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Header @ 4

List View

General Information | [Contact](#) | [Default Values](#) | [Discount](#) | [Document Information](#) | [Clarification Request](#)

Procurement Folder: 1287498

Procurement Type: Central Master Agreement

Vendor ID:

Legal Name: NUTRIEN AG SOLUTIONS INC

Alias/DBA:

Total Bid: \$0.00

Response Date:

Response Time:

Responded By User ID:

First Name:

Last Name:

Email:

Phone:

SO Doc Code: CRFQ

SO Dept: 0803

SO Doc ID: DOT2400000018

Published Date: 9/18/23

Close Date: 10/4/23

Close Time: 13:30

Status: Closed

Solicitation Description:

Total of Header Attachments: 4

Total of All Attachments: 4



Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Solicitation Response

Proc Folder: 1287498
Solicitation Description: Vegetation Management Products - Statewide
Proc Type: Central Master Agreement

Solicitation Closes	Solicitation Response	Version
2023-10-04 13:30	SR 0803 ESR10042300000001658	1

VENDOR
000000187417
NUTRIEN AG SOLUTIONS INC

Solicitation Number: CRFQ 0803 DOT2400000018
Total Bid: 0
Response Date: 2023-10-04
Response Time: 12:39:36
Comments: We look forward to helping you with your program.

FOR INFORMATION CONTACT THE BUYER
John W Estep
304-558-2566
john.w.estep@wv.gov

Vendor Signature X	FEIN#	DATE
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All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Vegetation Management Products, Herbicides and Misc Products	0.00000	EA	330000.000000	0.00

Comm Code	Manufacturer	Specification	Model #
10171700			

Commodity Line Comments:

Extended Description:

SEE ATTACHED PRICING PAGES-ATTACHMENT A, FOR ACTUAL COST

REQUEST FOR QUOTATION
Vegetation Management Products

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Division of Highways to establish an open-end contract for Vegetation Management Products, to include herbicides, adjuvants, and miscellaneous related products for vegetation management statewide.

2. **DEFINITIONS:** The terms listed below shall have the following meanings assigned to them throughout and for the purpose of this Solicitation. Additional definitions can be found in Section 2 of the General Terms and Conditions.
 - 2.1 **“ADO” and “Agency Delivery Order”** - A written order entered by WVDOT personnel in the wvOASIS financial system against a master agreement, authorizing quantities of commodities and/or services to be delivered in accordance with all terms, conditions, and prices stipulated in the original contract.

 - 2.2 **“Contract Item” or “Contract Item(s)”** – Contract Items are identified in Section 3 of this Solicitation.

 - 2.3 **“Contractor” or “Vendor”** - interchangeably used throughout this Solicitation and in any cited Sections of the West Virginia Department of Transportation, Division of Highways Standard Specifications, Roads and Bridges, adopted latest Standard Specs edition, as amended, including any Supplementals and refers to any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract, as context requires.

 - 2.4 **“DEP”** - means the WV Department of Environmental Protection and should reference the Federal, State and Local levels of government. Please reference and www.dep.wv.gov.

 - 2.5 **“Emergency Orders”**- means orders which are required to be expedited without delay owing to circumstances for which the WVDOT could not have reasonably expected and has been designated as such by a representative of the WVDOT.

 - 2.6 **“EPA”** – United States Environmental Protection Agency. Please reference www.epa.gov.

 - 2.7 **“FOB” or “Free on Board”** – indicates that the price for goods includes delivery at the Vendor’s expense to a specified point, and that the Vendor retains liability for loss or damage until the goods are delivered.

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- 2.8 **“Pricing Pages”** - means the pages, contained in wvOASIS, or attached hereto as **Attachment A (ATT A) “Pricing Pages”**, upon which Vendor should list its proposed price for the Contract Services and will be used to evaluate the solicitation responses.
- 2.9 **“Solicitation”** – means the official notice of an opportunity to supply the State with goods and/or services that is published by the West Virginia Division of Highways.
- 2.10 **“Standard Specs”** – used throughout this solicitation means the West Virginia Department of Transportation, Division of Highways Standard Specifications, Roads and Bridges, most recent edition, as modified or amended by all subsequent Supplemental Specifications.
- 2.11 **“WVDA”** - West Virginia Department of Agriculture. Please reference www.wvagriculture.org or call 304-558-2209 for additional information.
- 2.12 **“WVDOH” or “Agency”**–means the West Virginia Division of Highways.

3. GENERAL REQUIREMENTS:

- 3.1 **Standard Specifications Roads and Bridges:** The following Standard Specs Sections shall apply, as applicable, to the administration of this contract: 101, 102, 103, 104, 105, 106, 107, 108, 109, and 110, as amended.

Free electronic copies of the Standard Specs and Supplementals are available at:
<https://transportation.wv.gov/highways/TechnicalSupport/specifications/Pages/default.aspx>.

- 3.2 **Contract Items and Mandatory Requirements:** Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below.

Contract Items furnished under this contract shall conform to the physical and chemical properties set forth in the EPA registration of the product.

- 3.2.1 **Herbicide Products, Contract Items 1 through 68:** Vendor may bid the Product Trade Name, as requested on Attachment A (ATT A), Pricing Pages, Part I – HERBICIDE PRODUCTS, or the Vendor may bid an “Equal to” item. Reference Section 3.2.4.

Herbicide product containers, once emptied, shall be disposed of in the manner specified on the product’s label. Refillable containers 15 gallons

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in size or larger shall be returned to the vendor at the vendors expense for reuse, unless reuse is contraindicated by the product label or the EPA Pesticide Container Regulations at www.epa.gov/pesticide-worker-safety/pesticide-containers.

- 3.2.2 Adjuvant Products, Contract Items 69 through 80:** Vendor may bid the Product Trade Name, where applicable, as is requested on Attachment A (ATT A), Pricing Pages, Part II – ADJUVANT PRODUCTS, or the Vendor may bid an “equal to” item. Reference Section 3.2.4.
- 3.2.3 Miscellaneous Products, Contract Items 81 through 90:** Vendor may bid the Product Trade Name, where applicable, as is requested on Attachment A (ATT A), Pricing Pages, Part III – MISCELLANEOUS PRODUCTS, or the Vendor may bid an “equal to” item.
- 3.2.4 “Equal To” Items:** Vendor may bid any or all of the products listed on the Pricing Pages. Vendors may bid the Product Trade Name requested or bid an “equal to” item. If no “equal to” product is listed, it will be assumed by the WVDOH that the bid is for the Product Trade Name listed on ATT A. Vendor shall provide the product label for every herbicide and adjuvant being proposed as an “equal to” product with their bid submission. **Failure to provide the product label/product specifications for a proposed equal product will result in the disqualification of the Contract Items bid.**

It is the expectation that all ‘equal to’ products will be similar in scope, application, concentration, handling, safety, and quality to the Product Trade Name listed in the Item Description of the **Herbicide Information Form, Attachment B (ATT B)**, but not necessarily chemically identical to the Product Trade Name. The WVDOH will make the final determination of equivalency. Additional documentation may be requested by the West Virginia Purchasing Division during the evaluation and equivalency process. If additional documentation is requested, the vendor must provide requested information within 5 business days of the request or their proposed “equal to” Contract Item will be disqualified.

- 3.2.4.1 Registration Information:** For each “equal to” herbicide product bid, the Vendor shall provide the Product Trade Name, EPA Registration Number, and the WVDA Registration Number (aka Brand ID). The WVDOH will not assume the Product Name, EPA Registration Number, or the WVDA Registration Number for any “equal to” item bid. **Failure to provide the “equal to” Product Trade Name, EPA Registration Number and WVDA Registration Number for every herbicide bid will result in the**

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disqualification of the corresponding Contract Items bid.
“Equal to” Adjuvant Products require the Product Trade Name.

To locate the WVDA Registration Number (known as the Brand ID on the WVDA website), Vendors may contact WVDA Pesticide Product Registration by calling 304-558-2209 and/or they may look up this information on the WVDA Pesticide Registration, within Product Registration, website at <https://wvplants.wvda.us/Index.aspx>.

3.2.5 WVDA Category 12 Certification: The Vendor must have a valid Category 12 Pesticide Storage and Distribution certification in West Virginia. **Failure to provide a copy of their Category 12 certification prior to award will result in the disqualification of the vendor’s entire bid.**

3.2.6 Certified Representative Requirements: Vendor must have a representative, available for training and technical support who holds a valid WVDA Category 7 Right-of-Way/Industrial Weed Control certification or a WVDA Category 11 Demonstration and Research certification. The Vendor’s Certified Representative shall provide technical support or additional training upon the Agency’s request at no additional expense.

Failure to provide proof of Vendor’s Certified Representative’s Category 7 or 11 certification prior to award will result in the disqualification of the vendor’s entire bid.

Vendors may visit the WV Department of Agriculture’s website at <http://wvplants.wvda.us/index.aspx> or call 304-558-2209 for additional information.

3.2.7 Emergency Orders: Emergency orders by WVDON District Engineer, or their designee is work that shall be initiated within forty-eight (48) hours from when the order is received by the vendor. The determination of emergency work will be in accordance with Section 2.5 of this Solicitation and prominently noted on ADO. Designated emergency orders will be paid at 1.50 times the vendors bid price.

4. CONTRACT AWARD:

4.1 Contract Award: The Contract is intended to provide Agencies with a purchase price on all Contract Items. This is a multiple vendor award contract. Qualifying Vendors shall be awarded a contract for those Contract Items bid which meet all

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mandatory requirements of this Contract, for which they are the lowest bidding vendor. WVDOH will determine the amount of the product needed and will place an order with the vendor holding the lowest bid for the distribution size needed.

- 4.2 Pricing Pages, Attachment A (ATT A):** Vendor should complete the Pricing Pages by providing the bid price for the Product Trade Name listed or providing the required information for a proposed “equal to” product as described in sections of 3.2.4. Instructions are provided on the Pricing Pages (ATT A) for Part I, II, and III. The EPA registration number and WVDA registration number (Brand ID) are required to be provided on the pricing pages for all “equal to” herbicides bid. Bids shall be calculated per the unit of measure indicated for the Contract Item, when distributed in the case/pallet/container size requested within the Description column. Delivery and expenses related to the return of refillable containers should be factored into vendors bid price. Vendor shall complete the Pricing Pages in their entirety as failure to do so may result in Vendor’s bids being disqualified. All bids or pricing submitted shall be held and honored by the Vendor for 90 days after the bid opening date.

4.2.1 The Pricing Pages contain a list of the Contract Items with no guarantee that any Contract Item will be purchased throughout the life of this contract. Estimated quantities are not available.

4.2.2 Vendor should type or electronically enter the information into the Pricing Pages spreadsheet to prevent errors in the evaluation. In most cases, the Vendor can request an electronic copy of the Pricing Pages spreadsheet for bid purposes by sending an email request to the following address: John.W.Estep@wv.gov.

4.2.3 Changing a column or row description, Contract Item description, unit of measure, or estimated quantities on the **Pricing Pages, Attachment A (ATT A)**, shall result in the disqualification of Contract Item bid on the altered line. In circumstances when all Contract Items must be bid for bid evaluation and contract award, the disqualification of any Contract Item will result in the disqualification of the entire bid.

Submitting Pricing Pages other than those provided with this solicitation, as described in Section 4.2, shall result in the disqualification of the Vendor’s bid in its entirety.

Vendor entries of bid prices or other notations made in wvOASIS commodity line descriptions will not be considered for bid evaluation or award.

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- 4.3 Contract Award Transition:** Upon award of this contract, the WVDOH Operations Division will announce the effective date of use of this contract to the Districts and the Vendors, whether it is by the effective date, the completed and encumbered date, or an established date by the WVDOH. Upon the announced effective date of use, any order issued prior to the award of the contract shall remain in effect and should not be cancelled until that order is filled; however, after 10 working days of the Districts and Vendors notice, any order that has not been completely filled by the Vendors shall NOT be completed and a cancellation notice will be sent to that Vendor from the issuing District for cancellation of the balance of that order only. No orders from prior contracts should be held open by the Districts or Vendors longer than 10 working days after the effective date of use is announced for the new contract.
- 4.4 Cooperative Contracting:** The purchase prices on all Contract Items on this contract, available for the WVDOH, shall be adoptable for other public agencies upon their request. Agencies under the authority of the West Virginia Purchasing Division must receive prior approval by the Purchasing Director.

5. ORDERING AND PAYMENT:

- 5.1 Ordering:** Vendor shall accept orders through regular mail, facsimile, email, or any other written forms of communication. Vendor shall maintain and keep current its phone numbers, fax number, email address, locations, and ordering/billing/payment addresses with WVDOH and in wvOASIS. Vendor may, but is not required to, accept online orders through a secure internet ordering portal/website. If Vendor can accept online orders, it shall include in its response a brief description of how Agencies may utilize the online ordering system. Vendor shall ensure that its online ordering system is properly secured prior to processing Agency orders online.
- 5.2 Agency Delivery Order (“ADO”):** District personnel must issue an ADO from wvOASIS for specific quantities of materials based on each project’s requirements and detailing the need and location information of work to be completed per Contract Items, as well as the start and end dates, which will become the agreed upon official start and end dates. The ADO must be created in wvOASIS and approved to “Final”, prior to placing the order with the Vendor. The District is responsible for creating the ADO in wvOASIS and is required to submit the approved order, in writing, directly to the Vendor via mail, email or fax. **Verbal communication with the Vendor is not considered an official order.** In the event the Vendor denies an order or if there are changes to an ADO, the District must process a change order to the approved ADO issued from wvOASIS.

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Emergencies shall be prominently noted on the ADO. Once complete, the ADO shall be sent to Vendor via fax, email, or mail.

- 5.3 Payment:** Upon completion of the work indicated on the ADO, Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia. The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, as well as Electronic Funds Transfer as methods to process payment for goods and services. The Vendor shall accept the State of West Virginia's Purchasing Card and Electronic Funds Transfer for payment of orders under this Contract. Electronic Funds Transfer for payment is available through the WV State Auditor's Office. The Vendor may visit the WV State Auditor's website (wvsao.gov) for all necessary forms and instructions. Payment method may be dictated at WVD OH's discretion.

6. PROJECT ACCEPTANCE, DELIVERY AND RETURN:

- 6.1 Project Acceptance and Written Verification of Receipt:** Upon receipt of a WVD OH ADO, the Vendor shall advise the WVD OH in writing within five (5) calendar days of their acceptance or refusal of the ADO. As verification of receipt, **Vendor must provide written acknowledgement of any ADOs and any Revisions/Modifications thereto sent by WVD OH.** Failure to provide the WVD OH with written acknowledgement of any ADOs/Revisions within five (5) days of the Order being sent shall be considered refusal of the ADO. In the event of refusal, the WVD OH at its own discretion shall cancel the ADO and may seek to obtain the goods or services from the next low bid Vendor or proceed with an emergency purchase from the open market.
- 6.2 Delivery Time:** Vendor shall deliver standard orders within twenty (20) working days after orders are received. Vendor shall deliver emergency orders within an agreed upon alternative timeframe by the WVD OH and Vendor after orders are received. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met. **No Vendor is authorized to ship goods nor is the WVD OH authorized to receive materials, prior to the issuance of a Delivery Order.**
- 6.3 Late Delivery:** The Agency placing the order under this Contract must be notified in writing if orders will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from another awarded vendor or proceed with an Emergency Purchase from the open market.

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The Agency placing the ADO under this Contract must be notified **in writing by the Vendor no later than five (5) business days prior to the scheduled delivery date noted on the Agency's order.** Any failure to notify, acknowledge receipt of WVDOH's written ADOs/ Revisions resulting in delivery delay, or failure to start or complete the project per the WVDOH scheduled due dates may be determined by the WVDOH at its sole discretion as harmful to the Agency and as such, shall result in WVDOH's cancellation of the ADO.

Any Agency seeking to obtain items from the open market under this provision must first obtain approval of the West Virginia Division.

6.3.1 Force Majeure: Vendor is not responsible for and shall not be penalized for delays in its delivery of goods and/or services when caused by factors or events outside Vendor's control, including but not limited to acts or omissions of the Agency or third parties, acts of civil or military authority, civil disturbance, war, terrorism, pandemics, explosions, fire, floods, tornadoes, or other natural disasters or acts of God.

6.4 Delivery Payment/Risk of Loss: Standard order delivery shall be F.O.B. destination to the Agency's location. Vendor shall include the cost/discount of standard order delivery charges in its bid pricing and is not permitted to charge the Agency separately for such delivery. The Agency will pay delivery charges on all emergency orders provided that Vendor invoices those delivery costs as a separate charge with the original freight bill attached to the invoice.

Deliveries made by the vendor shall be comprised only of Contract Items intended for delivery at that location and specified in the pricing pages, contract specifications or WV-39 Blanket Release Order. At no time shall property belonging to the West Virginia Department of Transportation be utilized as a lay-down or storage facility by the vendor, or items left with the intention of being distributed to an alternate location.

6.5 Return of Unacceptable Items: The decision of the WVDOH District Engineer or their designee regarding materials, workmanship, quality etc., shall be final per the Standard Specs Section 105.1, as amended. If the Agency deems the Contract Items to be unacceptable, the Contract Items shall be returned to Vendor at Vendor's expense and with no restocking charge. Vendor shall either arrange for the return within five (5) days of being notified that items are unacceptable or permit the Agency to arrange for the return and reimburse Agency for delivery expenses. If the original packaging cannot be utilized for the return, Vendor will supply the Agency with appropriate return packaging upon request. All returns of unacceptable items shall be F.O.B. the Agency's location. The returned product shall either be replaced, or the Agency shall receive a full credit or refund for the purchase price, at the Agency's discretion.

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- 6.6 Return Due to Agency Error:** Items ordered in error by the Agency will be returned for credit within 30 days of receipt, F.O.B. Vendor's location. Vendor shall not charge a restocking fee if returned products are in a resalable condition. Items shall be deemed to be in a resalable condition if they are unused and in the original packaging. Any restocking fee for items not in a resalable condition shall be the lower of the Vendor's customary restocking fee or 5% of the total invoiced value of the returned items.

7. VENDOR DEFAULT:

- 7.1** The following shall be considered a vendor default under this Contract.
- 7.1.1** Failure to provide Contract Items in accordance with the requirements contained herein.
 - 7.1.2** Failure to comply with other specifications and requirements contained herein.
 - 7.1.3** Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
 - 7.1.4** Failure to remedy deficient performance upon request.
- 7.2** The following remedies shall be available to Agency upon default.
- 7.2.1** Immediate cancellation of the Contract.
 - 7.2.2** Immediate cancellation of one or more release orders issued under this Contract.
 - 7.2.3** Any other remedies available in law or equity.

8. MISCELLANEOUS:

- 8.1 No Substitutions:** Vendor shall supply only Contract Items submitted in response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.

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- 8.2 Vendor Supply:** Vendor must carry sufficient inventory of the Contract Items being offered to fulfill its obligations under this Contract. By signing its bid, Vendor certifies that it can supply the Contract Items contained in its bid response.
- 8.3 Reports:** Vendor shall provide the Agency with quarterly reports, annual summaries, and/or monthly reports as requested by the Agency and/or the West Virginia Purchasing Division showing quantities, total dollar value of the Contract Items purchased, ordered, shipped & invoiced with dates in spreadsheet format as defined by the Agency. Failure to supply such reports may be grounds for cancellation of this Contract.
- 8.4 Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract Manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract Manager and his or her contact information below.

Contract Manager: Steve Gray
Telephone Number: 606-386-0413
Fax Number: _____
Email Address: Steve.Gray@Nutrien.com

Vendor shall inform the Agency in writing of any changes to the information provided above within ten (10) calendar days of such changes. Failure to comply may be grounds for cancellation of this contract.

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or "Agencies" means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or "Proposal" means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or "Vendors" means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☒ **Term Contract**

Initial Contract Term: The Initial Contract Term will be for a period of One (1) Year. The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to Three (3) successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

☐ **Alternate Renewal Term** – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

☐ **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____ days.

☐ **Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that:

☐ the contract will continue for _____ years;

☐ the contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's Office (Attorney General approval is as to form only).

☐ **One-Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

☐ **Construction/Project Oversight:** This Contract becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and continues until the project for which the vendor is providing oversight is complete.

☐ **Other:** Contract Term specified in _____

4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☒ **Open End Contract:** Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☐ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ **One-Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

☐ **Construction:** This Contract is for construction activity more fully defined in the specifications.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:

☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

☒ West Virginia Department of Agriculture Category 12 Certification
(Pesticide Storage and Distribution Certification)

☐

☐

☐

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

☒ **Commercial General Liability Insurance** in at least an amount of: 1,000,000.00 per occurrence.

☐ **Automobile Liability Insurance** in at least an amount of: _____ per occurrence.

☐ **Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: _____ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

☐ **Commercial Crime and Third Party Fidelity Insurance** in an amount of: _____ per occurrence.

☐ **Cyber Liability Insurance** in an amount of: _____ per occurrence.

☐ **Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

☐ **Pollution Insurance** in an amount of: _____ per occurrence.

☐ **Aircraft Liability** in an amount of: _____ per occurrence.

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9. WORKERS' COMPENSATION INSURANCE: Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. VENUE: All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

☐ _____ for _____.

☐ Liquidated Damages Contained in the Specifications.

☒ Liquidated Damages Are Not Included in this Contract.

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence regarding all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in www.state.wv.us/admin/purchase/privacy.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR NON-CONFLICT: Neither Vendor nor its representatives are permitted to have any interest, nor shall they acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. NO DEBT CERTIFICATION: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.

38. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

39. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

☒ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

☒ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

40. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.
- c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
 1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
 2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a “substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

44. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

45. VOID CONTRACT CLAUSES: This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

46. ISRAEL BOYCOTT: Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Thomas Bowman, Warehouse Manager

(Address) 1850 Touchstone Rd Colonial Heights, VA 23834

(Phone Number) / (Fax Number) 804-520-0789

(email address) Thomas.Bowman@Nutrien.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Nutrien Ag Solutions, Inc.

(Company) JS

(Signature of Authorized Representative)

Tim Smith, Senior Director

(Printed Name and Title of Authorized Representative) (Date)
870-367-8561 870-367-1804

(Phone Number) (Fax Number)

tim.smith@nutrien.com

(Email Address)

Vegetation Management Products

Pricing Pages, Attachment A (ATT A)

VENDOR NAME: Nutrien Ag Solutions, Inc.

VENDOR INSTRUCTIONS: Please read the instructions below for Part I, II, and III carefully, and provide all required information with the bid submission. This is a multiple vendor award contract. Vendors may bid any or all contract items. A contract will be awarded to the low bid Vendor, per contract item bid, meeting all contract specification requirements.

Part I: HERBICIDES - Vendor shall bid either the Product Trade name product listed, or an "equal to" product (reference Section 3.2.4.) "Equal to" products must be listed by brand name in the "Equal To Product Bid." All "equal to" products MUST have the EPA registration number and the WVDA registration number (aka Brand ID) for every herbicide product bid. Failure to list the EPA registration number and WVDA # will result in the bid being disqualified for the corresponding Contract Item. Bids shall be calculated per the unit of measure indicated for the Contract Item, when distributed in the case/pallet/container size requested within the Description column. **Vendor must supply the product label for all equal to products bid.** Failure to provide product labels for equal to products bid will result in the bid being disqualified for the corresponding Contract Item for which the product label was omitted.

Part II: ADJUVANTS - Vendor shall bid either the Product Trade name product listed, or an "equal to" product (reference Section 3.2.4.) Bids shall be calculated per the unit of measure indicated for the Contract Item, when distributed in the case/pallet/container size requested within the Description column. **Vendor must supply the product label for all equal to products bid.** Failure to provide product labels for equal to Contract Items bid in Part II: Adjuvant Products with the bid submission will result in the bid being disqualified for the corresponding Contract Item for which the product label was omitted.

Part III: MISCELLANEOUS PRODUCTS - Vendor shall bid either the Product Trade name product listed, or an "equal to" product (reference Section 3.2.4.) Bids should be calculated per the unit of measure indicated for the Contract Item. **Vendor should supply the product label and/or the product specifications for every Miscellaneous products bid.**

Part I: HERBICIDE PRODUCTS

Contract Item #	Description	Unit of Measure	Cost Per Unit of Measure	Equal To Product Bid (Provide Product Labels for Equal to Items Bid)
	Product Trade Name: Accord® XRT II or equal A non-selective broad spectrum systemic herbicide for control of annual and perennial weeds and woody plants. Group 9. Active ingredient is 50.2% glyphosate: N-(phosphonomethyl)glycine, dimethylamine salt. Contains 5.07 lb per gallon glyphosate, dimethylamine salt (4 lb per gallon glyphosate acid).			Product Name: Mad Dog 5.4 EPA REG# 34704-929 WVDA#/Brand ID: 9511
1	Case of 2 X 2.5 Gal. containers	Gal.	\$18.90	
2	Pallet of 72 x 2.5 Gal. containers	Gal.	\$18.90	
3	30 Gal. container, sold individually	Gal.	\$18.40	
4	250 Gal. container, sold individually	Gal.	\$18.10	
	Product Trade Name: Arsenal® Powerline™ or equal Water-soluble formulation applied as a spray for control of most annual and perennial grasses, broad-leaf and woody plants. Group 2. Active Ingredient: Isopropylamine Salt of Imazapyr 26.7%. Equivalent to 21.8% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.			Product Name: EPA REG# WVDA#/Brand ID:
5	Case of 2 X 2.5 Gal. containers	Gal.	\$72.00	
6	15 Gal. container, sold individually	Gal.	\$72.00	
7	Pallet of 72 X 2.5 Gal. containers	Gal.	\$72.00	
8	Pallet of 9 X 15 Gal. containers	Gal.	\$72.00	
	Product Trade Name: Diuron 4L or equal A non-selective residual herbicide for the control of a wide range of grasses, broadleaf weeds in land not intended to bear vegetation. Group 7. Active Ingredients: Diuron 40.7%. Contains 4.0 Pounds of Diuron per gallon.			Product Name: EPA REG# WVDA#/Brand ID:
9	Case of 2 X 2.5 Gal. containers	Gal.	\$27.00	
10	30 Gal. container, sold individually	Gal.		

Vegetation Management Products

Pricing Pages, Attachment A (ATT A)

11	Product Trade Name: Escort XP Herbicide® or equal A dispersible granule, post-emergent herbicide that mixes in water for spray application and controls many annual and perennial weeds and woody plants. Group 2. Active Ingredient: Metsulfuron methyl 60% by weight.			Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 8 X 8 Oz. containers	Oz.	\$2.25	
	Case of 8 X 16 Oz. containers	Oz.	\$2.25	
	64 Oz. container, sold individually	Oz.	\$1.95	
14	Product Trade Name: EsplAnade® 200 SC or equal A preemergent herbicide for the control of annual grasses and broadleaf weeds. Group 29. Active Ingredient: Indaziflam 19.05%. Contains 1.67 pounds of indaziflam per gallon.			Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 4 X 16 Qt. containers	Qt.	\$395.54	
	Case of 2 X 2.5 Gal. containers	Gal.	\$1,437.44	
16	Product Trade Name: EsplAnade® EZ or equal A pre-mixed non-selective control of emerged and pre-emerged grasses and broadleaf weeds. Group 29, 22, and 9. Active Ingredients: Indaziflam 0.089% + Diquat 0.890% + Glyphosate 20.460%, by weight.			Product Name: <u>Roundup Quikpro SC Total</u> _____ EPA REG# <u>432-1532</u> _____ WVDA#/Brand ID: <u>18527</u> _____
	Case of 4 X 144oz EA containers	EA	\$72.20	
	Case of 2 X 2.5 Gal. containers	Gal.	\$72.20	
18	Product Trade Name: Freelexx™ or equal Selective control of many broadleaf weeds and turfgrass and certain aquatic applications. Group 4. Active Ingredients: 2,4-D Choline 19.6%. 2,4-dichlorophenoxyacetic acid - 38.4% - 3.8 Lb./Gal.			Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 2 X 2.5 Gal. containers	Gal.	\$32.75	
	Pallet of 72 X 2.5 Gal. containers	Gal.	\$32.75	
20	Product Trade Name: Garlon® 3A or equal Liquid amine formulation for foliar and basal bark applications and is effective on actively growing brush by penetrating the bark and entering the cambium layer. Group 4. Active Ingredients: Triclopyr 44.4%. Acid equivalent: triclopyr - 31.8% - 3 Lb./Gal.			Product Name: <u>Alligare Triclopyr 3</u> _____ EPA REG# <u>81927-13</u> _____ WVDA#/Brand ID: <u>2190.0019 R</u> _____
	Case of 2 x 2.5 Gal. containers - Alligare Triclopyr 3	Gal.	\$37.45	
	Pallet of 10 X 15 Gal. containers - Garlon 3A	Gal.	\$63.50	
	30 Gal. container, sold individually - Element 3A	Gal.	\$52.00	
23	Product Trade Name: Garlon® 4 Ultra or equal Liquid ester formulation for foliar and basal bark applications and is effective on actively growing brush by penetrating the bark and entering the cambium layer. Group 4. Active Ingredients: Triclopyr Butoxyethyl ester 61.6%. Acid equivalent: triclopyr - 43.46% - 4 Lb/Gal.			Product Name: <u>Alligare Triclopyr 4</u> _____ EPA REG# <u>81927-11</u> _____ WVDA#/Brand ID: <u>2190.0020 R</u> _____
	Case of 2 x 2.5 Gal. containers - Alligare Triclopyr 4	Gal.	\$56.20	
	15 Gal. container, sold individually - Garlon 4 Ultra	Gal.	\$81.50	
	30 Gal. container, sold individually - Element 4	Gal.	\$64.30	
	Pallet of 10 X 15 Gal. containers - Garlon 4 Ultra	Gal.	\$81.50	

Vegetation Management Products

Pricing Pages, Attachment A (ATT A)

27	Product Trade Name: Krenite® S or equal Herbicide brush control agent is a water-soluble liquid to be diluted with water and applied as a foliar spray for control and/or suppression of many woody species. Group 27. Active Ingredient: Ammonium salt of fosamine 41.5%. Contains 4 pounds of Active Ingredient per gallon.			Product Name: <u>Sumter SC</u> EPA REG# <u>91234-209</u> WVDA#/Brand ID: <u>17474</u>
	Case of 2 X 2.5 Gal. containers	Gal.	\$99.50	
	Case of 6 x 2.5 Gal. containers	Gal.	\$99.50	
28	Case of 6 x 2.5 Gal. containers	Gal.	\$99.50	
29	Pallet of 72 X 2.5 Gal. containers	Gal.	\$99.50	
30	Product Trade Name: Krovar® I DF or equal A dispersible granule to be mixed in water and applied as a spray for selective control of weeds. Group 5, 7. Active Ingredients: Bromacil 40.0% + Diuron 40.0% by weight.			Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 48 X 6 Lb. containers	Lb.	\$11.50	
31	Product Trade Name: Method® 240SL or equal A soluble liquid that is mixed in water and may be applied by aerial or ground equipment for control of broadleaf weeds and woody species. Group 4. Active Ingredients: Postassium salt of aminocyclopyrachlor 25.0%. Acid Equivalent: 6-Amino-5-chloro-2-cyclopropyl-4-pyrimidinecarboxylic acid - 2 pounds acid per gallon or 21.2%.			Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 2 x 2.5 Gal. containers	Gal.	\$343.04	
32	Product Trade Name: Milestone® or equal A liquid herbicide for use on rangeland and pastures to control noxious and invasive broadleaf species and other problem weeds. Group 4. Active Ingredients: Aminopyralid 40.6%. Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 21.1% - 2 Lb./Gal.			Product Name: <u>Whetstone</u> EPA REG# <u>81927-82</u> WVDA#/Brand ID: <u>15874</u>
	Case of 12 X 1 Qt. containers	Qt.	\$70.00	
33	Case of 2 X 2.5 Gal. containers	Gal.	\$280.00	
34	Product Trade Name: Oust® XP or equal A broad-spectrum herbicide that cost-effectively controls tough annual and perennial grasses and broadleaf weeds. Dispersible granules. Group 2. Sulfometuron Methyl 75.0% by weight.			Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	3 Lb. container, sold individually	Lb.	\$32.00	
35	Case of 8 X 3 Lb. containers	Lb.	\$32.00	
36	Product Trade Name: Oust® Extra or equal Controls many annual and perennial grasses and broad-leaf weeds. Group 2. Active Ingredients: Sulfometuron Methyl 56.25%, Metsulfuron Methyl 15% by weight.			Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	4 Lb container, sold individually	Lb.	\$32.00	
37	12 Lb. container, sold individually	Lb.	\$32.00	
38	Case of 8 x 4 Lb. containers	Lb.	\$32.00	
39	Product Trade Name: Outrider® or equal A selective herbicide for the control of certain annual and perennial grasses and broadleaf weeds. Water soluble dry granule. Active Ingredient: Sulfosulfuron 75.0%.			Product Name: <u>Cryder</u> EPA REG# <u>91234-119</u> WVDA#/Brand ID: <u>18812</u>
	20 Oz. container, sold individually	Oz.	\$13.00	
40	Case of 10 X 20 Oz. containers	Oz.	\$13.00	
41	Product Trade Name: Pathfinder® II or equal No mixing. For the control of woody plants, basal bark and cut-stump treatments. Group 4. Active Ingredients: Triclopyr Butoxyethyl ester 13.6%. Acid Equivalent: triclopyr - 9.81% - 0.75 Lb./Gal.			Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 2 X 2.5 Gal. containers	Gal.	\$51.80	

Vegetation Management Products

Pricing Pages, Attachment A (ATT A)

42	Product Trade Name: PENDulum® AquaCap™ or equal Water-based herbicide that provides preemergence control of weeds in turfgrass, landscape, noncropland areas and ornamental production. Pendulum will not control established weeds, rather it stops susceptible weeds from germinating and growing, eventually causing them to die before they ever emerge from the soil. Group 3. Active Ingredient: Pendimethalin 38.7%. 1 Gal contains 3.8 Lbs. of microencapsulated pendimethalin in aqueous carrier.					Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 2 X 2.5 Gal. containers					
	15 Gal. container, sold individually					
44	Product Trade Name: Plateau® or equal For weed control, native grass establishment and turf growth suppression. Group 2. Active Ingredients: 23.6% Ammonium salt of imazapic. Contains 2 lbs. of Imidazolinone per gallon.					Product Name: _____ Panoramic 2SL _____ EPA REG# 66222-141-81927 WVDA#/Brand ID: 2190.0023
	Case of 4X 1 Gal. containers					
45	Product Trade Name: Polaris® SP or equal Multi-Purpose Non-Selective liquid post-emergent herbicide for the management of grasses and broadleaf weeds, undesirable emergent and floating aquatic vegetation, and many brush and vine species in a variety of settings. Group 2. Active Ingredients: Imazapyr 27.7%. Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1 H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.					Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 2 X 2.5 Gal. containers					
	Pallet of 72 X 2.5 Gal. containers					
47	Product Trade Name: Rodeo® or equal Control of annual and perennial weeds and woody plants and for emerged aquatic vegetation control. Group 9. Active Ingredients: Isopropylamine Salt of Glyphosate 53.8%. Contains 5.4 Lb. per gallon glyphosate, isopropylamine salt (4 Lb. per gallon glyphosate acid).					Product Name: _____ Aquaneat _____ EPA REG# 228-365 WVDA#/Brand ID: 1009.0148
	Case of 2 X 2.5 Gal. containers					
	Pallet of 72 X 2.5 Gal. containers					
	30 Gal. container, sold individually					
50	Product Trade Name: Roundup® Pro Concentrate or equal A postemergence herbicide for industrial, turf and ornamental weed control. It gives broad-spectrum control of many annual weeds, perennial weeds, woody brush and trees. Formulated as a water-soluble liquid containing surfactant. Group 9. Active Ingredient: Glyphosate 50.2%. Contains 600 grams per liter or 5 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its isopropylamine salt. Equivalent to 445 grams per liter or 3.7 pounds per gallon of the acid glyphosate.					Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
	Case of 2 X 2.5 Gal. containers					
	Pallet of 72 X 2.5 Gal. containers					
	Pallet of 9 X 15 Gal. containers					
	30 Gal. container, sold individually					
	265 Gal. container, sold individually					

Vegetation Management Products

Pricing Pages, Attachment A (ATT A)

Roundup Custom Aquatic Terrestrial Herbicide A non-selective systemic aquatic herbicide effectively control weed, brush and vines by land or water. Active Ingredient: 53.8% Glyphosate, N-(phosphonomethyl) glycine. Contains 648 grams per liter or 5.4 pounds per US gallon of active ingredient in the form of isopropylamine salt. Equivalent to 480 grams per liter or 4 pounds per US gallon of the acid glyphosate.				Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
55	Case of 2 X 2.5 Gal. containers	Gal.	\$23.85	
56	30 Gal. container, sold individually	Gal.	\$23.15	
57	265 Gal. container, sold individually	Gal.	\$23.00	
Product Trade Name: Telar® XP or equal Foliar control and lasting residual to dramatically reduce noxious perennials and troublesome annual weeds. Group 3. Active Ingredient: Chlorsulfuron 75.0%, by weight.				Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
58	Case of 8 X 8 Oz. containers	Oz.	\$15.50	
59	Case of 8 X 16 Oz. containers	Oz.		
Product Trade Name: Vanquish® or equal A liquid post-emergent herbicide for the management of more than 200 broadleaf weeds, brush, and vines. Active Ingredient: Dicamba - 56.8%. By isomer specific method, equivalent to: *3, 6-dichloro-o-anisic acid 38.5%, 4 Lbs./Gal.				Product Name: <u>Clash</u> EPA REG# <u>228-615</u> WVDA#/Brand ID: <u>1009.0165</u>
60	Case of 2 X 2.5 Gal. containers	Gal.	\$48.00	
61	Pallet of 9 X 15 Gal. containers	Gal.		
Product Trade Name: Vastlan™ or equal For the control of woody plant species and annual and perennial broadleaf weeds. Group 4. Active Ingredients: Triclopyr 54.72%. Acid equivalent: triclopyr – 39.02% - 4 Lb./Gal.				Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
62	Case of 12 X 1 Qt. containers	Qt.	\$25.50	
63	Case of 2 X 2.5 Gal. containers	Gal.	\$102.00	
64	Pallet of 72 X 2.5 Gal. containers	Gal.	\$102.00	
65	Pallet of 9 x 15 Gal. containers	Gal.	\$102.00	
66	30 Gal. container, sold individually	Gal.	\$102.00	
Product Trade Name: Velpar L® Liquid Herbicide or equal Soil-active herbicide controls trees, brush, weeds, and grasses by inhibiting photosynthesis. Water Dispersible Liquid. Group 5. Active Ingredient: Hexazinone 25.0%. Contains 2 pounds of active ingredient per gallon.				Product Name: _____ EPA REG# _____ WVDA#/Brand ID: _____
67	Case of 2 X 2.5 Gal. containers	Gal.	\$160.00	
68	15 Gal. container, sold individually	Gal.		

Continue to Part II

Vegetation Management Products

Pricing Pages, Attachment A (ATT A)

Part II - ADJUVANT PRODUCTS

Contract Item #	Description	Unit of Measure	Cost Per Unit of Measure	Equal To Product Bid (Provide Product Labels for Equal to Items Bid)
69	Product Trade Name: Aquachem 90 or equal Non-Ionic Surfactant Case of 2 X 2.5 Gal. containers	Gal.	\$14.00	Product Name: <u>Activator 90</u>
70	Product Trade Name: Basal Oil or Bark Oil, or equal Diluent with Emulsifiers Supplied in <u>15GA</u> containers in lots of <u>9 Drums</u>	Gal.	\$12.50	Product Name: _____
71	Product Trade Name: Bullseye® or equal Water Soluble Blue Liquid Spray Pattern Indicator Case of 2 X 2.5 Gal. containers	Gal.	\$48.00	Product Name: _____
72	Product Trade Name: 41 A® Drift Retardant or equal Granular/Flake Drift Control Agent Case of 12 X 32 Oz. containers	Oz.		Product Name: _____
73	Product Trade Name: Liberate® or equal Non-Ionic, Low Foam Penetrating Surfactant with Lecithin, Drift Control Agent Case of 2 X 2.5 Gal. containers	Gal.	\$25.00	Product Name: _____
74	Product Trade Name: MSO® Concentrate or equal Concentrate Spray Adjuvant with Lecitech®, Methylated Seed Oil Case of 2 X 2.5 Gal. containers	Gal.	\$22.00	Product Name: _____
75	Product Trade Name: Nu-Film®-IR or equal Non-Ionic Sticker Spreader Case of 2 X 2.5 Gal. containers	Gal.	\$46.75	Product Name: <u>Attach</u>
76	Product Trade Name: Reign® LC or equal Liquid Drift Control Agent Case of 12 X 1 Qt. Containers	Qt.	\$10.50	Product Name: _____
77	Product Trade Name: Spreader 90 or equal Aquatic Surfactant Case of 2 X 2.5 Gal. containers	Gal.	\$15.75	Product Name: _____
78	Product Trade Name: Thinvert® RTU or equal Ready-to-Use Formula Containing Paraffinic Oil Emulsifiers Case of 5 Gal. containers	Gal.	\$16.00	Product Name: _____
79	15 Gal. Container, sold individually	Gal.	\$16.00	
80	Product Trade Name: Unfoamer® or equal Miscible-Dispersible Liquid Defoamer (10% Active Ingredient) Case of 12 X 1 Qt. Containers	Qt.	\$13.50	Product Name: _____

Continue to Part III

Vegetation Management Products

Pricing Pages, Attachment A (ATT A)

Part III - MISCELLANEOUS PRODUCTS

Contract Item #	Description	Unit of Measure	Cost Per Unit of Measure	Equal Product Bid
	Product Trade Name: Birchmeier or equal			
81	5-gallon Backpack Sprayer	Ea.		Product Name: _____
82	Gasket Set for Sprayer Pump	Set		
83	Valve and Wand Repair Kit	Kit		
	Product Trade Name: Birchmeier BCS or equal			
84	Closed System Backpack Sprayer	Ea.		Product Name: _____
85	Gasket Set for Sprayer Pump	Set		
86	Valve and Wand Repair Kit	Kit		
	Product Trade Name: Easy Rinse or equal			
87	Pressure Rinser	Ea.		Product Name: _____
88	32 oz. Eye Wash Bottle	Ea.		Product Name: _____
	Product Trade Name: Launch® or equal			
	Biostimulant; Plant nutrient supplement for the establishment and maintenance of turf and ornamentals.			Product Name: _____
89	Case of 2 X 2.5 Gal. containers	Gal.		
	Product Trade Name: Tolco® or equal			
90	2-Quart Handheld Pressure Sprayer	Ea.		Product Name: _____

ACTIVATOR 90

NON-IONIC SURFACTANT PENETRANT • ANTIFOAMING AGENT

Principal Functioning Agents:

Alkylphenol ethoxylate, alcohol ethoxylate and tall oil fatty acid.....	90%
Constituents ineffective as spray adjuvant.....	10%
TOTAL	100%

CA Reg. No. 34704-50034; WA Reg No. 34704-04001

KEEP OUT OF REACH OF CHILDREN

WARNING

Precautionary Statements: May be harmful if swallowed. May be harmful in contact with skin. Harmful if inhaled. Causes eye irritation. Wash hands thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.
Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers, or watercourses.

NET CONTENTS:

- ☐ 30 GL (113.6 L)
☐ 275 GL (1040.9 L)
☐ _____



Loveland Products, Inc.® • PO Box 1286 • Greeley, CO 80632-1286

Personal Protective Equipment: Wear protective gloves and eye/face protection.

First Aid: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor immediately for treatment advice. **If in eyes:** Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor immediately for treatment advice. **If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. **If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT, CALL 1-866-944-8565.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

GENERAL: **ACTIVATOR 90** is a low-foaming, non-ionic type spreader adjuvant. **ACTIVATOR 90** provides quick wetting, more uniform distribution, and increases retention of spray by reducing surface tension of the spray droplets. **ACTIVATOR 90** is a water soluble adjuvant that may also be used as an interfacing agent for wettable powders. Variations in conditions of use can cause some variation in the amount of **ACTIVATOR 90** required. The minimum required to give a smooth, uniform coverage usually gives the most effective results.

MIXING INSTRUCTIONS: For wettable powders and water soluble materials, add **ACTIVATOR 90** in water before adding pesticide to spray tank. For emulsifiable products, add **ACTIVATOR 90** after a good emulsion is formed.

THIS PRODUCT CAN BE USED IN THE FOLLOWING SETTINGS: AGRICULTURAL, AQUATIC, FORESTRY, INDUSTRIAL, MUNICIPAL, NON-CROPLAND, ORNAMENTAL, RIGHTS-OF-WAY AND TURF. (NOT FOR AQUATIC USE IN WASHINGTON.)

DIRECTIONS FOR USE: Some pesticides have stated adjuvant use rates. In all cases, the pesticide manufacturer's label should be consulted regarding specific adjuvant use recommendations and that rate followed. Do not add adjuvant at a level that would exceed 5% of the finished spray volume. For tank mix compatibility concerns, conduct a jar test of the proposed mixture to ensure compatibility of all components. Mix components in the same ratio as the proposed tank mix.

Herbicides, Defoliants, Desiccants:

1 to 4 pints/100 gallons of spray mixture.

Insecticides, Fungicides, Acaracides, Plant Growth Regulators, Foliar Nutrients:

1 to 4 pints/100 gallons of spray mixture.

Turf, Ornamental, and Industrial Spraying: 1 to 3 ounces per 5 gallons of spray mixture.
NOTE: This product has demonstrated excellent plant safety; however, not all species and varieties have been tested. Before treating a large area, treat a small area and observe prior to full-scale application. **DO NOT USE ON ROSES.**

STORAGE AND DISPOSAL

STORAGE: Store in cool, dry place. Store in original container. Keep container tightly closed. Do not reuse empty container. **DISPOSAL:** Do not contaminate water, food, or feed by storage or disposal. Dispose of contents/container on-site or at an approved waste disposal facility. Triple rinse (or equivalent) adding rinse water to spray tank. Offer container for recycling or dispose of container in sanitary landfill, or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at www.acrecycle.org.

For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC 1-800-424-9300.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT, read the Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary. LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, when the product is used in accordance with such Directions for Use under normal conditions of use. LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

Aqua Neat®

Aquatic Herbicide

FOR USE ON EMERGED AQUATIC WEEDS AND BRUSH IN AQUATIC SITES. FOR USE IN FORESTRY (INCLUDING WEED CONTROL IN CHRISTMAS TREE PLANTATIONS), PASTURES, RANGELANDS, RIGHTS-OF-WAY, HABITAT RESTORATION AREAS, NON-CROP AND OTHER LISTED APPLICATION SITES.

ACTIVE INGREDIENT:

Glyphosate, N-(phosphonomethyl)glycine, in the form of its isopropylamine salt* 53.8%

OTHER INGREDIENTS: 46.2%

TOTAL: 100.0%

*Contains 648 grams per litre or 5.4 pounds per U.S. gallon of the active ingredient, glyphosate, in the form of its isopropylamine salt. Equivalent to 480 grams per litre or 4 pounds per U.S. gallon of the acid, glyphosate.

KEEP OUT OF REACH OF CHILDREN

CAUTION / PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

SEE INSIDE BOOKLET FOR FIRST AID AND ADDITIONAL PRECAUTIONARY STATEMENTS

For Medical Emergencies, Call (877) 325-1840

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300

EPA Reg No. 228-365

Manufactured for
Nufarm Americas Inc.
11901 S. Austin Avenue
Alsip, IL 60803

 **Nufarm**

Grow a better tomorrow



Net Contents
2.5 Gal.
(9.46 L)
Nonrefillable Container

14501000

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION / PRECAUTION

Harmful if inhaled. Avoid breathing spray mist. Remove contaminated clothing and wash clothing before reuse. Wash thoroughly with soap and water after handling.

FIRST AID

IF INHALED

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exists, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Control Statements: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users Should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

For aquatic uses, do not contaminate water when disposing of equipment washwaters. Treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss can cause fish suffocation.

For terrestrial uses, do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.

In case of, SPILL OR LEAK, soak up and remove to a landfill. Do not contaminate water when disposing of equipment washwaters or rinsate.

PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product must be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

Read the entire label before using this product. Use strictly in accordance with label precautionary statements and directions.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protection equipment (PPE) and Restricted-Entry Interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the Restricted-Entry Interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, shoes plus socks, and waterproof gloves.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses. Keep people and pets off treated areas until spray solution has dried.

PRODUCT INFORMATION

DO NOT APPLY THIS PRODUCT USING AERIAL SPRAY EQUIPMENT EXCEPT UNDER CONDITIONS AS SPECIFIED WITHIN THIS LABEL OR CURRENT SUPPLEMENTAL LABELING ISSUED BY MANUFACTURER.

This product, a water-soluble liquid, mixes readily with water and nonionic surfactant to be applied as a foliar spray after dilution and thoroughly mixing with water in accordance with label instructions for the control or destruction of many herbaceous and woody plants.

Always use the higher rate of this product per acre within the specified range when vegetation is heavy or dense, when treating dense multi-canopied sites, or woody vegetation or difficult-to-control herbaceous or woody plants.

This product moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days but on most perennial brush species may not occur for 7 days or more. Extremely cool or cloudy weather following treatment may slow the activity of this product and delay visual effects of control. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of above-ground growth and deterioration of underground plant parts.

Unless otherwise directed on this label, delay application until vegetation has emerged and reached the stages described for control of such vegetation under the "WEEDS CONTROLLED" section of this label.

Unemerged plants arising from unattached underground rhizomes or root stocks of perennials or brush will not be affected by the spray and will continue to grow. For this reason best control of most perennial weeds or brush is obtained when treatment is made at late growth stages approaching maturity.

Do not treat weeds or brush under poor growing conditions such as drought stress, disease or insect damage, as reduced control may result. Reduced results may also occur when treating weeds or brush heavily covered with dust.

Reduced control may result when applications are made to any weed or brush species that have been mowed, grazed or cut, and have not been allowed to regrow to the recommended stage for treatment.

Rainfall or irrigation occurring within 6 hours after application may reduce effectiveness. Heavy rainfall or irrigation within 2 hours after application may wash the product off the foliage and a repeat treatment may be required.

Mixing this product with herbicides or other materials not instructed in this label may result in reduced performance. However, unless otherwise prohibited on this label or the label of an intended tank mix product may be applied in combination with any herbicide registered for the same site, timing, and method of application. Observe the most restrictive label statements of various tank mix products used. TO THE FULLEST EXTENT PERMITTED BY LAW, BUYER AND ALL USERS ARE RESPONSIBLE FOR ALL LOSS OR DAMAGE IN CONNECTION WITH THE USE OR HANDLING OF MIXTURES OF THIS PRODUCT OR OTHER MATERIALS THAT ARE NOT EXPRESSLY SPECIFIED IN THIS LABEL.

For best results, spray coverage must be uniform and complete. Do not spray weed foliage to the point of runoff.

When this product comes in contact with soil (on the soil surface or as suspended soil or sediment in water) it is bound to soil particles. Under labeled use situations, once this product is bound to soil particles, it is not available for plant uptake and will not harm off-site vegetation where roots grow into the treatment area or if the soil is transported off-site. Under labeled use conditions, the strong affinity of this product to soil particles prevents this product from leaching out of the soil profile and entering ground water. The affinity between this product and soil particles remains until this product is degraded, which is primarily a biological degradation process carried out under both aerobic and anaerobic conditions by soil micro flora.

This product does not provide residual weed control. For subsequent residual weed control, follow a label-approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used. Read **"WARRANTY DISCLAIMER"** and **"LIMITATION OF LIABILITY"** before buying or using. If items are not acceptable, return at once unopened. Buyer and all users are responsible for all loss or damage in connection with the use of handling of mixtures of this product or other materials that are not expressly specified in this label.

For more product information, call toll-free 1-800-345-3330.

ATTENTION

AVOID CONTACT WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS, OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES, SINCE SEVERE INJURY OR DESTRUCTION MAY RESULT. AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.

Do not allow the herbicide solution to mist, drip, drift or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to the crop, plants or other areas on which treatment was not intended. The likelihood of plant or crop injury occurring from the use of this product is greatest when winds are gusty or in excess of 5 miles per hour or when other conditions, including lesser wind velocities, will allow spray drift to occur. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) which are likely to drift. AVOID APPLYING AT EXCESSIVE SPEED OR PRESSURE.

NOTE: Use of this product in any manner not consistent with this label may result in injury to persons, animals or crops, or other unintended consequences. When not in use, keep container closed to prevent spills and contamination.

WEED RESISTANCE

Any weed population may contain plants that are naturally resistant to glyphosate, the active ingredient in this product, and to other herbicides with the same mode of action. ATTENTION: These resistant weed biotypes will not be controlled by this product. Consult advisors such as your local agricultural extension service for agronomic management practices to minimize the occurrence of glyphosate resistance and considerations for supplemental control measures.

Weed Management

To minimize the occurrence of glyphosate-resistant biotypes, observe the following general weed management practices:

- Scout application site before and after herbicide applications.
- Start with a clean application site, using either a burndown herbicide application or tillage.
- Control weeds early when they are relatively small.
- Add other herbicides (e.g. a selective and/or a residual herbicide) and cultural practices (e.g. tillage or crop rotation) where appropriate.
- Utilize the specified label rate for the most difficult to control weed in your field. Avoid tank mixtures with other herbicides that reduce this product's efficacy (through antagonism), or tank mixture directions that encourage application rates of this product below the label directions.
- Control weed escapes and prevent weeds from setting seeds.
- Clean equipment before moving from field to field to minimize the spread of weed seed or plant parts.
- Report any incidence of repeated non-performance of this product on a particular weed to your Nufarm representative, local retailer, or county extension agent.

Management of Glyphosate-Resistant Biotypes

Since the occurrence of new glyphosate-resistant weeds cannot be determined until after product use and scientific confirmation, manufacturer is not responsible for any losses that may result from the failure of this product to control glyphosate-resistant weed biotypes.

The following good agronomic practices are recommended to reduce the spread of confirmed glyphosate-resistant biotypes:

- If a naturally occurring resistant biotype is present in your application site, this product should be tank-mixed or applied sequentially with an appropriately labeled herbicide with a different mode of action to achieve control.
- Cultural and mechanical control practices (e.g. crop rotation or tillage) may also be used as appropriate.
- Scout treated application site after herbicide applications and control escaping weeds including resistant biotypes before they set seed.
- Thoroughly clean equipment before leaving fields known to contain resistant biotypes.

MIXING AND APPLICATION INSTRUCTIONS

APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES. HAND-GUN APPLICATIONS MUST BE PROPERLY DIRECTED TO AVOID SPRAYING DESIRABLE PLANTS. NOTE: REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, SUCH AS WATER FROM PONDS AND UNLINED DITCHES.

TANK MIXTURES

Always predetermine the compatibility of labeled tank mixtures of this product with water carrier by mixing small proportional quantities in advance. Mix labeled tank mixtures of this product with water as follows:

1. Place a 20 to 35 mesh screen or wetting basket over filling port.
2. Through the screen, fill the spray tank one-half full with water and start agitation.
3. If a wettable powder is used, make a slurry with the water carrier, and add it SLOWLY through the screen into the tank. Continue agitation.
4. If a flowable formulation is used, premix one part flowable with one part water. Add diluted mixture SLOWLY through the screen into the tank. Continue agitation.
5. If an emulsifiable concentrate formulation is used, premix one part emulsifiable concentrate with two parts water. Add diluted SLOWLY through the screen into the tank. Continue agitation.
6. Continue filling the spray tank with water and add the required amount of this product near the end of the filling process.
7. Where nonionic surfactant is recommended, add this to the spray tank before completing the filling process.
8. Add individual formulations to the spray tank as follows: wettable powder, flowable, emulsifiable concentrate, drift control additive, water soluble liquid followed by surfactant.

Maintain good agitation at all times until the contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed. To prevent or minimize foam, avoid the use of mechanical agitators, place the filling hose below the surface of the spray solution, terminate by-pass and return lines at the bottom of the tank and if needed use an approved anti-foam or defoaming agent.

Use screen size in nozzle or line strainers that are no finer than 50 mesh. Carefully select proper nozzle to avoid spraying a fine mist. For best results with conventional ground application equipment, use flat fan nozzles.

Clean sprayer and parts immediately after using this product by thoroughly flushing with water.

For best results with conventional ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

When using this product, mix 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution. Use a nonionic surfactant labeled for use with herbicides. The surfactant must contain 50 percent or more active ingredient.

Always read and follow the manufacturer's surfactant label instructions for best results.

Do not use surfactants in excess of 1 quart per acre when making broadcast applications.

Colorants or marking dyes approved for use with herbicides may be added to spray mixtures of this product. Colorants or dyes used in spray solutions of this product may reduce performance, especially at lower rates or dilutions. Use colorants or dyes according to the manufacturer's label instructions.

Clean sprayer and parts immediately after using this product by thoroughly flushing with water and dispose of rinsate according to labeled use or disposal instructions.

Carefully observe all cautionary statements and other information appearing in the surfactant label.

APPLICATION EQUIPMENT AND TECHNIQUES

This product may be applied with the following application equipment:

Broadcast Spray

Controlled Droplet Applicator (CDA) - Hand-held or boom-mounted applicators which produce a spray consisting of a narrow range of droplet sizes.

Hand-Held and High-Volume Spray Equipment* - Knapsack and backpack sprayers, pump-up pressure sprayers, handguns, handwands, lances and other hand-held and motorized spray equipment used to direct the spray onto weed foliage.

*This product is not registered in California or Arizona for use in mistblowers.

Selective Equipment - Recirculating sprayers and wiper applicators. See the appropriate part of this section for specific instructions and rates of application.

Aerial - Fixed Wing and Helicopter

APPLICATION INFORMATION

Observe the following directions to minimize off-site movement during aerial application of this herbicide. Minimization of off-site movement is the responsibility of the grower, Pest Control Advisor, and aerial applicator.

BOOM EQUIPMENT

For control of weed or brush species listed in this label using conventional boom equipment - Use the specified rates of this product and surfactant in 3 to 30 gallons of water per acre as a broadcast spray, unless otherwise specified. See the "WEEDS CONTROLLED" section of this label for specific rates. As density of vegetation increases, spray volume may be increased within the specified range to ensure complete coverage. Carefully select correct nozzle to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

HAND-HELD AND HIGH-VOLUME EQUIPMENT

Use Coarse Sprays Only

For control of weeds listed in this label using knapsack sprayers or high-volume spraying equipment utilizing handguns or other suitable nozzle arrangements - Prepare a 0.75 to 2 percent solution of this product in water, add a nonionic surfactant and apply to foliage of vegetation to be controlled. For specific rates of application and instructions for control of various annual and perennial weeds, see the "WEEDS CONTROLLED" section in this label.

Apply on a spray-to-wet basis so that the spray coverage is uniform and complete. Do not spray to point of runoff.

This product may be used as a 5 to 8 percent solution plus 0.5 to 1 fluid ounce non-ionic surfactant per gallon spray solution for low-volume directed sprays for spot treatment of trees and brush. It is most effective in areas where there is a low density of undesirable trees or brush. If a straight stream nozzle is used, start the application at the top of the targeted vegetation and spray from top to bottom in a lateral zig-zag motion. Ensure that at least 50 percent of the leaves are contacted by the spray solution. For flat fan and cone nozzles and with hand-directed mist blowers, mist the application over the foliage of the targeted vegetation. Small, open-branched trees need only be treated from one side. If the foliage is thick or there are multiple root sprouts, applications must be made from several sides to ensure adequate spray coverage.

For use in knapsack sprayers, it is suggested that the specified amount of this product be mixed with water in a large container. Fill sprayer with the mixed solution and add the correct amount of surfactant.

Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table:

SPRAY SOLUTION

DESIRED VOLUME	AMOUNT OF PRODUCT					
	0.75%	1.0%	1.25%	1.5%	5.0%	8.0%
1 Gallon	1.0 fl. oz.	1.33 fl. oz.	1.66 fl. oz.	2.0 fl. oz.	6.0 fl. oz.	10.25 fl. oz.
25 Gallons	1.5 pts.	1.0 qt.	1.25 qts.	1.5 qts.	5.0 qts.	2.0 gals.
100 Gallons	3.0 qts.	1.0 gal.	1.25 gals.	1.5 gals.	5.0 gals.	8.0 gals.

2 Tablespoons = 1 fluid ounce

SELECTIVE EQUIPMENT

For terrestrial application, this product may be applied through a shielded applicator, or a wiper applicator after dilution and thorough mixing with water to listed weeds growing in any non-crop site specified on this label.

- A shielded applicator directs the herbicide solution onto weeds, while shielding desirable vegetation from the herbicide.
- A wiper applicator applies the herbicide solution onto weeds by rubbing the weed with an absorbent material containing the herbicide solution.

AVOID CONTACT WITH DESIRABLE VEGETATION.

This section summarizes the general weed control spectrum and rates of application for this herbicide. Additional information specific to individual use patterns is detailed in following sections.

AERIAL EQUIPMENT

Use the specified rates of this product and surfactant in 3 to 20 gallons of water per acre as a broadcast spray, unless otherwise specified. See the "WEEDS CONTROLLED" section of this label for specific rates. Unless otherwise specified, do not exceed 1.5 pints per acre. Aerial applications of this product may only be made as specified in this label.

AVOID DRIFT - DO NOT APPLY DURING LOW-LEVEL INVERSION CONDITIONS, WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION WHICH WILL ALLOW DRIFT. DRIFT MAY CAUSE DAMAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure above the manufacturer's instructions.

Drift control additives may be used. When a drift control additive is used, read and carefully observe the precautionary statements and all other information appearing in the additive label.

Ensure uniform application - To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE. The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38413 may prevent corrosion.

For use of this product by air in California see additional instructions in "FOR AERIAL APPLICATION IN CALIFORNIA ONLY" Section.

FOR AERIAL APPLICATION IN CALIFORNIA ONLY

EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE, GREEN STEMS, OR FRUIT OF DESIRABLE CROPS, PLANTS, TREES, OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.

Written Directions

A written direction MUST be submitted by or on behalf of the applicator to the Fresno County Agricultural Commissioner 24 hours prior to the application. This written direction MUST state the proximity of surrounding crops, and that conditions of each manufacturer's applicable product label(s) and this label have been satisfied.

Aerial Applicator Training and Equipment

Aerial application of this herbicide is limited to pilots who have successfully completed a Fresno County Agricultural Commissioner and California Department of Pesticide Regulation approved training program for aerial application of herbicides. All aircraft must be inspected, critiqued in flight, and certified at a Fresno County Agricultural Commissioner approved fly-in. Test and calibrate spray equipment at intervals sufficient to insure that proper rates of herbicides and adjuvants are being applied during commercial use. Applicator must document such calibrations and testing. Demonstration of performance at Fresno County Agricultural Commissioner approved "fly-ins" constitutes such documentation, or other written records showing calculations and measurements of flight and spray parameters acceptable to the Fresno County Agricultural Commissioner.

Application at night

Do not apply this product by air earlier than 30 minutes prior to sunrise and/or later than 30 minutes after sunset without prior permission from the Fresno County Agricultural Commissioner.

Aquatic and Other Noncrop Sites

When applied as directed and under the conditions described in the "Weeds Controlled" section of the label booklet for this product, this herbicide will control or partially control the labeled weeds growing in the following industrial and public areas, or other similar sites.

Aquatic Sites-including all bodies of fresh and brackish water which may be flowing, nonflowing or transient. This includes lakes, rivers, streams, ponds, seeps, irrigation and drainage ditches, canals, reservoirs, estuaries and similar sites.

If aquatic sites are present in the noncrop areas and are part of the intended treatment, read and observe the following directions: There is no limit on the use of treated water for irrigation, recreation or domestic purposes.

Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

NOTE: Do not apply this product within 1/2 mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within 1/2 mile of an active potable water intake in a standing body of water such as a lake, pond or reservoir. To make aquatic applications around and within 1/2 mile of active potable water intakes, the water intake must be turned off for a minimum period of 48 hours after the application. The water intake may be turned on prior to 48 hours if the glyphosate level in the intake water is below 0.7 parts per million as determined by laboratory analysis. These aquatic applications may be made **ONLY** in those cases where there are alternative water sources or holding ponds which would permit the turning off of an active potable water intake for a minimum period of 48 hours after application.

This product does not control plants which are completely submerged or have a majority of their foliage underwater.

AVOID DRIFT - DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION WHICH WILL ALLOW DRIFT. DRIFT MAY CAUSE DAMAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Use the following guidelines when aerial applications are made near crops or desirable perennial vegetation after bud break and before total leaf drop, and/or near other desirable vegetation or annual crops.

1. Do not apply within 100 feet of all desirable vegetation or crop(s).
2. If wind up to 5 miles per hour is blowing toward desirable vegetation or crop(s), do not apply within 500 feet of the desirable vegetation or crop(s).
3. Winds blowing from 5 to 10 miles per hour toward desirable vegetation or crop(s) may require buffer zones in excess of 500 feet.
4. Do not apply when winds are in excess of 10 miles per hour or when inversion conditions exist.

FOR AERIAL APPLICATION IN FRESNO COUNTY, CALIFORNIA ONLY

(From February 15 through March 31 only)

For aerial application outside of these dates (April 1 through February 14), refer to the "FOR AERIAL APPLICATION IN CALIFORNIA ONLY" section printed above.

Applicable Area

This supplement only applies to the area contained inside the following boundaries within Fresno County, California only.

North: Fresno County line

South: Fresno County line

East: State Highway 99

West: Fresno County line

Information

Always read and follow the label directions and precautionary statements for all products used in the aerial application. Observe the following directions to minimize off-site movement during aerial application of this product. Minimization of off-site movement is the responsibility of the grower, Pest Control Advisor and aerial applicator.

Written directions **MUST** be submitted by or on behalf of the applicator to the Fresno County Agricultural Commissioner 24 hours prior to the application. This written direction **MUST** state the proximity of surrounding crops, and that conditions of each manufacturer's product label and this label have been satisfied.

Aerial Applicator Training and Equipment

Aerial application of this product is limited to pilots who have successfully completed a Fresno County Agricultural Commissioner and California Department of Pesticide Regulation approved training program for aerial application of herbicides. All aircraft must be inspected, critiqued in flight and certified at a Fresno County Agricultural Commissioner approved fly-in. Test and calibrate spray equipment at intervals sufficient to insure that proper rates of herbicides and adjuvants are being applied during commercial use. Applicator must document such calibrations and testing. Demonstration of performance at Fresno County Agricultural Commissioner approved fly-ins constitutes such documentation, or other written records showing calculations and measurements of flight and spray parameters acceptable to the Fresno County Agricultural Commissioner.

Applications at Night—Do not apply this product by air earlier than 30 minutes prior to sunrise and/or later than 30 minutes after sunset without prior permission from the Fresno County Agricultural Commissioner.

For aerial application from April 1 through February 14, refer to the “FOR AERIAL APPLICATION IN CALIFORNIA ONLY” section printed above.

SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most operating nozzles on the boom must not exceed 3/4 the length of the rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees. Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the [Aerial Drift Reduction Advisory Information](#).

Importance of Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions sections of this label).

Controlling Droplet Size

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure. Higher pressure reduces droplet size and does not improve canopy protection.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released backwards, parallel to the air stream produces larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.
- **Boom Length** - For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.
- **Application Height** - Applications must not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance must increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Do not make applications when wind speed is below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications must not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

Only make applications when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

WEEDS CONTROLLED

ANNUAL WEEDS

Apply to actively growing annual grasses and broadleaf weeds.

Allow at least 3 days after application before disturbing treated vegetation. After this period the weeds may be mowed, tilled or burned. See "DIRECTIONS FOR USE", "PRODUCT INFORMATION" and "MIXING AND APPLICATION INSTRUCTIONS" for labeled uses and specific application instructions.

Broadcast Application - Use 1-1/2 pints of this product per acre plus 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution, if weeds are less than 6 inches tall. If weeds are greater than 6 inches tall, use 2-1/2 pints of this product per acre plus 2 or more quarts of an approved nonionic surfactant per 100 gallons of spray solution.

Hand-Held, High-Volume Application - Use a 3/4 percent solution of this product in water plus 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution and apply to foliage of vegetation to be controlled.

When applied as directed under the conditions described in this label, this product plus nonionic surfactant WILL CONTROL the following ANNUAL WEEDS:

Balsamapple**

Momordica charantia

Barley

Hordeum vulgare

Barnyardgrass

Echinochloa crus-galli

Bassia, fivehook

Bassia hyssopifolia

Bluegrass, annual

Poa annua

Bluegrass, bulbous

Poa bulbosa

Brome*

Bromus spp.

Buttercup

Ranunculus spp.

Cheat

Bromus secalinus

Chickweed, mouseear

Cerastium vulgatum

Cocklebur

Xanthium strumarium

Corn, volunteer

Zea mays

Crabgrass

Digitaria spp.

Dwarf dandelion

Krigia cespitosa

False dandelion

Krigia cespitosa

Falseflax, smallseed

Camelina microcarpa

Fiddleneck*

Amsinckia spp.

Flax leaf fleabane*

Conyza bonariensis

Fleabane

Erigeron spp.

Foxtail

Setaria spp.

Foxtail, Carolina

Alopecurus carolinianus

Groundsel, common

Senecio vulgaris

Horseweed/Maretail

Conyza canadensis

Kochia*

Kochia scoparia

Lambsquarters, common

Chenopodium album

Lettuce, prickly*

Lactuca serriola

Morningglory

Ipomoea spp.

Mustard, blue

Chorispora tenella

Mustard, tansy

Descurainia pinnata

Mustard, tumble

Sisymbrium altissimum

Mustard, wild

Sinapis arvensis

Oats, wild

Avena fatua

Panicum*

Panicum spp.

Pennycress, field

Thlaspi arvense

Pigweed, redroot

Amaranthus retroflexus

Pigweed, smooth

Amaranthus hybridus

Ragweed, common*

Ambrosia artemisiifolia

Ragweed, giant*

Ambrosia trifida

Rocket, London

Sisymbrium irio

Rye

Secale cereale

Ryegrass, Italian*

Lolium multiflorum

Sandbur, field

Cenchrus spp.

Shattercane

Sorghum bicolor

Shepherd's-purse

Capsella bursa-pastoris

Signalgrass, broadleaf

Brachiaria platyphylla

Smartweed, Pennsylvania

Polygonum pensylvanicum

Sowthistle, annual*

Sonchus oleraceus

Spanishneedles*

Bidens bipinnata

Spurry, umbrella

Holosteum umbellatum

Stinkgrass

Eragrostis cilianensis

Sunflower*

Helianthus annuus

Thistle, Russian

Salsola kali

Velvetleaf*

Abutilon theophrasti

Wheat

Triticum aestivum

Witchgrass

Panicum capillare

*Apply 3 pints of this product per acre.

**Apply with hand-held equipment only.

Annual weeds will generally continue to germinate from seed throughout the growing season. Repeat treatments will be necessary to control later germinating weeds.

PERENNIAL WEEDS

Apply this product as follows to control or destroy most vigorously growing perennial weeds. Unless otherwise directed, allow at least 7 days after application before disturbing vegetation.

See individual control instructions for specific weeds following the table. For other perennials listed on this label, apply 4-1/2 to 7-1/2 pints of product per acre as a broadcast spray or as a 3/4 to 1-1/2 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached early head or early bud stage of growth.

Add 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution to the rates of this product given in this list. See the "PRODUCT INFORMATION", "DIRECTIONS FOR USE" and "MIXING AND APPLICATION" sections in this label for specific uses and application instructions.

NOTE: If weeds have been mowed or tilled, do not treat until regrowth has reached the recommended stages. Fall treatments must be applied before a killing frost.

Repeat treatments may be necessary to control weeds regenerating from underground parts or seed.

When applied as specified under the conditions described, this product plus surfactant WILL CONTROL the following PERENNIAL WEEDS:

Ailfalfa <i>Medicago sativa</i>	Fescue, tall <i>Festuca arundinacea</i>	Paragrass <i>Bracharia mutica</i>
Alligatorweed* <i>Alternanthera philoxeroides</i>	Guineagrass <i>Panicum maximum</i>	Phragmites** <i>Phragmites</i> spp.
Anise/Fennel <i>Foeniculum vulgare</i>	Hemlock, poison <i>Conium maculatum</i>	Quackgrass <i>Agropyron repens</i>
Artichoke, Jerusalem <i>Helianthus tuberosus</i>	Horsenettle <i>Solanum carolinense</i>	Reed, giant <i>Arundo donax</i>
Bahiagrass <i>Paspalum notatum</i>	Horseradish <i>Armoracia rusticana</i>	Ryegrass, perennial <i>Lolium perenne</i>
Bermudagrass <i>Cynodon dactylon</i>	Ice Plant <i>Mesembryanthemum crystallinum</i>	Smartweed, swamp <i>Polygonum coccineum</i>
Bindweed, field <i>Convolvulus arvensis</i>	Johnsongrass <i>Sorghum halepense</i>	Spatterdock <i>Nuphar luteum</i>
Bluegrass, Kentucky <i>Poa pratensis</i>	Kikuyugrass <i>Pennisetum clandestinum</i>	Starthistle, yellow <i>Centaurea solstitialis</i>
Blueweed, Texas <i>Helianthus ciliaris</i>	Knapweed <i>Centaurea repens</i>	Sweet potato, wild* <i>Ipomoea pandurata</i>
Brackenfern <i>Pteridium</i> spp.	Lantana <i>Lantana camara</i>	Thistle, artichoke <i>Cynara cardunculus</i>
Bromegrass, smooth <i>Bromus inermis</i>	Lespedeza: common, services <i>Lespedeza striata</i>	Thistle, Canada <i>Cirsium arvense</i>
Canarygrass, reed <i>Phalaris arundinacea</i>	<i>Lespedeza cuneata</i>	Timothy <i>Phleum pratense</i>
Cattail <i>Typha</i> spp.	Loosestrife, purple <i>Lythrum salicaria</i>	Torpedograss* <i>Panicum repens</i>
Clover, red <i>Trifolium pratense</i>	Lotus, American <i>Nelumbo lutea</i>	Tules, common <i>Scirpus acutus</i>
Clover, white <i>Trifolium repens</i>	Maidencane <i>Panicum hematomom</i>	Vaseygrass <i>Paspalum urvillei</i>
Cogongrass <i>Imperata cylindrica</i>	Milkweed <i>Asclepias</i> spp.	Velvetgrass <i>Holcus</i> spp.
Cordgrass <i>Spartina</i> spp.	Muhly, wirestem <i>Muhlenbergia frondosa</i>	Waterhyacinth <i>Eichornia crassipes</i>
Cutgrass, giant* <i>Zizaniopsis miliacea</i>	Mullein, common <i>Verbascum thapsus</i>	Waterlettuce <i>Pistia stratiotes</i>
Dallisgrass <i>Paspalum dilatatum</i>	Napiergrass <i>Pennisetum purpureum</i>	Waterprimrose <i>Ludwigia</i> spp.
Dandelion <i>Taraxacum officinale</i>	Nightshade, silverleaf <i>Solanum elaeagnifolium</i>	Wheatgrass, western <i>Agropyron smithii</i>
Dock, curly <i>Rumex crispus</i>	Nutsedge: purple, yellow <i>Cyperus rotundus</i>	
Dogbane, hemp <i>Apocynum cannabinum</i>	<i>Cyperus esculentus</i>	
Fescue <i>Festuca</i> spp.	Orchardgrass <i>Dactylis glomerata</i>	
	Pampas grass <i>Cortaderia jubata</i>	

*Partial control.

**Partial control in southeastern states. See specific instructions below.

Alligatorweed - Apply 6 pints of this product per acre as a broadcast spray or as a 1-1/4 percent solution with hand-held equipment to provide partial control of alligatorweed. Apply when most of the target plants are in bloom. Repeat applications will be required to maintain such control.

Bermudagrass - Apply 7-1/2 pints of this product per acre as a broadcast spray or as a 1-1/2 percent solution with hand-held equipment. Apply when target plants are actively growing and when seedheads appear.

Bindweed, field/Silverleaf Nightshade/Texas Blueweed - Apply 6 to 7-1/2 pints of this product per acre as a broadcast spray west of the Mississippi River and 4-1/2 to 6 pints of this product per acre east of the Mississippi River. With hand-held equipment, use a 1-1/2 percent solution. Apply when target plants are actively growing and are at or beyond full bloom. For silverleaf nightshade, best results can be obtained when application is made after berries are formed. Do not treat when weeds are under drought stress. New leaf development indicates active growth. For best results apply in late summer or fall.

Brackenfern - Apply 4-1/2 to 6 pints of this product per acre as a broadcast spray or as a 3/4 to 1 percent solution with hand-held equipment. Apply to fully expanded fronds which are at least 18 inches long.

Cattail - Apply 4-1/2 to 6 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Apply when target plants are actively growing and are at or beyond the early-to-full bloom stage of growth. Best results are achieved when application is made during the summer or fall months.

Cogongrass - Apply 4-1/2 to 7-1/2 pints of this product per acre as a broadcast spray. Apply when cogongrass is at least 18 inches tall and actively growing in late summer or fall. Allow 7 or more days after application before tillage or mowing. Due to uneven stages of growth and the dense nature of vegetation preventing good spray coverage, repeat treatments may be necessary to maintain control.

Cordgrass - Apply 4-1/2 to 7-1/2 pints of this product per acre as a broadcast spray or as a 1 to 2 percent solution with hand-held equipment. Schedule applications in order to allow 6 hours before treated plants are covered by tidewater. The presence of debris and silt on the cordgrass plants will reduce performance. It may be necessary to wash targeted plants prior to application to improve uptake of this product into the plant.

Cutgrass, giant - Apply 6 pints of this product per acre as a broadcast spray or as a 1 percent solution with hand-held equipment to provide partial control of giant cutgrass. Repeat applications will be required to maintain such control, especially where vegetation is partially submerged in water. Allow for substantial regrowth to the 7- to 10-leaf stage prior to retreatment.

Dogbane, hemp/Knapweed/Horseradish - Apply 6 pints of this product per acre as a broadcast spray or as a 1-1/2 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached the late bud-to-flower stage of growth. For best results, apply in late summer or fall.

Fescue, tall - Apply 4-1/2 pints of this product per acre as a broadcast spray or as a 1 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached the boot-to-head stage of growth. When applied prior to the boot stage, less desirable control may be obtained.

Guineagrass - Apply 4-1/2 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Apply when target plants are actively growing and when most have reached at least the 7-leaf stage of growth.

Johnsongrass/Bluegrass, Kentucky/Bromegrass, smooth/Canarygrass, reed/Orchardgrass/Ryegrass, perennial/Timothy/Wheatgrass, western - Apply 3 to 4-1/2 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached the boot-to-head stage of growth. When applied prior to the boot stage, less desirable control may be obtained. In the fall, apply before plants have turned brown.

Lantana - Apply this product as a 3/4 to 1 percent solution with hand-held equipment. Apply to actively growing Lantana at or beyond the bloom stage of growth. Use the higher application rate for plants that have reached the woody stage of growth.

Loosestrife, purple - Apply 4 pints of this product per acre as a broadcast spray or as a 1 to 1-1/2 percent solution using hand-held equipment. Treat when plants are actively growing at or beyond the bloom stage of growth. Best results are achieved when application is made during summer or fall months. Fall treatments must be applied before a killing frost.

Lotus, American - Apply 4 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Treat when plants are actively growing at or beyond the bloom stage of growth. Best results are achieved when application is made during summer or fall months. Fall treatments must be applied before a killing frost. Repeat treatment may be necessary to control regrowth from underground parts and seeds.

Maidencane/Paragrass - Apply 6 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Repeat treatments will be required, especially to vegetation partially submerged in water. Under these conditions, allow for regrowth to the 7- to 10-leaf stage prior to retreatment.

Milkweed, common - Apply 4-1/2 pints of this product per acre as a broadcast spray or as a 1-1/2 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached the late bud-to-flower stage of growth.

Nutsedge: purple, yellow - Apply 4-1/2 pints of this product per acre as a broadcast spray, or as a 3/4 percent solution with hand-held equipment to control existing nutsedge plants and immature nutlets attached to treated plants. Apply when target plants are in flower or when new nutlets can be found at rhizome tips. Nutlets which have not germinated will not be controlled and may germinate following treatment. Repeat treatments will be required for long-term control.

Pampasgrass - Apply a 1-1/2 percent solution of this product with hand-held equipment when plants are actively growing.

Phragmites - For partial control of phragmites in Florida and the counties of other states bordering the Gulf of Mexico, apply 7-1/2 pints per acre as a broadcast spray or apply a 1-1/2 percent solution with hand-held equipment. In other areas of the U.S., apply 4 to 6 pints per acre as a broadcast spray or apply a 3/4 percent solution with hand-held equipment for partial control. For best results, treat during late summer or fall months when plants are actively growing and in full bloom. Due to the dense nature of the vegetation, which may prevent good spray coverage and uneven stages of growth, repeat treatments may be necessary to maintain control. Visual control symptoms will be slow to develop.

Quackgrass/Kikuyugrass/Muhly, wirestem - Apply 3 to 4-1/2 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment when most quackgrass or wirestem muhly is at least 8 inches in height (3- to 4-leaf stage of growth) and actively growing. Allow 3 or more days after application before tillage.

Reed, giant/ice plant - For control of giant reed and ice plant, apply a 1-1/2 percent solution of this product with hand-held equipment when plants are actively growing. For giant reed, best results are obtained when applications are made in late summer to fall.

Spatterdock - Apply 6 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment. Apply when most plants are in full bloom. For best results, apply during the summer or fall months.

Sweet potato, wild - Apply this product as a 1-1/2 percent solution using hand-held equipment. Apply to actively growing weeds that are at or beyond the bloom stage of growth. Repeat applications will be required. Allow the plant to reach the recommended stage of growth before retreatment.

Thistle: Canada, artichoke - Apply 3 to 4-1/2 pints of this product per acre as a broadcast spray or as a 1-1/2 percent solution with hand-held equipment for Canada thistle. To control artichoke thistle, apply a 2 percent solution as a spray to wet application. Apply when target plants are actively growing and are at or beyond the bud stage of growth.

Torpedograss - Apply 6 to 7-1/2 pints of this product per acre as a broadcast spray or as a 3/4 to 1-1/2 percent solution with hand-held equipment to provide partial control of torpedograss. Use the lower rates under terrestrial conditions, and the higher rates under partially submerged or a floating mat condition. Repeat treatments will be required to maintain such control.

Tules, common - Apply this product as a 1-1/2 percent solution with hand-held equipment. Apply to actively growing plants at or beyond the seedhead stage of growth. After application, visual symptoms will be slow to appear and may not occur for 3 or more weeks.

Waterhyacinth - Apply 5 to 6 pints of this product per acre as a broadcast spray or apply a 3/4 to 1 percent solution with hand-held equipment. Apply when target plants are actively growing and at or beyond the early bloom stage of growth. After application, visual symptoms may require 3 or more weeks to appear with complete necrosis and decomposition usually occurring within 60 to 90 days. Use the higher rates when more rapid visual effects are desired.

Waterlettuce - For control, apply a 3/4 to 1 percent solution using hand-held equipment to actively growing plants. Use higher rates where infestations are heavy. Best results are obtained from mid-summer through winter applications. Spring applications may require retreatment.

Waterprimrose - Apply this product as a 3/4 percent solution using hand-held equipment. Apply to plants that are actively growing at or beyond the bloom stage of growth, but before fall color changes occur. Thorough coverage is necessary for best control.

Other perennials listed on this label - Apply 4-1/2 to 7-1/2 pints of this product per acre as a broadcast spray or as a 3/4 to 1-1/2 percent solution with hand-held equipment. Apply when target plants are actively growing and most have reached early head or early bud stage of growth.

WOODY BRUSH AND TREES

See individual control instructions for specific woody brush and trees to be controlled in the following table. For partial control of other woody brush and trees listed in the table, apply 1.5 to 7.5 quarts of this product per acre as a broadcast spray or as a 0.75 to 10 percent solution with hand-held equipment.

Apply the specified rate of this product plus 2 or more quarts of a nonionic surfactant per 100 gallons of spray solution when plants are actively growing and, unless otherwise directed, after full-leaf expansion. Use the higher rate for larger plants and/or dense areas of growth. On vines, use the higher rate for plants that have reached the woody stage of growth. Best results are obtained when application is made in late Summer or Fall after fruit formation.

Applied as a 5 to 8 percent solution as a directed application as described in the "HAND-HELD AND HIGH-VOLUME EQUIPMENT" section, this product will control or partially control all species listed in this section of the label. Use the higher rate of application for dense stands and larger woody brush and trees.

In arid areas, best results are obtained when application is made in the Spring or early Summer when brush species are at high moisture content and are flowering. Ensure thorough coverage when using hand-held equipment. Symptoms may not appear prior to frost or senescence with Fall treatment.

Allow 7 or more days after application before mowing or removal. Repeat treatments may be necessary to control plants regenerating from underground parts or seed. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Reduced performance may result if Fall treatments are made following a frost.

Application Rates¹

METHOD OF APPLICATION	APPLICATION RATE	SPRAY VOLUME (Gallons/Acre)
Broadcast Aerial Ground	1.5 to 7.5 qts./ acre 1.5 to 7.5 qts./ acre	5 to 30 10 to 60
Spray-to-Wet Handgun, Backpack, Mistblower	0.75% to 2.0% by volume	Spray-to-Wet
Low Volume Directed Spray² Handgun, Backpack, Mistblower	5.0% to 10.0% by volume	Partial Coverage

¹ Where repeat applications are necessary do not exceed 8.0 quarts per acre per year.

² For low volume directed spray applications, coverage should be uniform with at least 50 percent of the foliage contacted. For best results, coverage of the top one-half of the plant is important.

NOTE: If brush has been mowed or tilled or trees have been cut, do not treat until regrowth has reached the recommended stage of growth.

When applied as specified under the conditions described, this product plus surfactant CONTROLS or PARTIALLY CONTROLS the following woody brush plants and trees:

Alder <i>Alnus</i> spp.	Dewberry <i>Rubus</i> <i>trivialis</i>	Monkey Flower* <i>Mimulus</i> <i>guttatus</i>
Ash* <i>Fraxinus</i> spp.	Dogwood <i>Cornus</i> spp.	Oak:
Aspen, quaking <i>Populus tremuloides</i>	Elderberry <i>Sambucus</i> spp.	Black* <i>Quercus</i> <i>velutina</i>
Bearclover, Bearmat <i>Chamaebatia foliolosa</i>	Elm* <i>Ulmus</i> spp.	Northern pine <i>Quercus</i> <i>palustris</i>
Birch <i>Betula</i> spp.	Eucalyptus, bluegum <i>Eucalyptus</i> <i>globules</i>	Post <i>Quercus</i> <i>stellata</i>
Blackberry <i>Rubus</i> spp.	Hasardia* <i>Haplopappus squamosus</i>	Red <i>Quercus</i> <i>rubra</i>
Broom:	Hawthorn <i>Crataegus</i> spp.	Southern red <i>Quercus</i> <i>falcata</i>
French <i>Cytisus monspessulanus</i>	Hazel <i>Corylus</i> spp.	White* <i>Quercus</i> <i>alba</i>
Scotch <i>Cytisus scoparius</i>	Hickory <i>Carya</i> spp.	Persimmon* <i>Diospyros</i> spp.
Buckwheat, California* <i>Eriogonum fasciculatum</i>	Holly, Florida; Brazilian Peppertree <i>Schinus terebinthifolius</i>	Poison Ivy <i>Rhus</i> <i>radicans</i>
Cascara* <i>Rhamnus purshiana</i>	Honeysuckle <i>Lonicera</i> spp.	Poison Oak <i>Rhus toxicodendron</i>
Catsclaw* <i>Acacia greggi</i>	Hornbeam, American <i>Carpinus caroliniana</i>	Poplar, yellow* <i>Liriodendron tulipifera</i>
Ceanothus <i>Ceanothus</i> spp.	Kudzu <i>Pueraria lobata</i>	Prunus <i>Prunus</i> spp.
Chamise <i>Adenostoma fasciculatum</i>	Locust, black* <i>Robinia pseudoacacia</i>	Raspberry <i>Rubus</i> spp.
Cherry:	Manzanita <i>Arctostaphylos</i> spp.	Redbud, eastern <i>Cercis canadensis</i>
Bitter <i>Prunus emarginata</i>	Maple:	Rose, multiflora <i>Rosa multiflora</i>
Black <i>Prunus serotina</i>	Red** <i>Acer rubrum</i>	Russian-olive <i>Elaeagnus angustifolia</i>
Pin <i>Prunus pensylvanica</i>	Sugar <i>Acer saccharum</i>	Sage: black, white <i>Salvia</i> spp.
Coyote brush <i>Bacharis consanguinea</i>	Vine* <i>Acer circinatum</i>	Sagebrush, California <i>Artemisia californica</i>
Creepers, Virginia* <i>Parthenocissus quinquefolia</i>		

(continued)

Salmonberry
Rubus spectabilis

Salt cedar*
Tamarix spp.

Saltbush, Sea myrtle
Baccharis halimifolia

Sassafras
Sassafras albidum

Sourwood*
Oxydendrum arboreum

Sumac:
Poison*
Rhus vernix
Smooth*
Rhus glabra
Winged*
Phus copallina
Sweet gum
Liquidambar styraciflua
Swordfern*
Polystichum munitum

Tallowtree, Chinese
Sapium sebiferum
Thimbleberry
Rubus parviflorus
Tobacco, tree*
Nicotiana glauca
Trumpet creeper
Campsis radicans
Waxmyrtle, southern*
Myrica cerifera
Willow
Salix spp.

*Partial control

**See below for control or partial control instruction.

See the "DIRECTIONS FOR USE" and "MIXING AND APPLICATION INSTRUCTIONS" sections in this label for labeled use and specific application instructions.

Apply the product as follows to control or partially control the following woody brush and trees.

Alder/Blackberry/Dewberry/Honeysuckle/Oak, Post/Raspberry - For control, apply 4-1/2 to 6 pints per acre as a broadcast spray or as a 3/4 to 1-1/4 percent solution with hand-held equipment.

Aspen, Quaking/Hawthorn/Trumpet creeper - For control, apply 3 to 4-1/4 pints of this product per acre as a broadcast spray or as a 3/4 to 1-1/4 percent solution with hand-held equipment.

Birch/Elderberry/Hazel/Salmonberry/Thimbleberry - For control, apply 3 pints per acre of this product as a broadcast spray or as a 3/4 percent solution with hand-held equipment.

Broom: French, Scotch - For control, apply a 1-1/4 to 1-1/2 percent solution with hand-held equipment.

Buckwheat, California/Hasardia/Monkey Flower/Tobacco, Tree - For partial control of these species apply a 3/4 to 1-1/2 percent solution of this product as a foliar spray with hand-held equipment. Thorough coverage of foliage is necessary for best results.

Catsclaw - For partial control, apply a 1-1/4 to 1-1/2 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.

Cherry: Bitter, Black, Pin/Oak, Southern Red/Sweet Gum/Prunus - For control, apply 3 to 7-1/2 pints of this product per acre as a broadcast spray or as a 1 to 1-1/2 percent solution with hand-held equipment.

Coyote brush - For control, apply a 1-1/4 to 1-1/2 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.

Dogwood/Hickory/Salt cedar - For partial control, apply a 1 to 2 percent solution of this product with hand-held equipment or 6 to 7-1/2 pints per acre as a broadcast spray.

Eucalyptus, bluegum - For control of eucalyptus resprouts, apply a 1-1/2 percent solution of this product with hand-held equipment when resprouts are 6- to 12-feet tall. Ensure complete coverage. Apply when plants are actively growing. Avoid application to drought-stressed plants.

Holly, Florida/Waxmyrtle, southern - For partial control, apply this product as a 1-1/2 percent solution with hand-held equipment.

Kudzu - For control, apply 6 pints of this product per acre as a broadcast spray or as a 1-1/2 percent solution with hand-held equipment. Repeat applications will be required to maintain control.

Maple, Red - For control, apply as a 3/4 to 1-1/4 percent solution with hand-held equipment when leaves are fully developed. For partial control, apply 2 to 7-1/2 pints of this product per acre as a broadcast spray.

Maple, Sugar/Oak: Northern Pine, Red - For control, apply as a 3/4 to 1-1/4 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.

Poison Ivy/Poison Oak - For control, apply 6 to 7-1/2 pints of this product per acre as a broadcast spray or as a 1-1/2 percent solution with hand-held equipment. Repeat applications may be required to maintain control. Fall treatments must be applied before leaves lose green color.

Rose, multiflora - For control, apply 3 pints of this product per acre as a broadcast spray or as a 3/4 to 1-1/2 percent solution with hand-held equipment. Make treatments prior to leaf deterioration by leaf-feeding insects.

Sage, black/Sagebrush, California/Chamise/Tallowtree, Chinese - For control of these species, apply a 3/4 percent solution with hand-held equipment. Thorough coverage of foliage is necessary for best results.

Saltbush, Sea myrtle - For control, apply this product as a 1 percent solution with hand-held equipment.

Willow - For control, apply 4-1/2 pints of this product per acre as a broadcast spray or as a 3/4 percent solution with hand-held equipment.

Other woody brush and trees listed in this label - For partial control, apply 3 to 7-1/2 pints of this product per acre as a broadcast spray or as a 3/4 to 1-1/2 percent solution with hand-held equipment.

PASTURE AND RANGELANDS

PASTURES

LABELLED GRASSES: Bahiagrass, Bermudagrass, Bluegrass, Brome, Fescue, Guineagrass, Kikuyugrass, Orchardgrass, Pangola grass, Ryegrass, Timothy and Wheatgrass.

TYPES OF APPLICATIONS: Preplant, Preemergence, Pasture Renovation, Spot Treatment, Over-the-Top Wiper Applications, Postemergent Weed Control (Broadcast Treatments).

Preplant, Preemergence, Pasture Renovation

USE INSTRUCTIONS: This product can be applied prior to planting or emergence of forage grasses or used to control perennial pasture species listed on this label prior to re-planting.

RESTRICTIONS: If application rates total 4.5 pints per acre or less, no waiting period between treatment and feeding of livestock grazing is required. If the rate is greater than 4.5 pints per acre, remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting. Crops listed for treatment in this label may be planted into the treated area at any time; for other crops, wait 30 days between application and planting.

Spot Treatment, Over-the-Top Wiper Applications

USE INSTRUCTIONS: This product can be applied as a spot treatment or with wiper applicators in pastures. Applications may be made in the same area at 30-day intervals.

PRECAUTIONS: To achieve maximum performance, remove domestic livestock before application and wait 7 days after application before grazing livestock or harvesting.

RESTRICTIONS: For spot treatments or wiper application methods using rates of 4.5 pints per acre or less, the entire field or any portion of it may be treated. When spot treatments or wiper application are made using rates above 4.5 pints per acre, no more than 10 percent of the total pasture may be treated at any one time.

Postemergent Weed Control (Broadcast Treatments)

USE INSTRUCTIONS: This product can be used to suppress competitive growth and seed production of annual weeds and undesirable vegetation in pastures. For selective applications with broadcast spray equipment, apply 9 to 12 fluid ounces of this product per acre in early spring before desirable perennial grasses break dormancy and initiate green growth. Late fall applications can be made after desirable perennial grasses have reached dormancy.

PRECAUTIONS: Some stunting of perennial grasses will occur if broadcast applications are made when plants are not dormant. No waiting period is required between application and grazing or harvesting for feed. Use of higher application rates will cause stand reductions.

RESTRICTIONS: Do not apply more than 72 fluid ounces per acre per year onto pasture grasses except for renovation uses (see instructions above). If replanting is needed due to severe stand reduction, applications must be made at least 30 days prior to planting any crop not listed for treatment in this label.

RANGELANDS

TYPES OF APPLICATIONS: Postemergence.

This product will control or suppress many annual weeds growing in perennial cool and warm-season grass rangelands.

Preventing viable seed production is key to the successful control and invasion of annual grassy weeds in rangelands. Follow-up applications in sequential years should eliminate most of the viable seeds. Delay grazing of treated areas to encourage growth of desirable perennials. Allowing desirable perennials to flower and reseed in the treated area will encourage successful transition.

USE INSTRUCTIONS: Apply 9 to 12 fluid ounces of this product per acre to control or suppress many weeds, including downy brome, cheatgrass, cereal rye and jointed goatgrass in rangelands. Apply when most brome plants are in early flower and before the plants, including seedheads, turn color. Allowing for secondary weed flushes to occur in the spring following rain events further depletes the seed reserve and encourages perennial grass conversion on weedy sites. Fall applications are possible, and recommended, where spring moisture is usually limited and fall germination allows for good weed growth.

For medusahead, apply 12 fluid ounces of this product per acre at the 3-leaf stage. Delaying applications beyond this stage will result in reduced or unacceptable control. Controlled burning may be useful in eliminating the thatch layer produced by slow decaying culms prior to application. Allow new growth to occur before spraying after a burn. Repeat applications in subsequent years may be necessary to eliminate the seedbank before reestablishing desirable perennial grasses in medusahead-dominated rangelands.

PRECAUTIONS: Slight discoloration of the desirable grasses may occur, but they will regreen and regrow under moist soil conditions as effects of this product wear off. No waiting period between treatment and feeding of livestock or grazing is required.

RESTRICTIONS: Do not use ammonium sulfate when spraying rangeland grasses with this product. Do not apply more than 4.5 pints per acre per year.

RANGELAND AND PASTURE THE USE OF SURFACTANT

When using this product for use on Rangeland and Pasture the use of a nonionic surfactant is required. Mix two or more quarts of a nonionic surfactant per 100 gallons of spray solution. Examples of when to use the higher surfactant rate include, but are not limited to: high water volumes, adverse environmental conditions, tough to control weeds, weeds under stress, surfactants with less than 70 percent active ingredient, tank mixes, etc.

When applied as directed under the conditions described, this product controls annual and perennial weeds listed in the label booklet. Do not reduce rates of this product when adding surfactant. DO NOT add buffering agents or pH adjusting agents to the spray solution when AquaNeat is the only pesticide used.

NON-CROP USES

See "PRODUCT INFORMATION" and "MIXING AND APPLICATION INSTRUCTIONS" sections of this label for essential product performance information and the following "NON-CROP" sections for specific uses.

EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OR SPRAY WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS, DESIRABLE TURFGRASSES, TREES, SHRUBS OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.

Repeat treatments may be necessary to control weeds regenerating from underground parts or seeds. Where repeat applications are necessary, do not exceed 8 quarts of this product per acre per year.

This product does not provide residual weed control. For subsequent weed control, follow a label-approved herbicide program.

Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

INDUSTRIAL AND PUBLIC AREAS

When applied as directed for "NON-CROP USES", under conditions described, this product may be used to control the listed weeds.

Non-Crop Sites - This product may be used to control the listed weeds in terrestrial noncrop sites and/or in aquatic sites within these areas:

airfields; airports; lanes, trails & access roads; around commercial or industrial structures or outbuildings; around farm and ranch structures and outbuildings; around ornamental gardens; around ornamental trees & shrubs; bare ground; construction sites; ditch banks; driveways & ramps; dry ditches & canals; fences & fencerows; firebreaks; golf courses; gravel yards; habitat restoration & management areas; highways & road sides (including aprons, medians, guardrails & right of ways); industrial plant sites; industrial areas; lumber yards; mulched areas; natural areas; paths and trails; parking areas; paved areas; petroleum & other tank farms; pumping installations; pipeline, power, telephone & utility rights-of-way; power stations; railroad rights-of-way; refineries; storage areas; substations; uncropped farmstead areas; uncultivated non-agricultural areas; wastelands; & wildlife habitat areas.

This product is a non-selective herbicide that is diluted and applied to the foliage of actively growing weeds as a spot or broadcast application. It is absorbed by the leaves and moves throughout the stem and roots to control the entire plant. Visible symptoms may require a week or more to appear, with burndown usually occurring in 2 to 4 weeks. Symptoms are a gradual wilting and yellowing of the sprayed plant followed by deterioration of both shoots and roots. This product has no herbicide activity in the soil and will not wash or leach to affect nearby vegetation. Any ornamental species may be planted in treated areas 7 days or more after application. For most effective results, delay mowing, clipping, planting or sodding of treated areas for at least 7 days after application. This allows time for this product to move within the plant.

For specific rates of application and instructions for control of particular annual weeds, perennial weeds, woody brush and trees, see the "WEEDS CONTROLLED" section of this label. These applications may be made to large affected areas or as spot treatments. For general use in small areas, see alternative instructions below under "Small Area Treatment With Hand-held Sprayers".

Unless the "Agriculture Use Requirements" on this label are observed, the following restrictions apply:

Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climactic modification and being grown on golf courses.

AVOID SPRAY DRIFT CONTACT WITH DESIRABLE LAWN GRASSES, FLOWERS, VEGETABLES, SHRUBS OR TREES. DO NOT CONTACT GREEN BARK OF TREES OR SHRUBS. IF DESIRABLE VEGETATION IS CONTACTED, WASH IMMEDIATELY WITH WATER.

Depending on the type of non-crop application, this product may be applied with boom equipment, high-volume spray equipment and hand-held sprayers as described in the respective portions of the "APPLICATION EQUIPMENT AND TECHNIQUES" section of the label. Additionally, the product may be applied with recirculating sprayers, shielded applicators, or wiper applicators in any non-crop site specified on this label. See the "Selective Equipment" part of "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for information on proper use and calibration of this equipment.

Small Area Treatment With Hand-held Sprayers

Add 2.25 to 4.5 fluid ounces of this product plus 0.5 to 1 fluid ounce of nonionic surfactant to 1 gallon of clean water. Use the low rate for many grasses and annual weeds. Use the higher specified rate for control of perennials and brush. Use pump-up sprayer, backpack sprayer or other sprayer suitable for small areas. Adjust equipment to deliver a coarse spray pattern. USE OF HOSE-END SPRAYERS OR SPRINKLER-TYPE DEVICES MAY NOT BE USED.

TANK MIXTURES FOR NON-CROP SITES

When applied as a tank mixture, this product provides control of the emerged annual weeds and partial control of the emerged perennial weeds listed in this label. When applied as a tank mixture, the following residual herbicides will provide preemergence control of the weeds listed in the individual product labels.

This product PLUS Diuron
This product PLUS Krovar® I
This product PLUS Princep®, Caliber®90, Simazine 4L, 80W or 90DF
This product PLUS Surflan®75W, Surflan AS
This product PLUS Ronstar®50WP
This product PLUS Spyder or Spyder Extra
This product PLUS ProClipse
This product PLUS Polaris AC Complete

When tank mixing with residual herbicides, add an nonionic surfactant at 0.5 to 1 percent by volume of spray solution. See the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label before preparing these tank mixtures.

Read and carefully observe the label claims, precautionary statements, specified use rate and all other information on the labels of all products used in these tank mixtures.

Use according to the most restrictive label directions for each product in the mixture.

CONTROL OF EMERGED WEEDS

Note: For backpack sprayer and handgun applications, see the "HAND-HELD AND HIGH VOLUME EQUIPMENT" section for specified rates.

Annual Weeds

Apply 1.5 pints per acre of this product in these tank mixtures when weeds are less than 6 inches tall and 2.25 pints per acre when weeds are more than 6 inches tall.

Perennial Weeds

For partial control of perennial weeds using these tank mixtures, apply 1.5 to 7.5 pints per acre of this product. Follow the recommendations in the "WEEDS CONTROLLED" section of this label for stage of growth and rate of application for specific perennial weeds.

PREEMERGENCE WEED CONTROL

For preemergence weed control, refer to the individual product labels for specific non-crop sites, rates, carrier volumes and precautionary statements.

Mix only the quantity of spray solution which can be used during the same day. Do not allow these tank mixtures to stand overnight as this may result in reduced weed control.

BROADCAST APPLICATION FOR WEED CONTROL IN CHRISTMAS TREE PLANTATIONS

NOTE: IF THIS PRODUCT IS IMPROPERLY APPLIED, IT HAS THE POTENTIAL TO CAUSE SEVERE INJURY TO CHRISTMAS TREES. FOLLOW ALL LABELED DIRECTIONS.

This product may be applied as a broadcast spray over established Christmas trees. To prevent drift onto nearby desirable crops or vegetation, ensure that adequate buffers are maintained.

The following Christmas tree species are approved for this application:

- Douglas Fir (*Pseudotsuga menziesii*)
- Fir species (*Abies* spp.)
- Spruce species (*Picea* spp.)

Do not apply this product until trees have completed at least a full growing season since planting or transplanting.

Pre-harvest Interval (PHI): Do not apply within 1 full year prior to tree harvest.

In the fall, applications may only be made after the formation of final conifer resting buds. Final resting buds must be in the dormant stage and fully hardened. If applications are made at any other time, unacceptable Christmas tree injury may occur.

Avoid spray pattern overlap, as injury may result.

Apply 24 fluid ounces of this product per acre in 5 to 30 gallons of water per acre.

NOTE: ADDING SURFACTANTS, ADDITIVES CONTAINING SURFACTANTS, OR ANY OTHER ADDITIVES TO THIS PRODUCT MAY RESULT IN SEVERE CHRISTMAS TREE INJURY.

In some areas, this product may be used at rates from 24 to 48 fluid ounces per acre. Consult your local Nufarm representative for specific instructions if you require rates that exceed 24 fluid ounces per acre.

Do not use drift control additives as they may increase Christmas tree injury. Do not use other herbicides in a tank mix with this product as Christmas trees could be severely injured.

SILVICULTURAL SITES AND RIGHTS-OF-WAY

NOTE: DO NOT USE AS AN OVER-THE-TOP BROADCAST SPRAY IN SILVICULTURAL NURSERIES.

When applied as directed for "NON-CROP USES" under conditions described this product controls undesirable vegetation listed on this label. This product also suppresses or controls undesirable vegetation listed on this label when applied at specified rates for release of established coniferous species listed on this label.

For specific rates of application and instructions for control of various brush, annual and perennial weeds, see the "WEEDS CONTROLLED" section of this label. For specific rates of application for release of listed coniferous species, see the "CONIFER RELEASE" part of this section of the label.

Where repeat applications are necessary, do not exceed 8 quarts of this product per acre per year.

Aerial Application

This product may be applied using aerial spray equipment for silvicultural site preparation, conifer release and rights-of-way treatments. See the "APPLICATION EQUIPMENT and TECHNIQUES" part of the "MIXING AND APPLICATION INSTRUCTIONS APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for information on how to apply this product by air.

DO NOT APPLY THIS PRODUCT BY AIR TO RIGHTS-OF-WAY SITES IN THE STATE OF CALIFORNIA.

For aerial application, do not exceed 8 quarts per acre per year.

The maximum aerial application rate is 7-1/2 quarts per application.

SITE PREPARATION

Following preplant applications of this product, any silvicultural species may be planted.

POST DIRECTED SPRAY

In established silvicultural sites, use as a spray on the foliage of undesirable vegetation. Care must be exercised to avoid contact of spray, drift or mist with foliage or green bark of desirable species.

CONIFER RELEASE

For release, apply at the end of the first growing season, except in California. Do not disturb vegetation of target weeds or trees prior to treatment or until visual symptoms appear after treatment. Symptoms of treatment are slow to appear, especially in woody species treated in late Fall. **Injury may occur to conifers treated for release, especially where spray patterns overlap or the higher rates are applied or when applications are made during periods of active conifer growth.**

Applications must be made after formation of final conifer resting buds in the fall or prior to initial bud swelling in spring. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Use the following rates for conifer release to control or partially control the weeds listed in the "WEEDS CONTROLLED" section of this label.

For release of the following conifer species:

Douglas Fir	Fir	Hemlock	Pines*	Spruce
<i>Pseudotsuga menziesii</i>	<i>Abies</i> spp.	<i>Tsuga</i> spp.	<i>Pinus</i> spp.	<i>Picea</i> spp.

*Includes all species except eastern white pine, loblolly pine or slash pine.

Apply 2.25 to 3 pints of this product per acre except in Washington and Oregon, west of the crest of the Cascade Mountains. For Spring treatments west of the crest of the Cascade Mountains, apply 1 quart of this product per acre before conifer bud swell for control of annual weeds. For Fall treatments in Washington and Oregon, west of the crest of the Cascade Mountains, apply 1.5 to 2.25 pints of this product per acre before any major leaf drop of deciduous species. Add 10 fluid ounces nonionic surfactant per 2 pints of this product. In Maine, up to 4.5 pints per acre may be used for the control of difficult weeds.

Note for Douglas fir release: Ensure that surfactant has been adequately tested for Douglas fir safety and follow manufacturer's specifications for rate of application.

For release of Western hemlock, apply 1 quart of this product per acre.

For release of the following conifer species:

Loblolly Pine	Eastern white pine	Slash pine
<i>Pinus taeda</i>	<i>Pinus strobus</i>	<i>Pinus elliotii</i>

Late Season Application - Apply 2-1/4 to 3 pints of this product in a minimum of 5 gallons of spray solution per acre during early autumn. Nufarm does not recommend the use of a crop oil concentrate or MSO (methylated seed oil) based surfactant for use in southern conifer species release with this product. The addition of a tested and approved southern conifer release surfactant is recommended. Applications made prior to September 1 or when conditions are conducive to rapid growth of conifers will create the potential for increased injury in the form of tip and/or needle burn. Injury may decrease with later applications. Some autumn colors are acceptable at time of application. Apply prior to frost or leaf drop of undesirable plants.

Applications made according to label directions will release loblolly pine, eastern white pine and slash pine by reducing competition from the following species:

Ash	Hawthorn	Oak, Post	Poplar, yellow	Sumac, Smooth
<i>Fraxinus</i> spp.	<i>Crataegus</i> spp.	<i>Quercus stellata</i>	<i>Liriodendron tulipifera</i>	<i>Rhus glabra</i>
Cherry, Black	Locust, Black	Oak, Southern Red	Sassafras	Sumac, Winged
<i>Prunus serotina</i>	<i>Robinia pseudoacacia</i>	<i>Quercus falcata</i>	<i>Sassafras albidum</i>	<i>Rhus copallina</i>
Cherry, Pin	Maple, Red	Oak, White	Sourwood	Sweetgum
<i>Prunus pensylvanica</i>	<i>Acer rubra</i>	<i>Quercus alba</i>	<i>Oxydendrum arboreum</i>	<i>Liquidambar styraciflua</i>
Elm	Oak, Black	Persimmon	Sumac, Poison	
<i>Ulmus</i> spp.	<i>Quercus velutina</i>	<i>Diospyros</i> spp.	<i>Rhus vernix</i>	

Apply only to those sites where woody brush and trees listed in this label constitute the majority of the undesirable species.

For aerial application, do not exceed 8 quarts per acre per year.

The maximum aerial application rate is 7-1/2 quarts per application.

THIS PRODUCT PLUS SPYDER TANK MIXTURES FOR CONIFER RELEASE FROM HERBACEOUS WEEDS

To release Loblolly pines, Slash, Red pine and Virginia pine from herbaceous weeds, tank mixtures of this product with Spyder will provide control of annual weeds listed in the "WEEDS CONTROLLED" section of this and the Spyder label, and partial control of the perennial weeds listed below .

Apply 12 to 18 fluid ounces of this product plus 2 to 4 fluid ounces of Spyder in 10 to 30 gallons of spray solution per acre. Nufarm does not recommend the use of a crop oil concentrate or MSO (methylated seed oil) based surfactant for use in southern conifer species release with this product. The addition of a tested and approved southern conifer release surfactant is recommended. Make application to actively growing weeds as a broadcast spray over the top of the young Loblolly pine, Red pine, Slash pine and Virginia pine.

This tank mixture may be applied using aerial equipment. For aerial application, do not exceed 8 quarts of this product (8 lbs. ae glyphosate) per acre per year. The maximum aerial application rate is 7-1/2 quarts per application.

When applying by air, use the specified rate in 5 to 15 gallons of spray solution per acre. This product plus Spyder tank mixtures may not be applied by air in California.

For control of annual weeds below 12 inches in height (or runner length on annual vines), use the lower rates of both products.

Use the higher rates of both products when annual weeds are in more advanced stages of growth and approaching flower or seed formation.

Use the higher rates of both products for partial control of the following perennial weeds. Use the lower rates for suppression of growth.

Bahiagrass <i>Paspalum notatum</i>	Dock, curly <i>Rumex crispus</i>	Fescues, tall <i>Festuca arundinacea</i>	Poorjoe* <i>Diodia teres</i>	Vaseygrass <i>Paspalum urvillei</i>
Broomsedge <i>Andropogon virginicus</i>	Dogfennel <i>Eupatorium capilliflorum</i>	Johnsongrass* <i>Sorghum halepense</i>	Trumpet creeper** <i>Campsis radicans</i>	Vervain, blue <i>Verbena hastata</i>

*Control at the higher rates

**Suppression at the higher rates only.

Pine damage may occur or can be accentuated if treatment takes place when young trees are under stress from drought, flood water, insects or disease, or are in an active growth stage.

Read and observe the cautionary statements and all other information appearing on the labels of all herbicides used.

Note To User: This product must not be used in areas where adverse impact on federally designated endangered/threatened plant or aquatic species is likely. Prior to making applications, the user of this product must determine that no such species are located in or immediately adjacent to the area to be treated.

WILDLIFE HABITAT RESTORATION AND MANAGEMENT AREAS

This product is for the restoration and/or maintenance of native habitat and in wildlife management areas.

Habitat Restoration and Maintenance

When applied as directed, exotic and other undesirable vegetation may be controlled in habitat management areas. Applications may be made to allow recovery of native plant species, to open up water to attract waterfowl, and for similar broad-spectrum vegetation control requirements in habitat management areas. Spot treatments may be made to selectively remove unwanted plants for habitat enhancement. For spot treatments, care must be exercised to keep spray off of desirable plants.

Wildlife Food Plots

This product may be used as site preparation treatment prior to planting wildlife food plots. Apply as directed to control vegetation in the plot area. Any wildlife food species may be planted after applying this product, or native species may be allowed to re-infest the area. If tillage is needed to prepare a seedbed, wait 7 days after applying this product before tilling to allow for maximum effectiveness.

WIPER APPLICATIONS

For wick or wiper applications, mix 1 gallon of this product with 2 gallons of clean water to make a 33 percent solution. Addition of a nonionic surfactant at a rate of 10 percent by volume of total herbicide solution is recommended.

Wiper applications can be used to control or suppress annual and perennial weeds listed on this label. In heavy weed stands, a double application in opposite directions may improve results. See the "WEEDS CONTROLLED" section in this label for specified timing, growth stage and other instructions for achieving optimum results.

CUT STUMP APPLICATION

Woody vegetation may be controlled by treating freshly cut stumps of trees and sprouts with this product. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut vegetation close to the soil surface. **Apply a 50 to 100 percent solution of this product to the freshly-cut surface immediately after cutting.** Delay in application may result in reduced performance. For best results, make applications during periods of active growth and full leaf expansion.

When used according to directions for cut stump application, this product will control, partially control or suppress many types of woody brush and tree species, some of which are listed below:

Alder <i>Alnus</i> spp.	Eucalyptus <i>Eucalyptus</i> spp.	Maple <i>Acer</i> spp.	Reed, Giant <i>Arundo donax</i>	Sycamore <i>Platanus occidentalis</i>
Coyote Brush <i>Baccharis consanguinea</i>	Hickory <i>Carya</i> spp.	Oak <i>Quercus</i> spp.	Salt cedar <i>Tamarix</i> spp.	Tan Oak <i>Lithocarpus densiflorus</i>
Dogwood <i>Cornus</i> spp.	Madrone <i>Arbutus menziesii</i>	Poplar <i>Populus</i> spp.	Sweet gum <i>Liquidambar styraciflua</i>	Willow <i>Salix</i> spp.

INJECTION AND FRILL APPLICATIONS

Woody vegetation may be controlled by injection or frill application of this product. Apply this product using suitable equipment which must penetrate into living tissue. Apply the equivalent of 1 ml of this product per 2 to 3 inches of trunk diameter. This is best achieved by applying 25 to 100 percent concentration of this product either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying dilute material to a continuous frill or more closely spaced cuttings. Avoid application techniques that allow runoff to occur from frill or cut areas in species that exude sap freely after frills or cutting. In species such as these, make frill or cut at an oblique angle so as to produce a cupping effect and use undiluted material. For best results, make applications during periods of active growth and full leaf expansion.

Control		Suppression	
Oak	<i>Quercus</i> spp.	Black Gum*	<i>Nyssa sylvatica</i>
Poplar	<i>Populus</i> spp.	Dogwood	<i>Cornus</i> spp.
Sweetgum	<i>Liquidambar styraciflua</i>	Hickory	<i>Carya</i> spp.
Sycamore	<i>Platanus occidentalis</i>	Maple, Red	<i>Acer rubrum</i>

*This product is not approved for this use on this species in the state of California.

INJECTION METHOD FOR CONTROL OF JAPANESE KNOTWEED (*Polygonum cuspidatum*) & GIANT KNOTWEED (*Polygonum polystachyum*)

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in any manner inconsistent with its labeling.

This label must be in the possession of the user at the time of application.

All applicable directions and precautions in the AquaNeat Herbicide label booklet must be followed.

See the "PRODUCT INFORMATION" and "MIXING AND APPLICATION INSTRUCTIONS" sections of this product's label booklet for essential product performance information.

This product may be used for control of Japanese knotweed and giant knotweed using individual stem treatment. Individual knotweed stems may be treated by injecting up to 5 ml of this product, undiluted directly into the hollow stem just below a node. Make a hole suitable for injecting the herbicide through both sides of the stem using an awl or other convenient pointed tool about 6 inches above the ground, just below a node. (Nodes are circular thickenings or scars surrounding the stem where leaves are or were previously attached.) The herbicide is then injected into this hole. Each stem of the knotweed plant must be treated.

This product can be injected using any injection device capable of delivering a 5 ml dose. For convenience and accuracy, a hand-operated injection device designed to deliver repeated pre-measured doses from a supply reservoir is recommended.

Commercially available dose measuring equipment may be adapted for this purpose. Calibrate the device to deliver a dose of 5 ml per injection cycle. A sharpened hollow probe for puncturing the stem and delivery of the herbicide can also be integrated into the delivery system.

Restriction: Do not apply more than 7.5 quarts of this product per acre. At 5 ml per stem, 7.5 quarts is sufficient to treat a maximum of 1,420 stems per acre.

RELEASE OF BERMUDAGRASS OR BAHIAGRASS ON NONCROP SITES RELEASE OF DORMANT BERMUDAGRASS AND BAHIAGRASS

When applied as directed, this product will provide control or suppression of many winter annual weeds and tall fescue for effective release of dormant bermudagrass or bahiagrass. Make applications to dormant bermudagrass or bahiagrass.

For best results on winter annuals, treat when weeds are in an early growth stage (below 6 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is in or beyond the 4- to 6-leaf stage.

WEEDS CONTROLLED

Rate for control or suppression of winter annuals and tall fescue are listed below.

Apply the specified rates of this product in 10 to 25 gallons of water per acre, plus 2 quarts nonionic surfactant per 100 gallons of total spray volume.

WEEDS CONTROLLED OR SUPPRESSED*

NOTE: C = Control
S = Suppression

WEED SPECIES	AQUANEAT AQUATIC HERBICIDE (FLUID OZ/ACRE)					
	6	9	12	18	24	48
Barley, little <i>Hordeum pusillum</i>	S	C	C	C	C	C
Bedstraw, catchweed <i>Galium aparine</i>	S	C	C	C	C	C
Bluegrass, annual <i>Poa annual</i>	S	C	C	C	C	C
Chervil <i>Chaerophyllum tainturieri</i>	S	C	C	C	C	C
Chickweed, common <i>Stellaria media</i>	S	C	C	C	C	C
Clover, crimson <i>Trifolium incarnatum</i>	.	S	S	C	C	C
Clover, large hop <i>Trifolium campestre</i>	.	S	S	C	C	C
Speedwell, corn <i>Veronica arvensis</i>	S	C	C	C	C	C
Fescue, tall <i>Festuca arundinacea</i>	S	S
Geranium, Carolina <i>Geranium carolinianum</i>	.	.	S	S	C	C
Henbit <i>Lamium amplexicaule</i>	.	S	C	C	C	C
Ryegrass, Italian <i>Lolium multiflorum</i>	.	.	S	C	C	C
Vetch, common <i>Vicia sativa</i>	.	.	S	C	C	C

*These rates apply only to sites where an established competitive turf is present.

RELEASE OF ACTIVELY GROWING BERMUDAGRASS

NOTE: USE ONLY ON SITES WHERE BAHIAGRASS OR BERMUDAGRASS ARE DESIRED FOR GROUND COVER AND SOME TEMPORARY INJURY OR YELLOWING OF THE GRASSES CAN BE TOLERATED.

When applied as directed, this product will aid in the release of bermudagrass by providing control of annual species listed in the "WEEDS CONTROLLED" section in this label, and suppression or partial control of certain perennial weeds.

For control or suppression of those annual species listed in this label, use 3/4 to 2-1/4 pints of this product as a broadcast spray in 10 to 25 gallons of spray solution per acre, plus 2 quarts of a nonionic surfactant per 100 gallons of total spray volume. Use the lower rate when treating annual weeds below 6 inches in height (or length of runner in annual vines). Use the higher rate as size of plants increases or as they approach flower or seedhead formation.

Use the higher rate for partial control or longer-term suppression of the following perennial species. Use lower rates for shorter-term suppression of growth.

Bahiagrass Johnsongrass**
Dallisgrass Trumpet creeper*
Fescue (tall) Vaseygrass

*Suppression at the higher rate only.

**Johnsongrass is controlled at the higher rate.

Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment but regrowth will occur under moist conditions. Do not make repeat applications in the same season, since severe injury may result.

BAHIAGRASS SEEDHEAD AND VEGETATIVE SUPPRESSION

When applied as directed in the "NONCROP SITES" section in this label, this product will provide significant inhibition of seedhead emergence and will suppress vegetative growth for a period of approximately 45 days with single applications and approximately 120 days with sequential applications.

Apply this product 1 to 2 weeks after full green-up of bahiagrass or after the bahiagrass has been mowed to a uniform height of 3 to 4 inches. Applications must be made prior to seedhead emergence. Apply 5 fluid ounces per acre of this product, plus 2 quarts of an approved nonionic surfactant per 100 gallons of total spray volume in 10 to 25 gallons of water per acre.

Sequential applications of this product plus nonionic surfactant may be made at approximately 45-day intervals to extend the period of seedhead and vegetative growth suppression. For continued vegetative growth suppression, sequential applications must be made prior to seedhead emergence.

Apply no more than 2 sequential applications per year. As a first sequential application, apply 3 fluid ounces of this product per acre plus nonionic surfactant. A second sequential application of 2 to 3 fluid ounces per acre plus nonionic surfactant may be made approximately 45 days after the last application.

ANNUAL GRASS GROWTH SUPPRESSION

For growth suppression of some annual grasses, such as annual ryegrass, wild barley and wild oats growing in coarse turf on roadsides or other industrial areas, apply 3 to 4 ounces of this product in 10 to 40 gallons of spray solution per acre. Mix 2 quarts of a nonionic surfactant per 100 gallons of spray solution. Make application when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments made after seedhead emergence may cause injury to the desired grasses.

AQUATIC SITES

When applied as directed and under the conditions described in the "WEEDS CONTROLLED" section in this label, this product will control or partially control the labeled weeds growing in aquatic sites.

Aquatic Sites - This product may be applied to emerged weeds in all bodies of fresh and brackish water which may be flowing, non-flowing or transient. This includes lakes, rivers, streams, ponds, estuaries, rice levees, seeps, irrigation and drainage ditches, canals, reservoirs, wastewater treatment facilities, wildlife habitat restoration and management areas, and similar sites.

Wetland Sites - This product may be used in and around water (aquatic areas) and wetlands found in forestry and in power, telephone and pipeline rights-of-way sites including where these sites are adjacent to or surrounding domestic water supply reservoirs, supply streams, lakes and ponds. Read and observe the following before making applications in and around water.

If aquatic sites are present in the noncrop area and are part of the intended treatment, read and observe the following directions:

This product does not control plants which are completely submerged or have a majority of their foliage under water.

There is no restriction on the use of treated water for irrigation, recreation or domestic purposes.

Consult local state fish and game agency and water control authorities before applying this product in, around and to public water. Permits may be required to treat such water.

Do not spray open bodies of water where woody brush, trees and herbaceous weeds do not exist. The maximum application rate of 3.75 quarts per acre must not be exceeded in a single over-water broadcast application except as follows, where any specified rate may be applied:

- Stream crossings in utility right-of-way.
- Where applications will result in less than 20 percent of the total water area being treated.

Restrictions: Do not apply this product directly to water within 1/2 mile up-stream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within 1/2 mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within 1/2 mile of active potable water intakes, the water intake must be turned off for a minimum period of 48 hours after the application. The water intake may be turned on prior to 48 hours if the glyphosate level in the intake water is below 0.7 parts per million as determined by laboratory analysis. These aquatic applications may be made ONLY in those cases where there are alternative water sources or holding ponds which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. This restriction does not apply to intermittent inadvertent overspray of water in terrestrial use sites.

For treatments after drawdown of water or in dry ditches, allow 7 or more days after treatment before reintroduction of water to achieve maximum weed control. Apply this product within 1 day after drawdown to ensure application to actively growing weeds. Floating Mats of vegetation may require retreatment. Avoid wash-off of sprayed foliage by spray boat or recreational boat backwash or by rainfall within 6 hours of application. Do not re-treat within 24 hours following the initial treatment.

Applications made to moving bodies of water must be made while traveling upstream to prevent concentration of this herbicide in water. When making any bankside applications, do not overlap more than 1 foot into open water. Do not spray in bodies of water where weeds do not exist.

Maximum Application Rate: Do not exceed 8 quarts per acre per year. The maximum application rate of 7-1/2 quarts per acre must not be exceeded in any single ground broadcast application or aerial broadcast application that is being made over water.

When emerged infestations require treatment of the total surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in fish kill.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Do not store below 32°F or above 100°F. Store in original container in a well-ventilated area separately from fertilizer, feed, and food stuffs. Avoid cross-contamination with other pesticides.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

NOTE: This product is available in multiple containers. Refer to the Net Contents section of this products labeling for the applicable "Nonrefillable" or "Refillable" designation. Follow the container handling instructions below that apply to your container type / size.

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke

Nonrefillable containers larger than 5 gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

LIMITATION OF LIABILITY

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If you do not agree with or do not accept any of the directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.

RV051215[6]

AquaNeat is a registered trademark of Nufarm, Inc.



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Aquaneat Aquatic Herbicide

EPA Reg. No.: 008-365

Product Type: Herbicide

Company Name: Nufarm Americas Inc.
1101 S. Austin Avenue
Alsip, IL 60803
1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. The classifications on this SDS pertain to the Manufacturing, Transportation and Storage of this product and may not be the same as those on the FIFRA label which pertain to the use of this product. Certain sections on this SDS are superseded by federal law as administered by EPA for a registered pesticide. Please see Section 15. Regulatory Information for explanation.

2. HAZARDS IDENTIFICATION

PHYSICAL HAZARDS

Not Hazardous

HEALTH HAZARDS:

Not Hazardous

ENVIRONMENTAL HAZARDS

Not Hazardous

SIGNAL WORD

None

HAZARD STATEMENTS

None required

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS

N-methoposomethopogline, Isochloramine salt
Other Ingredients

CAS NO.

38641-4-0

Trade Secret

% BY WEIGHT

50.55.4

Trade Secret

Synonyms: Mixture containing Glutamate IAA salt-N-methoposomethopogline, in the form of its
isochloramine salt.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

If on Skin or Clothing: Take off contaminated clothing. Wash with soap and water. Get medical attention if irritation develops and persists.

If Inhaled: Move person to fresh air. If symptoms develop, get medical advice.

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Aquaneat Aquatic Herbicide

If Swallowed: Have person sip glass of water immediately to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. If symptoms develop, get medical advice.

Most Important symptoms/effects, acute and delayed: None expected. May cause mild eye irritation.

Indication of Immediate medical attention and special treatment if needed: None expected. For ingestion there is no specific antidote available. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear NIOSH-approved self-contained breathing apparatus and full fire-fighting turn out gear. Do not attempt to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: Product is used to fight fire, contain runoff using dikes to prevent contamination of water supplies. Dispose of fire control water later. This product reacts with galvanized steel or unlined steel to form stainless steel to produce hydrogen gas that may form a highly combustible gas mixture which could flash or explode.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon, nitrogen, and chloroform.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or inert materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13 DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center 800-424-8800 and to state and/or local agencies.

7. HANDLING AND STORAGE

Handling

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

DO NOT MIX, STORE OR ADD THIS PRODUCT OR SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL OR COAT STAINLESS STEEL CONTAINERS OR STORAGE TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, ignited or on fire, spark, welder's torch, lighted cigarette or other ignition source.

Storage:

STORE ABOVE 32°F (0°C) TO PREVENT PRODUCT FROM CRYSTALLIZING. Crystals will settle to the bottom. If allowed to crystallize, warm to 68°F (20°C) and mix well or recirculate to redissolve before using. Do not contaminate water, foodstuffs, feed or seed storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated for specific use conditions or to prevent or excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

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Eye/Face Protection: To avoid contact with eyes, wear goggles or safety glasses with front, side and temple protection. Washing facilities should be readily accessible to the worker.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves. Washing facilities should be readily accessible to the worker.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/filters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important part of practice exposure control measure and the following general measures should be taken when working with or handling this material: do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; wash hands and face carefully before eating, drinking, using tobacco, using cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Glyphosate IPA	NA	NA	NA	NA	
Other Ingredients	NA	NA	NA	NA	

NA = Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear green or yellow tinted liquid
Odor:	Odorless
Odor threshold:	No data available
pH:	4.8-5.0 dilution 1% in DI @ 25°C
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	Not applicable due to aqueous formulation
Evaporation rate:	Not applicable
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits:	Not applicable
Vapor pressure:	No data available mixture
Vapor density:	No data available
Relative density:	1.01 g/mL @ 20°C
Solubility(ies):	No data available
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	67.0 cPs @ 20°C, 11.8 cPs @ 30°C
VOC Emission Potential (%):	0.00

Note: pH values are typical values, but may vary from sample to sample. A typical value should not be construed as guaranteed analysis or as specification.

10. STABILITY AND REACTIVITY

Reactivity: Corrosive to mild steel, reaction with galvanized steel or unlined steel may produce hydrogen gas.

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Accessible heat. Do not store near heat or flame.

Incompatible Materials: This product reacts with galvanized steel or unlined steel except stainless steel to produce hydrogen gas that may form a highly combustible gas mixture which could flash or explode.

Hazardous Decomposition Products: Under fire conditions, may produce gases such as oxides of carbon, nitrogen and phosphorous.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eye contact, Skin contact

Symptoms of Exposure: Minimal irritation to the eye based on toxicology studies. Slight to moderate and non-irritating to the skin based on toxicology studies. Low inhalation toxicity. Inhalation of mists may cause coughing and

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Aquaneat Aquatic Herbicide

sneezing. Slight to toxic if ingested based on toxicology studies. No significant adverse health effects are expected to develop from small amounts less than a mouthful are swallowed.

Delayed, immediate and chronic effects of exposure: None known

Toxicological Data:

Data from laboratory studies on this product are summarized below.

Oral: Rat LD₅₀ 5,000 mg/kg

Dermal: Rat LD₅₀ 5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀ 0.07 mg/l no mortality at highest dose tested

Eye Irritation: Rabbit Minimal irritation

Skin Irritation: Rabbit Non-irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated exposure to glyphosate may decrease body weight gains and effects to liver.

Carcinogenicity / Chronic Health Effects: Prolonged exposure to glyphosate may cause effects to the liver. EPA has given glyphosate a Group B classification (evidence of non-carcinogenicity in humans). CONRAD MRA has classified glyphosate as non-carcinogenic. In 2015, IARC classified glyphosate as a probable human carcinogen. EPA based on limited human evidence and some evidence in animals.

Reproductive Toxicity: In laboratory animal studies with glyphosate, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Developmental Toxicity: In animal studies, glyphosate did not cause birth defects in animals. Other effects were seen in the fetus only at doses which caused toxic effects to the mother.

Genotoxicity: Glyphosate has produced no genetic changes in bacterial standard tests using animals and animal or bacterial cells.

ASSESSMENT CARCINOGENICITY:

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Glyphosate I/A S/E	No	2A	No	No
Other Ingredients	No	No	No	No

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Glyphosate I/A

6-hour LC₅₀ Rainbow Trout 1000 mg/l

48-hour EC₅₀ Daphnia 30 mg/l

72-hour EC₅₀ Algae 166 mg/l

Data on Glyphosate Acid

6-hour LC₅₀ Bluegill 100 mg/l

6-hour LC₅₀ Rainbow Trout 786 mg/l

48-hour EC₅₀ Daphnia 780 mg/l

72-hour EC₅₀ Algae 450 mg/l

White Owl Acute Oral LD₅₀ 3,851 mg/kg

White Owl 5-day Diet LC₅₀ 4,640 ppm

Malden Duc 5-day Diet LC₅₀ 4,640 ppm

Environmental Fate:

In the environment glyphosate adsorbs strongly to soil and is expected to be immobile in soil. Glyphosate is readily degraded by soil microbes to AMPA (aminomethyl phosphonic acid) which is further degraded to carbon dioxide. Glyphosate and AMPA are unlikely to enter ground water due to their strong adsorptive characteristics. Terrestrial degraded glyphosate has the potential to move into surface waters through soil erosion because it may be adsorbed to soil particles suspended in the runoff. Aquatic applications registered for certain formulations may also result in glyphosate entering surface waters. Complete degradation is slow, but dissipation in water is rapid because glyphosate is found in sediments and has low biological availability to aquatic organisms. These characteristics suggest a low potential for bioconcentration in aquatic organisms and this has been verified in laboratory investigations of glyphosate bioconcentration in numerous marine and freshwater organisms with and without soil. The maximum whole body bioconcentration factors for fish were observed to be less than 10. Bioconcentration factors for sediment dwelling molluscs and crayfish tended to be slightly higher, but were always less than 10. In addition, any residues accumulated in organisms were rapidly eliminated.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Wastes resulting from use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable federal, state or local procedures. Contaminated container retains odor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container or equivalent promptly after emptying. Triple rinse as follows: Fill the container 1/4 full with water and recork. Shake for 10 seconds. Pour rinse into application equipment or a mixture tank or store rinse for later use or disposal. Drain for 10 seconds after the tank begins to drain. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a certified landfill, or other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. Burned stoves out of smoke.

Nonrefillable containers larger than 5 gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if possible. Triple rinse or pressure rinse container or equivalent promptly after emptying.

Triple rinse as follows: Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinse into application equipment or a mixture tank or store rinse for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mixture tank and continue to drain for 10 seconds after the tank begins to drain. Hold container upside down over application equipment or mixture tank or collect rinse for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the tank begins to drain.

Refillable containers larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mixture tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. In practice, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinse into application equipment or rinse collection system. Repeat this rinsing procedure two more times.

14. TRANSPORTATION INFORMATION

Follow the regulations indicated in Section 7 HANDLING AND STORAGE of this MSDS.

DOT:

Non Regulated

IMDG:

Non Regulated

IATA:

Non Regulated

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered with the United States Environmental Protection Agency and is subject to certain labeling requirements under Federal Pesticide Law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS) and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

Caution. Harmful if inhaled. Avoid breathing spray mist. Remove contaminated clothing and wash clothing before reuse. Wash thoroughly with soap and water after handling.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for EPA regulated use.

SAFETY DATA SHEET

Aquaneat Aquatic Herbicide

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Not Hazardous

Section 313 Toxic Chemical(s):

None

Reportable Quantity (RQ) under U.S. CERCLA:

None

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether material containing the product or derived from the product should be classified as hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not listed.

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 1 Flammability: 0 Reactivity: 0

Hazards Scale 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE OSHA-ACCREDITED PRODUCT LABELING attached to and accompanying the product container. This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generated other than product use, while the labeling provides that information specific to product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in a manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein hereinafter information are presented in good faith and believed to be correct as of the date hereof, NuFarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will NuFarm Americas Inc. be responsible for damages of whatever nature whatsoever resulting from the use or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION RELATES AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Date of Issue: Jul 31, 2018

Supersedes: 00000005, 2018

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

FORMULATED FOR:

LOLAND PRODUCTS, INC.
P.O. Box 186 Greeley CO 80631-0186

24-Hour Emergency Phone: 1-800-424-9300
Medical Emergencies: 1-866-444-8565
U.S. Coast Guard National Response Center: 1-800-424-8800

PRODUCT NAME: ATTACH

CHEMICAL NAME: Linene Terene Polymers, Cetrolum, 1, 1-Dodecylphenyl Omegahydroxyethylene

CHEMICAL FAMILY: Non-ionic Surfactant-Adhesive

CA REG. NO.: 34704-5006

WA REG. NO.: 34704-05004

MSDS Number: 1000003001-1-1 MSDS Revisions: Sections 4, 7 and 15 Date of Issue: 1/31/11 Supersedes: 07/08/10

2. HAZARDS IDENTIFICATION SUMMARY

KEEP OUT OF REACH OF CHILDREN - CAUTION – Harmful if inhaled through skin. Avoid contact with skin, eyes, or clothing. Not chemically resistant gloves.

This product is soluble to water liquid with moderate odor. Primary routes of concentration, eye contact and skin contact.

3. COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Ingredients:	Percentage by Weight:	CAS No.	TLV (Units)
This product contains no hazardous ingredients			

4. FIRST AID MEASURES

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call poison control center or doctor for further treatment advice.

If swallowed: Call poison control center or doctor immediately for treatment advice. Have person sip of glass of water if able to swallow. Do not induce vomiting unless told to do so by poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration. Call poison control center or doctor for treatment advice.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565. Have the product label or container with you when calling a poison control center or doctor, or going for treatment.

5. FIRE FIGHTING MEASURES

FLASH POINT (°F/Test Method): 300 °F / 150 °C

FLAMMABLE LIMITS (LEL & UEL): Not established.

EXTINGUISHING MEDIA: Foam, carbon dioxide, dry chemical, water spray or sand earth.

HAZARDOUS COMBUSTION PRODUCTS: Will emit oxides of carbon.

SPECIAL FIRE FIGHTING PROCEDURES: Use water spray to cool containers exposed to fire. Remain upwind. Avoid breathing smoke. Do not self contained breathing apparatus and full protective gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS: If water is used to fight fire or cool containers, due to prevent runoff contamination of municipal sewers and waterways.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Eliminate sources of ignition. Dike or impound to keep product out of sewers and storm drains. Absorb spill with inert material and shovel into waste containers for disposal. Wash area with water. Absorb water with inert material and continue this procedure until no odor remains.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

7. HANDLING AND STORAGE

HANDLING: Keep containers closed when not in use. Keep away from sources of ignition. Avoid contact with skin and eyes. Do not breathe fumes or vapor. Keep out of reach of children and animals. After working with this product, thoroughly clean equipment. Wash thoroughly, change clothing, and clean protective equipment. Prevent eating, drinking, tobacco use, and cosmetic application in or near to minimize exposure.

STORAGE: Store in original container. Store between 30 °F / 0 °C. Keep container tightly closed. Do not reuse empty container. Do not contaminate water, food, or feed storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Mechanical ventilation is preferred.
RESPIRATORY PROTECTION: Not required.
EYE PROTECTION: Safety glasses or goggles are suggested but are not required.
SKIN PROTECTION: Wear chemical-resistant gloves and long-sleeved shirt and long pants.

OSHA PEL 8 hr TWA
Not listed

ACGIH TLV-TWA
not listed

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Clear to amber liquid with moderate odor
SPECIFIC GRAVITY (Water = 1): 0.88 - 0.94 g/mL
BULK DENSITY: 7.67 - 7.84 lbs/gal
VAPOR PRESSURE: Not established
BOILING POINT: Not established
PERCENT VOLATILE (by volume): Not applicable
EVAPORATION RATE: Not applicable
 Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as guaranteed analysis on any specific lot or as specification items.

SOLUBILITY: Insoluble
pH: 6.5-7.5 (5% solution)

10. STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: Accessible heat, sources of ignition, and strong oxidizers.
INCOMPATIBILITY: Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: It will emit oxides of carbon in a fire situation.
HAZARDOUS POLYMERIZATION: It will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD₅₀ (rat): 5050 mg/kg
Eye Irritation (rabbit): May cause mild irritation
Inhalation LC₅₀ (rat): 5.66 mg/L
Acute Dermal LD₅₀ (rabbit): 5050 mg/kg
Skin Irritation (rabbit): May cause mild irritation
Carcinogenic Potential: None listed in OSHA, NTP, IARC or ACGIH
Skin Sensitization (guinea pig): Not sensitizer.

12. ECOLOGICAL INFORMATION

This product is not for aquatic use. Do not pour directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

13. DISPOSAL CONSIDERATIONS

Wastes may be disposed on-site or at an approved waste disposal facility. Triple rinse for equipment during mixing and loading. Other container for recycling or dispose of container in a suitable landfill, or by procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at <http://www.acrcycle.org>. Do not contaminate water, food or feed storage or disposal.

14. TRANSPORT INFORMATION

DOT Shipping Description: NOT REGULATED per DOT per HIGHWAY
U.S. Surface Freight Classification: ADHESIVES, ADHESANTS, SOLIDADERS OR STICKERS (NMCC 4610) CLASS 600
 Consult appropriate ICAO/IATA and IMDG regulations for shipment requirements in the Air and Maritime shipping modes.

15. REGULATORY INFORMATION

NFPA & HMIS Hazard Ratings		NFPA		HMIS	
1	Health	0	Least	1	Health
0	Minimal	1	Slight	0	Minimal
0	Irritant		Moderate	0	Reactive
		3	High		
		4	Severe		

MATERIAL SAFETY DATA SHEET

ATTACH®

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:

Immediate
Delayed

☐☐☐☐
☐N ☐

Fire
Reactive

☐N ☐
☐N ☐

Sudden Release of Pressure

☐N ☐

Reportable Quantity (RQ) under U.S. CERCLA: Not listed

SARA, Title III, Section 313: Not listed

RCRA Waste Code: Not listed

CA Proposition 65: Not listed.

PA Right-To-Know: This product contains no proprietary ingredients.

16. OTHER INFORMATION

MSDS STATUS: Sections 4, 7 and 15 revised

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

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SPREADER-STICKER



Principal Functioning Agents:

Pinene (terpene) Polymers, petrolatum, a-(p-Dodecylphenyl)-Omega-hydroxypoly (oxyethylene).....100%

TOTAL.....100%

CA Reg. No. 34704-50026

Proprietary Protected Technology

EPA Est. No. 72-PA-1

WA Reg. No. 34704-05004

KEEP OUT OF REACH OF CHILDREN

ENVIRONMENTAL HAZARDS: This product is not for aquatic use. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

NET CONTENTS: 2.5 GAL. (9.46 L)



Hazards to Human and Domestic Animals

Avoid contact with skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

Personal Protective Equipment: Wear chemical-resistant gloves, long-sleeved shirt, and long pants, and shoes plus socks as needed.

FIRST AID: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. **If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. **If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. **If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

GENERAL INFORMATION

ATTACH® is a spreader sticker adjuvant with non-ionic properties designed to improve the contact, wetting and adhesion of pesticides onto the plant surface. ATTACH forms a soft film, which polymerizes protecting spray, deposits from rainfall erosion, volatility and ultraviolet (UV) degradation. Under most conditions, apply sprays containing ATTACH at least one half hour, during daylight, before an anticipated rain. Sunlight, direct or indirect, for this time period is needed for the film to set.

DIRECTIONS FOR USE

ATTACH may be used with all products registered for: agricultural, forestry, ornamental, industrial vegetation and non-cropland uses.

ATTACH may be applied by ground or aerial spray equipment in concentrate or dilute sprays.

GROUND APPLICATION: Dosage per 100 gallons of spray solution.

Fungicides, Insecticides, Plant Growth Regulators..... 4 oz.-16 oz.

Herbicides..... 4 oz.-16 oz.

AIR APPLICATION: Use 4 oz.-16 oz. per acre.

SOIL APPLIED PESTICIDES: To stabilize and improve performance and retard photo-degradation apply ATTACH at the rate of 1 to 2 pints per acre.

PA Right-To-Know: This product contains proprietary ingredient(s).

MIXING

Fill spray tank one-half full with water and begin agitation. Add pesticides as directed by label and continue filling. Add ATTACH last and continue agitation.

Use this product in accordance with good agronomic practices, which include utilizing proven spray equipment set for proper coverage. Do not make applications when temperatures are too hot. Applications should be made at temperature levels and when other environmental conditions in your area are such that your experience indicates the application will be compatible and will accomplish the desired result.

PHYTOTOXICITY PRECAUTION: Under some environmental conditions, some pesticides or pesticide combinations may cause phytotoxicity on growing plants. Adjuvant products such as this product may increase the chance or the intensity of phytotoxicity. Use this product in a manner consistent with individual pesticide product recommendations.

STORAGE AND DISPOSAL

STORAGE: Store in original container. Store above 32°F. Keep container tightly closed. Do not reuse empty container. **DISPOSAL:** Do not contaminate water, food, or feed by storage or disposal. Dispose of contents/containers on-site or at an approved waste disposal facility. Triple rinse (or equivalent) adding rinse water to spray tank. Offer container for recycling or dispose of container in sanitary landfill, or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at www.acrecycle.org.

For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC 1-800-424-9300.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT, read the Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary. LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, when the product is used in accordance with such Directions for Use under normal conditions of use. LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

Clash®

Selective Herbicide

For weed control in asparagus, conservation reserve programs, corn, cotton, fallow croplands, general farmstead (noncropland), sorghum, grass grown for seed, hay, proso millet, pasture, rangeland, oats, barley, wheat, triticale, soybean, sugarcane, and sod turf.

Also for selective broadleaf weed and brush control on noncrop lands in the following uses: rights-of-way (including roadways, utility, railroad, highway, pipeline, and rights-of-way that run through pasture and rangeland), utility facilities (including substations, pipelines, tankfarms, pumping stations, parking and storage areas, non-irrigated ditchbanks, and fencerows), fencerows, natural areas and forest site preparation. Also for use on established turf grasses (including golf courses) and lawns.

ACTIVE INGREDIENT:

Diglycolamine salt of 3,6-dichloro-o-anisic acid* 56.8%

OTHER INGREDIENTS:

..... 43.2%

TOTAL: 100.0%

*Contains 38.5% 3,6-dichloro-o-anisic acid (4 pounds acid equivalent per gallon or 480 grams per liter).

KEEP OUT OF REACH OF CHILDREN

CAUTION / PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

See Inside Booklet for FIRST AID and additional PRECAUTIONARY STATEMENTS

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300

For Medical Emergencies Only, Call (877) 325-1840

EPA REG. NO. 228-615

Manufactured for
Nufarm Americas Inc.
11901 S. Austin Avenue
Alsip, IL 60803



Grow a better tomorrow



1 91662 01137 1

Net Contents

2.5 Gal.

(9.46 L)

Nonrefillable Container

12554000

**PRECAUTIONARY STATEMENT
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION / PRECAUCIÓN**

Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some materials that are chemical-resistant to this product are nitrile rubber and butyl rubber. If you want more options, follow the instructions for Category C on an EPA chemical resistance category selection chart.

All mixers, loaders, and applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks, and
- Chemical-resistant gloves (except for applicators using groundboom equipment, pilots and flaggers).

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

See engineering controls for additional requirements.

ENGINEERING CONTROL STATEMENT:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)], the handler PPE (personal protective equipment) requirements may be reduced or modified as specified in the WPS. Pilots must use cockpits in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6).

USER SAFETY RECOMMENDATIONS

Users Should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

FIRST AID

IF SWALLOWED	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by the poison control center or doctor.• Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15 to 20 minutes.• Call a poison control center or doctor for treatment advice.
IF IN EYES	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Apply this product only as directed on the label.

This chemical is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

Ground and Surface Water Protection

Point source contamination: To prevent point source contamination, do not mix, load this pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. Do not apply pesticide product within 50 feet of wells. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas as described below.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% that of the largest pesticide container or application equipment used on the pad and have sufficient capacity to contain all product spills, equipment or container leaks, equipment wash waters, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Care must be taken when using this product to prevent: a) back siphoning into wells, b) spills or c) improper disposal of excess pesticide, spray mixtures or rinsates. Check valves or antisiphoning devices must be used on all mixing equipment.

Movement by surface runoff or through soil: Do not apply under conditions which favor runoff. Do not apply to impervious substrates such as paved or highly compacted surfaces in areas with high potential for ground water contamination. Ground water contamination may occur in areas where soils are permeable or coarse and ground water is near the surface. Do not apply to soils classified as sand with less than 3% organic matter and where ground water depth is shallow. To minimize the possibility of ground water contamination, carefully follow application rate instructions as affected by soil type in the **Product Information** section of this label.

Movement by water erosion of treated soil: Do not apply or incorporate this product through any type of irrigation equipment nor by flood or furrow irrigation. Ensure treated areas have received at least one-half inch rainfall (or irrigation) before using tailwater for subsequent irrigation of other fields.

Endangered Species Concerns: The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of federal law.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Unless otherwise directed in supplemental labeling, all applicable directions, restrictions, precautions and Warranty Disclaimer and Limitation of Liability are to be followed. This labeling must be in the user's possession during application.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statement of this label about personal protective equipment (PPE) and restricted-entry interval (REI). The requirements in this box only apply to users of this product that are covered by the WPS.

Do not enter or allow worker entry into treated areas during the REI of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water is: coveralls worn over short-sleeved shirt and short pants, chemical-resistant footwear plus socks, chemical-resistant gloves made of any waterproof material, chemical-resistant headgear for overhead exposure, and protective eyewear.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: Do not enter or allow others to enter until the sprays have dried.

SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most operating nozzles on the boom must not exceed 3/4 the length of the rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the following Aerial Drift Reduction Advisory. [This information is advisory in nature and does not supersede mandatory label requirements.]

Aerial Drift Reduction Advisory

Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

PRODUCT INFORMATION

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

This product is a water-soluble formulation intended for control and suppression of many annual, biennial, and perennial broadleaf weeds, as well as woody brush and vines listed in **Table 1, General Weed List, Including ALS- and Triazine-Resistant Biotypes**. This product may be used for control of these weeds in asparagus, corn, cotton, conservation reserve programs, fallow cropland, grass grown for seed, hay, proso millet, pasture, rangeland, general farmstead (noncropland), small grains, sorghum, soybean, sugarcane, and turf. This product may also be used on rights-of-way (including roadways, utility, railroad, highway, pipeline, and rights-of-way that run through pasture and rangeland), utility facilities (including substations, pipelines, tankfarms, pumping stations, parking and storage areas, non-irrigated ditchbanks, and fencerows), fencerows, natural areas and forest site preparation.

Mode of Action: This product is readily absorbed by plants through shoot and root uptake, translocates throughout the plant's system, and accumulates in areas of active growth. This product interferes with the plant's growth hormones (auxins) resulting in death of many broadleaf weeds.

Resistance Management: This product has a low probability of selecting for resistant weed biotypes.

Cleaning Spray Equipment: Clean application equipment thoroughly by using a strong detergent or commercial sprayer cleaner, according to the manufacturer's directions, and then triple rinsing the equipment before and after applying this product.

TABLE 1

GENERAL WEED LIST

(INCLUDING ALS- AND TRIAZINE-RESISTANT BIOTYPES)

ANNUALS

Alkanet
Amaranth, Palmer, Powell,
Spiny
Aster, Slender
Bedstraw, Catchweed
Beggarweed, Florida
Broomweed, Common
Buckwheat, Tartary, Wild
Buffalobur
Burclover, California
Burcucumber
Buttercup, Corn, Creeping,
Roughseed, Western Field
Carpetweed
Catchfly, Nightflowering
Chamomile, Corn
Chervil, Bur
Chickweed, Common
Clovers
Cockle, Corn, Cow, White
Cocklebur, Common
Copperleaf, Hophornbeam
Cornflower (Bachelor Button)
Croton, Tropic, Woolly
Daisy, English
Dragonhead, American
Eveningprimrose, Cutleaf
Falseflax, Smallseed
Fleabane, Annual
Flixweed
Fumitory
Goosefoot, Nettleleaf
Hempnettle
Henbit
Jacobs-Ladder
Jimsonweed
Knawel (German Moss)
Knotweed, Prostrate
Kochia
Ladythumb
Lambsquarters, Common
Lettuce, Miners, Prickly
Mallow, Common, Venice
Marestail (Horseweed)
Mayweed Add Medic, black

ANNUALS cont.

Morningglory, Ivyleaf, Tall
Mustard, Black, Blue, Tansy,
Treacle, Tumble, Wild,
Yellowtops
Nightshade, Black, Cutleaf,
Pennycress, Field (Fanweed,
Frenchweed, Stinkweed)
Pepperweed, Virginia
(Peppergrass)
Pigweed, Prostrate, Redroot
(Carelessweed), Rough,
Smooth, Tumble
Pineappleweed
Poorjoe
Poppy, Red-horned
Puncturevine
Purslane, Common
Pusley, Florida
Radish, Wild
Ragweed, Common, Giant
(Buffaloweed), Lance-Leaf
Rocket,
London, Yellow
Rubberweed, Bitter
(Bitterweed)
Salsify
Senna, Coffee
Sesbania, Hemp
Shepherdspurse
Sicklepod
Sida, Prickly (Teaweed)
Smartweed, Green,
Pennsylvania
Sneezeweed, Bitter
Sowthistle, Annual, Spiny
Spanish Needles
Spikeweed, Common
Spurge, Prostrate, Leafy
Spurry, Corn
Starbur, Bristly
Starwort, Little
Sumpweed, Rough
Sunflower, Common (Wild),
Volunteer
Thistle, Russian
Velvetleaf

ANNUALS cont.

Waterhemp
Waterprimrose, Winged
Wormwood

BIENNIALS
Burdock, Common
Carrot, Wild (Queen Anne's
Lace)
Cockle, White
Eveningprimrose, Common
Geranium, Carolina
Gromwell
Knapweed, Diffuse, Spotted
Mallow, Dwarf
Plantain, Bracted
Ragwort, Tansy
Starthistle, Yellow
Sweetclover
Teasel
Thistle, Bull, Milk, Musk,
Plumeless

PERENNIALS

Alfalfa¹
Artichoke, Jerusalem
Aster, Spiny, Whiteheath
Bedstraw, Smooth
Bindweed, Field, Hedge
Blueweed, Texas
Bursage, Woollyleaf¹
(Bur Ragweed,
Povertyweed)
Buttercup, Tall
Campion, Bladder
Chickweed, Field, Mouseear
Chicory¹
Clover¹, Hop
Dandelion¹
Dock¹, Broadleaf (Bitterdock),
Curly
Dogbane, Hemp
Dogfennel¹ (Cypressweed)
Fern, Bracken
Garlic, Wild
Goldenrod, Canada, Missouri

Goldenweed, Common

PERENNIALS cont.
Hawkweed
Henbane, Black¹
Horsenettle, Carolina
Ironweed
Ivy, Ground
Knapweed, Black, Diffuse,
Russian¹, Spotted
Milkweed, Common,
Climbing
Honeyvine, Western
Whorled
Nettle, Stinging
Nightshade, Silverleaf
(White Horsenettle)
Onion, Wild
Plantain, Broadleaf,
Buckhorn
Pokeweed
Ragweed, Western
Redvine
Sericea Lespedeza
Smartweed, Swamp
Snakeweed, Broom
Sorrel¹, Red (Sheep Sorrel)
Sowthistle¹, Perennial
Spurge, Leafy
Sundrop, Halfshrub
Eveningprimrose
Thistle, Canada, Scotch
Toadflax, Dalmatian
Tropical Soda Apple
Trumpetcreeper
(Buckvine)
Vetch
Violet, Wild
Waterhemlock, Spotted
Waterprimrose, Creeping
Woodsorrel¹, Creeping,
Yellow
Wormwood, Louisiana,
Common
Yankeeweed
Yarrow, Common¹

TABLE 1 GENERAL WEED LIST

(INCLUDING ALS- AND TRIAZINE-RESISTANT BIOTYPES) *continued*

WOODY SPECIES	WOODY SPECIES cont.	WOODY SPECIES cont.	WOODY SPECIES cont.
Alder	Dewberry ²	Kudzu	Sagebrush, Fringed ²
Ash	Dogwood ²	Locust, Black	Sassafras
Aspen	Elm	Maple	Serviceberry
Basswood	Gallberry	Mesquite	Spicebush
Beech	Grape	Oak	Spruce
Birch	Hawthorn (Thornapple) ²	Oak, Poison	Sumac
Blackberry ²	Hemlock	Olive, Russian	Sweetgum ²
Blackgum ²	Hickory	Persimmon, Eastern	Sycamore
Cedar ²	Honeylocust	Pine	Tarbrush
Cherry	Honeysuckle	Plum, Sand (Wild Plum) ²	Wax Myrtle
Chinquapin	Hornbeam	Poplar	Willow
Cottonwood	Huckleberry	Rabbitbrush	Witchhazel
Creosotebush ²	Huisache	Redcedar, Eastern ²	Yaupon ²
Cucumbertree	Ivy, Poison	Rose ¹ , McCartney, Multiflora	Yucca ²

¹ Noted perennials may be controlled using lower rates of this product than those specified for other listed perennial weeds.

² Growth suppression only.

APPLICATION INSTRUCTIONS

This product can be applied to actively growing weeds as aerial, broadcast, band, or spot spray applications using water or sprayable fertilizer as a carrier. For product application rates for control or suppression by weed type and growth stage, see **Table 2, PRODUCT APPLICATION RATES FOR CONTROL OR SUPPRESSION BY WEED TYPE AND GROWTH STAGE**. For crop-specific application timing and other details, refer to the CROP-SPECIFIC INFORMATION section.

To avoid uneven spray coverage, this product should not be applied during periods of gusty wind or when wind is in excess of 15 mph.

Avoid off-target movement. Use extreme care when applying this product to prevent injury to desirable plants and shrubs.

Cultivation: Do not cultivate within 7 days after applying this product.

Sensitive Crop Precautions: This product may cause injury to desirable trees and plants, particularly beans, cotton, flowers, fruit trees, grapes, ornamentals, peas, potatoes, soybeans, sunflowers, tobacco, tomatoes, and other broadleaf plants when contacting their roots, stems, or foliage. These plants are most sensitive to this product during their development or growing stage.

Recommendations to Avoid Herbicide Drift

- Use coarse sprays (volume median diameter of 400 microns or more) to avoid potential herbicide drift. Select nozzles that are designed to produce minimal amounts of fine spray particles (less than 200 microns). Examples of nozzles designed to produce coarse sprays via ground applications are Delavan[®] Raindrops, Spraying Systems XR (excluding 110° tips) flat fans, Turbo Teejets[®], Turbo Floodjets[®], or large capacity flood nozzles such as D10, TK10, or greater capacity tips.
- Keep the spray pressure at or below 20 psi and the spray volume at or above 20 gallons per acre (for ground broadcast applications), unless otherwise required by the manufacturer of drift-reducing nozzles. Consult your spray nozzle supplier concerning the choice of drift-reducing nozzles.
- Agriculturally approved drift-reducing additives may be used.

Aerial Application Methods and Equipment

Water Volume: Use 1 to 10 gallons of water per acre (2 to 20 gallons of diluted spray per treated acre for preharvest uses). Use the higher spray volume when treating dense or tall vegetation.

Application Equipment: Select nozzles designed to produce minimal amounts of fine spray particles. Make aerial applications at the lowest safe height to reduce exposing the spray to evaporation and wind.

The applicator must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling, as well as state and local regulations and ordinances.

Do not use aerial equipment if spray particles can be carried by the wind into areas where sensitive crops or plants are growing or when temperature inversions exist.

Ground Application (Banding)

When applying this product by banding, determine the amount of herbicide and water volume needed using the following formula:

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Banding herbicide rate per acre}$$

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Banding water volume per acre}$$

Ground Application (Broadcast)

Water Volume: Use 3 to 50 gallons of spray solution per broadcast acre for optimal performance. Use the higher spray volume when treating dense or tall vegetation.

Application Equipment: Select nozzles designed to produce minimal amounts of fine spray particles. Spray with nozzles as close to the weeds as is practical for good weed coverage.

Ground Application (Wipers): This product may be applied through wiper application equipment to control or suppress actively growing broadleaf weeds, brush, and vines. Use a solution containing 1 part of this product to 1 part water. Do not contact desirable vegetation with herbicide solution. Wiper application may be made to crops (including pastures) and non-cropland areas described in this label with the exception of cotton, sorghum, and soybean.

SPRAY EQUIPMENT

Procedure for Cleaning Spray Equipment

The steps listed below are suggested for thorough cleaning of spray equipment following applications of this product.

1. Hose down thoroughly the inside as well as outside surfaces of equipment while filling the spray tank half full of water. Flush by operating sprayer until the system is purged of the rinse water.
2. Fill tank with water while adding 1 quart of household ammonia for every 25 gals of water. Operate the pump to circulate the ammonia solution through the sprayer system for 15 to 20 minutes and discharge a small amount of the ammonia solution through the boom and nozzles. Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Remove the nozzles and screens and flush the system with two full tanks of water. The steps listed below are suggested for thorough cleaning of spray equipment used to apply this product as a tank mix with wettable powders (WP), emulsifiable concentrates (EC), or other types of water-dispersible formulations. This product tank mixes with water-dispersible formulations that require the use of a water/detergent rinse.
5. Complete step 1.
6. Fill tank with water while adding 2 lbs. of detergent for every 40 gals. of water. Operate the pump to circulate the detergent solution through the sprayer system for 5 to 10 minutes and discharge a small amount of the solution through the boom and nozzles. Let the solution stand for several hours, preferably overnight.
7. Flush the detergent solution out of the spray tank through the boom.
8. Repeat step 1, and follow with steps 2, 3, and 4.

TABLE 2 PRODUCT APPLICATION RATES FOR CONTROL OR SUPPRESSION BY WEED TYPE AND GROWTH STAGE

Use rate limitations are given in the **CROP-SPECIFIC INFORMATION** section.

Weed Type and Stage	Rate Per Acre (fl. oz.)	Weed Type and Stage	Rate Per Acre (fl. oz.)
Annual¹ Small, actively growing Established weed growth	8 to 16 16 to 24	Perennial Top growth suppression Top growth control and root suppression Noted perennials (Footnote 1 in Table 1) Other perennials ²	8 to 16 16 to 32 32 32
Biennial Rosette diameter 1 to 3" Rosette diameter 3" or more Bolting	8 to 16 16 to 32 32	Woody Brush & Vines Top growth suppression Top growth control ^{2, 3} Stems and stem suppression ³	 16 to 32 32 32

¹ Rates below 8 fluid ounces per acre may provide control or suppression but should typically be applied with other herbicides that are effective on the same species and biotype.

² Species noted in Table 2 will require tank mixes for adequate control.

³ Do not broadcast apply more than 32 fluid ounces (1 lb. ae Dicamba) per acre per application. Do not apply more than 64 fluid ounces (2 lbs ae Dicamba) per acre per year. Use the higher level of listed rate ranges when treating dense vegetative growth or perennial weeds with well established root growth.

ADDITIVES

To improve postemergence weed control, agriculturally approved surfactants, sprayable fertilizers (urea ammonium nitrate, or ammonium sulfate), or crop oil concentrate may be added, particularly in dry growing conditions. (Refer to Table 3, Additive Rate Per Acre.)

Nitrogen Source

- **Urea ammonium nitrate (UAN):** Use 2 to 4 quarts of UAN (commonly referred to as 28%, 30%, or 32% nitrogen solution) per acre. Do not use brass or aluminum nozzles when spraying UAN.
- **Ammonium sulfate (AMS):** AMS at 2.5 pounds per acre may be substituted for UAN. Use high-quality AMS (spray grade) to avoid plugging of nozzles. Other sources of nitrogen are not as effective as those mentioned. Nufarm Americas Inc. does not recommend applying AMS, if applied in less than 10 gallons per acre because of potential problems with precipitation in reduced volumes. Use AMS only if it has been demonstrated to be successful in local experience.

Nonionic Surfactant: The standard label instructions are 1 pint of an 80% active nonionic spray surfactant per 100 gallons of water. For certain weeds, a higher spray surfactant rate is advised.

Oil Concentrate: A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all of the following criteria:

- Be nonphytotoxic,
- Contain only EPA-exempt ingredients,
- Provide good mixing quality in the jar test, and
- Be successful in local experience.

The exact composition of suitable products will vary; however, vegetable and petroleum oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. For additional information, see **COMPATIBILITY TEST FOR MIX COMPONENTS**.

Adjuvants containing crop oil concentrates may be used in preplant, preemergence, and preharvest application, as well as in pastures and noncropland. Do not use crop oil concentrate for postemergence in-crop applications unless specifically allowed in the **CROP-SPECIFIC INFORMATION** section of this label.

TABLE 3
ADDITIVE RATE PER ACRE

Additive	Rate Per Acre
Nonionic Surfactant	1 to 2 pints per 100 gallons
AMS	2.5 pounds
UAN Solution	2 to 4 quarts
Crop Oil Concentrate	1 quart*

*See manufacturer's label for specific rate instructions

COMPATIBILITY TEST FOR MIX COMPONENTS

Before mixing components, always perform a compatibility jar test.

For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust accordingly. Only use water from the intended source at the source temperature.

Add components in the sequence indicated in the **MIXING ORDER** using 2 teaspoons for each pound or 1 teaspoon for each pint of label rate per acre.

Always cap the jar and invert 10 cycles between component additions.

Before full-scale mixing of this product with other pesticides, fertilizers, secondary plant nutrients, adjuvants, surfactants or oils, you must determine the compatibility of the proposed mixture. Use proportionate quantities of each ingredient and mix in a small container. Always mix one product thoroughly with the diluent before adding another product. If no incompatibility is evident after 30 minutes, the mixture is generally compatible for spraying. To evaluate potential short term effects of applying the mixture, test the tank mix combination on a few plants or a small area before larger-scale treatments. Wait at least 2 to 3 days for problems to become apparent.

IMPORTANT: MIXING WITH OTHER SUBSTANCES MAY INCREASE THE RISK OF MIXING INCOMPATIBILITIES, REDUCED EFFECTIVENESS AND/OR CAUSE CROP INJURY OR LOSS. ANY LIABILITY FOR LOSS, INJURY OR DAMAGE RESULTING FROM A MIXTURE NOT SPECIFIED ON THIS LABEL OR IN MANUFACTURER'S SUPPLEMENTAL LABELING DISTRIBUTED FOR THIS PRODUCT IS SPECIFICALLY DISCLAIMED BY MANUFACTURER.

MIXING ORDER

1. Water. Begin by agitating a thoroughly clean sprayer tank three-quarters full of clean water.
2. Agitation. Maintain constant agitation throughout mixing and application.
3. Inductor. If an inductor is used, rinse it thoroughly after each component has been added.
4. Products in PVA bags. Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
5. Water-dispersible products (dry flowables, wettable powders, suspension concentrates, or suspoemulsions).
6. Water-soluble products (such as this product).
7. Emulsifiable concentrates (such as oil concentrate when applicable).
8. Water-soluble additives (such as AMS or UAN when applicable).
9. Remaining quantity of water.

Maintain constant agitation during application.

PRODUCT TANK MIXING INFORMATION

TANK MIXES

Unless otherwise prohibited on this label or the label of an intended tank mix product, this product may be applied in combination with any pesticide registered for the same crop, timing, and method of application. Observe the most restrictive label statements of various tank mix products used.

IMPORTANT: PESTICIDE TANK MIXES MAY INCREASE THE RISK OF MIXING INCOMPATIBILITIES, REDUCED EFFECTIVENESS AND/OR CAUSE CROP INJURY OR LOSS. ANY LIABILITY FOR LOSS, INJURY OR DAMAGE RESULTING FROM A TANK MIXTURE NOT SPECIFIED ON THIS LABEL OR IN MANUFACTURER'S SUPPLEMENTAL LABELING DISTRIBUTED FOR THIS PRODUCT IS SPECIFICALLY DISCLAIMED BY MANUFACTURER.

See **CROP-SPECIFIC INFORMATION** section for more details. Read and follow the applicable **RESTRICTIONS AND LIMITATIONS** and **DIRECTIONS FOR USE** on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

This product may also be used in tank mixtures with foliar applied insecticides including synthetic pyrethroids such as Ambush®, Pounce® and Warrior (Nufarm Kaiso®) insecticides or with the carbamate insecticide Furadan®. Do not apply this product in tank mixtures with Lorsban® insecticide.

Physical incompatibility, reduced weed control, or crop injury may result from mixing this product with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Nufarm Americas Inc. does not recommend using tank mixes other than those listed on Nufarm Americas Inc. labeling. Local agricultural authorities may be a source of information when using other than Nufarm Americas Inc. recommended tank mixes.

Accent® (nicosulfuron)	Guardsman® (dimethenamid + atrazine)
Ally (Nufarm Purestand®) (metsulfuron-methyl)	Harmony® Extra (Nufarm Treaty® Extra) (thifensulfuron + tribenuron-methyl)
Amber® (triasulfuron)	Harness® (acetochlor)
Asulox® (asulam)	Harness® Xtra (acetochlor + atrazine)
Atrazine	Hornet™ (flumetsalam + clopyralid)
Axiom™ (flufenacet + metribuzin)	Karmex® (diuron)
Banvel® SGF (Nufarm Diablo®) (dicamba)	Kerb® (pronamide)
Basagran® (bentazon)	Laddok® S-12 (bentazon + atrazine)
Beacon® (primisulfuron-methyl)	Landmaster® BW (glyphosate + 2,4-D)
Bicep II Magnum® (s-metolachlor + atrazine)	Lariat® (alachlor + atrazine)
Bladex® (cyanazine)	Lasso® (alachlor)
Bronate® (Nufarm Maestro® MA) (bromoxynil + MCPA)	Liberty® (glufosinate)
Buctril® (Nufarm Maestro®)(bromoxynil)	Lightning® (imazethapyr + imazapyr)
Bullet® (alachlor + atrazine)	Marksman® (dicamba + atrazine)
Caparol® (prometryn)	MCPA
Crossbow® (Nufarm Candor®)(2,4-D + triclopyr)	Outlook® (dimethenamid-P)
Curtail® (Nufarm Cutback®)(clopyralid + 2,4-D)	Paramount® (quinclorac)
Cyclone® (paraquat)	Peak® (prosulfuron)
Degree™ (acetochlor)	Permit® (halosulfuron)
Degree Xtra™ (acetochlor + atrazine)	Princep® (simazine)
DoublePlay® (acetochlor + EPTC)	Prowl® (pendimethalin)
Dual Magnum™ (s-metolachlor)	Python™ (flumetsulam)
Dual II Magnum® (s-metolachlor + atrazine)	Ramrod® (propachlor)
Eradicane® (EPTC)	Nufarm Credit® / Credit® Extra (glyphosate)
Evik® (ametryn)	Sencor® (metribuzin)
Exceed® (primisulfuron + prosulfuron)	Spirit™ (primisulfuron + prosulfuron)
Express® (Nufarm Victory®) (thifensulfuron + tribenuron-methyl)	Stinger® (Nufarm Garrison®) (clopyralid)
Extrazine® II (cyanazine + atrazine)	Surpass® (acetochlor)
Fallow Master® (Nufarm GlyKamba®)(glyphosate + dicamba)	Sutan® + (butylate)
Field Master™ (acetochlor + atrazine + glyphosate)	TopNotch™ (acetochlor)
Frontier® (dimethenamid)	Tordon® 22K (Nufarm Trooper® 22K) (picloram)
FulTime™ (acetochlor + atrazine)	Touchdown® (sulfosate)
Garlon® (Nufarm Tahoe®) (triclopyr)	2,4-D
Gramoxone® Extra (paraquat)	

RESTRICTIONS AND LIMITATIONS

Maximum seasonal use rate: Refer to Table 4, Crop-Specific Restrictions and Limitations for crop-specific maximum seasonal use rates. Do not exceed 64 fluid ounces of this product (2 pounds acid equivalent) per acre, per year.

Preharvest Interval (PHI): Refer to the **CROP-SPECIFIC INFORMATION** section for preharvest intervals.

Restricted-Entry Interval (REI): 24 hours

Crop Rotational Restrictions: The interval between application and planting rotational crop is given below. Always exclude counting days when the ground is frozen. Planting at intervals less than specified below may result in crop injury. Moisture is essential for the degradation of this herbicide in soil. If dry weather prevails, use cultivation to allow herbicide contact with moist soil.

Planting/replanting restrictions for this product's applications of 24 fluid ounces per acre or less: No rotational cropping restrictions apply at 120 days or more following application. Additionally, for annual crop uses in this label including corn, cotton, sorghum, and soybean, follow the preplant use directions in the **CROP-SPECIFIC INFORMATION** section. For barley, oat, wheat, and other grass seedlings, the interval between application and planting is 15 days per 8 fluid ounces per acre applied east of the Mississippi River and 22 days per 8 fluid ounces per acre west of the Mississippi River.

Planting/replanting restrictions for applications of more than 24 fluid ounces and up to 64 fluid ounces of this product per acre: Corn, sorghum, cotton (east of the Rocky Mountains) and all other crops grown in areas with 30" or more of annual rainfall may be planted 120 days or more after application. Barley, oat, wheat, and other grass seedlings, may be planted if the interval from application to planting is 30 days per 16 fluid ounces per acre east of the Mississippi River and 45 days per 16 fluid ounces per acre west of the Mississippi River. For all other crops in areas with less than 30" of annual rainfall, the interval between application and planting is 180 days or more.

Rainfast period: Rainfall or irrigation occurring within 4 hours after postemergence applications may reduce the effectiveness of this product.

Stress: Do not apply to crops under stress due to lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, insects, or widely fluctuating temperatures as injury may result.

Do not apply through any type of irrigation equipment. Do not treat irrigation ditches or water used for crop irrigation or domestic purposes.

TABLE 4
CROP-SPECIFIC RESTRICTIONS AND LIMITATIONS¹

Crop	Maximum Rate Per Acre Per Application (fl. oz.)	Maximum In-Crop Rate Per Acre Per Season (fl. oz.)	Livestock Grazing or Feeding	Aircraft Application Allowed
Asparagus	16	16	Yes	Yes
Barley: Fall Spring	8 8	12 11	Yes	Yes
Corn	16	24	Yes ²	Yes
Cotton	8	8	Yes	Yes
Fallow Ground	32	32	Yes	Yes
Grass grown for seed	32	32	Yes	Yes
Proso Millet	4	4	Yes	Yes
Pastureland	32	32	Yes	Yes
Conservation Reserve Program (CRP)	32	32	Yes	Yes
Oats	4	4	Yes	Yes
Sorghum	8	16	Yes	Yes
Soybean	32	32	Yes	Yes
Sugarcane	32	32	Yes	Yes
Turf	32	32	Yes	Yes
Triticale	4	4	Yes	Yes
Wheat	8	16	Yes	Yes

¹ Refer to the **CROP-SPECIFIC INFORMATION** section for more details.

² Once the crop reaches the ensilage (milk) stage or later in maturity.

CROP-SPECIFIC INFORMATION

ASPARAGUS

Apply this product to emerged and actively growing weeds in 40 to 60 gallons of diluted spray per treated acre immediately after cutting the field, but at least 24 hours before the next cutting. Multiple applications may be made per growing season.

If spray contacts emerged spears, crooking (twisting) of some spears may result. If such crooking occurs, discard affected spears.

Rates: Apply 8 to 16 fluid ounces of this product to control annual sowthistle, black mustard, Canada and Russian thistle, and reedroot pigweed, (carelessweed).

Apply 16 fluid ounces of this product to control common chickweed, field bindweed, nettleleaf goosefoot, and wild radish. Multiple applications may be made per growing season. Do not exceed a total of 16 fluid ounces of this product per treated acre, per crop year.

Do not harvest prior to 24 hours after treatment.

Do not use in the Coachella Valley of California.

Asparagus Tank Mixes

Apply 8 to 16 fluid ounces of this product with glyphosate (Roundup® Ultra herbicide) or 2,4-D to improve control of Canada thistle and field bindweed.

BETWEEN CROP APPLICATIONS

Preplant Directions (Postharvest, Fallow, Crop Stubble, Set-Aside) For Broadleaf Weed Control: This product can be applied either postharvest in the fall, spring, or summer during the fallow period or to crop stubble/set-aside acres. Apply this product as a broadcast or spot treatment to emerged and actively growing weeds after crop harvest (postharvest) and before a killing frost or in the fallow cropland or crop stubble the following spring or summer.

See **Crop-Rotational Restrictions** in the **RESTRICTIONS AND LIMITATIONS** section for the recommended interval between application and planting to prevent crop injury.

Rates and Timings: Apply 4 to 32 fluid ounces of this product per acre. Refer to **Table 2** to determine use rates for specific targeted weed species. For best performance, apply this product when annual weeds are less than 6" tall, when biennial weeds are in the rosette stage and to perennial weed regrowth in late summer or fall following a mowing or tillage treatment. The most effective control of upright perennial broadleaf weeds such as Canada thistle and Jerusalem artichoke occurs if this product is applied when the majority of weeds have at least 4" to 6" of regrowth or for weeds such as field bindweed and hedge bindweed that are in or beyond the full bloom stage.

Avoid disturbing treated areas following application. Treatments may not kill weeds that develop from seed or underground plant parts such as rhizomes or bulblets, after the effective period for this product. For seedling control, a follow-up program or other cultural practices could be instituted. For small grain in-crop uses of this product, refer to the small grain section for details.

Ally® (Nufarm Purestand®)

Amber®

Atrazine

Curtail® (Nufarm Cutback®)

Cyclone®

Fallow Master®

Glyphosate® (Nufarm Credit® Extra)

Gramoxone® Extra

Kerb®

Landmaster® BW

Paramount®

Sencor®

Tordon® 22K (Nufarm Trooper® 22K)

Touchdown®

2,4-D

Between Crop Tank Mixes

In tank mixes with one or more of the following herbicides, apply 4 to 16 fluid ounces of this product per acre for control of annual weeds, or 16 to 32 fluid ounces of this product per acre for control of biennial and perennial weeds:

CORN (FIELD, POP, SEED, AND SILAGE)

Direct contact of this product with corn seed must be avoided. If corn seeds are less than 1.5" below the soil surface, delay application until corn has emerged.

Applications of this product to corn during periods of rapid growth may result in temporary leaning. Corn will usually become erect within 3 to 7 days. Cultivation should be delayed until after corn is growing normally to avoid breakage.

Corn may be harvested or grazed for feed once the crop has reached the ensilage (milk) stage or later in maturity. Up to 2 applications of this product may be made during a growing season. Sequential applications must be separated by 2 weeks or more.

Do not apply this product to seed corn or popcorn without first verifying with your local seed corn company (supplier) the selectivity of this product on your inbred line or variety of popcorn. This precaution will help avoid potential injury of sensitive varieties.

Avoid using crop oil concentrates after crop emergence as crop injury may result. Use crop oil concentrates only in dry conditions when corn is less than 5" tall and when applying this product alone or tank mixed with atrazine.

Use of sprayable fluid fertilizer as the carrier is not recommended for applications of this product made after corn emergence.

This product is not registered for use on sweet corn.

Preplant and Preemergence Application in No Tillage Corn

Rates: Apply 16 fluid ounces of this product per acre on medium- or fine-textured soils containing 2.5% or greater organic matter. Use 8 fluid ounces of this product per acre on coarse soils (sand, loamy sand, and sandy loam) or medium- and fine-textured soils with less than 2.5% organic matter.

Timing: This product can be applied to emerged weeds before, during, or after planting a corn crop. When planting into a legume sod (e.g. alfalfa or clover), apply this product after 4" to 6" of regrowth has occurred.

Preemergence Application In Conventional Or Reduced Tillage Corn

Rates: Apply 16 fluid ounces of this product per treated acre to medium- or fine-textured soils that contain 2.5% organic matter or more. Do not apply to coarse-textured soils (sand, loamy sand, or sandy loam) or any soil with less than 2.5% organic matter until after corn emergence (see **Early Postemergence** uses below).

Timing: This product may be applied after planting and prior to corn emergence. Preemergence application of this product does not require mechanical incorporation to become active. A shallow mechanical incorporation is recommended if the application is not followed by adequate rainfall or sprinkler irrigation. Avoid tillage equipment (e.g. drags, harrows) that concentrate treated soil over seed furrow, as seed damage could result.

Preemergence control of cocklebur, jimsonweed, and velvetleaf may be reduced if conditions such as low temperature or lack of soil moisture cause delayed or deep germination of weeds.

Early Postemergence Application in All Tillage Systems

Rates: Apply 16 fluid ounces of this product per treated acre. Reduce the rate to 8 fluid ounces of this product per treated acre for corn grown on coarse-textured soils (sand, loamy sand, and sandy loam).

Timing: Apply between corn emergence and the 5-leaf stage or 8" tall, whichever occurs first. Refer to **Late Postemergence Application** if the sixth true leaf is emerging from whorl or the corn is greater than 8" tall.

Late Postemergence Application

Rate: Apply 8 fluid ounces of this product per treated acre.

Timing: Apply this product from 8 to 36" tall corn or 15 days before tassel emergence, whichever comes first. For best performance, apply when weeds are less than 3" tall.

Apply directed spray when corn leaves prevent proper spray coverage, sensitive crops are growing nearby, or tank mixing with 2,4-D. Do not apply this product when soybeans are growing nearby if any of these conditions exist:

- Corn is more than 24" tall
- Soybean are more than 10" tall
- Soybean have begun to bloom

Corn Tank Mixes or Sequential Uses

When using tank mix or sequential applications with this product, always follow the companion product label to determine specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow precautions and restrictions including state and local use restrictions that may apply to specific products.

Apply this product prior to, in tank mix with, or after one or more of the following herbicides:

Accent® ¹	Harness® Xtra
Atrazine	Hornet™ ¹
Axiom™	Laddok® S-12
Banvel® (Nufarm Diablo®) ¹	Lasso®
Beacon® ¹	Liberty® ³
Bicep®	Lightning® ⁵
Bladex®	Marksman® ¹
Bullet®	Outlook®
Clarity® (Clash) ¹	Permit® ¹
Degree™	Princep®
Degree Xtra™	Prowl®
DoublePlay® ²	Python™
Dual Magnum™	(Nufarm Credit® / Credit® Extra)
Dual II Magnum®	Spirit™ ¹
Eradicane®	Stinger® (Nufarm Garrison®) ¹
Exceed® ¹	Surpass®
Extrazine® II	Sutan® + ²
Field Master®	TopNotch™
Frontier®	Touchdown®
FulTime®	2,4-D ¹
Gramoxone® Extra	
Guardsman®	
Harness®	

¹ See Table 5, Specific Guidelines for Tank Mixes or Sequential Use Programs for additional limitations or restrictions that apply for tank mix or sequential use programs with these products.

² Sequential use only.

³ Use only on Liberty Link® (glufosinate tolerant) corn hybrids.

⁴ Includes postemergence use on Roundup Ready® (glyphosate tolerant) corn hybrids.

⁵ Use only Clearfield® (imidazolinone tolerant) corn hybrids.

TABLE 5
SPECIFIC GUIDELINES FOR TANK MIXES OR SEQUENTIAL USE PROGRAMS

Tank Mix Partner	Rate Per Acre
Accent® or Beacon®	When tank mixing, applications immediately following extreme day or night temperature fluctuations or applications when daytime temperatures do not exceed 50° F may result in decreased weed control or crop injury. Delay application until the temperatures warm and both weeds and crop resume normal growth.
2,4-D	To provide maximum crop safety after corn emergence, use this tank mix only after corn is greater than 8" tall and when application can be made with drop pipes that direct spray beneath corn leaves and away from the whorl of the corn. The maximum rate of 2,4-D in this tank mix is 0.25 pints per acre (0.125 pounds of acid equivalent per acre).
Banvel® (Nufarm Diablo®), Clarity® (Clash) or Marksman® herbicide	Tank mixes with these products that contain dicamba must not exceed a total combined rate of 0.50 pounds of dicamba acid equivalent per acre (0.25 pound on coarse-textured soils or on any soil when corn is greater than 8" tall). Sequential applications of these products must be separated by a minimum of 2 weeks (unless the combined rate is less than 0.5 pounds of dicamba acid equivalent and corn is 8" tall or less) and must not exceed a combined total of 0.75 pounds dicamba acid equivalent per acre for in-crop use.
Exceed®, Spirit™, Stinger® (Nufarm Garrison®), Hornet™ or Permit®	For improved control of velvetleaf, tank mix 0.25 to 0.5 ounce of Exceed, 0.5 ounce of Spirit, or 0.17 to 0.33 ounce Permit per acre with this product. For improved control of Canada thistle, Stinger at 1.5 to 3 fluid ounces per acre or Hornet at 0.6 to 1.2 ounces per acre may be tank mixed with this product. Use the higher rate in the range for heavier infestations of these weeds.

COTTON

Preplant Application: Apply up to 8 fluid ounces of this product per acre to control emerged broadleaf weeds prior to planting cotton in conventional or conservation tillage systems.

For best performance, apply this product when weeds are in the 2 to 4 leaf stage and rosettes are less than 2" across.

Following application of this product and a minimum accumulation of 1" of rainfall or overhead irrigation, a waiting interval of 21 days is required per 8 fluid ounces per acre or less. These intervals must be observed prior to planting cotton.

Do not apply preplant to cotton west of the Rockies.

Do not make preplant applications of this product to cotton in geographic areas with average annual rainfall less than 25".

If applying a spring preplant treatment following application of a fall preplant (postharvest) treatment, then the combination of both treatments may not exceed 2 pounds acid equivalent per acre.

Cotton Tank Mixes

For control of grasses or additional broadleaf weeds, this product may be tank mixed with Bladex®, Caparol®, Gramoxone® Extra, and Nufarm Credit® or Nufarm Credit® Extra herbicides.

GRASS GROWN FOR SEED

Apply 8 to 16 fluid ounces of this product per treated acre on seedling grass after the crop reaches the 3 to 5 leaf stage. Apply up to 32 fluid ounces of this product on well-established perennial grass. For best performance, apply this product when weeds are in the 2 to 4 leaf stage and rosettes are less than 2" across. Use the higher level of listed rate ranges when treating more mature weeds or dense vegetative growth.

To suppress annual grasses such as brome (downy and rigput), rattail fescue, and windgrass, apply up to 32 fluid ounces of this product per treated acre in the fall or late summer after harvest and burning of established grass seed crops. Applications should be made immediately following the first irrigation when the soil is moist and before weeds have more than 2 leaves.

Do not apply this product after the grass seed crop begins to joint.

Refer to the **PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD** section for grazing and feeding restrictions.

Grass Seed Tank Mixes

This product may be applied in tank mixes with one or more of the following herbicides:

Buctril® (Nufarm Maestro®)
Curtail® (Nufarm Cutback®)
Express® (Nufarm Victory®)
Karmex®
MCPA amine
Sencorr®
Stinger® (Nufarm Garrison®)
2,4-D amine or ester

PROSO MILLIT

For use only within Colorado, Nebraska, North Dakota, South Dakota, and Wyoming.

This product combined with 2,4-D will provide control or suppression of the annual broadleaf weeds listed in **Table 1**.

Apply 4 ounces of this product with 0.375 pounds a.i. of 2,4-D. Apply the tank mix of this product + 2,4-D as a broadcast or spot treatment to emerged and actively growing weeds and when proso millet is in the 2 to 5 leaf stage. Use directions for 2,4-D products vary with manufacturers. Refer to a 2,4-D product with labeling consistent with the crop stage timing for this product. Some types of proso millet may be affected adversely by a tank mix of this product + 2,4-D.

Do not apply unless possible proso millet crop injury will be acceptable.

Restrictions for proso millet that is grazed or cut for hay are indicated in **Table 8, Timing Restrictions for Lactating Dairy Animals Following Treatment in the PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD** section of this label.

SMALL GRAINS NOT UNDERSEED TO LEGUMES

(Fall- and Spring-Seeded Barley, Oat, Triticale and Wheat)

Combinations with listed tank mix partners will provide control or suppression of the annual broadleaf weeds listed in **Table 1**. For improved control of listed weeds, tank mix this product with one or more of the herbicides listed. This product used in a tank mix with other herbicides offers the best spectrum of weed control and herbicide tolerant or resistant weed management. Refer to the specific crop section for this product's application rate and timing.

For applications prior to weed emergence or when sulfonylurea-resistant weeds are present or suspected, tank mix a minimum of 3 fluid ounces of this product per treated acre with a non-sulfonylurea herbicide such as 2,4-D or MCPA. Tank mixing this product with these products will offer more consistent control of sulfonylurea-resistant weeds.

Additives: When tank mixing this product with sulfonylurea herbicides (Ally® (Nufarm Purestand®), Amber®, Express® (Nufarm Victory®), Harmony® Extra (Nufarm Treaty® Extra), and Peak®), use 1 to 4 pints of an agriculturally approved surfactant (containing at least 80% active ingredient) per 100 gallons of spray or not more than 0.25 to 0.5% by volume. Use the highest rate of surfactant when using the lower rate ranges of the tank mix or when treating more mature and difficult to control weeds or dense vegetative growth.

Refer to the specific crop sections below for use rates. When treating difficult to control weeds such as kochia, wild buckwheat, cow cockle, prostrate knotweed, Russian thistle, and prickly lettuce or when dense vegetative growth occurs, use the 3 to 4 fluid ounces of this product per acre.

Timings: Apply this product before, during, or after planting small grains. See specific small grain crop uses below for maximum crop stage. For best performance, apply this product when weeds are in the 2 to 3 leaf stage and rosettes are less than 2" across. Applying this product to small grains during periods of rapid growth may result in crop leaning. This condition is temporary and will not reduce crop yields.

Applications to small grains may be made with aerial applications with 1 gallon of water or more per acre. Where dense foliage is present, 2 to 3 gallons of water per acre should be used.

Restrictions for small grain areas that are grazed or cut for hay are indicated in **Table 8 in the PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD** section of this label.

SMALL GRAINS: BARLEY (Fall- and Spring-Seeded)

Early Season Applications: Apply 2 to 4 fluid ounces of this product to fall-seeded barley prior to the jointing stage. Apply 2 to 3 fluid ounces of this product before spring-seeded barley exceeds the 4-leaf stage.

Note: For spring barley varieties that are seeded during the winter months or later, follow the rates and timings given for spring-seeded barley.

Do not tank mix this product with 2,4-D in early season applications on spring-seeded barley.

Preharvest Applications: This product can be used to control weeds that may interfere with harvest of fall- and spring-seeded barley. Apply 8 fluid ounces of this product per acre as a broadcast or spot treatment to annual broadleaf weeds when barley is in the hard dough stage and the green color is gone from the nodes (joints) of the stem. Best results will be obtained if application can be made when weeds are actively growing, but before weeds canopy.

A waiting interval of 7 days is required before harvest. Do not use preharvest-treated barley for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better.

For control of additional broadleaf weeds or grasses, this product may be tank mixed with other herbicides, such as 2,4-D, that are labeled for preharvest uses in barley.

Do not make preharvest applications in California.

**TABLE 6.
BARLEY TANK MIXES**

Tank Mix Partner	Rate Per Acre
Amber®	0.14 - 0.28 ounce ¹
Ally® (Nufarm Purestand®)	0.05 - 0.1 ounce ¹
Bronate® (Nufarm Maestro® MA)	0.75 to 1.5 pints
Buctril® (Nufarm Maestro®)	1 to 1.5 pints
Express® (Nufarm Victory®)	0.083 to 0.167 ounce ¹
Harmony® Extra (Nufarm Treaty® Extra)	0.167 to 0.33 ounce ¹
MCPA amine or ester	8 to 12 fluid ounces ² (0.25 - 0.375 pound a.e.)
Metribuzin (Sencor®)	0.125 to 0.47 pound a.i.
2,4-D amine or ester ^{2,3}	8 fluid ounces (0.25 pound a.e.)

¹ Do not use low rates of sulfonylureas (Ally (Nufarm Purestand®), Amber, Express (Nufarm Victory®), and Harmony Extra (Nufarm Treaty® Extra) on more mature weeds or on dense vegetative growth.

² When using formulations other than 4 pounds per gallon use pounds of a.e. per acre listed.

³ This tank mix is for fall-seeded barley only.

SMALL GRAINS: OAT (Fall- and Spring-Seeded)

Early Season Applications: Apply 2 to 4 fluid ounces of this product per acre to fall-seeded oat prior to the jointing stage. Apply 2 to 4 fluid ounces of this product before spring-seeded oat exceeds the 5-leaf stage.

This product may be tank mixed with MCPA amine or ester for applications in oat.

Do not tank mix this product with 2,4-D in oat.

Oats, grain: 7-day PHI

SMALL GRAINS: TRITICALE (Fall- and Spring-Seeded)

Early Season Applications: Apply 2 to 4 fluid ounces of this product to triticale. Early season applications to fall-seeded triticale must be made prior to the jointing stage.

Early season applications to spring-seeded triticale must be made before triticale reaches the 6-leaf stage.

Triticale Tank Mixes: For best performance, this product should be used in tank mix combination with bromoxynil (Buctril, Moxy™ 2E) herbicide.

SMALL GRAINS: WHEAT (Fall- and Spring-Seeded)

Early Season Applications: Apply 2 to 4 fluid ounces of this product to wheat unless using one of the fall-seeded wheat specific programs below. Early season applications to fall-seeded wheat must be made prior to the jointing stage.

Early season applications to spring-seeded wheat must be made before wheat exceeds the 6-leaf stage.

Early developing wheat varieties such as TAM 107, Madison, or Wakefield must receive application between early tillering and the jointing stage. Care should be taken in staging these varieties to be certain that the application occurs prior to the jointing stage.

To improve control of Russian thistle, flaxweed, gromwell, or mayweed, add 2,4-D amine or ester to a tank mix with one of the following herbicides: Ally®, Amber®, Express®, Harmony Extra, or Peak®.

Specific Use Programs for Fall-Seeded Wheat Only: This product may be used at 6 fluid ounces on fall-seeded wheat in Western Oregon as a spring application only. In Colorado, Kansas, New Mexico, Oklahoma, and Texas, up to 8 fluid ounces of this product may be applied on fall-seeded wheat after it exceeds the 3-leaf stage for suppression of perennial weeds, such as field bindweed. Applications may be made in the fall following a frost but before a killing freeze. This product may be tank mixed with 2,4-D amine at 8 fluid ounces after wheat begins to tiller. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury. For fall applications only, do not use if the potential for crop injury is not acceptable.

Preharvest Applications: This product can be used to control weeds that may interfere with harvest of wheat. Apply 8 fluid ounces this product per acre as a broadcast or spot treatment to annual broadleaf weeds when wheat is in the hard dough stage and the green color is gone from the nodes (joints) of the stem. Best results will be obtained if application can be made when weeds are actively growing but before weeds canopy.

A waiting interval of 7 days is required before harvest. Do not use preharvest-treated wheat for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better.

For control of additional broadleaf weeds or grasses, this product may be tank mixed with other herbicides such as Ally, Roundup® Ultra, and 2,4-D.

Do not make preharvest applications in California.

**TABLE 7
WHEAT TANK MIXES**

Tank Mix Partner	Rate Per Acre
Ally® (Nufarm Purestand®)	0.05 to 0.1 ounce ¹
Amber®	0.14 to 0.28 ounce ¹
Bronate® (Nufarm Maestro® MA)	0.75 to 1.5 pints
Buctril® (Nufarm Maestro®)	1 to 1.5 pints
Curtail® (Nufarm Cutback®)	2 to 2.67 pints
Express® (Nufarm Victory®)	0.083 to 0.167 ounce ¹
Harmony® Extra (Nufarm Treaty® Extra)	0.167 to 0.33 ounce ¹
Karmex® ²	0.5 to 1.5 pounds
Glyphosate (Nufarm Credit®, Credit® Extra) ³	12 to 16 fluid ounces
MCPA amine or ester ⁴	8 to 12 fluid ounces (0.25 to 0.375 pound a.e.)
Metribuzin2 (Sencor®)	0.25 to 0.375 pound a.i.
Peak® ¹	0.25 to 0.38 ounce
Stinger® (Nufarm Garrison®)	4 to 5.33 fluid ounces
2,4-D amine or ester ⁴	8 to 12 fluid ounces (0.25 to 0.375 pound a.e.)

¹ Do not use low rates of sulfonylurea herbicides, such as Ally (Nufarm Purestand®), Amber, , Express (Nufarm Victory®), Harmony Extra (Nufarm Treaty® Extra), and Peak on more mature weeds or on dense vegetative growth.

² Tank mixes with Karmex and metribuzin are for use in fall-seeded wheat only.

³ A tank mix of up to 4 fluid ounces of this product with Roundup Ultra RT or any glyphosate formulation labeled for use as a preplant application to small grains may be applied with no waiting period prior to planting.

⁴ Up to 32 fluid ounces of (1.0 pound a.e.) may be used on fall-seeded wheat if crop injury is acceptable. When using formulations other than 4 pounds per gallon, use the pounds of a.e. per acre listed.

SORGHUM

This product may be applied preplant, postemergence, or preharvest in sorghum to control many annual broadleaf weeds and to reduce competition from established perennial broadleaf weeds, as well as control their seedlings.

Do not graze or feed treated sorghum forage or silage prior to mature grain stage. If sorghum is grown for pasture or hay, refer to the **PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD** section of this label for specific grazing and feeding restrictions.

Do not apply this product to sorghum grown for seed production.

Preplant Application: Up to 8 fluid ounces of this product may be applied per acre if applied at least 15 days before sorghum planting.

Postemergence Application: Up to 8 fluid ounces of this product per acre may be applied after sorghum is in the spike stage (all sorghum emerged) but before sorghum is 15" tall. For best performance, apply this product when the sorghum crop is in the 3 to 5 leaf stage and weeds are small (less than 3" tall). Use drop pipes (drop nozzles) if sorghum is taller than 8". Keep the spray off the sorghum leaves and out of the whorl to reduce the likelihood of crop injury and to improve spray coverage of weed foliage. Applying this product to sorghum during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. These effects are usually outgrown within 10 to 14 days.

Preharvest Uses in Texas and Oklahoma Only: Up to 8 fluid ounces of this product per acre may be applied for weed suppression any time after the sorghum has reached the soft dough stage. An agriculturally approved surfactant may be used to improve performance. For aerial applications, use at least 2 gallons of water-based carrier per treated acre. Delay harvest until 30 days after a preharvest treatment.

Split Application: This product may be applied in split applications: preplant followed by postemergence or preharvest; or postemergence followed by preharvest. Do not exceed 8 fluid ounces per acre, per application or a total of 16 ounces per acre, per season.

Sorghum grain: 30-day PHI
Sorghum forage: 20-day PHI
Sorghum fodder: 30-day PHI

Sorghum Tank Mixes and Sequential Treatment

This product may be applied prior to, in a tank mix with, or after one or more of the following herbicides:

Atrazine	Laddok®S-12
Basagran®	Landmaster®
Bicep II Magnum®	Lasso®
Buctril® (Nufarm Maestro®)	Outlook®
Cyclone®	Paramount®
Dual Magnum®	Peak®
Dual II Magnum®	Permit®
Fallow Master®	Ramrod®
Frontier®	(Nufarm Credit® Extra)
Gramoxone® Extra	
Guardsman®	

SOYBEAN

Preplant Applications: Apply 4 to 16 fluid ounces of this product per acre to control emerged broadleaf weeds prior to planting soybeans.

Do not exceed 16 fluid ounces of this product per acre in a spring application prior to planting soybeans.

Following application of this product and a minimum accumulation of 1" rainfall or overhead irrigation, a waiting interval of 14 days is required for 8 fluid ounces per acre or less, and 28 days for 16 fluid ounces per acre. These intervals must be observed prior to planting soybeans or crop injury may occur.

Do not preplant applications of this product to soybeans in geographic areas with average annual rainfall less than 25".

Preharvest Applications: This product can be used to control many annual and perennial broadleaf weeds and control or suppress many biennial and perennial broadleaf weeds in soybean prior to harvest (refer to **Table 1**). Apply 8 to 32 fluid ounces of this product per acre as a broadcast or spot treatment to emerged and actively growing weeds after soybean pods have reached mature brown color and at least 75% leaf drop has occurred.

Soybeans may be harvested 14 days or more after a pre-harvest application.

Treatments may not kill weeds that develop from seed or underground plant parts, such as rhizomes or bulblets, after the effective period for this product. For seedling control, a follow-up program or other cultural practice could be instituted.

Do not use preharvest-treated soybean for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better.

Do not feed soybean fodder or hay following a preharvest application of this product.

Do not make preharvest applications in California.

Soybean Tank Mixes

Preplant Tank Mixes: This product may be tank mixed with other herbicides registered for early preplant use in soybeans including burndown herbicides such as glyphosate (Nufarm Credit® / Credit® Extra) and 2,4-D or residual herbicides such as Outlook®, Frontier® or Dual Magnum™.

Preharvest Tank Mixes: This product may be tank mixed with other herbicides registered for preharvest use in soybeans such as glyphosate (Nufarm Credit® Extra) and Gramoxone® Extra.

SUGARCANE

Apply this product for control of annual, biennial, or perennial broadleaf weeds listed in Table 1. Apply 8 to 24 fluid ounces of this product per acre for control of annual weeds, 16 to 32 fluid ounces for control of biennial weeds, and 32 fluid ounces for control or suppression of perennial weeds.

Use the higher level of listed rate ranges when treating dense vegetative growth.

Retreatments may be made as needed; however, do not exceed a total of 64 fluid ounces of this product per treated acre during a growing season.

Timing: This product may be applied to sugarcane any time after weeds have emerged, but before the close-in stage of sugarcane. Applications of 32 fluid ounces of this product per acre made over the top of actively growing sugarcane may result in crop injury.

When possible, direct the spray beneath the sugarcane canopy to minimize the likelihood of crop injury. Using directed sprays will also help maximize the spray coverage of weed foliage.

Sugarcane, cane: 87-day PHI

Sugarcane Tank Mixes

This product may be tank mixed with other products registered for use in sugarcane such as Asulox®, atrazine, Evik®, and 2,4-D.

PASTURE, HAY, RANGELAND, AND GENERAL FARMSTEAD (Noncropland)

This product is recommended for use on pasture, hay, rangeland, and general farmstead (non-cropland) (including fencerows and non-irrigation ditchbanks) for control or suppression of broadleaf weed and brush species listed in Table 1.

This product may also be applied to non-cropland areas to control broadleaf weeds in noxious weed control programs, districts, or areas including broadcast or spot treatment of roadsides and highways, utilities, railroad, and pipeline rights-of-way. Noxious weeds must be recognized at the state level, but programs may be administered at state, county, or other level.

Uses described in this section also pertain to small grains (forage sorghum, rye, sudangrass, or wheat) grown for pasture use only. Some perennial weeds may be controlled with lower rates of either this product or this product plus 2,4-D (refer to Table 2).

Rates and Timings: Refer to Table 2 for rate selection based on targeted weed or brush species. Some weed species will require tank mixes for adequate control.

Rates above 32 fluid ounces of this product per acre are for spot treatments only. Do not broadcast apply more than 32 fluid ounces per acre.

Retreatments may be made as needed; however, do not exceed a total of 32 fluid ounces of this product per treated acre during a growing season.

Crop-Specific Restrictions and Limitations: Do not apply more than 16 fluid ounces of this product per acre to small grains grown for pasture.

Newly seeded areas may be severely injured if more than 16 fluid ounces of this product is applied per acre.

Established grass crops growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. Bentgrass, carpetgrass, buffalograss, and St. Augustinegrass may be injured if more than 16 fluid ounces of this product is applied per acre. Usually colonial bentgrasses are more tolerant than creeping types. Velvetgrasses are most easily injured. Treatments will kill or injure alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

Table 8 lists the timing restrictions for grazing or harvesting hay from treated fields. There are no grazing restrictions for animals other than lactating dairy animals.

TABLE 8
TIMING RESTRICTIONS FOR LACTATING DAIRY ANIMALS FOLLOWING TREATMENT

Rate per Treated Acre (pints)	Days Before Grazing (days)	Days Before Hay Harvest (days)
Up to 1	7	37
Up to 2	21	51
Up to 4	40	70

This product can be applied using water, oil in water emulsions including invert systems, or sprayable fluid fertilizer as a carrier (refer to the **COMPATIBILITY TEST FOR MIX COMPONENTS** section).

To prepare oil in water emulsions, half-fill spray tank with water, then add the appropriate amount of emulsifier. With continuous agitation, slowly add the herbicide and then the oil (such as diesel oil or fuel oil) or a premix of oil plus additional emulsifier to spray tank. Complete filling of spray tank with water. Maintain vigorous agitation during spray operation to prevent oil and water from forming separate layers. This product may be applied broadcast using either ground or aerial application equipment.

Aerial Application

- **Spray Volume:** Use 2 to 40 gallons of diluted spray per treated acre in a water-based carrier.

Ground Application

- **Spray Volume:** Use 3 to 600 gallons of diluted spray per treated acre. The volume of spray applied will depend on the height, density, and type of weeds or brush being treated and on the type of equipment being used.
- **Spot Treatments:** This product may be applied to individual clumps or small areas of undesirable vegetation using handgun or similar types of application equipment. Apply diluted sprays to allow complete wetting (up to runoff) of foliage and stems.

CUT SURFACE TREATMENT

This product may be applied as a cut surface treatment for control of unwanted trees and prevention of sprouts of cut trees.

Rate: Mix 1 part of this product with 1 to 3 parts water to create the application solution. Use the lower dilution rate when treating difficult-to-control species.

- **For Frill or Girdle Treatments:** Make a continuous cut or a series of overlapping cuts using an axe to girdle tree trunk. Spray or paint the cut surface with the solution.
- **For Stump Treatments:** Spray or paint freshly cut surface with the water mix. The area adjacent to the bark should be thoroughly wet.

Note: For more rapid foliar effects, 2,4-D may be added to the solution.

APPLICATION FOR CONTROL OF DORMANT MULTIFLORA ROSE

This product can be applied when plants are dormant as an undiluted spot treatment directly to the soil or as a Lo-Oil basal bark treatment using an oil-water emulsion solution.

- **Spot treatments:** Spot treatment applications of this product should be applied directly to the soil as close as possible to the root crown but within 6 to 8" of the crown. On sloping terrain, apply this product to the uphill side of the crown. Do not apply when snow or water prevents applying this product directly to the soil. The use rate of this product depends on the canopy diameter of the multiflora rose.
- **Examples:** Use 0.25, 1.0, or 2.35 fluid ounces of this product respectively, for 5, 10, or 15 feet canopy diameters.

- **Lo-Oil basal bark treatments:** For Lo-Oil basal bark treatments, apply this product to the basal stem region from the ground line to a height of 12 to 18". Spray until runoff, with special emphasis on covering the root crown. For best results, apply this product when plants are dormant. Do not apply after bud break or when plants are showing signs of active growth. Do not apply when snow or water prevents applying this product to the ground line.

To prepare approximately 2 gallons of a Lo-Oil spray solution:

1. Combine 1.5 gallons of water, 1 ounce of emulsifier, 16 fluid ounces of this product, and 2.5 pints of No. 2 diesel fuel.
2. Adjust the amounts of materials used proportionately to the amount of final spray solution desired.

Do not exceed 8 gallons of spray solution mix applied per acre, per year.

Pasture Tank Mixes

This product may be applied in tank mixes with one or more of the following herbicides:

Ally [®] (Nufarm Purestand [®])	Gramoxone [®] Extra
Amber [®]	Roundup Ultra [®] RT (Nufarm Credit [®] / Credit [®] Extra)
Crossbow [®] (Nufarm Candor [®])	Stinger [®] (Nufarm Garrison [®])
Curtail [®] (Nufarm Cutback [®])	Tordon [®] 22K (Nufarm Trooper [®] 22K)
Garlon [®] (Nufarm Tahoe [®])	2,4-D

CONSERVATION RESERVE PROGRAM (CRP)

This product is recommended for use on both newly seeded and established grasses grown in Conservation Reserve or federal Set-Aside Programs. Treatments of this product will injure or may kill alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

Newly Seeded Areas: This product may be applied either preplant or postemergence to newly seeded grasses or small grains such as barley, oats, rye, sudangrass, wheat, or other grain species grown as a cover crop. Postemergence applications may be made after seedling grasses exceed the 3-leaf stage. Rates of this product greater than 16 fluid ounces per treated acre may severely injure newly seeded grasses.

Preplant applications may injure new seedlings if the interval between application and grass planting is less than 45 days per 16 fluid ounces of this product applied per treated acre west of the Mississippi River or 20 days per 16 fluid ounces applied east of the Mississippi River.

Established Grass Stands: Established grass stands are perennial grasses planted one or more seasons prior to treatment. Certain species (bentgrass, carpetgrass, smooth brome, buffalograss, or St. Augustinegrass) may be injured when treated with more than 16 fluid ounces of this product per treated acre.

When applied at instructed rates, this product will control many annual and biennial weeds and provide control or suppression of many perennial weeds.

Rates and Timings: Apply 4 to 32 fluid ounces of this product per acre. Refer to Table 2 for rates based on target weed species. This product may be tank mixed or applied sequentially with other products labeled for use in Conservation Reserve Programs such as atrazine, Cyclone[®], glyphosate (Roundup Ultra[®]), Gramoxone[®] Extra, Touchdown[®], or 2,4-D.

Retreatments may be made as needed; however, do not exceed a total of 64 fluid ounces (4 pints) of this product per acre.

RIGHTS-OF-WAY, UTILITY, INDUSTRIAL AREAS, FENCEROWS AND OTHER NONCROP AREAS

This product is recommended for use on general farmstead weed and brush control and for use on noncrop land areas such as rights-of-way (such as roadways, rest areas, utility, railroad, highway, pipeline, and rights-of-way that run through pasture and rangeland); utility facilities (such as substations, pipelines, tankfarms, pumping stations, parking and storage areas, fencerows and non-irrigated ditchbanks); brush control for forest site preparation or maintenance, conservation lands including natural areas, wildlife openings and other conservation lands.

Observe all Precautions on this label. Read and follow the Mixing and Application section.

General Farmstead

This product can be used on or around farms and farmstead for control of many broadleaf weeds and brush in noncrop land areas only.

Rights-of-Way

This product can be used to control many broadleaf weeds on rights-of-way. This use includes applications to roadside, roadway and highways; to areas along utilities such as cable and powerlines; railroad track and embankment; highways, highway medians, bridge abutments, pipelines, and rights-of-way that run through pasture and rangeland. Use controlled application techniques that minimize the risk of off-target movement.

Utility and Industrial Areas

This product can be used to control many broadleaf weeds and brush in noncrop areas on or surrounding substations, pipelines, tankfarms, pump stations, production facilities, and bareground situations. It may also be used on parking and storage areas (refer to Best Stewardship Practices to avoid direct runoff from impervious surfaces).

Fencerows

This product can be used to control many broadleaf weeds and brush in fencerows.

Mixing and Application

Read and observe Management of Off-Site Movement recommendations in this label. This product can be applied using water, oil in water emulsions including invert systems, or, sprayable fluid fertilizer as a carrier. A compatibility test (see Compatibility Test section) should be made prior to tank mixing.

To prepare oil in water emulsions, half-fill spray tank with water, then add the appropriate amount of emulsifier. With continuous agitation, slowly add the herbicide and then the herbicidal oil or a pre-mix of oil plus additional emulsifier to spray tank. Complete filling of spray tank with water. Maintain vigorous agitation during spray operation to prevent oil and water from forming separate layers.

This product may be applied broadcast using either ground or aerial application equipment. When using ground equipment, apply low or high volume sprays between 3 to 600 gals. of diluted spray per treated acre. Volume of spray applied will depend on the height, density, and type of weeds or brush being treated and on the type of equipment being used. When using aerial equipment, apply 5 to 40 gals. of diluted spray per treated acre.

This product may be applied to individual clumps or small areas (spot treatment) of undesirable vegetation using handgun or similar types of application equipment. Apply diluted sprays to allow complete wetting (up to runoff) of foliage and stems.

Herbicide adjuvants or other spray additives (emulsifiers, spreader stickers, surfactants, wetting agents, drift control agents, or penetrants) may be used for wetting, penetration, or drift control. Spray additives must be agriculturally approved when used in pasture applications. If spray additives are used, read and follow all use recommendations and precautions on product label.

Weeds and Brush Controlled

When applied at instructed rates, will give control of many annual, biennial, and perennial broadleaf weeds, and many woody brush and vine species commonly found in noncrop-land areas. (Refer to General Weed List.) Noted (*) perennial weeds may be controlled with lower rates of either this product or this product plus tank mix combinations. See **RATES AND TIMING** below.

TABLE 9 RATES AND TIMING

Application rates and timings of this product are given below. Use the higher level of listed rate ranges when treating dense or tall vegetative growth.

Weed Stage and Type	Amount of Product (Pints Per Acre)	Gallons of Spray Mixture Per Acre*	Spray Concentration for Use with Low Volume Application**** (%vol/vol)
Annual			
Small, Actively Growing	1/2 to 1	25 to 50	3
Established Weed Growth	1 to 1-1/2	50 to 75	3
Biennial* - Rosette diameter			
Less than 3"	1/2 to 1	25 to 50	3 to 4
3" or more	1 to 2	50 to 100	3 to 4
Bolting	2	100 to 150	3 to 4
Perennial			
Suppression or top growth control	1/2 to 1	50 to 100	4
Noted (*) Perennials	2	100 to 200	4
Other Perennials	2	200	5
Woody Brush and Vines***			
Top Growth	1/2 to 2	50 to 200	5
Stems and Roots	2	200	5

* For best performance, make application when biennial weeds are in the rosette stage.

** Assuming typical application rate of 1 quart. of this product/100 gals.

*** Tank mixes may be required for optimal control. Refer to General Weed List.

**** Low volume rates must not exceed 2 pints of this product maximum per acre per year (5% volume/volume = 10 gals. maximum solution per acre per year).

Retreatments may be made as needed; however, do not exceed a total of 4 pints (2 lbs. a.i.) of this product per treated acre during a growing season.

FOREST SITE PREPARATION

Product Information

This product may be used for control of undesirable conifers as well as many broadleaf weeds, vines, brambles, hardwood brush, and trees in forest site preparation. This product may be applied as broadcast foliar sprays from ground or aerial equipment. This product is absorbed through the leaf surfaces quickly after spraying and will also be absorbed from the soil by the roots. Translocation through the leaves, stems, and roots provides control of undesirable young conifer and broadleaf species. Woody plants, brush, and trees may not display the full extent of herbicide efficacy until several months following treatment. This product provides application flexibility for extended windows of application and tank mix options (refer to Mixing and Application Procedures and Tank Mix Options).

Mixing and Application Instructions

Ground Operated Spray Equipment

Thoroughly mix and apply the specified amount of this product (2 pints per acre maximum) in a minimum of 15 gals. of water per acre. Spray solution should uniformly cover undesirable foliage for best results. A suitable nonionic surfactant should be added to the spray solution to enhance foliage wetting, spreading, and solution absorption. Drift control and foam reducing agents may be added at specified rates, if needed. Spray pattern indicator agents may also be added at specified rates, if desired. DO NOT spray under windy or gusty conditions. Maintain proper buffer zone to ensure drift does not reach off-target vegetation.

Aerial Spray Equipment

Thoroughly mix the specified amount of this product (2 pints per acre maximum) in a minimum of 10 gals. of water per acre and uniformly apply with properly calibrated aerial equipment. A suitable nonionic surfactant should be added to the spray solution to enhance wetting, spreading, and solution absorption. All precautions should be taken to minimize or eliminate spray drift. Drift control and foam control agents may be added at specified rates, if needed.

Tank Mix Options

For extended range of species control, tank mix this product with other forest site preparation products such as Arsenal, Razor®, Razor® Pro, Spyder®, Tahoe®, etc. Observe all precautions and restrictions on the product labels. Always follow the most restrictive label in a tank mix.

TURF AND LAWNS

Including Golf Course (Fairways, Aprons, Tees, and Rough), Parks, Recreational areas, Lawn care application, Sod farms.

IMPORTANT: Observe all Precautions on this label. Read and follow **Mixing and Application Procedures**.

Established grass stands growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. To avoid injury to newly seeded grasses, application of this product should be delayed until after second mowing. Furthermore, application rates in excess of 1 pint. (1/2 lb. a.i.) per treated acre may cause noticeable stunting or discoloration of sensitive grass species such as bentgrass, carpetgrass, buffalograss, and St. Augustinegrass.

In areas where roots of sensitive plants extend, do not apply in excess of 1/4 pint (1/8 lb. a.i.) of this product per treated acre on coarse-textured (sandy-type) soils, or in excess of 1/2 pint (1/4 lb. a.i.) per treated acre on fine-textured (clay-type) soils. Do not make repeat applications in these areas for 30 days and until previous applications of this product have been activated in the soil by rain or irrigation.

Weeds Controlled

When applied at specified rates, will give control of many annual, biennial, and noted (*) perennial broadleaf weeds commonly found in turf. This product will also give growth suppression of many other listed perennial broadleaf weeds and woody brush and vine species, refer to **Table 1**. Refer to **Table 2** or **Table 9** for rates based on targeted weed or brush species and growth stage. Some weed species will require tank mixes for adequate control.

Mixing and Application

Apply 30 to 200 gals. of diluted spray per treated acre (3 quarts to 4-1/4 gals. on 1 ,000 sq. ft.), depending on density or height of weeds treated and on the type of equipment used.

Rates and Timings

Use the higher level of listed rate ranges when treating dense vegetative growth.

TABLE 10
TURF AND LAWN BROADCAST APPLICATION RATES

Weed Stage and Type	Pints Per Treated Acre	Pounds a.i. Per Treated Acre	Teaspoon Per 1,000 Square Feet
Annual			
Small, actively growing	1/2 to 1	1/4 to 1/2	1 to 2-1/4
Established weed growth	1 to 1-1/2	1/2 to 3/4	2-1/4 to 3-1/4
Biennial* - Rosette diameter			
Less than 3 inches	1/2 to 1	1/4 to 1/2	1 to 2-1/4
3 inches or more	1 to 2	1/2 to 1	2-1/4 to 4-1/2
Perennial, Woody Brush and Vines	1 to 2	1/2 to 1	2-1/4 to 4-1/2

*For best performance, make application when biennial weeds are in the rosette stage.

For best performance, apply when weeds are emerged and actively growing.

Retreatments may be made as needed; however, do not exceed a total of 2 pints. (1 lb. a.i.) of this product per treated acre during a growing season.

Tank Mix Treatments

READ AND FOLLOW THE LABEL OF EACH TANK MIX PRODUCT USED FOR PRECAUTIONARY STATEMENTS, DIRECTIONS FOR USE, APPLICATION RATES AND TIMINGS, AND OTHER RESTRICTIONS. Consult product labels for rate recommendations for tank mix partners. OBSERVE ALL PRECAUTIONS AND RESTRICTIONS ON THE PRODUCT LABELS. ALWAYS FOLLOW THE MOST RESTRICTIVE LABEL IN A TANK MIX.

Tank mix treatments of this product may be made with 2,4-D, MCPA, MCPP, Confront, or bromoxynil for control of additional weeds listed on the tank mix product label.

Apply 1/4 to 1/2 pint (1/10 to 1/4 lb. a.i.) of this product per treated acre with 1/2 to 1-1/2 lbs. acid equivalent of 2,4-D, MCPA, or MCPP, or with 1 to 2 pints of Confront, or with 3/8 to 1/2 lb. a.i. of bromoxynil. Use the higher level of the listed rate ranges when treating established weeds. Repeat treatments may be made as needed; however, do not exceed 2 pints (1 lb. a.i.) of this product per treated acre during the growing season.

PESTS IN THIS LABEL

COMMON NAME

Annuals:

Alkanet

Amaranth, Palmer

Powell

Spiny

Aster, Slender

Bedstraw, Catchweed

Beggarweed, Florida

Broomweed, Common

Buckwheat, Tartary

Wild

Buffalobur

Burclover, California

Burcucumber

Buttercup, Corn

Creeping

Roughseed

Western Field

Carpetweed

Chamfly, Nightflowing

Cottonmole, Corn

Chervil, Bur

Chickweed, Common

Clovers

Cockle, Corn

Cow

White

Cocklebur, Common

Copperleaf, Hophornbeam

Cornflower (Bachelor Button)

Croton, Tropic

Woolly

Daisy, English

Dragonhead, American

Eveningprimrose, Cutleaf

Falseflax, Smallseed

Fleabane, Annual

Flixweed

Fumitory

Goosefoot, Nettleleaf

Hempnettle

Henbit

Jacob's Ladder

Jimsonweed

Knawel (German Moss)

Knottweed, Prostrate

Kochia

Ladythumb

Lambsquarters, Common

Lettuce, Miners

Prickly

Mallow, Common

Venice

Marestail (Horseweed)

Mayweed

SCIENTIFIC NAME

Lithospermum arvense

Amaranthus palmeri

Amaranthus powellii

Amaranthus spinosus

Aster subulatus

Galium aparine

Desmodium tortuosum

Gutierrezia dracunculoides

Fagopyrum tatarium

Polygonum convolvulus

Solanum rostratum

Medicago polymorpha

Scyos angulatus

Ranunculus arvensis

Ranunculus repens

Ranunculus muricatus

Ranunculus occidentalis

Mullugo verticillata

Silene noctiflorum

Anthemis arvensis

Anthriscus caucalis

Stellaria media

Trifolium spp.

Agrostemma githago

Vaccaria pyramidata

Melandrium album

Xanthium strumarium

Acalypha ostryifolia

Centaurea cyanus

Croton glandiola

Croton capitatus

Bellis perennis

Dracocephalum parviflorum

Oenothera lacinata

Camelina microcarpa

Erigeron annuus

Descurainia sophia

Fumaria officinalis

Chenopodium murale

Galeopsis tetrahit

Lamium amplexicaule

Polemonium caeruleum

Datura stramonium

Scleranthus annuus

Polygonum aviculare

Kochia scoparia

Polygonum persicaria

Chenopodium album

Claytonia perfoliata

Lactuca serriola

Malva neglecta

Hibiscus trionum

Hippurus vulgaris

Anthemis cotula

COMMON NAME

Annuals (continued):

Morningglory, Ivyleaf

Tall

Mustard, Black

Blue

Tansy

Treacle

Tumble

Wild

Nightshade, Black

Cutleaf

Pennycress, Field (Fanweed,

Frenchweed, Stinkweed)

Pepperweed, Virginia

(Peppergrass)

Pigweed, Prostrate

Redroot

(Carelessweed)

Smooth

Tumble

Pineappleweed

Poorjoe

Puncturevine

Purslane, Common

Pusley, Florida

Radish, Wild

Ragweed, Common

Giant (Buffaloweed)

Lance-Leaf

Ragwort, Tansy

Rocket, London

Yellow

Rubberweed, Bitter

Salsify

Sesbania, Hemp

Shepherdspurse

Sicklepod

Sida, Prickly (Teaweed)

Smartweed, Green

Pennsylvania

Sneezeweed, Bitter

Southistle, Annual

Spiny

Spikeweed, Common

Spurge, Prostrate

Spurry, Corn

Starbur, Bristly

Starwort, Little

Sumpweed, Rough

Sunflower, Common (Wild)

Thistle, Russian

Velvetleaf

Waterhemp, Common

Tall

Waterprimrose, Winged

Wormwood

SCIENTIFIC NAME

Ipomea hederacea

Ipomea purpurea

Brassica nigra

Chorispora tenella

Descurainia pinnata

Erysimum repandum

Sisymbrium altissimum

Sinapis arvensis

Solanum nigrum

Solanum triflorum

Thlaspi arvense

Lepidium virginicum

Amaranthus blitoides

Amaranthus retroflexus

Amaranthus hybridus

Amaranthus albus

Matricaria matricarioides

Diodia teres

Tribulus terrestris

Portulaca oleracea

Richardia scabra

Raphanus raphanistrum

Ambrosia artemisiifolia

Ambrosia trifida

Ambrosia bidentata

Senecia jacobea

Sisymbrium irio

Barbarea vulgaris

Hymenoxys odorata

Tragopogon porrifolius

Sesbania exaltata

Capsella bursa-pastoris

Cassia obtusifolia

Sida spinosa

Polygonum scabrum

Polygonum pensylvanicum

Helenium amurum

Sonchus oleraceus

Sonchus asper

Hemizonia pungens

Euphorbia humistrata

Spergula arvensis

Acanthospermum hispidum

Stellaria graminea

Iva ciliata

Helianthus annuus

Salsola iberica

Abutilon theophrasti

Amaranthus rudis

Amaranthus tuberculatus

Ludwigia decurrens

Artemisia annua

PESTS IN THIS LABEL (continued)

COMMON NAME	SCIENTIFIC NAME
Biennials:	
Burdock, Common	<i>Arctium minus</i>
Carrot, Wild (Queen Anne's Lace)	<i>Daucus carota</i>
Cockle, White	<i>Melandrium album</i>
Eveningprimrose, Common	<i>Oenothera biennis</i>
Geranium, Carolina	<i>Geranium carolinianum</i>
Gromwell	<i>Lithospermum</i> spp.
Knapweed, Diffuse	<i>Centaurea diffusa</i>
Spotted	<i>Centaurea maculosa</i>
Mallow, Dwarf	<i>Malva borealis</i>
Plantain, Bracted	<i>Plantago aristata</i>
Ragwort, Tansy	<i>Senecio jacobaea</i>
Starthistle, Yellow	<i>Centaurea solstitialis</i>
Sweetclover	<i>Mellilotus</i> spp.
Teasel	<i>Dipsacus sativus</i>
Thistle, Bull	<i>Cirsium vulgare</i>
Musk	<i>Carduus nutans</i>
Plumeless	<i>Carduus acanthoides</i>
Perennials:	
Alfalfa	<i>Medicago sativa</i>
Artichoke, Jerusalem	<i>Helianthus tuberosus</i>
Aster, Spiny	<i>Aster spinosus</i>
Whiteheath	<i>Aster pilosus</i>
Bedstraw, Smooth	<i>Gallium mollugo</i>
Bindweed, Field	<i>Convolvulus arvensis</i>
Hedge	<i>Calystegia sepium</i>
Blueweed, Texas	<i>Helianthus ciliaris</i>
Bursage, Woollyleaf, (Bur Ragweed, Povertyweed)	<i>Ambrosia grayi</i>
Buttercup, Tall	<i>Ranunculus acris</i>
Campion, Bladder	<i>Silene vulgaris</i>
Chickweed, Field	<i>Cerastium arvense</i>
Mouseeear	<i>Cerastium vulgatum</i>
Chicory	<i>Cichorium intybus</i>
Clover, Hop	<i>Trifolium aureum</i>
Dandelion	<i>Taraxacum officinale</i>
Dock, Broadleaf (Bitterdock)	<i>Rumex obtusifolius</i>
Curly	<i>Rumex crispus</i>
Dogbane, Hemp	<i>Apocynum cannabinum</i>
Dogfennel (Cypressweed)	<i>Eupatorium capillifolium</i>
Fern, Bracken	<i>Pteridium aquilinum</i>
Garlic, Wild	<i>Allium vineale</i>
Goldenrod, Canada	<i>Solidago canadensis</i>
Missouri	<i>Solidago missouriensis</i>
Goldenweed, Common	<i>Isocoma coronopifolia</i>
Hawkweed	<i>Hieracium</i> spp.
Henbane, Black	<i>Hyoscyamus niger</i>
Horsenettle, Carolina	<i>Solanum carolinense</i>
Ironweed	<i>Vernonia</i> spp.
Knapweed, Black	<i>Centaurea nigra</i>
Russian	<i>Centaurea repens</i>

COMMON NAME	SCIENTIFIC NAME
Perennials (continued):	
Milkweed, Common	<i>Asclepias syriaca</i>
Honeyvine	<i>Ampelamus albidus</i>
Western Whorled	<i>Asclepias subverticillata</i>
Nettle, Stinging	<i>Urtica dioica</i>
Nightshade, Silverleaf (White Horsenettle)	<i>Solanum elaeagnifolium</i>
Onion, Wild	<i>Allium canadense</i>
Plantain, Broadleaf	<i>Plantago major</i>
Buckhorn	<i>Plantago lanceolata</i>
Pokeweed	<i>Phytolacea americana</i>
Ragweed, Western	<i>Ambrosia psilostachya</i>
Redvine	<i>Brunnichia ovata</i>
Sericea Lespedeza	<i>Lespedeza cuneata</i>
Smartweed, Swamp	<i>Polygonum coccineum</i>
Snakeweed, Broom	<i>Gutierrezia sarothrae</i>
Sorrel, Red (Sheep Sorrel)	<i>Rumex acetosella</i>
Sowthistle, Perennial	<i>Sonchus arvensis</i>
Spurge, Leafy	<i>Euphorbia esula</i>
Sundrops	<i>Oenothera perrenis</i>
Thistle, Canada	<i>Cirsium arvense</i>
Scotch	<i>Onopordum acanthium</i>
Toadflax, Dalmatian	<i>Linaria genistrata</i>
Tropical Soda Apple	<i>Solanum viarum</i>
Trumpetcreeper (Buckvine)	<i>Campsis radicans</i>
Vetch	<i>Vicia</i> spp.
Waterhemlock, Spotted	<i>Cicuta maculata</i>
Waterprimrose, Creeping	<i>Ludwigia peploides</i>
Woodsorrel, Creeping	<i>Oxalis corniculata</i>
Yellow	<i>Oxalis stricta</i>
Wormwood, Absinth	<i>Artemesia absinthium</i>
Louisiana	<i>Artemesia ludoviciana</i>
Yankeeweed	<i>Eupatorium compositifolium</i>
Yarrow, Common	<i>Achillea millefolium</i>
Woody Species:	
Alder	<i>Alnus</i> spp.
Ash	<i>Fraxinus</i> spp.
Aspen	<i>Populus</i> spp.
Basswood	<i>Tilia americana</i>
Beech	<i>Fagus</i> spp.
Birch	<i>Betula</i> spp.
Blackberry	<i>Rubus</i> spp.
Blackgum	<i>Nyssa</i> spp.
Cedar	<i>Cedrus</i> spp.
Cherry	<i>Prunus</i> spp.
Chinquapin	<i>Chrysopsis chrysophylla</i>
Cottonwood	<i>Populus deltoides</i>
Creosotebush	<i>Larrea tridentata</i>
Cucumbertree	<i>Magnolia acuminata</i>
Dewberry	<i>Rubus caesius</i>
Dogwood	<i>Corpus</i> spp.
Elm	<i>Ulmus</i> spp.
Grape	<i>Vitus</i> spp.

PESTS IN THIS LABEL (continued)

COMMON NAME	SCIENTIFIC NAME
Woody Species:	
Hawthorn (Thornapple)	<i>Crataegus</i> spp.
Hemlock	<i>Tsuga</i> spp.
Hickory	<i>Carya</i> spp.
Honeylocust	<i>Gleditsia triacanthos</i>
Honeysuckle	<i>Lonicera</i> spp.
Hornbeam	<i>Carpinus</i> spp.
Huckleberry	<i>Vaccinium arboreum</i>
Huisache	<i>Acacia farnesiana</i>
Ivy, Poison	<i>Rhus radicans</i>
Kudzu	<i>Pueraria lobata</i>
Locust, Black	<i>Robinia pseudoacacia</i>
Maple	<i>Acer</i> spp.
Mesquite	<i>Prosopis ruscifolia</i>
Oak	<i>Quercus</i> spp.
Oak, Poison	<i>Rhus toxicodendron</i>
Olive, Russian	<i>Eleagnus angustifolia</i>
Persimmon, Eastern	<i>Diospyros virginiana</i>
Pine	<i>Pinus</i> spp.
Plum, Sand (Wild Plum)	<i>Prunus amygdalis</i>

COMMON NAME	SCIENTIFIC NAME
Woody Species (continued):	
Poplar	<i>Populus</i> spp.
Rabbitbrush	<i>Chrysothamnus pulchellus</i>
Redcedar, Eastern	<i>Juniperus virginiana</i>
Rose, McCartney	<i>Rosa bracteata</i>
Multiflora	<i>Rosa multiflorum</i>
Sagebrush, Fringed	<i>Artemisia frigida</i>
Sassafras	<i>Sassafras albidum</i>
Serviceberry	<i>Amelanchier sanguinea</i>
Spicebush	<i>Lindera benzoin</i>
Spruce	<i>Picea</i> spp.
Sumac	<i>Rhus</i> spp.
Sweetgum	<i>Liquidambar styraciflua</i>
Sycamore	<i>Platanus occidentalis</i>
Tarbrush	<i>Flourensia cernua</i>
Willow	<i>Salix</i> spp.
Witchhazel	<i>Hamamelis macrophylla</i>
Yaupon	<i>Ilex</i> spp.
Yucca	<i>Yucca</i> spp.

CROPS

This product can be used on the following:

Asparagus
 Corn (Not registered for use on Sweet Corn)
 Cotton
 Fallow Systems (Between Crop Applications)
 Grass Grown for Seed
 Proso Millet
 Small Grains (Barley, Oat, Triticale and Wheat)
 Sorghum
 Soybean
 Sugarcane
 Conservation Reserve Program (CRP)
 Pastures, Rangeland, General Farmstead
 Rights-of-way, Utility, Industrial Areas, Fencerows, and Other Noncrop
 Cut Surface Tree Treatments
 Dormant Applications for Control of Multiflora Rose
 Forest Site Preparation
 Turf: (Sod, lawns, and golf courses)

Look inside for complete **RESTRICTIONS AND LIMITATIONS** and **APPLICATION INSTRUCTIONS**.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. This product may not be mixed, loaded, or used within 50 feet of all wells including abandoned wells, drainage wells, and sinkholes.

PESTICIDE STORAGE: Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material. Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Avoid cross-contamination with other pesticides.

PESTICIDE DISPOSAL: Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility.

Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures under Subtitle C of the Resource Conservation and Recovery Act. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law.

CONTAINER DISPOSAL:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

Nonrefillable containers larger than 5 gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

LIMITATION OF LIABILITY

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THEIR NATURE OF PENALTIES RELATING TO THE GOODS SOLD, INCLUDING USE, APPLICATION, HANDLING, AND DISPOSAL. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER OR SELLER SHALL NOT BE LIABLE TO BUYER OR USER BY WAY OF INDEMNIFICATION TO BUYER OR TO CUSTOMERS OF BUYER, IF ANY, OR FOR ANY DAMAGES OR SUMS OF MONEY, CLAIMS OR DEMANDS WHATSOEVER, RESULTING FROM OR BY REASON OF, OR ARISING OUT OF THE MISUSE, OR FAILURE TO FOLLOW LABEL WARNINGS OR INSTRUCTIONS FOR USE, OF THE GOODS SOLD BY MANUFACTURER OR SELLER TO BUYER. ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER, USER, OR ITS CUSTOMERS. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND MANUFACTURER'S OR SELLER'S TOTAL LIABILITY SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

If you DO NOT agree with or DO NOT accept any of directions for use, the warranty disclaimers, or limitations on liability, DO NOT use the product, and return it unopened to the Seller, and the purchase price will be refunded.

RV051611[4]

Razor®, Razor® Pro, Garrison®, Credit® and Credit® Extra, Maestro®, and Maestro® MA, Cutback®, Purestand®, Tahoe®, Kaiso®, Diablo®, GlyKamba®, Spyder®, Victory®, Trooper®, and Treaty® are registered trademarks of Nufarm Americas Inc.

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Specimen Label

ELEMENT® 3A

Specialty Herbicide

®Trademark of Dow AgroSciences LLC

For the control of woody plants, broadleaf weeds in range and pasture, forests and non-crop areas, including manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, fence rows, non-irrigation ditch banks, and around farm buildings; and applications to grazed areas, and establishment and maintenance of wildlife openings, and in Christmas tree plantations and aquatic sites.

For use in New York State, comply with Section 24(c) Special Local Need labeling for Element 3A, SLN NY-110005.

Active Ingredient:

triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, triethylamine salt	44.4%
Other Ingredients.....	55.6%
Total	100.0%

Acid equivalent: triclopyr - 31.8% - 3 lb/gal

Precautionary Statements

Hazard to Humans and Domestic Animals

EPA Reg. No. 62719-37

DANGER

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed Or Absorbed Through Skin • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reaction In Some Individuals

Do not get in eyes or on skin or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical resistant gloves (≥14 mils) such as butyl rubber, natural rubber, neoprene rubber or nitrile rubber

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the WPS (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or

First Aid (Cont.)

doctor. Do not give anything by mouth to an unconscious person. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Note to Applicator: Allergic skin reaction is not expected from exposure to spray mixtures of Element 3A herbicide when used as directed.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Under certain conditions, treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants, which may contribute to fish suffocation. This loss can cause fish suffocation. Therefore, to minimize this hazard, do not treat more than one-third to one-half of the water area in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency for fish and game before applying to public water to determine if a permit is needed.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Physical or Chemical Hazards

Combustible. Do not use or store the product near heat or open flame.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical-resistant gloves (≥14 mils) such as butyl rubber, natural rubber, neoprene rubber or nitrile rubber

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: For applications to non-cropland areas, do not allow entry into areas until sprays have dried, unless applicator and other handler PPE is worn.

Storage and Disposal

Do not contaminate water, food, or feed by storage and disposal. Open dumping is prohibited.

Pesticide Storage: Store above 28°F or agitate before use.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Storage and Disposal (Cont.)

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers 5 gallons or larger:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Nonrefillable containers 5 gallons or larger:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

General Information for Forests and Non-Crop Areas

Use Element® 3A specialty herbicide for the control of woody plants and broadleaf weeds in range and pasture, forests and non-crop areas including manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, fence rows, non-irrigation ditch banks, and around farm buildings, and applications to grazed areas, and establishment and maintenance of wildlife openings, and in Christmas tree plantations and aquatic sites.

Obtain Required Permits: Consult with appropriate state or local water authorities before applying this product to public waters. State or local public agencies may require permits.

General Use Precautions and Restrictions

For use in New York State, comply with Section 24(c) Special Local Need labeling for Element 3A, SLN NY-110005.

When applying this product in tank mix combination, follow all applicable use directions, precautions and limitations on each manufacturer's label.

Note: If tank mixing with Rodeo® herbicide, mix the Element 3A with at least 75% of the total spray volume desired and ensure that Element 3A is well mixed before adding the Rodeo to avoid incompatibility.

Chemigation: Do not apply this product through any type of irrigation system.

Do not apply Element 3A directly to, or otherwise permit it to come into direct contact with, grapes, tobacco, vegetable crops, flowers, or other desirable broadleaf plants. Do not permit spray mists containing Element 3A to drift onto such plants.

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs), and transitional areas between upland and lowland sites.

Water treated with Element 3A may not be used for irrigation purposes for 120 days after application or until residue levels of Element 3A are determined by laboratory analysis, or other appropriate means of analysis, to be 1 ppb or less.

Seasonal Irrigation Waters: Element 3A may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis provided that there is a minimum of 120 days between applying Element 3A and the first use of treated water for irrigation purposes, or until residue levels of Element 3A are determined by laboratory analysis, or other appropriate means of analysis, to be 1 ppb or less.

Irrigation Canals/Ditches: Do not apply Element 3A to irrigation canals/ditches unless the 120-day restriction on irrigation water usage can be observed or residue levels of Element 3A are determined by laboratory analysis, or other appropriate means of analysis, to be 1 ppb or less.

- Do not apply to salt water bays or estuaries.
- Do not apply directly to un-impounded rivers or streams.
- Do not apply on ditches or canals currently being used to transport irrigation water or that will be used for irrigation within 4 months following treatment. It is permissible to treat irrigation and non-irrigation ditch banks.
- Do not apply where runoff water may flow onto agricultural land as injury to crops may result.
- When making applications to control unwanted plants on banks or shorelines of moving water sites, minimize overspray to open water.
- The use of a mistblower is not recommended.
- Apply no more than 2 lb ae of triclopyr (2/3 gallon of Element 3A) per acre per growing season on range and pasture sites, including rights-of-way, fence rows or any area where grazing or harvesting is allowed.
- On forestry sites, Element 3A may be used at rates up to 6 lb ae of triclopyr (2 gallons of Element 3A) per acre per year.
- For all terrestrial use sites other than range, pasture, forestry sites, and grazed areas, the maximum application rate is 9 lb ae of triclopyr (3 gallons of Element 3A) per acre per year.

For use in New York State, comply with Section 24(c) Special Local Need labeling for Element 3A, SLN NY-110005.

Precautions for Potable Water Intakes for Emerged Aquatic Weed Control

See chart below for specific setback distances near functioning potable water intakes. **Note:** Existing potable water intakes which are no longer in use, such as those replaced by potable water wells or connections to a municipal water system, are not considered to be functioning potable water intakes. These setback restrictions do not apply to terrestrial applications made adjacent to potable water intakes.

Area Treated (acres)	Element 3A Application Rate			
	2 qt/acre	4 qt/acre	6 qt/acre	8 qt/acre
Setback Distance (ft)				
4	0	200	400	500
>4 - 8	0	200	700	900
>8 - 16	0	200	700	1000
>16	0	200	900	1300

To apply Element 3A around and within the distances noted above from a functioning potable water intake, the intake must be turned off until the triclopyr level in the intake water is determined to be 0.4 parts per million (ppm) or less by laboratory analysis or immunoassay.

- **Recreational Use of Water in Treatment Area:** There are no restrictions on use of water in the treatment area for recreational purposes, including swimming and fishing.
- **Livestock Use of Water from Treatment Area:** There are no restrictions on livestock consumption of water from the treatment area.

Grazing and Haying Restrictions

Except for lactating dairy animals, there are no grazing restrictions following application of this product.

- **Grazing Lactating Dairy Animals:** Do not allow lactating dairy animals to graze treated areas until the next growing season following application of this product.
- Do not harvest hay for 14 days after application.
- Grazed areas of non-cropland and forestry sites may be spot treated if they comprise no more than 10% of the total grazable area.

Slaughter Restrictions: During the season of application, withdraw livestock from grazing treated grass at least 3 days before slaughter.

Avoiding Injurious Spray Drift

Make applications only when there is little or no hazard from spray drift. Small quantities of spray, which may not be visible, may seriously injure susceptible plants. Do not spray when wind is blowing toward

susceptible crops or ornamental plants that are near enough to be injured. It is suggested that a continuous smoke column at or near the spray site or a smoke generator on the spray equipment be used to detect air movement, lapse conditions, or temperature inversions (stable air). If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

Aerial Application: For aerial application on rights-of-way or other areas near susceptible crops, apply through a Microfoil† or Thru-Valve boom†, or use an agriculturally labeled drift control additive. Other drift reducing systems or thickened sprays prepared by using high viscosity inverting systems may be used if they are made as drift-free as mixtures containing agriculturally labeled thickening agents or applications made with the Microfoil or Thru-Valve boom. Keep spray pressures low enough to provide coarse spray droplets. Spray boom should be no longer than 3/4 of the rotor length. Do not use a thickening agent with the Microfoil or Thru-Valve booms, or other systems that cannot accommodate thick sprays. Spray only when the wind velocity is low (follow state regulations). Avoid application during air inversions. If a spray thickening agent is used, follow all use recommendations and precautions on the product label.

†Reference within this label to a particular piece of equipment produced by or available from other parties is provided without consideration for use by the reader at its discretion and subject to the reader's independent circumstances, evaluation, and expertise. Such reference by Dow AgroSciences is not intended as an endorsement of such equipment, shall not constitute a warranty (express or implied) of such equipment, and is not intended to imply that other equipment is not available and equally suitable. Any discussion of methods of use of such equipment does not imply that the reader should use the equipment other than as advised in directions available from the equipment's manufacturer. The reader is responsible for exercising its own judgment and expertise, or consulting with sources other than Dow AgroSciences, in selecting and determining how to use its equipment.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most operating nozzles on the boom must not exceed 3/4 the length of the rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the following Aerial Drift Reduction Advisory. [This information is advisory in nature and does not supersede mandatory label requirements.]

Aerial Drift Reduction Advisory

Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the rotor length may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Ground Equipment: To aid in reducing spray drift, Element 3A should be used in thickened (high viscosity) spray mixtures using an agriculturally labeled drift control additive, high viscosity invert system, or equivalent as directed by the manufacturer. With ground equipment, spray drift can be reduced by keeping the spray boom as low as possible; by applying 20 gallons or more of spray per acre; by keeping the operating spray pressures at the lower end of the manufacturer's recommended pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when wind velocity is low (follow state regulations). In hand-gun applications, select the minimum spray pressure that will provide adequate plant coverage (without forming a mist). Do not apply with nozzles that produce a fine-droplet spray.

High Volume Leaf-Stem Treatment: To minimize spray drift, do not use pressure exceeding 50 psi at the spray nozzle and keep sprays no higher than brush tops. An agriculturally labeled thickening agent may be used to reduce drift.

Plants Controlled

Woody Plant Species

alder	dogwood	salt cedar ²
arrowwood	elderberry	salmonberry
ash	elm	sassafras
aspen	gallberry	scotch broom
Australian pine	hazel	sumac
bear clover (bearmat)	hornbeam	sweetbay magnolia
beech	kudzu ¹	sweetgum
birch	locust	sycamore
blackberry	madrone	tanoak
blackgum	maples	thimbleberry
Brazilian pepper	mulberry	tulip poplar
cascara	oaks	waxmyrtle
ceanothus	persimmon	western hemlock
cherry	pine	wild rose
chinquapin	poison ivy	willow
choke cherry	poison oak	winged elm
cottonwood	poplar	
crataegus (hawthorn)	salt-bush	
Douglas fir	(<i>Baccharis</i> spp.)	

¹For complete control, re-treatment may be necessary.

²Use cut surface treatments for best results.

Plants Controlled (Cont.)

Annual and Perennial Broadleaf Weeds

bindweed	lambsquarter	Spanish needles/
burdock	Mexican petunia	common beggarthicks
Canada thistle	plantain	tansy ragwort
chicory	purple loosestrife	tropical soda apple
curly dock	ragweed	vetch
dandelion	smartweed	wedelia
field bindweed		wild lettuce

Purple Loosestrife (*Lythrum salicaria*)

Purple loosestrife can be controlled with foliar applications of Element 3A. For broadcast applications, use a minimum of 4 1/2 to 6 lb ae of triclopyr (6 to 8 quarts of Element 3A) per acre. Apply Element 3A when purple loosestrife is at the bud to mid-flowering stage of growth. Follow-up applications for control of regrowth should be made the following year in order to achieve increased control of this weed species. For all applications, a non-ionic surfactant should be added to the spray mixture. Follow all directions and use precautions on the label of the surfactant. Thorough wetting of the foliage and stems is necessary to achieve satisfactory control. A minimum spray volume of 50 gallons per acre is recommended for ground broadcast applications.

If using a backpack sprayer, a spray mixture containing 1% to 1.5% Element 3A or 5 to 7.6 fl oz of Element 3A per 4 gallons of water should be used. All purple loosestrife plants should be thoroughly wetted.

Application Methods

Use Element 3A at rates of 3/4 to 9 lb ae of triclopyr (1/4 to 3 gallons of Element 3A) per acre to control broadleaf weeds and woody plants. In all cases, use the amount specified in enough water to give uniform and complete coverage of the plants to be controlled. Use only water suitable for spraying. Use an agriculturally labeled non-ionic surfactant for all foliar applications. When using surfactants, follow the use directions and precautions listed on the surfactant manufacturer's label. Use the higher concentrations of surfactant in the spray mixture when applying lower spray volumes per acre. The order of addition to the spray tank is water, spray thickening agent (if used), additional herbicide (if used), and Element 3A. Surfactant should be added to the spray tank last or as recommended on the product label. If combined with emulsifiable concentrate herbicides, moderate continuous adequate agitation is required.

Before using any recommended tank mixtures, read the directions and all use precautions on both labels. **Note:** If tank mixing with Rodeo® herbicide, mix the Element 3A with at least 75% of the total spray volume desired and ensure that Element 3A is well mixed before adding the Rodeo to avoid incompatibility.

For best results, apply when woody plants and weeds are actively growing. When hard to control species such as ash, blackgum, choke cherry, elm, maples, oaks, pines, or winged elm are prevalent and during applications made in late summer when the plants are mature and during drought conditions, use the higher rates of Element 3A alone or in combination with Tordon® 101 Mixture specialty herbicide. (Tordon 101 Mixture is a restricted use pesticide. See product label.) Tordon 101 Mixture is not registered for use in the states of California and Florida.

When using Element 3A in combination with 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile ester herbicides, generally the higher rates should be used for satisfactory brush control.

Use the higher dosage rates when brush approaches an average of 15 feet in height or when the brush covers more than 60% of the area to be treated. If lower rates are used on hard to control species, resprouting may occur the year following treatment.

On sites where easy to control brush species dominate, rates less than those listed may be effective. Consult State or Local Extension personnel for such information.

Foliage Treatment With Ground Equipment

High Volume Foliage Treatment

For control of woody plants, use Element 3A at the rate of 3 to 9 lb ae of triclopyr (1 to 3 gallons of Element 3A) per 100 gallons of spray solution, or Element 3A at 3/4 to 3 lb ae of triclopyr (1 to 4 quarts of Element 3A) may be tank mixed with 1/4 to 1/2 gallons of 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile ester or Tordon 101 Mixture and diluted to make 100 gallons of spray solution. Apply at a volume of 100 to 400 gallons of total spray per acre depending upon size and density of woody plants. Coverage should be thorough to wet all leaves, stems, and root collars. (See General Use Precautions and Restrictions.) Do not exceed maximum allowable use rates per acre (see table below). Tordon 101 Mixture is not registered for use in the states of California and Florida.

Maximum Labeled Rate versus Spray Volume per Acre

Total Spray Volume (gal/acre)	Maximum Rate of Element 3A		
	Range and Pasture Sites ¹ (gal/100 gal of spray)	Forestry Sites ² (gal/100 gal of spray)	Other Non-Cropland Sites ³ (gal/100 gal of spray)
400	Do not use	0.5	0.75
300	Do not use	0.67	1
200	Do not use	1	1.5
100	0.67	2	3
50	1.33	4	6
40	1.67	5	7.5
30	2.33	6.65	10
20	3.33	10	15
10	6.67	20	30

¹Do not exceed the maximum use rate of 2 lb ae of triclopyr (2/3 gal of Element 3A)/acre/year.

²Do not exceed the maximum use rate of 6 lb ae of triclopyr (2 gal of Element 3A)/acre/year.

³Do not exceed the maximum use rate of 9 lb ae of triclopyr (3 gal of Element 3A)/acre/year on non-cropland use sites other than rangeland, pasture, forestry, and grazed areas.

Low Volume Foliage Treatment

To control susceptible woody plants, apply up to 15 lb ae of triclopyr (5 gallons of Element 3A) in 10 to 100 gallons of finished spray. The spray concentration of Element 3A and total spray volume per acre should be adjusted according to the size and density of target woody plants and kind of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars (see General Use Precautions and Restrictions). For best results, a surfactant should be added to all spray mixtures. Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 psi may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

Tank Mixing: As a low volume foliar spray, up to 9 lb ae of triclopyr (3 gallons of Element 3A) may be applied in tank mix combination with 1/2 to 1 gallon of Tordon K or 1 to 2 gallons of Tordon 101 Mixture in 10 to 100 gallons of finished spray. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Broadcast Applications With Ground Equipment

Apply using equipment that will assure uniform coverage of the spray volumes applied. To improve spray coverage, add an agriculturally labeled non-ionic surfactant as described later under Directions for Use. See Maximum Labeled Rate versus Spray Volume per Acre table above for relationship between mixing rate, spray volume and maximum application rate.

Woody Plant Control

Foliage Treatment: Use 6 to 9 lb ae of triclopyr (2 to 3 gallons of Element 3A) in enough water to make 20 to 100 gallons of total spray per acre or 1 1/2 to 3 lb ae of triclopyr (1/2 to 1 gallon of Element 3A) may be combined with 1 to 2 gallons of 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile esters or Tordon 101 Mixture in sufficient water to make 20 to 100 gallons of total spray per acre. Tordon 101 Mixture is not registered for use in the states of California and Florida.

Broadleaf Weed Control

Use Element 3A at rates of 1 to 4 1/2 lb ae of triclopyr (1/3 to 1 1/2 gallons of Element 3A) in a total volume of 20 to 100 gallons of water per acre. Apply any time during the growing season. Element 3A at 1 to 3 lb ae of triclopyr (1/3 to 1 gallon of Element 3A) may be tank mixed with 1/2 to 1 gallon of Tordon K, Tordon 101 Mixture or 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile herbicides to improve the spectrum of activity. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Aerial Application (Helicopter Only)

Aerial sprays should be applied using suitable drift control. (See General Use Precautions and Restrictions.) Add an agriculturally labeled non-ionic surfactant as described under Directions for Use. See Maximum Labeled Rate versus Spray Volume per Acre table above for relationship between mixing rate, spray volume and maximum application rate.

Foliage Treatment (Non-Grazed Rights-of-Way)

Non-grazed areas: Use 6 to 9 lb ae of triclopyr (2 to 3 gallons of Element 3A) or 3 to 4 1/2 lb ae of triclopyr (1 to 1 1/2 gallons of

Element 3A) in a tank mix combination with 1 to 2 gallons of 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile esters or Tordon 101 Mixture, and apply in a total spray volume of 10 to 30 gallons per acre. Use the higher rates and volumes when plants are dense or under drought conditions. Tordon 101 Mixture is not registered for use in the states of California and Florida.

Interspersed areas in non-grazed rights-of-ways that may be subject to grazing may be spot treated if the treated area comprises no more than 10% of the total grazable area.

Cut Surface Treatments

Individual plant treatments such as basal bark and cut surface applications may be used on any use site listed on this label at a maximum use rate of 2.67 gallons of Element 3A (8 lb ae of triclopyr) per acre. These types of applications are made directly to ungrazed parts of plants and, therefore, are not restricted by the grazing maximum rate of 2/3 of a gallon of Element 3A (2 lb ae of triclopyr) per acre.

To control unwanted trees of hardwood species such as elm, maple, oak and conifers in labeled sites, apply Element 3A, either undiluted or diluted in a 1 to 1 ratio with water, as directed below.

With Tree Injector Method

Apply by injecting 1/2 milliliter of undiluted Element 3A or 1 milliliter of the diluted solution through the bark at intervals of 3 to 4 inches between centers of the injector wound. The injections should completely surround the tree at any convenient height. **Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is injected directly into plants.**

With Hack and Squirt Method

Make cuts around the tree trunk at a convenient height with a hatchet or similar equipment so that the cuts overlap slightly and make a continuous circle around the trunk. Spray 1/2 milliliter of undiluted Element 3A or 1 milliliter of the diluted solution into the pocket created between the bark and the inner stem/trunk by each cut.

With Frill or Girdle Method

Make a single girdle through the bark completely around the tree at a convenient height. The frill should allow for the herbicide to remain next to the inner stem and absorb into the plant. Wet the cut surface with undiluted or diluted solution.

Both of the above methods may be used successfully at any season except during periods of heavy sap flow of certain species - for example, maples.

Stump Treatment

Spray or paint the cut surfaces of freshly cut stumps and stubs with undiluted Element 3A. The cambium area next to the bark is the most vital area to wet.

Forest Management Applications

For best control from broadcast applications of Element 3A, use a spray volume which will provide thorough plant coverage. Recommended spray volumes are usually 10 to 25 gallons per acre by air or 10 to 100 gallons per acre by ground. To improve spray coverage of spray volumes less than 50 gallons per acre, add an agriculturally labeled non-ionic surfactant as described under Directions for Use. Application systems should be used to prevent hazardous drift to off-target sites. Nozzles or additives that produce larger droplets of spray may require higher spray volumes to maintain brush control.

Forest Site Preparation (Not for Conifer Release)

Use up to 6 lb ae of triclopyr (2 gallons of Element 3A) and apply in a total spray volume of 10 to 30 gallons per acre or Element 3A at 3 to 4 1/2 lb ae of triclopyr (1 to 1 1/2 gallons of Element 3A) may be used with 1 to 2 gallons of Tordon 101 Mixture or 2,4-D 3.8 lb low volatile ester in a tank mix combination in a total spray volume of 10 to 30 gallons per acre. Use a non-ionic agricultural surfactant for all foliar applications as described under Directions for Use. Tordon 101 Mixture is not registered for use in the states of California and Florida.

Note: Conifers planted sooner than one month after treatment with Element 3A at less than 4 lb ae of triclopyr (1 1/3 gallons of Element 3A) per acre or sooner than two months after treatment at 4 to 9 lb ae of triclopyr (1 1/3 to 3 gallons of Element 3A) per acre may be injured. When tank mixtures of herbicides are used for forest site preparation, labels for all products in the mixture should be consulted and the longest recommended waiting period before planting observed.

Directed Spray Applications for Conifer Release

To release conifers from competing hardwoods such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, hickory, alder, birch, aspen, and pin cherry, mix 3 to 6 lb ae of triclopyr (1 to 2 gallons of Element 3A) in enough water to make 100 gallons of spray mixture. To improve spray coverage, add an agriculturally labeled non-ionic surfactant as described under Directions for Use. The spray mixture should be directed onto foliage of competitive hardwoods using knapsack

or backpack sprayers with flat fan nozzles or equivalent any time after hardwoods have reached full leaf size, but before autumn coloration. The majority of treated hardwoods should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct spray away from contact with conifer foliage, particularly foliage of desirable pines.

Note: Spray may cause temporary damage and growth suppression where contact with conifers occurs; however, injured conifers should recover and grow normally. Over-the-top spray applications can kill pines.

Broadcast Applications for Conifer Release in the Northeastern United States

To release spruce, fir, red pine and white pine from competing hardwoods, such as red maple, sugar maple, striped maple, alder, birch (white, yellow or gray), aspen, ash, pin cherry and *Rubus* spp. and perennial and annual broadleaf weeds, use Element 3A at rates of 1 1/2 to 3 lb ae of triclopyr (2 to 4 quarts of Element 3A) per acre alone or with 2,4-D amine, like DMA 4 IVM, or 2,4-D ester to provide no more than 4 lb ae per acre from both products. Apply in late summer or early fall after conifers have formed their over wintering buds and hardwoods are in full leaf and prior to autumn coloration.

Broadcast Applications for Douglas-Fir Release in the Pacific Northwest and California

To release Douglas-fir from susceptible competing vegetation such as broadleaf weeds, alder, blackberry or Scotch broom, apply Element 3A at 1 to 1 1/2 lb ae of triclopyr (1 1/3 to 2 quarts of Element 3A) per acre alone or in combination with 4 lb per acre of atrazine. Mix all sprays in a water carrier with a non-ionic surfactant. Apply in early spring after hardwoods begin growth and before Douglas fir bud break ("early foliar" hardwood stage) or after Douglas fir seasonal growth has "hardened off" (set winter buds) in late summer, but while hardwoods are still actively growing. When treating after Douglas fir bud set, apply prior to onset of autumn coloration in hardwood foliage. **Note:** Treatments applied during active Douglas fir shoot growth (after spring bud break and prior to bud set) may cause injury to Douglas fir trees.

Christmas Tree Plantations

Use Element 3A for the control of woody plants and annual and perennial broadleaf weeds in established Christmas tree plantations. For best results, apply when woody plants and weeds are actively growing. Element 3A does not control weeds which have not emerged at the time of application. If lower rates are used on hard to control woody species, resprouting may occur the year following treatment. Brush over 8 feet tall is difficult to treat efficiently using hand equipment such as backpack or knapsack sprayers. When treating large brush or trees or hard to control species such as ash, blackgum, choke cherry, elm, hazel, madrone, maples, oaks or sweetgum, and for applications made during drought conditions or in late summer when the leaves are mature, use the higher rates of Element 3A or use cut surface application methods. For foliar applications, apply in enough water to give uniform and complete coverage of the plants to be controlled. Applications made under drought conditions may provide less than desirable results.

Use Precautions:

- Do not use on newly seeded grass until well established as indicated by vigorous growth and development of secondary root system and tillering
- Newly seeded turf (alleys, etc.) should be mowed two or three times before any treatment with Element 3A.
- Do not reseed Christmas tree areas treated with Element 3A for a minimum of three weeks after application.
- Do not use Element 3A if legumes, such as clover, are present and injury cannot be tolerated.

Spray Preparation

The order of addition to the spray tank is water, drift control agent (if used), non-ionic agricultural surfactant and Element 3A. Continue moderate agitation while mixing and spraying. Use a non-ionic agricultural surfactant for all applications. When using surfactants, follow use directions and precautions listed on the manufacturer's label. Use the higher recommended concentrations of surfactant in the spray mixture when applying lower spray volumes per acre. **Note:** If tank mixing with Rodeo herbicide, mix the Element 3A with at least 75% of the total spray volume desired and ensure that Element 3A is well mixed before adding the Rodeo to avoid incompatibility.

Application

Apply in late summer or early autumn after terminal growth of Christmas trees has hardened off, but before leaf drop of, target weeds. Apply at a rate of 3/4 to 1 3/4 lb ae of triclopyr (2 to 5 pints of Element 3A) per acre as a foliar spray directed toward the base of Christmas trees. Use sufficient spray volume to provide uniform coverage of target plants (20 to 100 gallons per acre). **Do not apply with 2,4-D.** Application rates of Element 3A recommended for Christmas trees will only suppress some well established woody plants that are greater than 2 to 3 years old (see

table below). Broadcast sprays may also be applied in bands between the rows of planted trees. Use spray equipment that will assure uniform coverage of the desired spray volume.

Spray solution from Element 3A can cause needle and branch injury to Christmas trees. To minimize injury to Christmas trees, direct sprays so as to minimize contact with foliage. Blue spruce, white spruce, balsam fir and Fraser fir are less susceptible to injury than white pine and Douglas fir.

Restriction: Apply Element 3A only to established Christmas trees that were planted at least one full year prior to application.

Application Rates and Species Controlled:

Element 3A		
2 pints/acre (3/4 lb ae of triclopyr)	3 to 4 pints/acre (1 1/2 lb ae of triclopyr)	5 pints/acre (1 3/4 lb ae of triclopyr)
clover dandelion dock, curly lambsquarters lespedeza plantain, broadleaf plantain, buckhorn ragweed, common vetch	bindweed, field (TG) blackberry ¹ chicory (s) fireweed ivy, ground lettuce, wild oxalis poison ivy smartweed (TG) thistle, Canada (TG) violet, wild Virginia creeper ¹	arrowwood (SDL) aspen beech (SDL) birch (SDL) chinquapin cottonwood (SDL) elderberry grape, wild mulberry (SDL) poplar (SDL) sassafras (SDL) sumac (SDL) sycamore (SDL)

(TG) Top growth control, retreatment may be necessary

(S) Suppression

(SDL) Seedlings less than 2 to 3 years old

¹Use 4 pint per acre rate

Directed Applications

To control hardwoods such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, alder, birch, aspen, and pin cherry, mix 4 to 20 fl oz of Element 3A in enough water to make 3 gallons of spray mixture. For directed applications, do not exceed 6 lb ae of triclopyr (2 gallons of Element 3A) per acre per year. To improve coverage, add a non-ionic agricultural surfactant to the spray. This spray mixture should be directed onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent any time after hardwoods have reached full leaf size, but before autumn coloration (when plants are actively growing). The majority of treated hardwoods should be less than 8 feet in height to ensure adequate spray coverage. **Note:** To prevent Christmas tree injury, care should be taken to direct spray away from contact with Christmas tree foliage.

Cut Surface Treatments

When treating large brush or trees or hard to control species such as ash, blackgum, choke cherry, elm, hazel, madrone, maples, oaks, salt cedar or sweetgum, and for applications made during drought conditions or in late summer when the leaves are mature, use cut surface treatments. (See directions for Cut Surface Treatments in preceding section of this label.)

Wetland Sites in Forests and Non-Crop Areas

Element 3A may be used within forests and non-crop sites to control target vegetation in and around standing water sites, such as marshes, wetlands, and the banks of ponds and lakes and transition areas between upland and lowland sites.

For control of woody plants and broadleaf weeds in these sites, follow use directions and application methods on this label for forestry and non-cropland sites.

Use Precautions:

Minimize overspray to open water when treating target vegetation in and around non-flowing, quiescent or transient water. When making applications to control unwanted plants on banks or shorelines of flowing water, minimize overspray to open water. **Note:** Consult local public water control authorities before applying this product in and around public water. Permits may be required to treat such areas.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: D02-338-003

Replaces Label: D02-338-002

LOES Number: 010-02148

EPA accepted 01/03/06

Revisions:

1. Revise list of use sites to add range and pasture and aquatic sites; remove "industrial" before non-crop; remove sentence: Use within production forests and industrial non-crop sites (including those listed above) may include applications to control target vegetation in and around standing water sites, such as marshes, wetlands, and the banks of ponds and lakes.
2. Add reference to New York 24(c) label
3. Remove "production" before "forests" and "industrial" before "non-crop" throughout label.
4. Use Precautions: add Note for tank mixing with Rodeo.
5. Maximum Rate table: change "rangeland" to "range"
6. Application Methods: add note for tank mixing with Rodeo.
7. Move section "Cut Surface Treatments" to be under the "Foliage Treatment (Non-Grazed Rights-of-Way)" section
8. Spray Preparation: add Note for tank mixing with Rodeo

SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: ELEMENT™ 3A Herbicide

Issue Date: 04/04/2016

Print Date: 04/04/2016

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: ELEMENT™ 3A Herbicide

Recommended use of the chemical and restrictions on use

Identified uses: End use herbicide product

COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN 46268-1053
UNITED STATES

Customer Information Number:

800-992-5994
info@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-992-5994

Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Flammable liquids - Category 3

Eye irritation - Category 2A

Specific target organ toxicity - repeated exposure - Category 2

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

Flammable liquid and vapour.

Causes serious eye irritation.

May cause damage to organs (Kidney) through prolonged or repeated exposure.

Precautionary statements**Prevention**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ ventilating/ lighting/ equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Wash skin thoroughly after handling.

Wear protective gloves/ eye protection/ face protection.

Response

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Get medical advice/ attention if you feel unwell.

If eye irritation persists: Get medical advice/ attention.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage

Store in a well-ventilated place. Keep cool.

Disposal

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Mixture

This product is a mixture.

Component	CASRN	Concentration
Triclopyr Triethylamine Salt	57213-69-1	44.4%
Ethanol	64-17-5	2.1%
Alkylphenol alkoxyate	69029-39-6	1.0%
Balance	Not available	52.5%

4. FIRST AID MEASURES

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be immediately available.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. May produce flash fire. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Eliminate ignition sources. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. Refer to section 7, Handling, for additional precautionary measures. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Keep out of reach of children. No smoking, open flames or sources of ignition in handling and storage area. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Do not get in eyes. Avoid contact with skin and clothing. Avoid breathing vapor or mist. Do not swallow. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Electrically ground and bond all equipment. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Use of non-sparking or explosion-proof equipment may be necessary,

depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies. Minimize sources of ignition, such as static build-up, heat, spark or flame.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Triclopyr Triethylamine Salt	Dow IHG	TWA	2 mg/m ³
	Dow IHG	TWA	SKIN, DSEN, BEI
	ACGIH	TWA	1,000 ppm
	ACGIH	STEL	1,000 ppm
	OSHA Z-1	TWA	1,900 mg/m ³ 1,000 ppm
Ethanol	CAL PEL	PEL	1,900 mg/m ³ 1,000 ppm
Alkylphenol alkoxylate	Dow IHG	TWA	2 mg/m ³

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Pink
Odor	Ammoniacal
Odor Threshold	No test data available
pH	9.5 10% <i>pH Electrode</i>
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	closed cup 43 °C (109 °F) <i>Setaflash Closed Cup ASTM D3828</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	No data available
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	1.1385 at 20 °C (68 °F) <i>Digital Density Meter (Oscillating Coil)</i>
Water solubility	Soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Dynamic Viscosity	12.5 mPa.s at 25 °C (77 °F)
Kinematic Viscosity	No test data available
Explosive properties	No <i>Thermal</i>
Oxidizing properties	No
Liquid Density	1.1385 g/cm ³ at 20 °C (68 °F) <i>Digital density meter</i>
Molecular weight	No data available
Surface tension	38.5 mN/m at 20 °C (68 °F) <i>EC Method A5</i>

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at recommended temperatures and pressures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Active ingredient decomposes at elevated temperatures.

Incompatible materials: Avoid contact with: Oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

As product:

LD50, Rat, female, 4,100 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:

LD50, Rabbit, male and female, > 5,000 mg/kg

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

As product:

LC50, Rat, male and female, 4 Hour, Mist, > 5.4 mg/l

Maximum attainable concentration.

No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

May cause moderate eye irritation.

May cause moderate corneal injury.

Sensitization

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient(s):

In animals, effects have been reported on the following organs:

Kidney.

For the minor component(s):

In animals, effects have been reported on the following organs:

Kidney.

Liver.

Carcinogenicity

For similar active ingredient(s). Triclopyr. Did not cause cancer in laboratory animals.

Teratogenicity

For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

For the minor component(s): Has caused birth defects in lab animals at high doses.

Reproductive toxicity

For similar active ingredient(s). Triclopyr. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity**Acute toxicity to fish**

Based on information for a similar material:

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), 96 Hour, 400 mg/l, OECD Test Guideline 203 or Equivalent

LC50, *Lepomis macrochirus* (Bluegill sunfish), semi-static test, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates

EC50, eastern oyster (*Crassostrea virginica*), static test, 48 Hour, 56 - 87 mg/l, Method Not Specified.

LC50, Daphnia magna (Water flea), static test, 48 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 107 mg/l, OECD Test Guideline 201 or Equivalent

ErC50, blue-green alga Anabaena flos-aquae, 72 Hour, Growth inhibition, > 100 mg/l

EC50, Lemna gibba, 7 d, Growth inhibition, > 100 mg/l

Based on information for a similar material:

ErC50, Myriophyllum spicatum, 14 d, 0.241 mg/l

Based on information for a similar material:

NOEC, Myriophyllum spicatum, 14 d, 0.0191 mg/l

Persistence and degradability

Triclopyr Triethylamine Salt

Biodegradability: For similar active ingredient(s). Triclopyr. Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

For similar active ingredient(s). Triclopyr. Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Ethanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: > 70 %

Exposure time: 5 d

Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 2.99 d

Method: Estimated.

Alkylphenol alkoxylate

Biodegradability: Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

Theoretical Oxygen Demand: 2.35 mg/mg

Chemical Oxygen Demand: 1.78 mg/mg

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Triclopyr Triethylamine Salt

Bioaccumulation: For similar active ingredient(s). Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Ethanol

Bioaccumulation: Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.31 Measured

Alkylphenol alkoxyate

Bioaccumulation: No bioconcentration is expected because of the relatively high water solubility. May foam in water.

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Triclopyr Triethylamine Salt

For similar active ingredient(s).

Potential for mobility in soil is very high (Koc between 0 and 50).

Ethanol

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 1.0 Estimated.

Alkylphenol alkoxyate

No data available.

Balance

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Combustible liquid, n.o.s.(Triclopyr Triethylamine Salt, Ethanol)
UN number	NA 1993
Class	CBL
Packing group	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name	FLAMMABLE LIQUID, N.O.S.(Triclopyr Triethylamine Salt, Ethanol)
UN number	UN 1993
Class	3
Packing group	III
Marine pollutant	Triclopyr Triethylamine Salt
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Flammable liquid, n.o.s.(Triclopyr Triethylamine Salt, Ethanol)
UN number	UN 1993
Class	3
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Fire Hazard
Acute Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

Components
Triclopyr Triethylamine Salt

CASRN
57213-69-1

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components

Ethanol

CASRN

64-17-5

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number: 62719-037

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER

Corrosive

Causes irreversible eye damage

Harmful if swallowed or absorbed through skin

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

16. OTHER INFORMATION

Hazard Rating System**NFPA**

Health	Fire	Reactivity
3	2	0

Revision

Identification Number: 101199615 / A211 / Issue Date: 04/04/2016 / Version: 9.0

DAS Code: XRM-3724

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
CAL PEL	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Dow IHG	Dow Industrial Hygiene Guideline

OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
PEL	Permissible exposure limit
SKIN, DSEN, BEI	Absorbed via Skin, Skin Sensitizer, Biological Exposure Indice
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)

1. IDENTIFICATION

PRODUCT NAME: Cryder
DESCRIPTION: Granular herbicide
EPA REG. NO.: 91234-119
COMPANY IDENTIFICATION: Atticus, LLC
940 NW Cary Parkway, Suite 200
Cary, NC 27513

2. HAZARD IDENTIFICATION

WARNING

Very toxic to aquatic life with long last effects (H400+H410)



HAZARD CLASSIFICATION

Health Hazards	Category	Physical Hazards	Category
None	-	None	-
		Environmental Hazards	Category
		Hazardous to the aquatic environment, short-term	1
		Hazardous to the aquatic environment, long-term	1

HAZARDS NOT REQUIRING CLASSIFICATION

Do not mix or allow to come in contact with oxidizing agents. Hazardous chemical reaction may occur.

PRECAUTIONARY STATEMENTS

Avoid release to the environment not in accordance with the product label. Collect spillage. (P273+P391)

Dispose of contents / container in accordance with local regulations. Refer to the product label for specific disposal instructions. (P501)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name	Chemical Name	CAS #	Composition
Sulfosulfuron	Imidazo[1,2-a]pyridine-3-sulfonamide, N-[[[4,6-dimethoxy-2-pyrimidinyl]amino]carbonyl]-2-(ethylsulfonyl)-	141776-32-1	75%
Other Ingredients	--	N/A	25%

NOTE: Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency medical assistance, call SafetyCall: 1-844-685-9173. For chemical emergency: spill, leak, fire, exposure or accident, call CHEMTREC: 1-800-424-9300.

IF IN EYES: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or physician for advice.

5. FIREFIGHTING MEASURES

Fire and Explosion Hazards: None known.

Extinguishing Medium: Dry chemical, foam, fog or CO₂

Fire Fighting Equipment: Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear.

Fire Fighting Instructions: Minimize use of water to prevent environmental contamination. Use self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

Hazardous Combustion Products: Carbon oxides and Sulfur oxides; Oxides of nitrogen; ammonia

NFPA Ratings: Health – 1 / Flammability – 1 / Reactivity – 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Spill Cleanup: For small quantities: sweep, scoop, or vacuum to remove. Wash spill area with detergent and water. For large quantities: Dig up heavily contaminated soil. Refer to section 7 for types of containers. Collect in containers for disposal. Flush residues with small quantities of water. Minimize use of water to prevent environmental contamination.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Storage: Store in a tightly closed container in a cool, dry place. Store in original container and out of reach of children, preferably in a locked storage area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use dust goggles

Protective Clothing: Applicators must wear long-sleeved shirt and long pants, shoes plus socks, protective eyewear, and chemical-resistant gloves, such as nitrile rubber, neoprene rubber or polyethylene.

General: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	light brown granules
Odor:	bitter
Melting/freezing point:	not available
Boiling point/Boiling range:	not available
Flammability:	not available
Flammability limits (upper/lower):	not available
Flash point:	not available
Auto-ignition temperature:	not available
Decomposition temperature:	not available
pH:	4.65-4.75
Kinematic viscosity:	not available
Solubility:	dispersible in water
Partition coefficient:	not available
Vapor pressure:	not available
Relative Density:	not available
Relative vapor density:	not available
Particle characteristics:	not available
Bulk Density:	37.4 lb/ft ³ (tap)

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Extremes of temperature and direct sunlight

CHEMICAL STABILITY: Stable under all normal use and storage conditions.

INCOMPATIBILITY WITH OTHER MATERIALS: None known based on information supplied.

HAZARDOUS DECOMPOSITION PRODUCTS: thermal decomposition can lead to release of irritating and toxic gases and vapors.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

Information presented below is from testing done on an identical or substantially similar product:

ORAL TOXICITY (rat LD₅₀): >5000 mg/kg

DERMAL TOXICITY (rat LD₅₀): > 5000 mg/kg

INHALATION TOXICITY (rat LC₅₀): > 2.6 mg/L (4-hr)

EYE IRRITATION: Slightly irritating (Rabbit)

SKIN IRRITATION: Non-irritating (Rabbit)

SKIN SENSITIZATION: Non-sensitizer (Guinea pigs)

CARCINOGENICITY: Urinary bladder tumors in rats and mice. Mode(s) of action not relevant to humans.

EPA: Not likely to be a carcinogenic to humans (sulfosulfuron)

ACGIH: Not Listed **NTP:** Not Listed

IARC: Not Listed **OSHA:** Not Listed

MUTAGENIC TOXICITY: No data available.

TERATOGENICITY: No data available.

12. ECOLOGICAL INFORMATION

This pesticide is highly toxic to non-target plants. No significant bioaccumulation is expected. This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water.

The following information is for the active ingredient, sulfosulfuron:
AQUATIC TOXICITY

Fish (Rainbow Trout) (96-hour LC₅₀): >97 mg/L

Daphnia magna (48-hour EC₅₀): >144 mg/L

Green Algae (96-hour EC₅₀): 0.0714 mg/L

Duckweed (7 days, EC₅₀): 0.0012 mg/L

Duckweed (7 days, NOEC₅₀): 0.0027 mg/L

AVIAN TOXICITY

Bobwhite Quail (acute, oral LD₅₀): >2,250 mg/kg

Bobwhite Quail (5 days, oral LD₅₀): >5,620 mg/kg

Mallard Duck (acute, oral LD₅₀): > 2,250 mg/kg

Mallard Duck (5 days, oral LD₅₀): > 5,620 mg/kg

OTHER NON-TARGET ORGANISM TOXICITY

Honeybee (Contact, 48-hours LD₅₀): >0.123 mg/L

Honeybee (Oral, 48-hours LD₅₀): >0.128 mg/L

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Pesticide spray mixture or rinsate that cannot be used must be disposed of in a landfill approved for pesticides. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. See individual container label for pesticide disposal or handling.

14. TRANSPORT INFORMATION

US DOT:

Not regulated

IMDG:

UN3077, Environmentally Hazardous Substance, solid, N.O.S. (sulfosulfuron), 9, PG III, Marine Pollutant

IATA:

UN3082, Environmentally Hazardous Substance, solid, N.O.S. (sulfosulfuron), 9, PG III, Marine Pollutant

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

FIFRA –

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label:

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. CAUSES MODERATE EYE IRRITATION. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

ENVIRONMENTAL HAZARDS

This chemical has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly raining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of sulfosulfuron from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of Federal Laws.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPA/TSCA.

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate (Acute)

SARA Title III – Section 312 Threshold Planning Quantity

None

SARA Title III – Section 313 Reportable Ingredients

None

CERCLA Reportable Quantity (RQ) –

None

CALIFORNIA PROP 65 STATUS –

This product does not contain any chemicals known to the state of California to cause cancer or other reproductive harm.

CANADA –

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

16. OTHER INFORMATION

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

To the extent consistent with applicable law, neither Atticus, LLC nor Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ATTICUS, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF ATTICUS, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SDS Version: 2.0

Effective Date: 10/31/2022

CRYDER™

Contains sulfosulfuron, the active ingredient used in Outrider®.

CRYDER is a Selective Herbicide for the Control of Certain Annual and Perennial Grasses and Broadleaf Weeds in Select Pasture Grasses and Rangelands, Non-Crop Areas and in Winter and Spring Wheat.

ACTIVE INGREDIENT:	(% by weight)
Sulfosulfuron.....	75.0%
OTHER INGREDIENTS:	25.0%
TOTAL:	100.0%
Water dispersible granule.	
EPA Reg. No.: 91234-119	

**KEEP OUT OF REACH OF CHILDREN
CAUTION!**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

See below for additional Precautionary Statements.

FIRST AID	
If in eyes:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact SafetyCall at 1-844-685-9173 for emergency medical treatment information.	

For Chemical Emergency: Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300 or +1 703-527-3887 (collect calls accepted)

CRYDER™ is not manufactured, or distributed by Valent USA Corporation seller of Outrider®.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION!

CAUSES MODERATE EYE IRRITATION. Avoid contact with eyes or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, shoes plus socks, protective eyewear, and chemical-resistant gloves, including nitrile rubber, neoprene rubber or polyethylene. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides 40 CFR 170.240 (d) (4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Non-Target Organism Advisory

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated area. Protect the forage and habitat of non-target organisms by minimizing spray drift. For further guidance and instructions on how to minimize spray drift, refer to the **SPRAY DRIFT** section of this label.

Windblown Soil Particles Advisory

WINDBLOWN SOIL PARTICLES: **CRYDER** has the potential to move off-site due to wind erosion. Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content. Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns. Avoid applying **CRYDER** if prevailing local conditions may be expected to result in off-site movement.

Groundwater Advisory

This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow groundwater. This product is classified as having high potential for reaching surface water via runoff for months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features including ponds, streams, and springs will reduce the potential loading of sulfosulfuron from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of Federal Laws.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in any manner inconsistent with its labeling. This product can only be used in accordance with the Directions for Use on this label. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, including plants, soil, or water, is coveralls, shoes plus socks, chemical-resistant gloves, including nitrile rubber, neoprene rubber or polyethylene.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (40 CFR Part 170) for agricultural pesticides. The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep people and pets off treated areas until spray solution has dried.

PRODUCT INFORMATION

Product Description: **CRYDER** is a selective, systemic herbicide, formulated as a water dispersible granule (WDG) for control of many annual and perennial weeds in non-crop sites, pastures and rangeland, and for control of certain grasses and broadleaf weeds in winter and spring wheat.

Time to Symptoms: This product is absorbed through the roots and foliage of plants. Soon after application, growth of susceptible weeds is inhibited and in cropping situations susceptible weeds are no longer competitive with the crop. Following growth inhibition, affected plants may appear dark green and stunted, affected leaves will turn yellow and/or red, and the growing point of the plant may turn reddish-purple. These visible effects of control may not be observed for 1 to 3 weeks after application. Within 6 weeks after application the growing points die. Warm and moist conditions following application will accelerate herbicidal activity. Cool, dry conditions will delay herbicidal activity. Weeds stressed by drought are less susceptible to this product.

Rainfastness: Heavy rainfall soon after application (less than 2 hours) may wash this product off of the foliage and a repeat application may be required for adequate control.

RESISTANCE MANAGEMENT

For resistance management, **CRYDER** is a Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to **CRYDER** and other Group 2 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of **CRYDER** or other Group 2 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.



- Scout before and after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method including hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Atticus, LLC at (984) 465-4754.

MIXING

Thoroughly clean mixing and application equipment prior to mixing spray solution.

Eliminate any risk of siphoning the contents of the spray or mixing tank back into the carrier source while mixing. Use approved anti-back-siphoning devices where required by State or local regulations.

Apply spray solutions within 24 hours after mixing.

Water Carrier

This product mixes readily with water. Mix spray solutions of this product as follows. Fill the spray tank with three-fourths of the desired final volume. Add the appropriate amount of this product to achieve the desired application rate as defined on this label (see the appropriate section of this label for application rates). Continue the filling process while maintaining agitation. When using a nonionic surfactant in non-crop uses or in postemergence applications in wheat, add the nonionic surfactant near the end of the filling process.

Surfactant and Adjuvants

A nonionic surfactant is required for all postemergence applications of this product and is the only adjuvant required to be added to the spray solution. For in-crop applications, use only nonionic surfactants that are approved by EPA for use on food crops. Use only nonionic surfactants that contain at least 90 percent active ingredient. Add nonionic surfactants to a concentration of 0.25 to 0.5 percent by volume (1 to 2 quarts per 100 gallons of spray solution), unless otherwise directed. **DO NOT USE NONIONIC SURFACTANTS OR OTHER ADDITIVES THAT ALTER THE pH OF THE SPRAY SOLUTION BELOW pH 5.**

DO NOT mix oil-based adjuvants or adjuvant containing oils when this herbicide is tank-mixed with emulsifiable concentrate pesticide formulations.

DO NOT use low rates of liquid fertilizer as a substitute for surfactant.

pH Adjustment

Spray solutions of between pH 6.0 and 8.0 are required for optimal performance of this product. Failure to adjust the pH of the spray solution may result in reduced weed control. Follow the mixing procedure described on this label and adjust the pH of the spray solution after the addition of nonionic surfactant. To adjust the pH, add between 2 to 4 quarts (depending on the starting pH of your water carrier) of a 7-percent solution of ammonia for every 100 gallons of spray solution.

Restriction: DO NOT use ammonia with chlorine bleach as your pH adjuster, as dangerous gases will form.

Tank Mixtures

Tank mixtures of this product with other herbicide products may be used to provide a broader spectrum of weed control and an alternate mode of herbicidal action. Tank-mix this product with other herbicides or materials that are listed in the specific use site sections of this label. Refer to each individual product label or supplemental labeling for all products in the tank mixture, and observe all instructions, precautions and limitations on the label, including application rates and restrictions related to soil texture, soil organic matter, wheat growth stage and crop rotation. Use the mixture according to the most restrictive precautionary statements for each product in the tank mixture.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

To the extent consistent with applicable law, buyer and all users are responsible for all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly listed on this label. Mixing this product with herbicides or other materials that are not listed on this label may result in reduced performance.

Tank mixtures with broadleaf herbicides formulated as amines (including 2,4-D and others) may decrease the effectiveness.

When a generic active ingredient, including 2,4-D, dicamba, diuron or MSMA is listed on this label for tank-mixing with this product, the user is responsible for ensuring that the specific application being made is included on the label of the product being used in the tank mixture.

Always predetermine the compatibility of all tank-mix products together in the carrier by mixing small proportional quantities before mixing in the spray tank. When preparing tank mixtures, add individual components to the spray tank in the following sequence: water, water dispersible granules (this product), water-soluble bags, dry flowables, emulsifiable concentrates, drift control additives, water-soluble liquids, nonionic surfactants.

APPLICATION EQUIPMENT AND TECHNIQUES

This product may be applied using either ground or aerial (fixed-wing or helicopter) spray application equipment. Apply spray solutions of this product using properly maintained and calibrated equipment capable of delivering desired volumes. Use equipment that is capable of continuous and vigorous agitation. Use an agitation system capable of creating a rippling or rolling action on the liquid surface when the tank is full.

DO NOT apply this product through any type of irrigation system.

DO NOT allow this herbicide solution to mist, drift, or splash onto desirable vegetation or soil areas where sensitive crops will be planted, as minute quantities of this product can cause severe damage or destruction to susceptible plants on which treatment was not intended.

Aerial Application

All treatments described on this label may be made using aerial equipment where appropriate, except where specifically prohibited, provided that the applicator complies with the precautions and restrictions described in the **SPRAY DRIFT** section of this label.

Injection Systems

This product may be used in ground applicator injection spray systems. It may be diluted prior to injecting into the spray stream. **DO NOT** mix this product with the undiluted concentrate of other products when using injections systems, unless specifically directed.

Equipment Cleaning

Thoroughly clean application equipment with a 1-percent solution of ammonia (one quart of ammonia for every 25 gallons of rinse water) promptly after using this product. Use a sufficient volume of cleaning solution to thoroughly rinse all surfaces and to flush all hoses. Rinse with water and repeat the cleaning procedure with the ammonia solution. Complete the cleaning procedure by rinsing thoroughly with clean water.

If visible residue is present in the spray tank, use a 1-percent solution of ammonia plus 0.25 percent nonionic surfactant (8 fluid ounces for every 25 gallons of rinse water) as the cleaning solution.



MANDATORY SPRAY DRIFT

Aerial Applications:

- Do not release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

Ground Boom Applications:

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy unless making a turf, pasture, or rangeland application, in which case applicators may apply with a nozzle height no more than 4 feet above the ground.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

Boom-Less Ground Applications:

- Applicators are required to use a Medium or coarser droplet size (ASABE S572.1) for all applications.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.
- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.

BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- Adjust Nozzles - Follow nozzle manufacturers specifications for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT – Aircraft

Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

HANDHELD TECHNOLOGY APPLICATIONS

Take precautions to minimize spray drift.

NON-CROP, PASTURES AND RANGELAND

Use Sites:

Non-Crop Use Sites: Use this product for weed control on non-crop sites including airports, conservation areas, ditch banks, dry ditches, dry canals, fallow areas, fencerows, industrial sites, lumberyards, manufacturing sites, natural areas, petroleum tank farms and pumping installations, railroads, roadsides, storage areas, utility rights-of-way, utility sites and substations, warehouse areas and wildlife areas.

Pasture and Rangeland Use Sites: Use this product for weed control in pastures, hayfields and rangelands as defined in this label. It can be used for weed control in perennial native grasses as defined on the label.



DO NOT use this product on or around athletic fields, commercial turf sites, golf courses, residential turf sites or sod and turfgrass seed farms.

IMPORTANT: DO NOT allow this product to contact roots or foliage of desirable vegetation, areas where roots of desirable vegetation may extend, or areas where this product may be washed or moved into contact with roots of desirable vegetation. Desirable plants may be injured if planted into treated areas.

Application Equipment and Techniques

Best results are obtained when weeds are actively growing and not disturbed by mowing for at least 14 days before and 14 days after application.

Ground Broadcast Application

Apply this product uniformly with properly calibrated ground application equipment at rates specified on this label in 10 to 50 gallons of water per acre. Select spray volumes that ensure thorough and uniform weed coverage. Spray booms need to be equipped with nozzles that provide optimum spray distribution and uniform coverage at the appropriate spray pressure to minimize streaking, skips, overlaps and spray drift during application.

Aerial Application

Apply this product at rates specified on this label in 5 to 15 gallons of water per acre when making aerial applications, unless otherwise specified.

Hand-Held and High-Volume Application

Hand-held spray guns, backpack sprayers and other similar types of sprayers may be used to apply this product. Follow the use directions for hand-held and high-volume application in the specific use sections of this label. Apply to foliage of vegetation to be controlled at a rate of approximately 2 gallons of spray solution per 1000 square feet. Spray coverage needs to be uniform and complete. **DO NOT** spray to the point of runoff. Use coarse sprays only.

BERMUDAGRASS AND BAHAGRASS NON-CROP SITES

Use this product to control or partially control many annual and perennial weeds for effective release of bermudagrass and bahiagrass on roadsides and other non-crop sites listed in this section of this label.

Ground Broadcast Application

Apply at 0.75 to 2 ounces of product (0.035 to 0.093 lb ai) per acre in a spray solution containing a nonionic surfactant at a concentration of 0.25 percent by volume. Use the higher application rate of this product within the range for control of large established weeds or when weed growth is heavy or dense. Follow-up applications can be made after suitable re-growth of weeds but no sooner than 30 days after the previous application.

Restrictions:

- **Maximum Annual Use Rate:** The combined total of all applications of this product must not exceed 2.66 ounces of product (0.124 lb ai) per acre per year.
- **Single Maximum Use Rate:** 2 ounces (0.093 lb ai) per acre
- **Maximum Number of Applications/Year:** 2
- **RTI:** 30 days

Hand-Held and High-Volume Application

With hand-held and high-volume spray equipment, apply a spray solution consisting of 1 ounce (0.046 lb ai) of this product plus 1 quart of a nonionic surfactant (0.25 percent) per 100 gallons of spray solution.

Tank Mixtures

ESTABLISHED STANDS OF BERMUDAGRASS AND BAHAGRASS ARE TOLERANT TO THIS PRODUCT AT RATES SPECIFIED ON THIS LABEL; HOWEVER, TANK MIXTURES OF THIS PRODUCT WITH OTHER HERBICIDES MAY INCREASE GRASS INJURY. USE THESE TANK MIXTURES ONLY WHEN SOME TEMPORARY INJURY OR DISCOLORATION OF THE BERMUDAGRASS AND BAHAGRASS CAN BE TOLERATED.

Tank mixtures of this product with other herbicides may be used to increase the spectrum of weed control in bermudagrass and bahiagrass.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

This product may be applied at a rate of 0.75 to 2 ounces (0.035 to 0.093 lb ai) per acre in a tank-mix with the following products:

2,4-D, chlorsulfuron, clopyralid, dicamba, diuron, glyphosate, imazapic, metsulfuron methyl, MSMA, sulfometuron methyl, triclopyr

Refer to the label of each individual product included in the tank mixture for application rates and use instructions for weed control on bermudagrass and bahiagrass turf sites.

A surfactant does not need to be added to the spray solution when this product is tank-mixed with Campaign® (EPA Reg. No. 524-351, Glyphosate-isopropylammonium and 2,4-D, isopropylamine salt), Roundup PROMAX® (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt), or Roundup PRO® Concentrate (EPA Reg. No. 524-529, Glyphosate-isopropylammonium) herbicides.

Release of Dormant Bermudagrass or Bahiagrass

This product may be tank-mixed with Campaign® (EPA Reg. No. 524-351, Glyphosate-isopropylammonium and 2,4-D, isopropylamine salt), Roundup PROMAX® (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt), or Roundup PRO® Concentrate (EPA Reg. No. 524-529, Glyphosate-isopropylammonium) herbicides to control or partially control many winter annual weeds in dormant bermudagrass and bahiagrass prior to spring green-up. In dormant bermudagrass or bahiagrass, apply 0.75 to 2 ounces of this product (0.035 to 0.093 lb ai) per acre, alone or in a tank mixture with one of the following herbicide products at an application rate within the range indicated.

Tank-Mix Product	Application Rate
Campaign® (EPA Reg. No. 524-351, Glyphosate-isopropylammonium and 2,4-D, isopropylamine salt)	16 - 64 fl oz/acre (0.15 - 0.6 lb ai/acre glyphosate isopropylammonium and 0.2375 - 0.95 lb ai/acre 2,4-D isopropylamine salt)
Roundup PROMAX® (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt)	5 - 44 fl oz/acre (0.214 - 1.88 lb ai/acre)
Roundup PRO® Concentrate (EPA Reg. No. 524-529, Glyphosate-isopropylammonium)	6.4 - 51 fl oz/acre (0.25 - 1.99 lb ai/acre)

In dormant bermudagrass only, up to 1 ounce per acre of Escort (EPA Reg. No. 432-1549, metsulfuron) may be applied along with 0.75 to 2 ounces of this product (0.035 to 0.093 lb ai), alone or in a three-way tank mixture with Roundup PRO (EPA Reg. No. 524-475, Glyphosate-isopropylammonium) or Roundup PRO Concentrate (EPA Reg. No. 524-529, Glyphosate-isopropylammonium) herbicides at the rates indicated in the previous table, to increase the spectrum of broadleaf weeds controlled. Addition of Escort (EPA Reg. No. 432-1549, metsulfuron) may delay green-up of bermudagrass in the spring. TANK MIXTURES OF THIS PRODUCT WITH ESCORT (EPA Reg. No. 432-1549, metsulfuron) IN HIGHLY MAINTAINED TURFGRASS AREAS WILL RESULT IN UNACCEPTABLE TURF INJURY.

In the state of Texas, applications of this product applied before September 30 will not delay green-up of bermudagrass the following spring; however, some temporary discoloration of desirable spring germinating wildflowers may occur.

Release of Actively Growing Bermudagrass

This product may be tank-mixed with Roundup PROMAX (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt) or Roundup PRO Concentrate (EPA Reg. No. 524-475, Glyphosate-isopropylammonium) herbicides to control or partially control johnsongrass and other weeds in bermudagrass when it is actively growing. Use only on well-established stands of bermudagrass. Apply 0.75 to 2 ounces (0.035 to 0.093 lb ai) of this product alone or in a tank mixture with one of the following herbicide products within the range of application rates indicated. Use the higher application rate within the range to control perennial weeds or annual weeds greater than 6 inches in height.



Tank-Mix Product	Application Rate
Roundup PROMAX (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt)	5 - 22 fl oz/acre (0.214 - 0.94 lb ai/acre)
Roundup PRO Concentrate (EPA Reg. No. 524-475, Glyphosate-isopropylammonium)	6.4 - 26 fl oz/acre (0.25 - 1.01 lb ai/acre)

The following herbicide products can also be applied at the application rates indicated in a tank mixture with 0.75 to 2 ounces (0.035 to 0.093 lb ai) of this product per acre, alone or in a three-way tank mixture with Roundup PROMAX (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt) or Roundup PRO Concentrate (EPA Reg. No. 524-529, Glyphosate-isopropylammonium) herbicides at the application rates indicated in the previous table.

Tank-Mix Product	Application Rate
Escort (EPA Reg. No. 432-1549, metsulfuron)	1 fl oz/acre (0.004 lb ai/acre)
Oust (EPA Reg. No. 352-401, sulfometuron)	0.5 fl oz/acre (0.023 lb ai/acre)
Telar (EPA Reg. No. 432-1561, chlorsulfuron)	0.5 fl oz/acre (0.023 lb ai/acre)

DO NOT apply this product in tank mixtures with Escort (EPA Reg. No. 432-1549, metsulfuron), Oust (EPA Reg. No. 352-401, sulfometuron), or Telar (EPA Reg. No. 432-1561, chlorsulfuron) in highly maintained turfgrass areas.

Release of Actively Growing Bahiagrass

This product may be tank-mixed with Roundup PROMAX (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt) or Roundup PRO Concentrate (EPA Reg. No. 524-475, Glyphosate-isopropylammonium) herbicides to control or partially control johnsongrass and other weeds in bahiagrass while it is actively growing. Use only on well-established stands of bahiagrass. Apply 0.75 to 2 ounces of this product (0.035 to 0.093 lb ai) per acre, alone or in a tank mixture with one of the following herbicide products at the application rate indicated.

Tank-Mix Product	Application Rate
Roundup PROMAX (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt)	4 fl oz/acre (0.171 lb ai/acre)
Roundup PRO Concentrate (EPA Reg. No. 524-475, Glyphosate-isopropylammonium)	5 fl oz/acre (0.195 lb ai/acre)

TALL FESCUE NON-CROP SITES

This product may be used to control or partially control johnsongrass and other weeds listed in the **WEEDS CONTROLLED** section of this label in tall fescue on roadsides and other non-crop sites listed on this label.

Use this product only on well-established stands of tall fescue. Even at rates listed in this section, use of this product may result in temporary chlorosis and discoloration, and may result in transient growth reduction of the desirable turf. These symptoms generally appear 7 to 10 days after application and are typically gone within 21 to 28 days.

Ground Broadcast Application

Apply this product at 0.75 to 1 ounce (0.035 to 0.046 lb ai) per acre in a spray solution containing a nonionic surfactant at a concentration of 0.25 percent by volume. **DO NOT** exceed 1 ounce of this product (0.046 lb ai) per acre per year. Use the higher application rate of this product within the range for control of large established weeds or when weed growth is heavy or dense.

Restrictions:

- **Maximum Annual Use Rate:** 1 ounce (0.046 lb ai) per acre per year
- **Single Maximum Use Rate:** 1 ounce (0.046 lb ai) per acre
- **Maximum Number of Applications/Year:** 1

Hand-Held and High-Volume Application

With hand-held and high-volume spray equipment, apply a spray solution consisting of 1 ounce of this product (0.046 lb ai) plus 1 quart of a nonionic surfactant (0.25 percent) per 100 gallons of spray solution.

Tank Mixtures

Tank mixtures of this product may be used to increase the spectrum of vegetation controlled in tall fescue. This product may be applied at 0.75 to 1 ounce (0.035 to 0.046 lb ai) per acre in a tank-mix with the following products:

Escort (EPA Reg. No. 432-1549, metsulfuron), Escort XP (EPA Reg. No. 432-1549, metsulfuron), Garlon 3A (EPA Reg. No. 62719-37, triclopyr), Garlon 4 (EPA Reg. No. 62719-40, triclopyr), Transline (EPA Reg. No. 62719-259, clopyralid)

Refer to the label of each individual product included in the tank mixture for application rates and use instructions for weed control on tall fescue sites.

BERMUDAGRASS AND BAHIAGRASS PASTURE SITES

This product may be used in early spring through the fall to control or partially control the weeds listed in the **WEEDS CONTROLLED** section of this label in well-established bermudagrass and bahiagrass pastures.

Grass forage may be grazed immediately after application. However, for best weed control, **DO NOT** mow or harvest the pasture to be treated for 2 weeks before or 2 weeks after application. For best control of johnsongrass, make application when the johnsongrass is actively growing, is at least 18 to 24 inches tall and up to the heading stage.

For control of large established weeds or when weed growth is particularly heavy or dense, a single application of up to 2 ounces of this product (0.093 lb ai) per acre can be made.

Ground Broadcast Application

Apply 1.33 ounces of this product (0.062 lb ai) per acre along with a nonionic surfactant at a concentration of 0.25 percent by volume (1 quart per 100 gallons of spray solution) in 10 - 50 gallons of spray solution per acre. A follow-up application can be made after suitable regrowth of weeds but no sooner than 40 days after the previous application.

Restrictions:

- **Maximum Annual Use Rate:** 2.66 ounces (0.124 lb ai) per acre per year
- **Single Maximum Use Rate:** 1.33 ounces (0.062 lb ai) per acre
- **Maximum Number of Applications/Year:** 2
- **RTI:** 40 days

Hand-Held and High-Volume Application

With hand-held and high-volume spray equipment, apply a spray solution consisting of 1.33 ounces of this product (0.062 lb ai) per acre plus 1 quart of a non-ionic surfactant (0.25 percent) per 100 gallons of spray solution. A follow-up application can be made after suitable regrowth of weeds but no sooner than 40 days after the previous application.



Pasture and Rangeland Sites in States West of the Mississippi River

This product may be used in pasture and rangeland grasses in States west of the Mississippi River in the fall or spring to provide selective post-emergent control or partial control of the weeds specified in the **WEEDS CONTROLLED** section of this label.

This product is selective in crested wheatgrass and selectivity in other pasture grasses is increased when they are not actively growing. Temporary stunting or chlorosis of grasses may occur but desirable grasses will recover. If concern exists about selectivity on desirable grasses, a small area needs to be treated to confirm selectivity.

Grass forage may be grazed immediately after application. However, for best weed control **DO NOT** mow or graze the pasture or rangeland for 2 weeks before or after application.

Ground Broadcast and Aerial Application

Apply 0.75 to 1.33 ounces of this product (0.035 - 0.062 lb ai) per acre along with a nonionic surfactant. Use the higher rate when weeds are in advanced growth stage. The level of weed control following application is dependent on weed species and weed stage of growth at application. For best results, weeds need to be actively growing and in an early vegetative stage. Refer to the **SPRAY DRIFT MANAGEMENT** section of this label for guidelines regarding spray drift management.

Restrictions:

- **Maximum Annual Use Rate:** 2.66 ounces (0.124 lb ai) per acre per year
- **Single Maximum Use Rate:** 1.33 ounces (0.062 lb ai) per acre
- **Maximum Number of Applications/Year:** 2
- **RTI:** 30 days

Dormant Pastures and Rangelands

Apply 0.75 to 1.33 ounces of this product (0.035 - 0.062 lb ai) per acre in a tank mix with Roundup PRO Concentrate (EPA Reg. No. 524-529, Glyphosate-isopropylammonium) at 10 to 13 fluid ounces (0.39 - 0.505 lb ai) per acre or Roundup PROMAX (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt) at 8 to 11 fluid ounces (0.342 - 0.47 lb ai) per acre for control of weeds in dormant pastures. Tank mixing this product with Roundup PROMAX (EPA Reg. No. 524-579, Glycine, N-(phosphonomethyl)- potassium salt) herbicide at rates below 12 ounces (0.513 lb ai) per acre requires the addition of a nonionic surfactant to the spray solution at a concentration of 0.25 percent by volume (1 quart per 100 gallons of spray solution). Make these applications when the desirable pasture grass species are dormant and a new flush of the target weeds is emerged and actively growing.

NATIVE GRASSES AND CONSERVATION RESERVE PROGRAM (CRP) SITES

This product may be used to selectively control the weeds listed in the **WEEDS CONTROLLED** section of this label in perennial native grassland areas, including land enrolled in the Federal Conservation Reserve Program (CRP). This product may be applied to the following native perennial grasses:

- big bluestem
- blue oats grama
- buffalograss
- bushy bluestem
- Indiangrass
- little bluestem
- lovegrass
- side oats grama
- switchgrass

For selective weed control in the native grasses listed in this section, apply 1.33 to 2 ounces of this product (0.062 - 0.093 lb ai) per acre. Use the higher application rate of 2.0 ounces (0.093 lb ai) per acre of this product for control of large established weeds, or when weed growth is heavy or dense.

Addition of a nonionic surfactant to the spray solution at a concentration of 0.25 percent by volume (1 quart per 100 gallons of spray solution) is required for this application.

Sequential applications of this product may be made at a minimum of 30 days between applications, up to a maximum use rate of 2.66 ounces of product (0.124 lb ai) per acre per year.

Restrictions:

- **Maximum Annual Use Rate:** 2.66 ounces (0.124 lb ai) per acre per year
- **Single Maximum Use Rate:** 2 ounces (0.093 lb ai) per acre
- **Maximum Number of Applications/Year:** 2 at lower rate of 1.33 ounces (0.062 lb ai)
- **RTI:** 30 days

DO NOT apply this product to newly seeded perennial native grasses prior to the 3-leaf growth stage. Native grasses listed in this section may be reseeded into treated areas, but no sooner than 14 days after treatment.

Crop Rotation Restrictions

No crop, except wheat, may be planted into pasturelands, rangelands, or land taken out of the CRP that has been treated with this product within 12 months after application. For all crops, except wheat, a successful field bioassay, as described in this section, must be completed before planting.

DO NOT seed any crop, except wheat, any sooner than 3 months after the last application of this product. There are no crop rotation restrictions for wheat.

Field Bioassay

To conduct an effective field bioassay, plant strips of the crop you plan to grow the following season in the fields previously treated with this product. Crop response to the bioassay will determine if the crop(s) planted in the test strips can be safely grown in the previously treated fields.

Non-Fruit Bearing Tree Sites

This product may be applied as a broadcast application around or over the top of select hardwood and conifer tree species in conservation and wildlife areas to control johnsongrass, tall fescue, purple and yellow nutsedge, and other weed species listed in the **WEEDS CONTROLLED** section of this label.

This product has been shown to provide selective control on the following tree species:

- American Plum
- Bald Cypress
- Bur Oak
- Cottonwood
- Green Ash
- Pecan
- Pin Oak
- Swamp White Oak
- Sycamore
- Walnut

Treated trees must be growing in areas where commercial fruit or nut harvest will not occur. Make over-the-top applications to non-bearing trees only. Treat over the top of transplanted trees after they are well established. Temporary yellowing and growth reduction may occur in some species.

DO NOT apply by air.

Apply up to 1.33 ounces of this product (0.062 lb ai) per acre with a nonionic surfactant concentration of 0.25 percent (1 quart per 100 gallons of spray solution). Sequential applications of this product can be made at a minimum of 21 days between applications, up to a maximum use rate of 2.66 ounces (0.124 lb ai) per acre per year.



Restrictions:

- **Maximum Annual Use Rate:** 2.66 ounces (0.124 lb ai) per acre per year
- **Single Maximum Use Rate:** 1.33 ounces (0.062 lb ai) per acre
- **Maximum Number of Applications/Year:** 2
- **RTI:** 21 days

Selective Herbaceous Weed Control in
Forestry Conifer Release

This product provides control or partial control of herbaceous weeds in a forestry conifer release program using a spring or early summer application after planting loblolly, slash or longleaf pine, and in fallow silvicultural nursery sites for these species. Best results are obtained when Accord® SP herbicide (EPA Reg. No. 524-517, Glyphosate-isopropylammonium) or a labeled tank-mix with Accord SP herbicide (EPA Reg. No. 524-517, Glyphosate-isopropylammonium) has been used for site preparation prior to planting.

Ground Broadcast Application

Apply **CRYDER** at 0.75 to 2 ounces (0.035 to 0.093 lb ai) per acre. **DO NOT** exceed 2 ounces of this product (0.093 lb ai) per acre per year.

Restrictions:

- **Maximum Annual Use Rate:** 2 ounces (0.093 lb ai) per acre per year
- **Single Maximum Use Rate:** 2 ounces (0.093 lb ai) per acre
- **Maximum Number of Applications/Year:** 2 at lower rate of 0.75 ounces (0.035 lb ai)
- **RTI:** 30 days

Use the higher application rate of this product within the range or in one of the tank mixtures described on this labeling for control of large established weeds or when weed growth is heavy or dense. Best results are obtained when weeds are in the early stage of growth. Addition of a nonionic surfactant at a concentration of 0.25 percent by volume (1 quart per 100 gallons of spray solution) is required for postemergence application of this product. Use only nonionic surfactants that contain at least 90 percent active ingredient.

Hand-Held and High-Volume Application

Apply a spray solution consisting of 1 to 2 ounces of **CRYDER** (0.046 to 0.093 lb ai) plus 1 quart of a nonionic surfactant per 100 gallons per acre of water. Use only nonionic surfactants that contain at least 90 percent active ingredient.

Aerial Application

DO NOT APPLY THIS PRODUCT USING AERIAL SPRAY EQUIPMENT EXCEPT UNDER CONDITIONS AS SPECIFIED WITHIN THIS LABEL.

Aerial application of this product is by helicopter only. Apply the specified rate of this product in 5 to 30 gallons of water per acre. Use the higher spray volumes where weeds are dense or form multiple canopy layers.

When used according to label directions, this product will give control or partial control of herbaceous weeds listed in the **WEEDS CONTROLLED** section of this label. Follow instructions in the **SPRAY DRIFT** section of this label to manage off-target drift movement from aerial application to agricultural field crops. Apply **CRYDER** at 0.75 to 2 ounces of product (0.035 to 0.093 lb ai) per acre. **DO NOT** exceed 2 ounces of this product (0.093 lb ai) per acre per year.

Use the higher application rate of this product within the range or in one of the tank mixtures described on this labeling for control of large established weeds or when weed growth is heavy or dense. Best results are obtained when weeds are in the early stage of growth.

Addition of a nonionic surfactant at a concentration of 0.25 percent by volume (1 quart per 100 gallons of spray solution) is required for postemergence application of this product. Use only nonionic surfactant that contains at least 90 percent active ingredient.

Tank Mixtures

Tank mixtures of this product may be used to increase the spectrum of herbaceous vegetation controlled in a conifer release program. When tank-mixing, read and carefully observe the label directions, precautionary statements and all information on the labels of all products used. Use according to the most restrictive precautionary statements for each product in the mixture.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Ensure that the tank-mix product is approved for use prior to planting the desired species. Observe planting interval restrictions.

Any labeled rate of this product may be used in a tank-mix with the following products for forestry use.

Tank-Mix Product	Application Rate
Arsenal Applicators Concentrate* (EPA Reg. No. 241-299, imazapyr)	4 fl oz/acre (0.125 lb ai/acre)
Arsenal Applicators Concentrate* (EPA Reg. No. 241-299, imazapyr) + Oust (EPA Reg. No. 352-401, sulfometuron) or Oust XP (EPA Reg. No. 432-1552, sulfometuron)	4 fl oz/acre (0.125 lb ai/acre) + 1 fl oz/ acre (0.005 lb ai/acre)
Oust (EPA Reg. No. 352-401, sulfometuron) or Oust XP (EPA Reg. No. 432-1552, sulfometuron)	1 - 2 fl oz/acre (0.046 - 0.093 lb ai/acre)
Oust (EPA Reg. No. 352-401, sulfometuron) or Oust XP (EPA Reg. No. 432-1552, sulfometuron) + Velpar (EPA Reg. No. 432-1576, hexazinone)	1 - 2 fl oz/acre (0.046 - 0.093 lb ai/acre) + 0.375 - 0.05 lb/acre (0.281 - 0.562 lb ai/acre)
Oustar (EPA Reg. No. 432-1553, sulfometuron)	8 - 12 fl oz/acre (0.316 - 0.474 lb ai/acre)
Velpar (EPA Reg. No. 432-1576, hexazinone)	0.375 - 0.75 lb/acre (0.281 - 0.562 lb ai/acre)

* Use of surfactant not advised with these products for slash and longleaf pine.

Any of these mixtures can be used as a broadcast spray or in a banded application around trees to reduce potential for soil erosion.



Weeds Controlled

Barley, volunteer

Hordeum vulgare

Bedstraw, catchweed

Galium aparine

Bentgrass, creeping

Agrostis stolonifera

Bluegrass, bulbous

Poa bulbosa

Bluegrass, roughstalk

Poa trivialis

Brome, downy

Bromus tectorum

Brome, rigput

Bromus rigidus

Buttercup

Ranunculus arvensis

Chamomile, mayweed

Anthemis cotula

Cheat

Bromus secalinus

Chess, hairy

Bromus commutatus

Chickweed, common

Stellaria media

Cocklebur, common

Xanthium strumarium

Fiddleneck, tarweed

Amsinckia lycopsoides

Flixweed

Descurainia sophia

Horseweed

Conyza canadensis

Johnsongrass

Sorghum halepense

Mustard, tumble

Sisymbrium altissimum

Mustard, wild

Sinapis arvensis

Nutsedge, purple

Cyperus rotundus

Nutsedge, yellow

Cyperus esculentus

Pennycress, field

Thlaspi arvense

Quackgrass

Elytrigia repens

Shepherd's-purse

Capsella bursa-pastoris

Sunflower, common

Helianthus annuus

Tansymustard, pinnate

Descurainia pinnata

WINTER WHEAT AND SPRING WHEAT**

**Not for Use in New York

Use Sites: Winter wheat and spring wheat

Preharvest Interval: Wheat forage may be grazed immediately after application of this product. **DO NOT** harvest wheat for hay within 30 days of CRYDER application. **DO NOT** harvest wheat for grain within 55 days of application of this product.

Application Equipment and Techniques

Select spray volumes that ensure thorough and uniform weed coverage. Use nozzles that provide optimum spray distribution and coverage at the appropriate spray pressure. Thorough coverage is necessary to provide good weed control without streaking, skips, overlaps, and spray drift during application.

To the extent consistent with applicable law, Atticus, LLC will not be liable for rotational crop injury resulting from spray overlaps.

Ground Broadcast Application

Apply this product uniformly as a broadcast spray with properly calibrated ground equipment in 5 to 20 gallons of water per acre, or in 10 to 40 gallons of liquid fertilizer solution per acre.

Aerial Application

Apply with aerial equipment in 5 to 15 gallons of water per acre.

Applications in Fluid Fertilizer Carrier

APPLICATION OF THIS HERBICIDE IN LIQUID FERTILIZER SOLUTIONS MAY RESULT IN LEAF BURN AND REDUCED FORAGE GROWTH.

This herbicide provides most consistent performance when applied with water as the spray carrier and surfactant is added to the spray solution. Liquid nitrogen fertilizer solutions (28-0-0 or 32-0-0) may, however, be used as a spray carrier in place of all or part of the water when the label directions are followed.

DO NOT USE IN FERTILIZER SOLUTIONS OF pH 5 OR LESS.

Fall applications of this herbicide in liquid fertilizer solutions may cause rapid leaf burn, resulting in reduced weed control and reduced forage growth.

Fertilizer solutions must contain less than 50 percent liquid nitrogen and not exceed 30 pounds of actual nitrogen per acre.

Nonionic surfactants must be added at 0.25 percent by volume (1 quart per 100 gallons of spray solution) to spray solutions containing fluid fertilizer.

Tank Mixtures with Insecticides

This product may be tank-mixed or used sequentially with insecticides labeled for use in wheat, except Malathion. **DO NOT USE THIS PRODUCT PLUS MALATHION, AS CROP INJURY MAY RESULT.**

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

DO NOT use tank mixtures of this product plus insecticides when the wheat crop has significant insect damage, is under drought stress, or when growth is negatively influenced by other environmental stresses, including nutrient deficiency, poor soil pH, or disease. **DO NOT** apply this product within 60 days of crop emergence where an organophosphate insecticide has been applied as an in-furrow treatment, as crop injury may result.



Winter Wheat

When applied to winter wheat as directed in this section, the following weeds are either controlled or suppressed by this product as indicated for either preemergence application, postemergence application in the fall, or postemergence application in the spring.

Weed Species	Pre	Fall Post	Spring Post
Barley, volunteer <i>Hordeum vulgare</i>	C	C	S
Bedstraw, catchweed <i>Galium aparine</i>	S	C	C
Bluegrass, bulbous <i>Poa bulbosa</i>	▪	▪	C
Bluegrass, roughstalk <i>Poa tinialis</i>	▪	C	▪
Brome, downy <i>Bromus tectorum</i>	C	C	S
Brome, Japanese <i>Bromus japonicus</i>	C	C	S
Brome, riggut <i>Bromus rigidus</i>	▪	S	S
Chamomile, mayweed <i>Anthemis cotula</i>	▪	C	C
Cheat <i>Bromus secalinus</i>	C	C	S
Chess, hairy <i>Bromus commutatus</i>	C	C	S
Chickweed, common <i>Stellaria media</i>	▪	S	C
Fiddleneck, tarweed <i>Amsinckia lycopsoides</i>	▪	S	S
Flixweed <i>Descurainia sophia</i>	S	S	S
Henbit <i>Lamium amplexicaule</i>	S	S	▪
Lady's-thumb <i>Polygonum persicaria</i>	▪	▪	S
Mustard, tumble <i>Sisymbrium altissimum</i>	S	C	C
Mustard, wild <i>Sinapis arvensis</i>	C	C	C
Oat, wild (fall germinating) <i>Avena fatua</i>	▪	S	S
Oat, wild (spring germinating) <i>Avena fatua</i>	▪	▪	S
Pennycress, field <i>Thlaspi arvense</i>	S	S	S
Quackgrass <i>Elytrigia repens</i>	▪	▪	C
Rescuegrass <i>Bromus catharticus</i>	▪	S	S
Ryegrass, Italian <i>Lolium multiflorum</i>	▪	S	S**
Shepherd's-purse <i>Capsella bursa-pastoris</i>	▪	▪	C
Tansymustard, pinnate <i>Descurainia pinnata</i>	S	S	S
Wallflower, bushy <i>Erysimum repandum</i>	▪	C	C

** Spring application will provide suppression only in WA, ID, OR.

C = Control S = Suppression ▪ = Not Control or Suppressed

This product can be applied in winter wheat either as a single preemergence application, a single postemergence application, or as a split postemergence application to control or suppress the weeds listed in this section. Best weed control is obtained when soil moisture is adequate to support vigorous wheat and weed growth.

Choose one of the following application scenarios.



Preemergence in Winter Wheat

Apply **CRYDER** preemergence to winter wheat at 2/3 ounce of product (0.03 lb ai) per acre in a single application. Preemergence applications of **CRYDER** must be made after drilling wheat but before wheat or weed emergence. **DO NOT** use preemergence application if dry soil conditions will cause delayed wheat and/or weed emergence. Preemergence applications under dry soil conditions can:

1. Increase the risk of wheat injury due to slow and inconsistent winter wheat germination and growth prior to winter dormancy. (If winter wheat does not reach the 3-leaf stage prior to winter dormancy, a negative crop response the following spring can be expected.)
2. Result in poor weed control performance.
3. Make this product vulnerable to wind erosion until fall moisture is received.

Under these conditions wait until crop and weeds have emerged and are showing good vigor, and then follow directions for postemergence application. **DO NOT** use preemergence applications for no-till systems or when high crop residue levels (plant material) are present on the soil surface.

Postemergence in Winter Wheat-Single Application

Apply this product at 2/3 ounce of product (0.03 lb ai) per acre in a single application when the target weeds listed in this section are actively growing. Use a nonionic surfactant at a concentration of 0.5 percent by volume (2 quarts per 100 gallons of spray solution) with this postemergence application.

In the states of KS, OK, TX and MT, the single postemergence application can be made after the wheat is in the 2-leaf stage, but prior to the jointing stage (Feekes' Scale 6). In all other states, postemergence application can be made after the wheat emerges, but prior to the jointing stage (Feekes' Scale 6).

Brome (Cheat, Downy Brome, Japanese Brome)

For best control of brome species, apply this product as a single postemergence fall application of 2/3 ounce of product (0.03 lb ai) per acre when brome is in the 2- to 3-leaf stage of growth. Best performance with fall applications of this product will occur with good soil moisture and/or rainfall soon after application.

For spring postemergence suppression of brome species, apply a single application of 2/3 ounce of this product (0.03 lb ai) per acre when brome has recovered from cold weather (majority of foliage is green and not red or purple) and is actively growing. For best control, apply when brome is less than the 5-tiller stage of growth.

Mustards and other winter annual broadleaf weeds

For fall postemergence control of mustards and other winter annual broadleaf weeds, apply 2/3 ounce of this product (0.03 lb ai) per acre in a single application. For best control, apply when weeds are less than 2 inches in diameter. Best performance with fall application of this product will occur with good soil moisture and/or rainfall soon after application.

For spring postemergence control of winter annual broad leaf weeds, apply 2/3 ounce of this product (0.03 lb ai) per acre. For best control, make application when weeds are less than 2 inches in diameter. Use tank mixtures with broad-leaf herbicides when winter annual broadleaf weeds are greater than 2 inches in diameter.

Postemergence in Winter Wheat-Split Application

For use only in the following states: ID, MT, OR, WA, and WY

As an alternative to a single postemergence application, this product may be applied to winter wheat in a split application. Start with an initial application of 3/8 ounce of product (0.017 lb ai) per acre after winter wheat and target weeds have emerged and are beyond the 2-leaf stage, followed by a second application of 3/8 ounce of this product (0.017 lb ai) per acre in the spring, no sooner than two weeks following the initial application but prior to boot stage (Feekes' Scale 9). Add a nonionic surfactant at a concentration of 0.5 percent by volume (2 quarts per 100 gallons of spray solution) with this postemergence application.

FOR SPLIT APPLICATION ONLY, **DO NOT EXCEED 3/4 OUNCE OF PRODUCT (0.035 lb ai) PER ACRE PER YEAR.**

Restrictions:

- **Maximum Annual Use Rate:** 0.75 ounces (0.035 lb ai) per acre per year
- **Single Maximum Use Rate:** 0.375 ounces (0.017 lb ai) per acre
- **Maximum Number of Applications/Year:** 2
- **RTI:** 2 weeks

Tank Mixtures for Winter Wheat

For additional broadleaf weed control, this product may be applied as a spring postemergence application to winter wheat in a tank mixture with the following herbicides.

2,4-D amine^{1,2,3} (EPA Reg. No. 81927-38)

Bronate (bromoxynil + MCPA) (EPA Reg. No. 264-690)

Buctril (bromoxynil) (EPA Reg. No. 264-437)

Buctril 4EC (bromoxynil) (EPA Reg. No. 264-540)

MCPA amine^{1,2,3} (EPA Reg. No. 1381-104)

MCPA LV ester² (EPA Reg. No. 9779-265)

Sencor DF (metribuzin)^{3,4} (EPA Reg. No. 264-738)

¹ Tank mixtures with this herbicide may result in reduced control of brome species.

² Tank mixtures with this product may be made provided the specific product being used is registered for postemergence application to wheat.

³ Not required for use with split application rate of 0.375 ounce of **CRYDER** (0.017 lb ai).

⁴ Different formulations of the active ingredient may be used, provided that the specific product being used is registered for postemergence application to wheat.

Tank mixtures with herbicides formulated as amines may decrease the effectiveness of this product.

Refer to individual tank-mix product label for application rate and restrictions related to soil texture, soil organic matter, and wheat growth stage.

Tank mixtures with metribuzin may be applied only in the spring.

See the **MIXING** section of this label for additional information on Tank Mixtures.

Spring Wheat

When this product is applied to spring wheat as directed in this section, the following weeds are either controlled or suppressed as indicated for either preemergence or postemergence application:

Weed Species	Pre	Post
Barley, volunteer <i>Hordeum vulgare</i>	S	S
Oat, wild <i>Avena fatua</i>	▪	C
Quackgrass <i>Elytrigia repens</i>	▪	S
Sunflower, common <i>Helianthus annuus</i>	C	C

C = Control S = Suppression ▪ = Not Controlled or Suppressed

In spring wheat, apply a single postemergence application of 0.667 ounce of this product (0.03 lb ai) per acre when soil moisture is adequate to support vigorous wheat and weed growth, and prior to jointing stage (Feekes' scale 6). Use a non-ionic surfactant at a concentration of 0.5 percent by volume (2 quarts per 100 gallons of spray solution) with this postemergence application.



DO NOT apply this product postemergence to durum wheat.

For wild oat control, apply 0.667 ounce of this product (0.03 lb ai) per acre when wild oat is in the 1 to 4 true leaf stage.

Tank Mixtures for Spring Wheat

For additional broadleaf weed control, this product may be applied to spring wheat in a tank mixture with the following herbicides:

2,4-D amine^{1,2} (EPA Reg. No. 81927-38)
Bronate (bromoxynil + MCPA) (EPA Reg. No. 264-690)
Buctril (bromoxynil) (EPA Reg. No. 264-437)
Buctril 4EC (EPA Reg. No. 264-540)
Cheyenne (fenoxaprop + MCPA) (EPA Reg. No. 264-654)
Curtail (clopyralid + 2,4-D)¹ (EPA Reg. No. 62719-48)
Dakota (fenoxaprop + MCPA) (EPA Reg. No. 83100-38-83979)
MCPA amine^{1,2} (EPA Reg. No. 1381-104)
MCPA LV ester² (EPA Reg. No. 9779-265)
Stinger (clopyralid) (EPA Reg. No. 62719-73)
Tiller (fenoxaprop + 2,4-D + MCPA) (EPA Reg. No. 264-649)

¹ Tank mixtures with this herbicide may result in reduced control of grass species.

² Tank mixtures with this herbicide may be made provided the specific product is registered for this use.

Crop Rotation

No crop other than wheat may be planted sooner than 3 months after application of this product.

The following tables provide crop rotation intervals (months) for selected crops based on soil pH and cumulative precipitation by geographic region. For soils with pH higher than listed or for cumulative precipitation less than listed, a successful field bioassay must be completed before planting, as described in this section under **Field Bioassay**. If a shorter rotation interval other than that listed for a crop is desired, a successful field bioassay must be completed before planting.

All crops other than those listed in these tables may be seeded into fields treated with this product only after the completion of a successful field bioassay.

Field Bioassay

To conduct an effective field bioassay, plant strips of the crop you plan to grow the following season in fields previously treated with this product. Crop response will determine if the crop(s) planted in the test strips can be adequately grown in these areas.

Table 1 - KS, NE, OK, TX

Crop	Soil pH	Cumulative Precipitation (Inches)	Rotation Interval (Months)
Millet	<7.5	18	3
Corn-IR (imidazolinone resistant)	<7.5	18	3
Soybean-STST TM (sulfonyleurea resistant soybean)	<7.5	18	3
Winter Canola (varieties that exhibit resistance to sulfonyleurea herbicides)	<7.5	18	3
Corn - Normal	<7.5	30	12
Cotton	<7.5	30	12
Soybean	<7.5	30	12
Sorghum (grain)	6.0 - 7.5	30	22
Sunflower	<6.0	30	17
Winter Canola (varieties that do not exhibit sensitivity to sulfonyleurea herbicides)	6.0 - 7.5	30	22

Table 2 - ID, OR, WA

Crop	Soil pH	Cumulative Precipitation (Inches)	Rotation Interval (Months)
Millet	<7.5	18	3
CLEARFIELD Canola	<7.5	18	3
Corn-IR (imidazolinone resistant)	<7.5	18	3
Soybean-STST TM (sulfonyleurea resistant soybean)	<7.5	18	3
Potato	<7.5	18	12
Barley	<7.5	24	22
Canola	<7.5	24	22
Corn - Normal	<7.5	24	22
Lentils	<7.5	24	22
Peas*- All Classes (including chickpeas)	>6.5	24	22
	<6.5	30	17
Soybean	<7.5	24	22

* Peas must not be planted on clay or eroded hillsides treated with **CRYDER** without conducting a field bioassay as described in this section.

Table 3 - CO, SD, WY

Crop	Soil pH	Cumulative Precipitation (Inches)	Rotation Interval (Months)
Millet	<7.5	18	3
Corn-IR (imidazolinone resistant)	<7.5	18	3
Soybean-STST TM (sulfonyleurea resistant soybean)	<7.5	18	3
Corn - Normal	<7.5	24	22
Soybean	<7.5	24	22
Sorghum (grain)	6.5 - 7.5	45	34
Sunflower	<6.5	35	22

Table 4 - MT, ND

Crop	Soil pH	Cumulative Precipitation (Inches)	Rotation Interval (Months)
CLEARFIELD Canola	<7.5	12	12

Table 5 - All Other Regions

Crop	Soil pH	Cumulative Precipitation (Inches)	Rotation Interval (Months)
Soybean-STST TM (sulfonyleurea resistant soybean)	<6.5	30	3
Soybean	<6.5	30	5
	<7.5	24	12

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store in a tightly closed container in a cool, dry place. Store in original container and out of reach of children, preferably in a locked storage area.

PESTICIDE DISPOSAL: Pesticide spray mixture or rinsate that cannot be used must be disposed of in a landfill approved for pesticides. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

Bag: Nonrefillable outer bag. **DO NOT** reuse or refill the outer bag. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Plastic Container: Nonrefillable container. **DO NOT** reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

LIMITATION OF WARRANTY AND LIABILITY

IMPORTANT: READ BEFORE USE. Read the entire Directions for Use, Conditions of Warranties and Limitations of Liability before using this product. If these terms and conditions are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Disclaimer of Warranties and Limitations of Liability. **CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, injury, and other unintended consequences may result because of such factors as manner of use or application (including misuse), the presence of other materials, weather conditions, and other unknown factors, all of which are beyond the control of ATTICUS, LLC. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, ATTICUS, LLC makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond statements on this label. **LIMITATIONS OF LIABILITY:** To the extent consistent with applicable law, neither ATTICUS, LLC the manufacturer, nor the Seller shall be liable for any indirect, special, incidental or consequential damages resulting from the use, handling, application, storage, or disposal of this product. To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use, handling, application, or storage of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid.

CRYDERTM is a trademark of Atticus, LLC

Outrider[®] is a registered trademark of Valent USA Corporation.

Campaign, Roundup PRO, Roundup PRO Concentrate, and Roundup PROMAX are registered trademarks of Monsanto Technology LLC. All other trademarks are the property of their respective owners.

F20200618a



Specimen Label

ELEMENT[®] 4

SPECIALTY HERBICIDE

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

For the control of woody plants and annual and perennial broadleaf weeds in non-crop industrial manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, forests and in the establishment and maintenance of wildlife openings. Use on these sites may include application to grazed areas.

Active Ingredient:

triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester	61.6%
Other Ingredients	38.4%
Total	100.0%

Contains petroleum distillates

Acid Equivalent: triclopyr - 44.3% - 4 lb/gal

Precautionary Statements

Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-40

EPA Est. _____

CAUTION

Causes Moderate Eye Irritation • Harmful If Swallowed • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reactions In Some Individuals

Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Personal Protective Equipment (PPE)

Applicators and other handlers who handle this pesticide must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables are given, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the WPS (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

Note to Physician: This product may pose an aspiration pneumonia hazard. Contains petroleum distillates.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

This pesticide is toxic to fish. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Physical or Chemical Hazards

Combustible. Do not use or store the product near heat or open flame.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

The requirements in this box apply to forestry uses.

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves
- Shoes plus socks
- Protective eyewear

Non-Agricultural Use Requirements

The requirements in this box apply to all use sites on this label except for forestry uses.

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: For applications to non-cropland areas, do not allow entry into areas until sprays have dried.

Storage and Disposal

Do not contaminate water, food, or feed by storage and disposal. Open dumping is prohibited.

Pesticide Storage: Store above 28°F or agitate before use.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Storage and Disposal (Cont.)

Refillable containers 5 gallons or larger:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Nonrefillable containers 5 gallons or larger:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Product Information

Use Element® 4 specialty herbicide for the control of woody plants and annual and perennial broadleaf weeds in non-crop industrial manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, forests and in the establishment and maintenance of wildlife openings. Use on these sites may include application to grazed areas.

Element 4 is an oil soluble, emulsifiable liquid product containing the herbicide triclopyr. Element 4 may be applied to woody or herbaceous broadleaf plants as a foliar spray or as a basal bark or cut stump application to woody plants. As a foliar spray, Element 4 controls only herbaceous plants that have emerged from the soil or woody plants that are in full leaf at the time of application. Small amounts of Element 4 can kill or injure many broadleaf plants. To prevent damage to crops and other desirable plants, follow all directions and precautions.

Use Precautions and Restrictions

In Arizona: The state of Arizona has not approved Element 4 for use on plants grown for commercial production; specifically forests grown for commercial timber production, or on designated grazing areas.

When applying this product in tank mix combination, follow all applicable use directions, precautions, and limitations on each manufacturer's label.

Chemigation: Do not apply this product through any type of irrigation system.

Apply no more than 1/2 gallon of Element 4 (2 lb ae of triclopyr) per acre per growing season on rights-of-way or any area where grazing or harvesting is allowed.

On forestry sites, Element 4 may be used at rates up to 6 quarts (6 lb ae of triclopyr) per acre per year.

Element 4 may be used at rates up to 8 quarts (8 lb ae of triclopyr) per acre per year on non-cropland industrial manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides and railroads, fence rows, non-irrigation ditch banks. Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lb ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Do not apply Element 4 directly to, or otherwise permit it to come into direct contact with, cotton, grapes, peanuts, soybeans, tobacco, vegetable crops, flowers, citrus, or other desirable broadleaf plants. Do not permit spray mists containing Element 4 to drift onto such plants.

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs) and transitional areas between upland and lowland sites where surface water is not present except in isolated pockets due to uneven or unlevel

conditions. Do not apply to open water (such as lakes, reservoirs, rivers, streams, creeks, salt water bays, or estuaries).

Do not apply on ditches currently being used to transport irrigation water. Do not apply where runoff or irrigation water may flow onto agricultural land as injury to crops may result.

Do not apply this product using mist blowers unless a drift control additive, high viscosity inverting system, or equivalent is used to control spray drift.

Sprays applied directly to Christmas trees may result in conifer injury. When treating unwanted vegetation in Christmas tree plantations, care should be taken to direct sprays away from conifers.

Element 4 is formulated as a low volatile ester. However, the combination of spray contact with impervious surfaces, such as roads and rocks, and increasing ambient air temperatures, may result in an increase in the volatility potential for this herbicide, increasing a risk for off-target injury to sensitive crops such as grapes and tomatoes.

Grazing and Haying Restrictions

Except for lactating dairy animals, there are no grazing restrictions following application of this product.

- **Grazing Lactating Dairy Animals:** Do not allow lactating dairy animals to graze treated areas until the next growing season following application of this product.
- Do not harvest hay for 14 days after application.
- Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lb ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Slaughter Restrictions: During the season of application, withdraw livestock from grazing treated grass at least 3 days before slaughter.

Avoiding Injurious Spray Drift

Make applications only when there is little or no hazard from spray drift. Small quantities of spray, which may not be visible, may seriously injure susceptible plants. Do not spray when wind is blowing toward susceptible crops or ornamental plants that are near enough to be injured. It is suggested that a continuous smoke column at or near the spray site or a smoke generator on the spray equipment be used to detect air movement, lapse conditions, or temperature inversions (stable air). If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

Aerial Application: Element 4 may be aerially applied by fixed wing aircraft or helicopter. For aerial application on rights-of-way or other areas near susceptible crops, apply through a Microfoil† or Thru-Valve boom†, or use an agriculturally labeled drift control additive. Other drift reducing systems or thickened sprays prepared by using high viscosity inverting systems may be used if they are made as drift-free as mixtures containing agriculturally labeled thickening agents or applications made with the Microfoil or Thru Valve boom. Do not use a thickening agent with the Microfoil or Thru Valve booms, or other systems that cannot accommodate thick sprays. Spray only when the wind velocity is low (follow state regulations). Avoid application during air inversions. If a spray thickening agent is used, follow all use directions and precautions on the product label.

†Reference within this label to a particular piece of equipment produced by or available from other parties is provided without consideration for use by the reader at its discretion and subject to the reader's independent circumstances, evaluation, and expertise. Such reference by Dow AgroSciences is not intended as an endorsement of such equipment, shall not constitute a warranty (express or implied) of such equipment, and is not intended to imply that other equipment is not available and equally suitable. Any discussion of methods of use of such equipment does not imply that the reader should use the equipment other than is advised in directions available from the equipment's manufacturer. The reader is responsible for exercising its own judgment and expertise, or consulting with sources other than Dow AgroSciences, in selecting and determining how to use its equipment.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most operating nozzles on the boom must not exceed 3/4 the length of the rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the following Aerial Drift Reduction Advisory. [This information is advisory in nature and does not supersede mandatory label requirements.]

Aerial Drift Reduction Advisory

Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produced larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Ground Equipment: To aid in reducing spray drift, Element 4 should be used in thickened (high viscosity) spray mixtures using an agriculturally labeled drift control additive, high viscosity invert system, or equivalent as directed by the manufacturer. When using a spray thickening or inverting additive, follow all use directions and precautions on the product label. With ground equipment, spray drift can be reduced by keeping the spray boom as low as possible; by applying 20 gallons or more of spray per acre; by keeping the operating spray pressures at the lower

end of the manufacturer's recommended pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when wind velocity is low. In hand-gun applications, select the minimum spray pressure that will provide adequate plant coverage (without forming a mist). Do not apply with nozzles that produce a fine droplet spray. Select nozzles and pressures which provide adequate plant coverage, but minimize the production of fine spray particles.

High Volume Leaf-Stem Treatment: To minimize spray drift, keep sprays no higher than brush tops and keep spray pressures low enough to provide coarse spray droplets. An agriculturally labeled thickening agent may be used to reduce drift.

Mixing Directions

Element 4 may be foliarly applied by diluting with water or by preparing an oil-water emulsion. For woody plant control, an oil-water emulsion performs more dependably under a broader range of conditions than a straight water dilution and is recommended for aerial applications.

Oil-Water Mixture Sprays

Prepare a premix of oil, surfactant and Element 4 in a separate container using diesel fuel, fuel oil, or kerosene plus an emulsifier such as Sponto 712 or Triton X-100. Use a jar test to check spray mix compatibility before preparing oil-water emulsion sprays in the mixing tank. Do not allow any water or mixtures containing water to get into the premix or Element 4 since a thick "invert" (water in oil) emulsion may form that will be difficult to break. Such an emulsion may also be formed if the premix or Element 4 is put into the mixing tank before the addition of water. Fill the spray tank about one-half full with water, then slowly add the premix with continuous agitation and complete filling the tank with water. Continue moderate agitation.

Ground Application: Add oil to the spray mix at a rate of 5 to 10% of the total mix, up to a maximum of 1 gallon of oil per acre, using agricultural spray emulsifiers according to mixing instructions below.

Aerial Application: Use oil and water in the spray mixture in a 1:5 ratio (1 part oil to 5 parts water), up to a maximum of 1 gallon of oil per acre according to mixing instructions below.

Oil Mixture Sprays for Basal Treatment

Prepare oil-based spray mixtures using either diesel fuel, No. 1 or No. 2 fuel oil, kerosene or a commercially available basal oil. Substitute other oils or diluents only as recommended by the oil or diluent's manufacturer. When preparing an oil mixture, read and follow the use directions and precautions on the manufacturer's product label. Add Element 4 to the required amount of oil in the spray tank or mixing tank and mix thoroughly. If the mixture stands over 4 hours, reagitiation is required.

Oil Mixtures of Element 4 and Tordon K: Tordon K and Element 4 may be used in tank mix combination for basal bark treatment of woody plants. These herbicides are incompatible and will not form a stable mixture when mixed together directly in oil. Make a stable tank mixture for basal bark application by first combining each product with a compatibility agent prior to final mixing in the desired ratio. (See product bulletin for mixing instructions.) Tordon K is not registered for use in the states of California and Florida.

Water Dilutions

For water dilutions, an agricultural surfactant at the manufacturer's recommended rate may be added to the spray mixture to provide improved wetting of foliage. To help minimize spray drift, a drift control and deposition aid cleared for application to growing crops is recommended.

Tank Mixing

Element 4 may be applied in tank mix combination with labeled rates of other herbicides provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product. When tank mixing Element 4 with other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. Use a clear glass quart jar with lid and mix the tank mix ingredients in the required order and their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing Order for Tank Mixes: Add one-half of the needed water to the mixing tank and start agitation. Add different materials in the order indicated below, allowing time for complete dispersion and mixing after addition of each product.

1. Water soluble herbicide (if used)
2. Premix of oil, emulsifier, Element 4 and other oil-soluble herbicide (if used); see below

Add the remaining water. During the final filling of the tank, add a drift control and deposition aid cleared for application to growing crops (if used), plus an agricultural surfactant (if a water dilution rather than an oil-water emulsion spray is used). Maintain continuous agitation of the spray mixture during mixing, final filling and throughout application to ensure spray uniformity.

Premixing: Prepare a premix of oil, emulsifier (if oil-water emulsion), and Element 4 plus other oil-soluble herbicide (if used), e.g., 2,4-D ester.

Note: Do not allow water or mixtures containing water to get into the premix or Element 4 since a thick "invert" (water in oil) emulsion may form that will be difficult to break. Such an emulsion may also be formed if the premix or Element 4 is put into the mixing tank before the addition of water.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed labeled application rates. If products containing the same active ingredient are tank mixed, do not exceed the maximum allowable active ingredient use rates.
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

Mixing with Liquid Fertilizer for Broadleaf Weed Control

Element 4 may be tank mixed with liquid nitrogen fertilizer and foliarly applied for weed control and fertilization of grass pastures. Use Element 4 in accordance with directions for grass pastures as given on this label. Apply at rates directed by supplier or Extension Service Specialist. **Note:** Do not use Element 4 with liquid fertilizer on woody plants (brush). Foliage burn caused by liquid fertilizer may reduce herbicide effectiveness on woody plants. Test for mixing compatibility using desired procedure and spray mix proportions in clear glass jar before mixing in spray tank. A compatibility aid such as Unite or Compex may be needed in some situations. **Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K solutions or suspensions may not be satisfactory even with the addition of compatibility aid.** Premixing Element 4 with 1 to 4 parts water may help in difficult situations.

Fill in the spray tank about half full with the liquid fertilizer, then add the herbicide with agitation and complete filling the tank with fertilizer. Apply immediately and continue agitation in the spray tank during application. **Do not store liquid fertilizer spray mixtures.** Application during very cold weather (near freezing) is not advisable. The likelihood of mixing or compatibility problems with liquid fertilizer increases under cold conditions.

Note: Do not use spray equipment for other applications to land planted, or to be planted, to susceptible crops or desirable plants **unless** it has been determined that all phytotoxic herbicide residue has been removed by thoroughly cleaning the equipment.

Plants Controlled by Element 4

Woody Plant Species

alder	gallberry	salmonberry
arrowwood	gorse	saltbush
ash	granjeno	(<i>Braccharis</i> spp.) ³
aspen	guajillo	salt cedar ¹
bear clover (bearmat)	guava ³	sassafras
beech	hazel	scotch broom
birch	hickory	sumac
blackberry	hornbeam	sweetbay magnolia
blackbrush	huisache (suppression)	sweetgum
blackgum	kudzu ²	sycamore
boxelder ¹	locust	tanoak
Brazilian pepper	madrone	thimbleberry
buckthorn	maple	tree-of-heaven
cascara	(except bigleaf, vine ³)	(<i>Ailanthus</i>) ¹
ceanothus	milkweed vine ³	trumpet creeper ³
cherry ³	mulberry	tulip poplar
chinquapin	oaks	twisted acacia
choke cherry	osage orange	Virginia creeper ³
cottonwood	pepper vine ³	wax myrtle (top growth)
crataegus (hawthorn)	persimmon, eastern	wild rose
dogwood	pine	willow
Douglas-fir	poison ivy	willow primrose
elderberry	poison oak	winged elm
elm (except winged elm)	poplar	

¹For best control, use either a basal bark or cut stump treatment.

²For complete control, re-treatment may be necessary.

³Basal or dormant stem applications only.

Annual, Biennial and Perennial Broadleaf Weeds

Note: Numbers in parentheses refer to footnotes below table.

black medic	mustard
bull thistle	Oxalis
burdock	plantain
Canada thistle	purple loosestrife
chicory	ragweed
cinqwefoil	sericea lespedeza (1)
clover	smartweed
creeping beggarweed	sulfur cinquefoil (2)
curly dock	sweet clover
dandelion (top growth)	tropical soda apple (3)
dogfennel	vetch
field bindweed	wild carrot
goldenrod	(Queen Anne's lace)
ground ivy	wild lettuce
lambquarters	wild violet
lespedeza	yarrow
matchweed	

1. **Sericea lespedeza:** Apply 1 to 2 pints of Element 4 per acre. For best results, apply after maximum foliage development in the late spring to early summer, but prior to bloom.
2. **Sulfur cinquefoil:** Apply 1 to 2 pints of Element 4 per acre. For best results, apply to plants in the rosette stage.
3. **Tropical soda apple:** Apply 2 pints of Element 4 per acre when tropical soda apple plants reach the first flower stage. For best results, apply in a total spray volume of 40 gallons per acre using ground equipment. An agricultural surfactant may be added at the manufacturer's recommended rate to provide more complete wetting and coverage of the foliage. Spot treatments may be used to control sparse plant stands. For spot treatment use a 1 to 1.5% solution of Element 4 in water (1 to 1 1/2 gallons of Element 4 in 100 gallons total spray mixture) and spray the entire plant to completely wet the foliage. **In Florida,** control of tropical soda apple may be improved by using the following management practices:
 - Mow plants to a height of 3 inches every 50 to 60 days or whenever they reach flowering. Continue the mowing operation through April.
 - In late May to June (50 to 60 days after the April mowing), apply Element 4 as a broadcast treatment.
 - Use spot treatment to control any remaining plants or thin stands of plants that germinate following a broadcast treatment.

Application Methods

Use Element 4 at rates of 1 to 8 quarts per acre to control broadleaf weeds and woody plants. It is suggested that rates higher in this rate range be used to control woody plants. In all cases, use the amount specified in enough water to give uniform and complete coverage of the plants to be controlled. The order of addition to the spray tank is water, spray thickening agent (if used), surfactant (if used), additional herbicide (if used), and Element 4. If a standard agricultural surfactant is used, use at a rate of 1 to 2 quarts per acre. Use continuous adequate agitation.

Before using any recommended tank mixtures, read the directions and all precautions on both labels.

For best results apply when woody plants and weeds are actively growing. When hard to control species such as ash, blackgum, choke cherry, elm, maples (other than vine or big leaf), oaks, pines, or winged elm are prevalent, during applications made during late summer when the plants are mature, or during drought conditions, use the higher rates of Element 4 alone or in combination with Tordon® 101 Mixture specialty herbicide or Tordon K herbicide. Tordon 101 Mixture and Tordon K are restricted use pesticides. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

When using Element 4 in combination with 2,4-D low volatile ester herbicide, generally the higher rates of Element 4 should be used for satisfactory brush control.

Use the higher dosage rates when brush approaches an average of 15 feet in height or when the brush covers more than 60% of the area to be treated. If lower rates are used on hard to control species, resprouting may occur the year following treatment.

On sites where easy to control brush species dominate, rates less than those listed may be effective. Consult state or local extension personnel for such information.

Foliage Treatment With Ground Equipment

Use sufficient spray volume to completely and uniformly cover foliage. For ground application, apply 10 gallons or more of total spray volume per acre. Use higher spray volumes for ground applications to ensure adequate coverage with increased depth and density of foliage, particularly for treatment of woody plants.

High Volume Foliage Treatment

For control of woody plants, use Element 4 at the rate of 2 to 6 quarts per 100 gallons of spray mixture, or Element 4 at 2 to 4 quarts may be tank mixed with labeled rates of 2,4-D low volatile ester herbicide, Tordon 101 Mixture, or Tordon K and diluted to make 100 gallons of spray. Do not apply more than 2 gallons of Element 4 per acre. On rangeland and permanent pasture sites, make 1 application per year and apply no more than 2 quarts of Element 4 (2 lb ae of triclopyr) per acre. Apply at a volume of 100 to 400 gallons of total spray per acre depending upon size and density of woody plants. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida. When tank mixing, follow applicable use directions and precautions on each manufacturer's label.

Depending upon the size and density of the woody plants, apply sufficient spray volume to thoroughly wet all leaves, stems, and root collars. To minimize spray drift, select the minimum spray pressure that provides adequate plant coverage without forming a mist and direct sprays no higher than the top of the target plants. Use a drift control additive cleared for application to growing crops to reduce spray drift. Before using any tank mixture, read the directions and use precautions on both labels. For best results, apply when woody plants and weeds are actively growing.

Table 1: The following table is provided as a guide to the user to achieve the proper rate of Element 4.

Total Spray Volume (gallons/acre)	Rate of Element 4	
	Forestry Sites (qt/100 gallons of spray) ¹	Non-Cropland Sites (qt/100 gallons of spray) ²
400	1.5	2
300	2	2.7
200	3	4
100	6	8
50	12	16
40	15	20
30	20	26.7
20	30	40
10	60	80

¹Do not exceed the maximum use rate of 6 qt of Element 4 (6 lb ae of triclopyr) per acre per year.

²Do not exceed the maximum use rate of 8 qt of Element 4 (8 lb ae of triclopyr) per acre per year for non-grazable areas, or 2 qt (2 lb ae of triclopyr) per acre per year for grazed areas, except on portions of grazed areas that meet the following requirement. Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lb ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Table 2

Application Rates per 100 Gallons of Spray		
Element 4	Plus Tank Mix Product	Rate (qt)
1 - 4 qt	--	--
1 - 2 qt	Grazon® P+D specialty herbicide	4
1 - 2 pt	2,4-D low volatile ester herbicide	1 - 2
1 - 2 qt	Tordon 22K	1 - 2
2 qt	Reclaim® specialty herbicide ^{1,2}	2

¹Reclaim is registered for use only in Arizona, Texas, Oklahoma and New Mexico.

²See directions for Mesquite Control Using High Volume Foliage Treatment below.

Mesquite Control Using High Volume Foliage Treatment: For control of mesquite infestations of low to moderate density, apply Element 4 and Reclaim in a tank mixture to individual plants with backpack or hand-held sprayers or a vehicle-mounted sprayer with hand-held spray wand or spray gun. For individual plant treatment, use 2 quarts of Element 4 in combination with 2 quarts of Reclaim per 100 gallons of total spray solution (1/2% v/v of each product). Apply in water or as an oil-water emulsion as described in Mixing Directions. If using an oil-water emulsion, add the oil at a rate of 5% of the total spray volume. Apply as a complete spray-to-wet foliar application, including all leaves. Thorough coverage is necessary for good results, but do not spray to the point of runoff. Do not apply when mesquite foliage is wet. The total amount of Element 4 applied should not exceed 1 1/3 pints per acre. For best results, follow information given elsewhere in this label

concerning effect of environmental conditions and application timing on control. This application method works best for brush less than 8 feet tall since efficient treatment and thorough coverage of taller brush is difficult to achieve with this method. To minimize drift, select a spray nozzle and pressure that provides good coverage while forming a coarse spray. Additionally, drift may be reduced by using the minimum pressure necessary to obtain plant coverage without forming a mist and by directing sprays no higher than the top of target plants. If desired, a spray dye may be added to the spray mixture to mark the treated plants.

Low Volume Foliage Treatment

To control susceptible woody plants, mix up to 20 quarts of Element 4 in 10 to 100 gallons of finished spray. The spray concentration of Element 4 and total spray volume per acre should be adjusted according to the size and density of target woody plants and kind of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars (see General Use Precautions and Restrictions). For best results, a surfactant should be added to all spray mixtures. Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 psi may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

Tank Mixing: As a low volume foliage spray, up to 12 quarts of Element 4 may be applied in tank mix combination with labeled rates of Tordon K or Tordon 101 Mixture in 10 to 100 gallons of finished spray. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Broadcast Applications With Aerial or Ground Equipment

Environmental conditions and application timing influence brush and weed control results. For best results, apply when woody plants and weeds are actively growing. For woody species, apply after the rapid growth period of early spring when leaf tissue is fully expanded and terminal growth has slowed. Brush regrowth should be at least 4 ft high prior to treatment to insure adequate foliage for herbicide absorption. Adequate soil moisture before and after treatment as well as the presence of healthy foliage at the time of application are important factors contributing to optimal herbicidal activity.

Use sufficient spray volume to completely and uniformly cover foliage. For ground application, apply 10 gallons or more of total spray volume per acre. For aerial application, apply at least 2 gallons of total spray volume per acre. Use higher spray volumes for ground or aerial applications to ensure adequate coverage with increased depth and density of foliage, particularly for treatment of woody plants.

Mesquite: The herbicidal response of mesquite is strongly influenced by foliage condition, growth stage and environmental conditions. For best results, apply when new growth foliage has turned from light to dark green, when the soil temperature is above 75°F at a depth of 12 to 18 inches, and soil moisture is adequate for plant growth. Apply within 60 days after the 75°F minimum soil temperature at the 12- to 18-inch depth has been reached. Product performance may be adversely affected if application is made before mesquite foliage has turned from light to dark green or if foliage has been injured or removed by late frost, insects, hail or plant diseases. Do not treat if mesquite exhibits new (light green) terminal growth in response to recent heavy rainfall during the growing season. Rate of soil warm-up at the 12- to 18-inch depth may vary with soil texture and drainage. Coarse-textured (sandy) soils warm up sooner than fine-textured (clay) soils and dry soils warm up more quickly than wet soils. Mesquite regrowth should be at least 4 ft high prior to treatment to insure adequate foliage for herbicide absorption.

Mesquite Only

Apply 1/2 to 1 pint of Element 4 per acre in combination with 2/3 to 1 1/3 pint per acre of Reclaim. See label for Reclaim for additional treatment directions and information on mesquite control. Apply aerially as an oil:water emulsion in 4 gallons or more total volume per acre or with ground equipment in 10 gallons or more total volume per acre. Use a maximum of 1 gallon of oil per acre for aerial or ground application.

Mesquite and Pricklypear Cactus

If pricklypear cactus is a target species in association with mesquite, apply a tank mix of 1/2 to 1 pint of Element 4 with 1 to 2 pints of Tordon 22K per acre. (The 2 pint per acre rate of Tordon 22K provides a higher and more uniform plant kill of pricklypear.) Tordon 22K may also be applied in combination with Reclaim to control pricklypear while providing improved control of mesquite. See labels for Tordon 22K and Reclaim for additional information and treatment directions. Apply aerially as an oil:water emulsion in 4 gallons or more total volume per acre or with ground equipment in 10 or gallons or more total volume per acre. If

mesquite canopy is dense, use higher spray volumes. Use a maximum of 1 gallon of oil per acre for aerial or ground application.

South Texas Mixed Brush (Mesquite, Pricklypear Cactus, Blackbrush, Twisted Acacia and Granjeno)

Use 1 to 2 pints of Element 4 in a tank mix with 2 pints of Tordon 22K per acre if pricklypear is a problem, or with 2/3 to 1 1/3 pints of Reclaim per acre if mesquite is the prevalent species. Element 4 contributes to the control of non-legume species such as granjeno and oaks. However, if woody legume species are predominate, apply 2 pints of Tordon 22K per acre in combination with 2/3 to 1 1/3 pints of Reclaim per acre for improved control. See labels for Tordon 22K and Reclaim for additional information and treatment directions. Apply aerially in an oil:water emulsion in 4 gallons or more total volume per acre or with ground equipment in 15 gallons or more total volume per acre. Use a maximum of 1 gallon of oil per acre for aerial or ground application. The use of an oil:water emulsion is critical and good spray coverage is essential for acceptable brush control.

Sand Shinnery Oak Suppression

In Texas, New Mexico and Oklahoma, apply Element 4 alone at a rate of 1/2 to 2 pints per acre for suppression of shinnery oak growing on sandy soils. Grass response following suppression may be impressive where rainfall is adequate. Grazing deferment following application together with proper grazing management is recommended to allow for the reestablishment of grass stands.

Post Oak and Blackjack Oak - Regrowth Stands

Apply in the late spring (May) to early summer (June-July) when oak leaves are fully developed (expanded). Use 2 quarts of Element 4 alone or in tank mix combination with 0.5 to 1 pints of 2,4-D low-volatile ester herbicide per acre. Apply in an oil:water emulsion or water surfactant dilution in sufficient total volume per acre to assure thorough coverage, usually 5 gallons or more per acre by fixed-wing aircraft or helicopter or 15 to 25 gallons per acre by ground equipment. Use a maximum of 1 gallon of oil per acre for aerial or ground application. Lower rates may be used for suppression only. Control will require at least 3 consecutive treatments. **Note:** Regrowth plants have a large root mass relative to top growth when compared to undisturbed plants. In order for top growth to intercept and translocate enough herbicide to control the roots, delay broadcast treatment until top growth is at least 4 ft tall.

High Volume Foliage Treatment: For regrowth less than 4 ft tall, apply 2 quarts of Element 4 per 100 gallons of water and 2 quarts of ag surfactant alone or in tank mix combination with 1 gallon of Grazon P+D or 1 quart of Tordon 22K. Apply as a high volume leaf-stem treatment to individual plants using ground equipment.

Post Oak and Blackjack Oak - Mature Stands

For control of mature stands (greater than 5 ft tall), apply 2 quarts of Element 4 per acre in late spring (May) to early summer (June-July) when oak leaves are fully developed (expanded). Understory species such as winged elm, buckbrush, tree huckleberry and ash occurring in some areas will not be controlled (only suppressed or defoliated) by using Element 4 alone. Where these understory species occur, control may be improved by tank mixing 2 quarts of Element 4 with 1 quart of Tordon 22K or 4 quarts of Grazon P+D per acre. For best results, apply as an oil:water emulsion in a total volume of 5 gallons per acre or more by fixed-wing aircraft or helicopter.

Other Susceptible Woody Plants

Apply 2 to 4 pints of Element 4 alone or in combination with 2 to 3 quarts of 3.8 lb/gal 2,4-D low volatile ester or amine formulation per acre. If difficult to control species such as ash, choke cherry, elm, maple or oaks are prevalent, and during applications made when plants are mature late in the summer or during drought conditions, use the higher rates of Element 4, alone or with 2,4-D. Element 4 may also be applied in a tank mixture with Grazon P+D or Tordon 22K for increased control of certain species. See labels for Grazon P+D and Tordon 22K for additional information and treatment directions. Apply aerially in 4 gallons or more total volume per acre or with ground equipment in 10 gallons or more total volume per acre. For best results on blackberry, apply during or after bloom. For management of kudzu, apply 1 quart of Element 4 per acre. Repeat application may be necessary to achieve desired level of control.

Susceptible Broadleaf Weeds

Use 2 pints of Element 4 per acre in a water spray. Apply as a broadcast spray in a total volume of 10 gallons or more per acre by ground equipment or aerially in a total volume of 2 gallons or more per acre. Apply anytime the weeds are actively growing. Element 4 at 1/2 to 3 pints may be tank mixed with 1 to 2 quarts of 3.8 lb/gal 2,4-D amine or low volatile ester.

Woody Plant Control

Foliage Treatment: Use 4 to 8 quarts of Element 4 in enough water to make 5 gallons or more per acre of total spray, or 1 1/2 to 3 quarts of Element 4 may be combined with labeled rates of 2,4-D low volatile ester, Tordon 101 Mixture, or Tordon K in sufficient water to make 5 gallons or

more per acre of total spray. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Broadleaf Weed Control

Use Element 4 at rates of 1 to 4 quarts in a total volume of 5 gallons or more per acre as a water spray mixture. Apply anytime weeds are actively growing. Element 4 at 0.25 to 3 quarts may be tank mixed with labeled rates of 2,4-D amine or low volatile ester, Tordon K, or Tordon 101 Mixture to improve the spectrum of activity. For thickened (high viscosity) spray mixtures, Element 4 can be mixed with diesel oil or other inverting agent. When using an inverting agent, read and follow the use directions and precautions on the product label. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Foliage Treatment (Utility and Pipeline Rights-of-Way)

Use 4 to 8 quarts of Element 4 alone, or 3 to 4 quarts of Element 4 in a tank mix combination with labeled rates of 2,4-D low volatile ester, Tordon 101 Mixture or Tordon K and apply in a total spray volume of 10 to 30 gallons per acre. Use the higher rates and volumes when plants are dense or under drought conditions. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lb ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Basal Bark, Dormant Stem and Cut Surface Treatments

Individual plant treatments such as basal bark and cut surface applications may be used on any use site listed on this label at a maximum use rate of 8 lb ae of triclopyr per acre. These types of applications are made directly to ungrazed parts of plants and, therefore, are not restricted by the grazing maximum rate of 2 lb ae of triclopyr per acre.

Basal Bark Treatment

To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 1 to 5 gallons of Element 4 in enough oil to make 100 gallons of spray mixture. Apply with knapsack sprayer or power spraying equipment using low pressure (20 to 40 psi). Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground, thoroughly wetting the indicated area. Spray until runoff at the ground line is noticeable. Old or rough bark requires more spray than smooth young bark. Apply anytime, including the winter months, except when snow or water prevent spraying to the ground line. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Low Volume Basal Bark Treatment

To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 20 to 30 gallons of Element 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground in a manner that thoroughly wets the lower stems, including the root collar area, but not to the point of runoff. Herbicide concentration should vary with size and susceptibility of species treated. Apply anytime, including the winter months, except when snow or water prevent spraying to the ground line or when stem surfaces are saturated with water. See Table 1 for relationship between mixing rate, spray volume and maximum application rate. **Note:** The addition of a soil active herbicide to a basal bark mixture with Element 4 may result in damage to surrounding non-target vegetation. Care should be taken to assess the areas in which these soil active herbicides are used in combination with Element 4 in basal bark applications. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Element 4 Plus Tordon K in Oil Tank Mix: Element 4 and Tordon K may be used in tank mix combination as a low volume basal bark treatment to improve control of certain woody species such as ash, elm, maple, poplar, aspen, hackberry, oak, oceanspray, birch, hickory, pine, tanoak, cherry, locust, sassafras, and multiflora rose. (See product bulletin for mixing instructions.) Tordon K is not registered for use in the states of California and Florida.

Streamline Basal Bark Treatment (Southern States)

To control or suppress susceptible woody plants for conifer release, mix 20 to 30 gallons of Element 4 in enough oil to make 100 gallons of spray mixture. Streamline basal bark treatments are most effective on stems less than 4 inches in basal diameter. Apply with a backpack or knapsack sprayer using equipment that provides a directed straight stream spray. Apply the spray in a 2- to 3-inch wide band to one side of stems less than 3 inches in basal diameter. When the optimum amount of spray mixture is applied, the treated zone should widen to encircle the stem within approximately 30 minutes. Treat both sides of stems which are 3 to 4 inches in basal diameter. Direct the spray at bark that is approximately 12 to 24 inches above ground. Pines (loblolly, slash,

shortleaf, and Virginia) up to 2 inches in diameter breast height (dbh) can be controlled by directing the spray at a point approximately 4 feet above ground. Vary spray mixture concentration with size and susceptibility of the species being treated. Better control is achieved when spray is applied to thin juvenile bark and above rough thickened mature bark. This technique is not recommended for scrub and live oak species, including blackjack, turkey, post, live, bluejack and laurel oaks, or bigleaf maple. Apply anytime, including winter months, except when snow or water prevents spraying at the desired height above ground level. **Note:** Best results with some hardwood species occur when applications are made from approximately 6 weeks prior to leaf expansion in the spring until approximately 2 months after leaf expansion is completed. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Low Volume Stem Bark Band Treatment (North Central and Lake States)

To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 20 to 30 gallons of Element 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6- to 10-inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results, apply the band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made anytime, including winter months. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Thinline Basal Bark Treatment

To control susceptible woody plants with stems less than 6 inches in diameter, apply Element 4, either undiluted or mixed at 50 to 75% v/v with oil, in a thin stream to all sides of the lower stems. The stream should be directed horizontally to apply a narrow band of Element 4 around each stem or clump. Use a minimum of 2 to 15 milliliters of Element 4 or oil mixture with Element 4 to treat single stems and from 25 to 100 milliliters to treat clumps of stems. Use an applicator metered or calibrated to deliver the small amounts required. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Dormant Stem Treatment

Dormant stem treatments control susceptible woody plants and vines with stems less than 2 inches in diameter. Plants with stems greater than 2 inches in diameter may not be controlled and resprouting may occur. This treatment method is best suited for sites with dense, small diameter brush. Dormant stem treatments of Element 4 can also be used as a chemical side-trim for controlling lateral branches of larger trees that encroach onto roadside, utility, or other rights-of-way.

Mix 4 to 8 quarts of Element 4 in 2 to 3 gallons of crop oil concentrate or other recommended oil and add this mixture in enough water to make 100 gallons of spray solution. Use continuous adequate agitation. Apply with knapsack or power spraying equipment, using low pressure (20 to 40 psi). In western states, apply anytime after woody plants are dormant and most of the foliage has dropped. In other areas apply anytime within 10 weeks of budbreak, generally February through April. Thoroughly wet the upper parts of the stems and use the remainder to wet the lower 12 to 15 inches above the ground to the point of runoff. For root suckering species such as sumac, sassafras and locust, also spray the ground under the plant to cover small root suckers which may not be visible above the soil surface. For oil-water mixture application, mix 6 quarts of Element 4, 25 gallons of oil and 1.5 gallons of an approved agricultural spray emulsifier such as Sponto 712 or Triton X-100 as indicated in the mixing directions. Treat as above. Element 4 may be mixed with 4 quarts of Weedone 170 herbicide to improve the control of black cherry and broaden the spectrum of herbicidal activity. Do not apply to wet or saturated bark as poor control may result.

Cut Stump Treatment

To control resprouting, mix 20 to 30 gallons of Element 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressures and a solid cone or flat fan nozzle. Spray the root collar area, sides of the stump, and the outer portion of the cut surface, including the cambium, until thoroughly wet, but not to the point of runoff. Spray mixture concentration should vary with the size and susceptibility of species treated. Apply anytime, including in winter months, except when snow or water prevent spraying to the ground line. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Cut Stump Treatment in Western States

To control resprouting of salt cedar and other *Tamarix* species, bigleaf maple, tanoak, Oregon myrtle, and other susceptible species, apply undiluted Element 4 to wet the cambium and adjacent wood around

the entire circumference of the cut stump. Treatments may be applied throughout the year; however, control may be reduced with treatment during periods of moisture stress as in late summer. Cut stumps so that they are approximately level to facilitate uniform coverage of Element 4. Use an applicator which can be calibrated to deliver the small amounts of material required.

Growing Point and Leaf Base (Crown) Treatment of Yucca

Prepare a 2% v/v solution of Element 4 in diesel or fuel oil (13 fl oz of Element 4 in 5 gallons of spray mixture). Thoroughly wet the center of the plant including growing point and leaf bases to the soil surface. Complete coverage of leaves is not necessary.

Forest Management Applications

For broadcast applications, apply 1 to 6 quarts of Element 4 per acre in a total spray volume of 5 to 25 gallons per acre by air or 10 to 100 gallons per acre by ground. Use spray volumes sufficient to provide thorough coverage of treated foliage. Nozzles or additives that produce larger droplets of spray may require higher spray volumes to provide adequate coverage.

Plant Back Interval for Conifers: Conifers planted sooner than 1 month after treatment with Element 4 at less than 4 quarts per acre or sooner than 2 months after treatment at 4 to 6 quarts per acre may be injured. When tank mixtures of herbicides are used for forest site preparation, labels for all products in the mixture should be consulted and the longest waiting period before planting observed.

Forest Site Preparation (Not for Conifer Release)

Southern States including Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia: To control susceptible woody plants and broadleaf weeds, apply Element 4 at a rate of 4 to 6 quarts per acre. To broaden the spectrum of woody plants and broadleaf weeds controlled, apply 2 to 4 quarts of Element 4 per acre in tank mix combination with labeled rates of Tordon 101 Mixture or Tordon K. Tordon 101 Mixture and Tordon K is not registered for use in the state of Florida. Where grass control is also desired, Element 4, alone or in tank mix combination with Tordon K or Tordon 101 Mixture, may be applied with labeled rates of other herbicides registered for grass control in forests. Use of tank mix products must be in accordance with the most restrictive of label limitations and precautions. Do not exceed labeled application rates. Element 4 cannot be tank mixed with any product containing a label prohibition against such mixing.

Western, Northeastern, North Central, and Lake States (States not Listed Above as Southern States):

To control susceptible woody plants and broadleaf weeds, apply Element 4 at a rate of 3 to 6 quarts per acre. To broaden the spectrum of woody plants and broadleaf weeds controlled, apply 1.5 to 3 quarts of Element 4 per acre in tank mix combination with labeled rates of Tordon 101 Mixture, Tordon K, or 2,4-D low volatile ester. Tordon 101 Mixture and Tordon K are not registered for use in the state of California. Where grass control is also desired, Element 4, alone or in tank mix combination with Tordon 101 Mixture or Tordon K, may be applied with labeled rates of other herbicides registered for grass control in forests. When applying tank mixes, follow applicable use directions and precautions on each product label.

Southern Coastal Flatwoods: To control susceptible broadleaf weeds and woody species such as gallberry and wax-myrtle, and for partial control of saw-palmetto, apply 2 to 4 quarts of Element 4 per acre. To broaden the spectrum of species controlled to include fetterbush, staggerbush, titi, and grasses, apply 2 to 3 quarts of Element 4 per acre in tank mix combination with labeled rates of Arsenal Applicator's Concentrate herbicide. Where control of gallberry, wax-myrtle, broadleaf weeds, and grasses is desired, apply 2 to 3 quarts of Element 4 per acre in tank mix combination with labeled rates of Accord Concentrate or Accord SP herbicide.

These treatments may be broadcast during site preparation of flat planted or bedded sites or, on bedded sites, applied in bands over the top of beds. For best results, apply in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August.

Note: Do not apply after planting pines.

Directed Spray Applications for Conifer Release

To release conifers from competing hardwoods and brush such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, hickory, alder, birch, aspen, pin cherry, *Ceanothus* spp., blackberry, chinquapin, and poison oak, mix 4 to 20 quarts of Element 4 in enough water to make 100 gallons of spray mixture. This spray mixture should be directed onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent anytime after the hardwoods and brush have reached full leaf size, but before autumn coloration. The majority of treated hardwoods and brush should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct spray away from contact with conifer foliage, particularly

foliage of desirable pines. See Table 1 for relationship between mixing rate, spray volume and maximum application rate.

Note: Spray may cause temporary damage and growth suppression where contact with conifers occurs; however, injured conifers should recover and grow normally. Over-the-top spray applications can kill pines.

Broadcast Applications for Mid-Rotation Understory Brush Control in Southern Coastal Flatwoods Pine Stands (Ground Equipment Only)

For control of susceptible species such as gallberry and wax-myrtle and broadleaf weeds, apply 2 to 4 quarts of Element 4 per acre. To broaden the spectrum of woody plants controlled to include fetterbush, staggerbush, and titi, apply 2 to 3 quarts of Element 4 per acre in tank mix combination with labeled rates of Arsenal Applicator's Concentrate. Saw-palmetto will be partially controlled by use of Element 4 at 4 quarts per acre or by mixtures of Element 4 at 2 to 3 quarts per acre in tank mix combination with either Arsenal Applicator's Concentrate or Escort herbicide. These mixtures should be broadcast applied over target understory brush species, **but to prevent injury to pines, make applications underneath the foliage of pines.** Apply sprays in 30 gallons or more per acre of total volume. For best results, apply in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August.

Broadcast Applications for Conifer Release in the Pacific Northwest and California

Dormant Conifers Before Bud Swell (Excluding Pines): To control or suppress deciduous hardwoods such as vine maple, bigleaf maple, alder, scotch broom, or willow **before leaf-out**, or evergreen hardwoods such as madrone, chinquapin, and *Ceanothus* spp., use Element 4 at 1 to 2 quarts per acre. Use diesel or fuel oil as a diluent, or use water plus 1 to 2 gallons per acre of diesel oil or a suitable surfactant or oil substitute at manufacturer's recommended rates. **Mixing with oil as the only diluent requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Conifer Plantations (Excluding Pines) After Hardwoods Begin Growth and Before Conifer Bud Break ("Early Foliar" Hardwood Stage): Use Element 4 at 1 to 1.5 quarts alone or with 2,4-D low volatile ester herbicide in water carrier to provide no more than 3 lb ae per acre from both products. After conifer bud break, these sprays may cause more serious injury to the crop trees. Use of a surfactant may cause unacceptable injury to conifers especially after bud break.

Conifer Plantations (Excluding Pines) After Conifers Harden Off in Late Summer and While Hardwoods are Still Actively Growing: Use Element 4 at rates of 1 to 1.5 quarts per acre alone or with 2,4-D low volatile ester to provide no more than 3 lb ae per acre from both products. Treat as soon after conifer bud hardening as possible so that hardwoods and brush are actively growing. Use of oil, oil substitute, or surfactant may cause unacceptable injury to the conifers.

Broadcast Applications for Conifer Release in the Eastern United States

To release spruce, fir, red pine, and white pine from competing hardwoods such as red maple, sugar maple, striped maple, alder, birch (white, yellow, and grey), aspen, ash, pin cherry, and *Rubus* spp. and perennial and annual broadleaf weeds, use Element 4 at rates of 1.5 to 3 quarts per acre alone or with 2,4-D amine or low volatile ester to provide no more than 4 lb ae per acre from both products. Apply in late summer or early fall after conifers have formed their overwintering buds and hardwoods are in full leaf and prior to autumn coloration.

Broadcast Applications for Conifer Release in the Lake States Region

To release spruce, fir, and red pine from competing hardwoods such as aspen, birch, maple, cherry, willow, oak, hazel, and *Rubus* spp. and perennial and annual broadleaf weeds, use Element 4 at rates of 1.5 to 3 quarts per acre. Apply in late summer or early fall after conifers have formed their overwintering buds and hardwoods are in full leaf and prior to autumn coloration.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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**Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**

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Revisions:

1. Corrected "non-crop" to non-cropland" under Use Precautions and Restrictions section. Added ", or using the toilet" to Hazards to Human and Domestic Animals statement under Precautionary Statements section.
2. Updated "Container Reuse" to Container Handling" under Storage and Disposal sections.
3. Changed "should" to "must" under Spray Drift Management section.
4. Updated language: "Garlon 4 is not recommended for use..." to "Do not use Garlon 4..." under Mixing with Liquid Fertilizer for Broadleaf Weed Control section.
5. Deleted the word "recommended" under Forest Management Applications – Plant Back Interval for Conifer section.
6. Updated Terms and Conditions of Use and Warranty Disclaimer
7. Updated trademark line

SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: ELEMENT™ 4 Herbicide

Issue Date: 05/15/2020

Print Date: 05/15/2020

DOW AGROSCIENCES LLC encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should immediately refer to the product label attached to or accompanying the product container.

1. IDENTIFICATION

Product name: ELEMENT 4 Herbicide

Recommended use of the chemical and restrictions on use

Identified uses: end use herbicide product

COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC
330 IONSILL RD
INDIANAPOLIS IN 46168-1053
UNITED STATES

Customer Information Number:

800-888-5884
customerinformation@corteva.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-888-5884

Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with GHS 10.1.00

Flammable liquids - Category 4

Acute toxicity - Category 4 - Oral

Skin sensitization - Sub-category 1

Specific target organ toxicity - single exposure - Category 3

Specific target organ toxicity - repeated exposure - Category 2

Aspiration hazard - Category 1

Label elements

Hazard pictograms



Signal word **DANGER!**

Hazards

Corrosive liquid.

Harmful if swallowed.

May be fatal if swallowed and enters airways.

May cause an allergic skin reaction.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

Keep away from heat, sparks, open flames, hot surfaces. No smoking.

Do not breathe dust, fumes, gases, mists, vapours or sprays.

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Use protective gloves, eye protection, face protection.

Response

IF SWALLOWED: Immediately call a POISON CONTROL doctor.

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove person to fresh air and see a competent person for breathing. Call a POISON CONTROL doctor if you feel unwell.

Get medical advice/attention if you feel unwell.

Do NOT induce vomiting.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal

Dispose of contents/container in an approved waste disposal plant.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Tricloro-2-methyl ester	64700-56-7	61.6%
Xerosene	8008-00-6	18.6 - 31.0 %
ethylene glycol monoethyl ether	111-76-0	0.3 - 1.0 %
Once	Not available	7.1 - 18.8 %

4. FIRST AID MEASURES

Description of first aid measures

General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). Potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration mouth to mouth use rescuer protection (protect mask etc). Call poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Wash skin with soap and detergent for 15-20 minutes. Call poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed properly.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call poison control center or doctor for treatment advice.

Ingestion: Immediately call poison control center or doctor. Do not induce vomiting unless told to do so by poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures above and Indication of immediate medical attention and specific treatment needed below, no additional important symptoms and effects are described in Section 11 Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Skin contact may aggravate pre-existing dermatitis. The decision on whether to induce vomiting or not should be made by a physician. If emesis is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. See the Safety Data Sheet, and if

Immediately, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Drychemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams including Aqueous Protein foams may function, but will be less effective.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products depending on composition which may be toxic and/or irritating. Combustion products may include and are not limited to Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Inhaled in a fire, toxic fumes may be released.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

Advice for firefighters

Fire Fighting Procedures: See code 0000. Isolate fire and deny unnecessary entry. Consider possibility of controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. Monitor fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this MSDS.

Special protective equipment for firefighters: Self-contained positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing includes fire fighting helmet, coat, trousers, boots, and gloves. Avoid contact with this material during fire fighting operations. Contact is likely to change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. See unnecessary and unprotected personnel from entering the area. No smoking in area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate protective equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 1, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as Clay, Dirt, Sand. See also. Collect in suitable and

properly labeled containers. Large spills: Contact the company for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Keep away from heat, sparks and flame. Do not smoke. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. See Section 8, EXPOSURE CONTROLS/PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed. Do not store near food, foodstuffs, drugs or other sensitive materials.

Storage stability

To maintain product quality, recommended storage temperature is -10 °C to 14 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are disclosed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Tricloro-2,4,6-trinitroethyl ester	DoI IHG	T/A	1 mg/m ³
	DoI IHG	T/A	SDIN, DSIN, 100
	DoI IHG	T/A	100 mg/m ³ , total hydrocarbon vapor
	DoI IHG	T/A	SDIN
Perosene	ACGIH	T/A	100 mg/m ³ , total hydrocarbon vapor
	ACGIH	T/A	SDIN
	OSHA 1910.1000	T/A	1,000 mg/m ³ 500 ppm
	ACGIH	T/A	100 ppm
Ethylene glycol monoethyl ether	OSHA 1910.1000	T/A	140 mg/m ³ 50 ppm
	ACGIH	T/A	100 ppm
	OSHA 1910.1000	T/A	SDIN
	OSHA 1910.1000	T/A	SDIN

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING PURPOSES. APPLICATORS AND HANDLERS SHOULD FOLLOW THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTION EQUIPMENT AND CLOTHING.

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Ethylene glycol monoethyl ether	111-76-2	2,4-dinitrophenol c acid 2-AA	urine	End of shift As soon as possible	100 mg/g Creatinine	ACGIH 100

filter
exposure
concentrations

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses with side shields.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove carrier materials include Chlorinated polyethylene, Neoprene, Nitrile-butadiene rubber ("nitrile" or "NBR") polyethylene, ethyl vinyl alcohol laminate "EVAL", Examples of acceptable glove carrier materials include butyl rubber, Natural rubber latex, polyvinyl chloride "PVC" or "vinyl" nitrile. NOTICE: The selection of specific glove for particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, chemical requirements (cut/puncture protection, dexterity, thermal protection, potential for reactions to glove materials, as well as the instructions/specifications provided on the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full bodysuit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated in your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective times of air-purifying respirators: Organic vapor cartridge with particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Yellow
Odor	Gasoline-like
Odor Threshold	No test data available
pH	6.36 - 10 pH Electrode
Melting point/range	Not applicable
Freezing point	No data available
Boiling point (760 mmHg)	No test data available
Flash point	closed cup 65.5 °C (149 °F) EC Method A9

Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	No
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.07 at 23 °C 73 °F at 20 °C EC Method A3
Water solubility	emulsifiable
Partition coefficient: n-octanol/water	No test data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Dynamic Viscosity	16.4 mPa.s at 20 °C 68 °F
Kinematic Viscosity	11.1 cSt at 20 °C 68 °F
Explosive properties	No EEC A14
Oxidizing properties	No significant increase 5°C in temperature.
Liquid Density	1.0 g/mL
Molecular weight	No test data available
Surface tension	7.0 mN/m at 25 °C 77 °F EC Method A5

NOTE: The physical data presented above are typical values and should not be construed as specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Avoid contact with Acids. Bases. Oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to Carbon monoxide. Carbon dioxide. Nitrogen oxides. Toxic gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity is observed. Small amounts spilled incidentally as a result of normal handling operations are not likely to cause injury; however, spilling larger amounts may cause injury.

As product

LD50, Rat, oral, 1,338 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product

LD50, Rabbit, 10,000 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Mist may cause irritation of upper respiratory tract nose and throat.

As product

LC50, Rat, 4 Hour, dust/mist, 5.0 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.

May cause drying and itching of the skin.

Repeated contact may cause severe skin irritation with local redness and discomfort.

Serious eye damage/eye irritation

May cause eye discoloration due to the level of irritation to eye tissues.

May cause slight eye irritation.

Cornea injury is unlikely.

Sensitization

Has caused allergic skin reactions when tested in guinea pigs.

With the dilute mix, no allergic skin reaction is expected.

For respiratory sensitization

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause droppiness or dizziness.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient(s)

In animals, effects have been reported on the following organs

Kidney

Liver.

Carcinogenicity

In lifetime animal dermal carcinogenicity study, an increased incidence of skin tumors was observed when terosene was applied at doses that also produced skin irritation. This response was similar to that produced in skin by other types of chronic chemical/physical irritation. No increase in tumors was observed when non-irritating dilutions of terosene were applied at equivalent doses, indicating that terosene is unlikely to cause skin cancer in the presence of long-term continued skin irritation.

Active ingredient did not cause cancer in laboratory animals.

Teratogenicity

For the active ingredient(s) Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

For the solvent(s) Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity

For similar active ingredient(s) Triclopyr. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. For the solvent(s) In animal studies, did not interfere with reproduction.

Mutagenicity

For the active ingredient(s) For the solvent(s) In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Mixture may be inhaled and enters airways.

Carcinogenicity

Component	List	Classification
Kerosene	ACGIH	A3-Confirmed animal carcinogen with unknown relevance to humans.
Ethylene glycol monobutyl ether	ACGIH	A3-Confirmed animal carcinogen with unknown relevance to humans.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish

Material is highly toxic to aquatic organisms on an acute basis LC50/C50 between 0.1 and 1 mg/L in the most sensitive species tested.

LC50, Oncorhynchus mykiss rainbow trout, 100-through test, 96 Hour, 0.84 mg/L

LC50, Lemnis microchirus bluegill sunfish, static test, 96 Hour, 0.44 mg/L

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna water flea, 100-through test, 48 Hour, 0.35 mg/L

Acute toxicity to algae/aquatic plants

EC50, pseudonitzschia succitans green algae 72 Hour, biomass, 10.6 mg/L

EC50, pseudonitzschia succitans microalgae static test, 72 Hour, Growth rate inhibition, 36.7 mg/L

Toxicity to Above Ground Organisms

Material is slightly toxic to birds on an acute basis LD50 between 501 and 1000 mg/kg

or LD50, *Colinus virginianus* (white guinea pig) 1350 mg/kg body weight.

or LD50, *Apis mellifera* (bees) 48 Hour, 0.30 g/bee

contact LD50, *Apis mellifera* (bees) 48 Hour, 0.30 g/bee

Toxicity to soil-dwelling organisms

LC50, *isenia eidei* (earthworms) 14 d, 0.55 mg/kg

Persistence and degradability

Biodegradability: biodegradation under aerobic static laboratory conditions is high (OD 0 or OD 8 ThOD 40%)

Bioaccumulative potential

Triclopyr-2-butoxyethyl ester

Bioaccumulation: bioconcentration potential is moderate (C 100 and 3000 or Log Po between 3 and 5)

Partition coefficient: n-octanol/water(log Pow): 4.6

Bioconcentration factor (BCF): 110 (ish)

Kerosene

Bioaccumulation: bioconcentration potential is high (C 3000 or Log Po between 5 and 7)

Partition coefficient: n-octanol/water(log Pow): 6.3

Bioconcentration factor (BCF): 07.7

Ethylene glycol monobutyl ether

Bioaccumulation: bioconcentration potential is low (C 100 or Log Po 3)

Partition coefficient: n-octanol/water(log Pow): 0.81 Measured

Bioconcentration factor (BCF): 3.

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Triclopyr-2-butoxyethyl ester

Calculation of meaningful sorption data is not possible due to derivate degradation in the soil.

For the degradation product

Triclopyr.

Potential for mobility in soil is derivate high (oc between 0 and 50)

Kerosene

Potential for mobility in soil is slight (oc between 000 and 5000)

Partition coefficient (Koc): 4818

Ethylene glycol monobutyl ether

Potential for mobility in soil is high (oc between 50 and 150)

Partition coefficient (Koc): 67 estimated.

Balance

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: Packages and/or containers cannot be disposed according to the product label directions, disposal of this material must be in accordance with your local or regional regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristics or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes obsolete, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Combustible liquid, n.o.s. Triclor, Aerosene Petroleum
UN number	NA 103
Class	CL
Packing group	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name	UN 3082, N.O.S. Triclor, Aerosene Petroleum
UN number	UN 3082
Class	III
Packing group	III
Marine pollutant	Triclor, Aerosene Petroleum
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	UN 3082, N.O.S. Triclor, Aerosene Petroleum
UN number	UN 3082
Class	III
Packing group	III

Further information:

Marine pollutants assigned UN number 3077 and 3082 in single or combination packaging containing net quantity per single or inner packaging of 5 L or less for liquids or having net mass per single or inner packaging of 5 kg or less for solids may be transported as non-dangerous goods as provided in section 10.7 of IMDG code, IATA specification A17, and ADR/RID specification 375.

This information is not intended to constitute specific regulatory or operational requirements. Information relating to this product. Transportation classifications may vary by container volume and may be influenced by region or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Commode gases, aerosols, liquids, or solids
 Acute toxicity in route of exposure
 Respiratory or skin sensitization
 Specific target organ toxicity (single or repeated exposure)
 Aspiration hazard
 Commode gases, aerosols, liquids, or solids
 Acute toxicity in route of exposure
 Respiratory or skin sensitization
 Specific target organ toxicity (single or repeated exposure)
 Aspiration hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

The following components are subject to reporting levels established by SARA Title III, Section 313

Components	CASRN
Tricloro-2,2,2-trifluoroethyl ester	64700-56-7
2,2,2-trifluoroethyl monoethyl ether	111-76-0
2,2,2-trifluoroethyl Chloroacetate	5330-17-6

Pennsylvania Right To Know

The following chemicals are listed because of the additional requirements of Pennsylvania law

Components	CASRN
Tricloro-2,2,2-trifluoroethyl ester	64700-56-7
Perosene	8008-00-6

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

United States TSCA Inventory (TSCA)

This product contains chemical substances exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number 6710-040

CAUTION

Causes moderate eye irritation

Harmful substances

Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals.

16. OTHER INFORMATION

Hazard Rating System

NFPA

Health	Flammability	Instability
1	<input type="checkbox"/>	0

Revision

Identification Number 80600 A11 Issue Date 05/15/00 Version 17.0

DAS Code RM-4714

Most recent revisions are noted in the cold, double bars in left-hand margin throughout this document.

Legend

ACGIH	SA. ACGIH Threshold Limit Values TL
ACGIH	ACGIH - Biologic Exposure Indices
	Biologic Exposure Indices
DoH	DoH Industrial Hygiene Guideline
OSHA 1	SA. Occupational Exposure Limits OSHA Title 1 Limits for Air Contaminants
SDIN	Absorbed Dose
SDIN, DSDN, BI	Absorbed Dose, Skin Sensitizer, Biologic Exposure Indices
TA	Time Weighted Average TWA

Full text of other abbreviations

AICS - Australasian Inventory of Chemical Substances
ASTM - American Society for the Testing of Materials
C8 - Codeweight
CLP - Classification, Labeling and Packaging Regulation
CMR - Carcinogen, Mutagen or Reproductive Toxicant
DIN - Standard of the German Institute for Standardization
DOT - Department of Transportation
DSL - Domestic Substances List
EC - Concentration associated with response
HS - Extremely Hazardous Substance
L - Loading rate associated with response
MS - Emergency Schedule
NCS - Existing and New Chemical Substances
P - Concentration associated with growth rate response
RG - Emergency Response Guide
GHS - Globally Harmonized System
GL - Good Laboratory Practice
HMIS - Hazardous Materials Identification System
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IC - International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
IC50 - Half maximal inhibitor concentration
CAO - International Civil Aviation Organization
CSC - International Existing Chemical Substances in China
MDG - International Maritime Dangerous Goods
IMO - International Maritime Organization
ISHL - Industrial Safety and Health Law
ISO - International Organization for Standardization
CI - Core Existing Chemicals Inventory
LC50 - Lethal Concentration to 50% of test population
LD50 - Lethal Dose to 50% of test population
Median Lethal Dose
MARPOL - International Convention for the Prevention of Pollution from Ships
MSHA - Mine Safety and Health Administration
n.o.s. - Not Otherwise Specified
NQA - National Fire Protection Association
NOAEC - No Observed Adverse Effect Concentration
NOAEL - No Observed Adverse Effect Level
NOELR - No Observed Effect Loading Rate
NT - Nation

Toxicology Program (NIO) - National Center for Chemicals (OCD) - Organization for Economic Co-operation and Development (OTS) - Office of Chemical Safety and Pollution Prevention (T) - Persistent, Bioaccumulative and Toxic substance (ICCS) - Guidelines for Chemical and Chemical Substances (SAR) - Quantitative Structure-Activity Relationship (RCRA) - Resource Conservation and Recovery Act (ACH) - Regulation (EC) No 1006/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) - Reportable Quantity (SADT) - Self-Accelerating Decomposition Temperature (SARA) - Substances and Amendments and Reauthorization Act (SDS) - Safety Data Sheet (TCSI) - Toxic Chemical Substances Inventory (TSCA) - Toxic Substances Control Act (United States) (N) - United Nations (NRTDG) - United Nations Recommendations on the Transport of Dangerous Goods (GHS) - Persistent and Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DO AGROSCIENCES LLC urges each customer or recipient of this MSDS to study it carefully and consult appropriate experts, as necessary or appropriate, to become more informed and understand the data contained in this MSDS and the hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific MSDSs, we are not and cannot be responsible for MSDSs obtained from any source other than ourselves. If you have obtained an MSDS from another source or if you are not sure that the MSDS you have is current, please contact us for the most current version.

MS



SAFETY DATA SHEET

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SDS REVISIONS: 8.2

DATE OF ISSUE: 05/20/19

ACTIVATOR 90

SUPERSEDES: 01/20/16

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 PRODUCT IDENTIFIER:

TRADE NAME: **ACTIVATOR 90**

1.2 RECOMMENDED USE:

NON-IONIC SURFACTANT - DETERGENT ANTI-FOAMING AGENT

1.3 SUPPLIER DETAILS:

LOVELAND PRODUCTS, INC.

P.O. Box 186 Greeley, CO 80631-0186

1.4 24 Hour Emergency Phone: 1-800-444-3000 - Medical Emergencies: 1-866-444-8565 - Product Information: 1-888-574-8788 1-800-COST U.S. Coast Guard National Response Center: 1-800-424-8800

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to 29 CFR 1910.1200

Acute Toxicity Inhalation

Severe Dermal Irritation

Category 4

Category 3

H332

H312

2.2 Label elements



Signal word

Hazard Statements

WARNING

H332 Harmful if inhaled.

H312 Causes eye irritation.

H313 May be harmful in contact with skin.

H303 May be harmful if swallowed.

Precautionary

Statement

Precautionary

P061 Avoid breathing dust/fume/gas/mist/spray/aerosol.

P071 Use only outdoors or in well-ventilated area.

P064 Wash hand and face thoroughly after handling.

Precautionary

Statement

Response

P304+P340 Inhalation: Remove person to fresh air and keep comfortable for breathing.

P311+P331+P333+P338 Call a POISON CENTER or doctor/physician if you feel unwell.

P305+P351+P338 In eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

Precautionary

Statement

General

P101+P102+P103 If medical advice is needed, have product container or label available. Keep out of reach of children. Read label before use.

2.3 Other hazards

None known



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3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Classification according to 29 CFR 1910.1200

Chemical Name	CAS No.	Concentration %
Alcohol ethoxide	3438-01-1	
Nonphenol polyethylene glycol ether	17087-87-0	
Tall oil fatty acids	6170-13-3	
Diethylene glycol	111-46-6	
Water	7732-18-5	0.00 10.00

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

Eye contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.

Ingestion: Call poison control center or doctor immediately for treatment advice. Have person sip of glass of water if able to swallow. Do not induce vomiting unless told to do so by poison control center or doctor. Do not give anything by mouth to an unconscious person.

Inhalation: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call poison control center or doctor for treatment advice.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Moderate harmful effects followed.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565

Take container, label or product name with you when seeking medical attention.

NOTES TO PHYSICIAN: Irritable mucous damage may contraindicate the use of gastric lavage. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable extinguishing media

Dry chemical, carbon dioxide (CO₂), alcohol foam, foam, water spray or fog. Do not use water jet as this will spread the fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting

During fire, hazardous by-products can be released.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people back. Isolate fire and deny unnecessary entry.



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6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Person's Precautions

Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environment's Precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers, or watercourses.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.

Small Spills: Use up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling

Avoid inhalation of mists, vapors and contact with eyes, skin and clothing. Do not breathe the mists or vapor. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not emit into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers

Store in cool, dry place. Store in original container. Keep tightly closed. Do not reuse empty container. Product will become thicker at cold temperatures but effectiveness will not be affected. Warm product before use. Do not contaminate water, food or feed in storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH) Guides

Components	Type	Value
No listings	TWA	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:

Engineering Measures

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mists. Provide eye wash station and safety shower.

Individual Protection Measures:

Eye/Face Protection

Goggles or shielded safety glasses are recommended.

Skin Protection

Protective gloves.

Respirator Protection

Dependent on function. Vapors or dusts exceed acceptable levels, wear MSHA/NIOSH approved air-purifying respirator with appropriate cartridges/filters approved for pesticides. If respirators are used, program should be in place to ensure compliance with 29 CFR 1910.134, the OSHA Respirator Protection Standard. Wear supplied air respirator if exposure concentrations are unknown.



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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE Liquid
ODOR Mild, little
ODOR THRESHOLD No detectable.
COLOR Golden yellow.
pH 6.3 in solution
MELTING POINT FREEZING POINT No detectable
OILING POINT 15 to 101.0 °C
FLASH POINT 100 to 100 °C (TCC)
FLAMMABILITY (solid, gas) No detectable.
CORROSION OR FLAMMABILITY OR LOSS LIMITS No detectable.
ACID OR BASIC No detectable.
SOLUBILITY Soluble
VAPOR PRESSURE 10.0 to 4 HRS @ 50 °C
PARTITION COEFFICIENT, n-OCTANOL AT 25 °C No detectable.
AUTO-IGNITION TEMPERATURE No detectable.
DECOMPOSITION TEMPERATURE No detectable
VISCOSITY, dynamic No detectable
SPECIFIC GRAVITY at 15.007 g/ml
DENSITY 8.40 lbs./gal. 1.01 g/l

Note: These physical data are typical values based on material tested but may vary from sample to sample.
Typical values should not be construed as guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

Stable

10.2 CHEMICAL STABILITY

Stable under normal temperature conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No reactions known under normal use conditions. Will not polymerize.

10.4 CONDITIONS TO AVOID

None known.

10.5 INCOMPATIBLE MATERIALS

Strong oxidizers, strong acids and bases at high temperatures.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide from burning.

11. TOXICOLOGICAL INFORMATION

11.1 LIKELY ROUTES OF EXPOSURE

Inhalation. Skin contact.

LC₅₀ (rat): 1.4 mg/l 4 HR

LD₅₀ Oral (male rat): 3,870 to 5,000 mg/kg

LD₅₀ Dermal (rabbit): 10,000 mg/kg

Acute Toxicity Estimates: No detectable

Skin Irritation (rabbit): Minor irritant.

Eye Irritation (rabbit): Irritant

Specific Target Organ Toxicity: Single exposure No detectable.

Aspiration: No detectable

Skin Sensitization (guinea pig): Not sensitive

Carcinogenicity: No detectable

Germ Cell Mutagenicity: No detectable

Interactive Effects: None known



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12. ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. This product is not intended for use in aquatic settings.

Ecotoxicological Data

	Species	Test Results
Product		
6-hour LC ₅₀	Oecilia reticulata	1.7 mg/L
6-hr NOEC	Oecilia reticulata	5.8 mg/L
4-hour EC ₅₀	Daphnia Magna	5.0 mg/L
4-hour NOEC	Daphnia Magna	1.0 mg/L

Drift or runoff may adversely affect non-target plants.

Do not apply directly to water.

Do not contaminate water when disposing of equipment wash water.

Do not apply when weather conditions may or may not result in drift to target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: No data available.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: No data available.

12.4 MOBILITY IN SOIL

No data available.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Wastes may be disposed on site or at an approved waste disposal facility. Triple rinse (or equivalent) and add rinse water to spray tank. Other containers for recycling or disposal in a unit or landfill or other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at <http://www.acrcycle.org>. Do not contaminate water, food or feed storage or disposal.

14. TRANSPORT INFORMATION

14.1 LAND TRANSPORT

DOT Shipping Description: NOT REGULATED.

U.S. Surface Freight Classification: ADHESIVES, ADHESANTS, SPRAYERS OR STICKERS (NMFC 4610) CLASS 60

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings

NFPA

1	Health	0	Least
0	Irritant	1	Slight
0	Instability		Moderate
		3	High
		4	Severe

HMIS

1	Health
0	Irritant
0	Reactivity
	Other



SAFETY DATA SHEET

SDS NUMBER: 1000001730-19-LPI

SDS REVISIONS: 8.2

DATE OF ISSUE: 05/20/19

ACTIVATOR 90

SUPERSEDES: 01/20/16

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:

Immediate ☐ ☐ ☐ ☐

Delayed ☐ ☒ ☐ ☐

Fire ☐ ☒ ☐ ☐

Reactive ☐ ☒ ☐ ☐

Sudden Release of Pressure ☐ ☒ ☐ ☐

Reportable Quantity (RQ) under U.S. CERCLA: Not listed

SARA, Title III, Section 313: Not listed

RCRA Waste Code: Not listed

CA Proposition 65: Not applicable

16. OTHER INFORMATION

SDS STATUS: Supersedes section 8.0 revised.

PREPARED BY: Product Stewardship and Regulatory Affairs

REVIEWED BY: Safety, Health and Environment

CA REG. NO.: 34704-50034

WA REG. NO.: 34704-04001

Disclaimer and Limitation of Liability: This data sheet is developed from information on the constituent materials identified herein and does not relate to the use of such materials in combination with any other material or process. No warranty is expressed or implied with respect to the completeness or ongoing accuracy of the information contained in this data sheet, and LOVELAND PRODUCTS, INC. disclaims all liability for reliance on such information. This data sheet is not a guarantee and users are responsible for ensuring that they have all current information necessary to safely use the product described in this data sheet for their specific purpose.



GROUP

9

HERBICIDE



Avoid contact of herbicide with foliage, green stems, exposed non-woody roots or fruit of crops, desirable plants and trees, because severe injury or destruction may result.

ACTIVE INGREDIENT:

Glyphosate*, N-(phosphonomethyl)glycine, in the form of its isopropylamine salt.....	53.80%
OTHER INGREDIENTS:	46.20%
TOTAL	100.00%

*Contains 648 grams per liter or 5.4 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its isopropylamine salt. Equivalent to 480 grams per liter or 4.0 pounds per U.S. gallon of the acid, glyphosate.

KEEP OUT OF REACH OF CHILDREN
CAUTION

For Additional Precautionary Statements, Complete First Aid, Directions for Use, Storage and Disposal and Other Use Information, See Inside This Label Booklet

FIRST AID

If Inhaled:	<ul style="list-style-type: none">• Move person to fresh air.• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to mouth, if possible.• Call a poison control center or doctor for treatment advice.
If Swallowed:	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have a person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by the poison control center or doctor.• Do not give anything by mouth to an unconscious person.• Call a poison control center or doctor for treatment advice.
If on Skin or Clothing:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15 to 20 minutes.• Call a poison control center or doctor for treatment advice.
If in Eyes:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565.	

EPA REG. NO. 34704-929
EPA EST. NO. 34704-XX-XXX
NET CONTENTS 2.5 GAL (9.46 L)

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1.0 INGREDIENTS

ACTIVE INGREDIENT:

Glyphosate*, N-(phosphonomethyl)glycine, in the form of its isopropylamine salt.....	53.80%
OTHER INGREDIENTS:	46.20%
TOTAL	100.00%

2.0 EMERGENCY PHONE NUMBERS

24-Hour Emergency Phone: 1-800-424-9300

Medical Emergencies: 1-866-944-8565

U.S. Coast Guard National Response Center: 1-800-424-8802

3.0 PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Domestic Animals: This product is considered to be relatively nontoxic to dogs and other domestic animals; however, ingestion of this product or large amounts of freshly sprayed vegetation may result in temporary gastrointestinal irritation (vomiting, diarrhea, colic, etc.). If such symptoms are observed, provide the animal with plenty of fluids to prevent dehydration. Call a veterinarian if symptoms persist for more than 24 hours.

3.1 Physical or Chemical Hazards

Spray solutions of this product must be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

3.2 Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- long-sleeved shirt and long pants,
- shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

3.3 User Safety Recommendations

Users should:

- Wash hands thoroughly after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing or PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

3.4 Environmental Hazards

FOR TERRESTRIAL USE ONLY: Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

3.5 Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, are:

- coveralls,
- waterproof gloves,
- shoes plus socks.

3.6 Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep people and pets off treated areas until spray solution has dried to prevent transfer of this product onto desirable vegetation.

3.7 Seed Potato Precautions

Potatoes grown for seed are very sensitive to glyphosate at extremely low concentrations. Exposure of the seed potato crop can cause germination failure or deformities. Daughter tuber damage may occur at levels where mother crop symptoms are not viable. Multiple sprouting from eyes, weak and distorted stems, "little potato syndrome", cauliflower sprouts, root distortions, excessive root growth, suppressed tuber initiation and bulking failure or delay in opening of eyes and rotting of tubers in the field or store can result. Subsequent plantings of seed pieces from the exposed mother crop can result in delayed a no emergence or produce lower than normal yields.

Glyphosate can contaminate seed potato crops through carryover residue in application equipment or drift from applying glyphosate to nearby crops.

Always follow good wash-out procedures using detergents or other suitable cleaning agents to remove all residual traces of glyphosate from application equipment that may be used to apply other products to seed potato crops.

To avoid contamination from spray drift follow the precautions in the "Spray Drift Management" section of the label.

4.0 USE INFORMATION

Product Description: This product is a postemergent, systemic herbicide with no soil residual activity. It is generally non-selective and gives broad-spectrum control of many annual weeds, perennial weeds, woody brush and trees. It is formulated as a water-soluble liquid. It may be applied through most standard industrial or field-type sprayers after dilution and thorough mixing with water or other carriers according to label instructions.

Surfactant may be included in the tank mixture if desired and should only be done so based on field experience or further instructions from your local extension service, crop consultant or field representative.

Time to Symptoms: This product moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days, but on most perennial weeds may not occur for 7 days or more. Extremely cool or cloudy weather following treatment may slow activity of this product and delay development of visual symptoms. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of aboveground growth and deterioration of underground plant parts.

Stage of Weeds: Annual weeds are easiest to control when they are small. Best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity. Refer to the annual, perennial, woody brush and trees rate tables for rates of specific weeds.

Always use the higher rate of this product per acre within the labeled range when weed growth is heavy or dense or weeds are growing in an undisturbed (non-cultivated) area.

Do not treat weeds under poor growing conditions such as drought stress, disease or insect damage, as reduced weed control may result. Reduced results may also occur when treating weeds heavily covered with dust.

Cultural Considerations: Reduced control may result when applications are made to annual or perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow to the labeled stage for treatment.

Rainfastness: Heavy rainfall soon after application may wash this product off of the foliage and a repeat application may be required for adequate control.

Spray Coverage: For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of runoff.

Mode of Action: The active ingredient in this product inhibits an enzyme found only in plants and microorganisms that is essential to formation of specific amino acids.

No Soil Activity: Weeds must be emerged at the time of application to be controlled by this product. Weeds germinating from seed after application will not be controlled. Unemerged plants arising from unattached underground rhizomes or rootstocks of perennials will not be affected by the herbicide and will continue to grow.

When this product comes in contact with soil, it is bound to soil particles. Under labeled use situations, once this product is bound to soil particles, it is not available for plant uptake and will not harm off-site vegetation where roots grow into the treated area or if the soil is transported off-site. The strong affinity of this product to soil particles prevents this product from leaching out of the soil profile and entering ground water.

Biological Degradation: Degradation of this product is primarily a biological process carried out by soil microbes.

Tank Mixing: This product does not provide residual weed control. For subsequent residual weed control, follow a label-approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used. Use according to the most restrictive label directions for each product in the mixture.

To the extent consistent with applicable law, buyer and all users are responsible for all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly allowed in this labeling. Mixing this product with herbicides or other materials not labeled on this label may result in reduced performance.

Annual Maximum Use Rate: Except as otherwise specified in a crop section of this label, the combined total of all treatments must not exceed 4.5 quarts of this product per acre per year.

For noncrop uses, the combined total of all treatments must not exceed 6.0 quarts of this product per acre per year.

ATTENTION

AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.

Do not allow the herbicide solution to mist, drip, drift or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to the crop, plants or other areas on which treatment was not intended. The likelihood of injury occurring from the use of this product increases when winds are gusty, as wind velocity increases, when wind direction is constantly changing or when there are other meteorological conditions that favor spray drift. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) which are likely to drift.

Refer to the Spray Drift Management guidance in Section 7.0

NOTE: Keep container closed to prevent spills and contamination.

5.0 WEED RESISTANCE MANAGEMENT

Glyphosate, the active ingredient in this product, is a Group 9 herbicide. Target site resistance to Group 9 herbicides is rare. Any weed population may contain plants naturally resistant to Group 9 herbicides. Weed species resistant to Group 9 herbicides may be effectively managed utilizing another herbicide from a different Group or using other cultural practices or mechanical practices.

5.1 Weed Management Directions

To minimize the occurrence of glyphosate-resistant biotypes, observe the following weed management recommendations:

- Scout your fields before and after herbicide applications.
- Start with a clean field, use either a burndown herbicide application or tillage.
- Control weeds early when they are relatively small.
- Add other herbicides (e.g. a selective and/or a residual herbicide) and cultural practices (e.g. tillage or crop rotation) where appropriate.
- One method of adding other herbicides into a continuous Roundup Ready system is to rotate to other Roundup Ready crops.
- Utilize the labeled rate for the most difficult to control weed in your field. Avoid tank mixtures with other herbicides that reduce this product's efficacy (through antagonism), or tank mixture recommendations that encourage application rates of this product below the labeled rate.
- Control weed escapes and prevent weeds from setting seeds.
- Clean equipment before moving from field to field to minimize the spread of weed seed or plant parts.
- Use new commercial seed that is as free of weed seed as possible.
- Report any incidence of repeated non-performance of this product on a particular weed to your Loveland Products, Inc. representative, local retailer, or county extension agent.

5.2 Management Directions for Glyphosate Resistance Biotypes

Note: Appropriate testing is critical in order to determine if a weed is resistant to glyphosate. Contact your Loveland Products, Inc. representative to determine if resistance has been confirmed to any particular weed biotype in your area, or visit on the internet www.weedresistancemanagement.com or www.weedscience.org. For more information see the "ANNUAL WEEDS RATE SECTION" and "PERENNIAL WEEDS RATE SECTION" of this label.

Control directions for biotypes confirmed as resistant to glyphosate are made available on separately published supplemental labeling or fact sheets for this product and can be obtained from your local retailer or Loveland Products, Inc. representative.

Since the occurrence of new glyphosate resistant weeds cannot be determined until after product use and scientific confirmation, to the extent consistent with applicable law, Loveland Products, Inc. is not responsible for any losses that may result from the failure of this product to control glyphosate-resistant weed biotypes.

The following good agronomic practices are recommended to reduce the spread of confirmed glyphosate resistant biotypes:

- If a naturally occurring resistant biotype is present in your field, this product should be tank-mixed or applied sequentially with an appropriately labeled herbicide with a different mode of action to achieve control.
- Cultural and mechanical control practices (e.g. crop rotation or tillage) may also be used as appropriate.
- One method for adding other herbicides into a continuous Roundup Ready system is to rotate to other Roundup Ready crops.
- Scout treated fields after herbicide applications and control escaping weeds including resistant biotypes before they set seed.
- Thoroughly clean equipment before leaving fields known to contain resistant biotypes.

6.0 MIXING

Clean sprayer parts immediately after using this product by thoroughly flushing with water.

Precaution: Reduced results may occur if water containing soil is used, such as visibly muddy water or water that is not clear from ponds and ditches.

6.1 Mixing with Water

This product mixes readily with water. Mix spray solutions of this product as follows: Fill the mixing or spray tank with the required amount of water. Add the labeled amount of this product near the end of the filling process and mix well. Use caution to avoid siphoning back into the carrier source. Use approved anti-back-siphoning devices where required by state or local regulations. During mixing and application, foaming of the spray solution may occur. To prevent or minimize foam, avoid the use of mechanical agitators, terminate by-pass and return lines at the bottom of the tank and, if needed, use an approved anti-foam or defoaming agent.

6.2 Surfactant

Surfactant may be included in the tank mixture if desired and should only be done so based on field experience or further recommendation of your local extension service, crop consultant or field representative.

6.3 Tank Mixing Procedure

Mix labeled tank mixtures of this product with water as follows:

1. Place a 20 to 35-mesh screen or wetting basket over filling port.
2. Through the screen, fill the spray tank one-half full with water and start agitation.
3. If a wettable powder is used, make a slurry with the water carrier, and add it SLOWLY through the screen into the tank. Continue agitation.
4. If a flowable formulation is used, premix one part flowable with one part water. Add diluted mixture SLOWLY through the screen into the tank. Continue agitation.
5. If an emulsifiable concentrate formulation is used, premix one part emulsifiable concentrate with two parts water. Add diluted mixture slowly through the screen into the tank. Continue agitation.
6. Continue filling the spray tank with water and add the required amount of this product near the end of the filling process.
7. When using nonionic surfactant add it to the spray tank before completing the filling process.
8. Add individual formulations to the spray tank as follows: wettable powder, flowable, emulsifiable concentrate, drift control additive, water-soluble liquid followed by surfactant.

Maintain good agitation at all times until the contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed. Keep by-pass line on or near the bottom of the tank to minimize foaming. Screen size in nozzle or line strainers must be no finer than 50 mesh.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Always predetermine the compatibility of labeled tank mixtures of this product with water carrier by mixing small proportional quantities in advance.

Refer to the "TANK MIXING" section of "USE INFORMATION" for additional precautions.

6.4 Mixing for Hand-held Sprayers

Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table:

Spray Solution

Desired Volume	Amount of Mad Dog 5.4					
	0.75%	1.0%	1.5%	2.0%	5.0%	10.0%
1.0 gal	1.0 fl oz	1.33 fl oz	2.0 fl oz	2.66 fl oz	6.5 fl oz	13.0 fl oz
25.0 gal	1.5 pt	1.0 qt	1.5 qt	2.0 qt	5.0 qt	10.0 qt
100 gal	3.0 qt	1.0 gal	1.5 gal	2.0 gal	5.0 gal	10.0 gal

2.0 tablespoons = 1.0 fluid ounce

For use in knapsack sprayers, it is suggested that the labeled amount of this product be mixed with water in a larger container. Fill sprayer with the mixed solution.

6.5 Ammonium Sulfate

The addition of 1 to 2 percent dry ammonium sulfate by weight or 8.5 to 17.0 pounds per 100 gallons of water may increase the performance of this product when tank mixed with certain residual herbicides on annual and perennial weeds. The equivalent rate of ammonium sulfate in a liquid formulation may also be used. Ensure that ammonium sulfate is completely dissolved in the spray tank before adding herbicides. Thoroughly rinse the spray system with clean water after use to reduce corrosion.

NOTE: When using ammonium sulfate, apply this product at rates labeled in this label. Lower rates will result in reduced performance.

6.6 Colorants or Dyes

Agriculturally approved colorants or marking dyes may be added to this product. Colorants or dyes used in spray solutions of this product may reduce performance, especially at lower rates or dilutions. Use colorants or dyes according to the manufacturer's directions.

6.7 Drift Control Additives

Drift control additives may be used with all equipment types, except wiper applicators, sponge bars and CDA equipment. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

7.0 APPLICATION EQUIPMENT AND TECHNIQUES

Do not apply this product through any type of irrigation system.

This product may be applied with the following application equipment:

Aerial - Fixed Wing and Helicopter

Ground Broadcast Spray - Boom or boomless systems, pull-type sprayer, floaters, pick-up sprayers, spray coupes and other ground broadcast equipment.

Hand-held and High-Volume Spray Equipment - Knapsack and backpack sprayers, pump-up pressure sprayers, handguns, handwands, mistblowers*, lances and other hand-held and motorized spray equipment used to direct the spray onto weed foliage.

*This product is not registered in California or Arizona for use in mistblowers.

Selective Equipment - Recirculating sprayers, shielded and hooded sprayers, wiper applicators and sponge bars.

Injection Systems - Aerial or ground injection sprayers.

Controlled Droplet Applicator (CDA) - Hand-held or boom-mounted applicators which produce a spray consisting of a narrow range of droplet sizes.

Apply these spray solutions in properly maintained and calibrated equipment capable of delivering desired volumes.

7.1 Aerial Equipment

DO NOT APPLY THIS PRODUCT USING AERIAL SPRAY EQUIPMENT EXCEPT UNDER CONDITIONS AS SPECIFIED WITHIN THIS LABEL.

Use the labeled rates of this herbicide in 3.0 to 15.0 gallons of water per acre unless otherwise specified on this label. Unless otherwise specified, do not exceed 24.0 fluid ounces per acre. Aerial applications of this product may be made in annual cropping conventional tillage systems, fallow and reduced tillage systems and preharvest applications. Refer to the individual use area sections of this label for labeled volumes and application rates.

NOTE: For aerial application in California or Arkansas, refer to the Federal supplemental label for aerial applications in that state for specific instructions, restrictions and requirements. For aerial applications, consult with state or local authorities regarding any additional requirements for aerial treatments.

Dicamba tank mixtures may not be applied by air in California. Avoid direct application to any body of water.

AVOID DRIFT - DO NOT APPLY DURING LOW-LEVEL INVERSION CONDITIONS, WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION WHICH FAVORS DRIFT. DRIFT MAY CAUSE DAMAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

Ensure uniform application - To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills.

Prolonged exposure of this product to uncoated steel surfaces may result in corrosion and possible failure of the part. Landing gear are most susceptible.

The maintenance of an organic coating (paint), which meets aerospace specification MIL-C-38413, may prevent corrosion.

7.2 Aerial Spray Drift Management

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.
3. Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory.

Aerial Drift Reduction Advisory

This section is advisory in nature and does not supersede the mandatory label requirements.

Information on droplet size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

Controlling droplet size

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation - Orient nozzles so that the spray is released parallel to the airstream which produces larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom length

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application height

Applications must not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance must increase with increasing drift potential (higher wind, smaller drops, etc.)

Wind

Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application must be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

Temperature and humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature inversions

Applications must not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive areas

The pesticide must only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

7.3 Ground Broadcast Equipment

Use the labeled rates of this product in 3.0 to 40.0 gallons of water per acre as a broadcast spray unless otherwise specified. As density of weeds increases, also increase the spray volume within the labeled range to ensure complete coverage. Carefully select proper nozzles to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

7.4 Hand-Held and High-Volume Equipment

Apply to foliage of vegetation to be controlled. For applications made on a spray-to-wet basis, spray coverage must be uniform and complete. Do not spray to the point of runoff. Use coarse sprays only. For control of weeds listed in the annual weeds rate tables, apply a 0.5 percent solution of this product to weeds less than 6 inches in height or runner length. Apply prior to seedhead formation in grass or bud formation in broadleaf weeds. For annual weeds over 6 inches tall, or unless otherwise specified, use a 1 percent solution.

For best results, use a 1.5 percent solution on harder-to-control perennials, such as Bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

When using application methods which result in less than complete coverage, use a 3.75 percent solution for annual and perennial weeds and a 3.75 to 5.0 percent solution for woody brush and trees.

7.5 Selective Equipment

This product may be applied through recirculating spray systems, shielded applicators, hooded sprayers, wiper applicators or sponge bars after dilution and thorough mixing with water to listed weeds growing in any noncrop site specified on this label and only when specifically labeled in cropping systems.

A recirculating spray system directs the spray solution onto weeds growing above desirable vegetation, while spray solution not intercepted by weeds is collected and returned to the spray tank for reuse.

A shielded or hooded applicator directs the herbicide solution onto weeds, while shielding desirable vegetation from the herbicide.

A wiper or sponge applicator applies the herbicide solution onto weeds by rubbing the weed with an absorbent material containing the herbicide solution.

AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.

Contact of the herbicide solution with desirable vegetation may result in damage or destruction. Applicators used above desirable vegetation must be adjusted so that the lowest spray stream or wiper contact point is at least 2 inches above the desirable vegetation. Droplets, mist, foam, or splatter of the herbicide solution settling on desirable vegetation may result in discoloration, stunting or destruction.

Make applications above the crops when the weeds are a minimum of 6 inches above the desirable vegetation. Better results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations or when the height of the weeds varies so that not all weeds are contacted. In these instances, repeat applications can be made up to the maximum number of applications for that use site.

Shielded and hooded applicators: Use nozzles that provide uniform coverage within the treated area. Keep shields on these sprayers adjusted to protect desirable vegetation. Extreme care must be exercised to avoid contact of herbicide with desirable vegetation.

A hooded sprayer is a type of shielded applicator. The spray pattern is completely enclosed on the top and all 4 sides by a hood, thereby shielding the crop from the spray solution. This equipment must be set up and operated in a manner that avoids bouncing or raising the hoods off the ground in any way. If the hoods are raised, spray particles may escape and come into contact with the crop, causing damage or destruction of the crop. The spray hoods must be operated on the ground or skimming across the ground. Tractor speed must be adjusted to avoid bouncing of the spray hoods. Avoid operation on rough or sloping ground where the spray hoods might be raised off the ground.

Wiper applicators and sponge bars: Wiper applicators are devices that physically wipe appropriate amounts of this product directly onto the weed.

Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation. Operate this equipment at ground speeds no greater than 5 mph. Performance may be improved by reducing speed in areas of heavy weed infestations to ensure adequate wiper saturation. Better results may be obtained if 2 applications are made in opposite directions.

Avoid leakage or dripping onto desirable vegetation. Adjust height of applicator to ensure adequate contact with weeds. Keep wiping surfaces clean. Be aware that, on sloping ground, the herbicide solution may migrate, causing dripping on the lower end and drying of the wicks on the upper end of a wiper applicator.

Do not use wiper equipment when weeds are wet.

Mix only the amount of solution to be used during a 1-day period, as reduced activity may result from use of leftover solutions. Clean wiper parts immediately after using this product by thoroughly flushing with water.

Include a nonionic surfactant at a rate of 10 percent by volume of total herbicide solution with all wiper applications.

For Rope or Sponge Wick Applicators - Mix 3.0 quarts of this product in 2.0 gallons of water to prepare a 25 percent solution. Apply this solution to weeds listed in this section.

For Porous-Plastic Applicators - Solutions ranging from 25 to 100 percent of this product in water may be used in porous-plastic wiper applicators.

When applied as labeled, this product CONTROLS the following weeds:

Corn, volunteer	Panicum, Texas	Rye, common	Shattercane
Sicklepod	Spanishneedles	Starbur, bristly	

When applied as labeled, this product SUPPRESSES the following weeds:

Beggarweed, Florida	Bermudagrass	Dogbane, hemp	Dogfennel	Guineagrass	Johnsongrass
Milkweed	Nightshade, silverleaf	Pigweed, redroot	Ragweed, common	Ragweed, giant	Smutgrass
Sunflower	Thistle, Canada	Thistle, musk	Vaseygrass	Velvetleaf	

7.6 Injection Systems

This product may be used in aerial or ground injection spray systems. It may be used as a liquid concentrate or diluted prior to injecting into the spray stream.

RESTRICTION:

- Do not mix this product with the concentrate of other products when using injection systems.

7.7 CDA Equipment

The rate of this product applied per acre by vehicle-mounted CDA equipment must not be less than the amount labeled in this label when applied by conventional broadcast equipment. For vehicle-mounted CDA equipment, apply 3.0 to 15.0 gallons of water per acre.

For the control of annual weeds with hand-held CDA units, apply a 20 percent solution of this product at a flow rate of 2.0 fluid ounces per minute and a walking speed of 1.5 mph (1.5 pints per acre). For the control of perennial weeds, apply a 20 to 40 percent solution of this product at a flow rate of 2.0 fluid ounces per minute and a walking speed of 0.75 mph (3.0 to 6.0 pints per acre).

Controlled droplet application equipment produces a spray pattern which is not easily visible. Extreme care must be exercised to avoid spray or drift contacting the foliage or any other green tissue of desirable vegetation, as damage or destruction may result.

CROPS (Alphabetical)

8.0 ANNUAL and PERENNIAL CROPS (Alphabetical)

This section is organized alphabetically by crop category. There may be several labeled crops listed in a crop category.

See the individual crop categories for specific instructions, preharvest intervals, and additional precautions and restrictions.

See the "ROUNDUP READY CROPS" section of this label or separately published Loveland Products, Inc. supplemental labeling for instructions for treating Roundup Ready crops.

TYPES OF APPLICATIONS

Chemical fallow, Pre-plant fallow beds, Pre-plant, Pre-emergence, At Planting, Hooded Sprayers in Row-Middles, Shielded Sprayers in Row-Middles, Wiper Applications in Row-Middles, and Post-Harvest Treatments.

Additional application types may be specified or allowed in individual Crop Categories.

USE DIRECTIONS

Apply this product during fallow intervals preceding planting, prior to planting or transplanting, at planting, or pre-emergent to annual and perennial crops listed in this label, except where specifically limited. For any crop NOT listed in this label, applications must be made at least 30 days prior to planting.

Unless otherwise specified weed control applications must be made according to the rates listed in the "Annual Weeds", Perennial Weeds", and "Woody Brush and Trees" rate tables in this label.

Post-directed hooded sprayers and wiper equipment capable of preventing all crop contact with herbicide solutions may be used in mulched or un-mulched row middles after crop establishment. Where specifically noted below, wipers may also be used above certain crops to control tall weeds. Refer to the "SELECTIVE EQUIPMENT" section of this label for essential precautions when using hooded sprayers or wipers to avoid crop injury caused by leakage of spray mists or dripping onto crops. Crop injury is possible with these applications and shall be the sole responsibility of the applicator.

The maximum use rates stated throughout this product's labeling apply to this product combined with the use of all other herbicides containing glyphosate or sulfosate as the active ingredient, whether applied as mixtures or separately. Calculate the application rates and ensure that the total use of this and other glyphosate or sulfosate containing products does not exceed stated maximum use rate.

PRECAUTIONS

- Avoid contact of herbicide with foliage, green shoots or stems, bark, exposed roots (including those emerging from plastic mulch), or fruit of crops because severe injury or destruction may result.
- Apply before seed germination in coarse sandy soils to further minimize the risk of injury.

RESTRICTIONS

- Unless otherwise specified in this product's labeling, treatments with selective equipment including wipers and hooded sprayers must be made at least 14 days prior to harvest.
- In crops where spot treatments are allowed, do not treat more than 10 percent of the total field to be harvested. The crop receiving spray in treated area will be killed. Take care to avoid drift or spray outside the target area for the same reason.
- When making pre-emergence and at planting applications, applications must be made before crop emergence to avoid severe crop injury. Broadcast applications made at emergence will result in injury or death to emerged seedlings.
- Post-harvest or fallow applications must be made at least 30 days prior to planting any non-labeled crop.
- For broadcast post-emergent treatments, do not harvest or feed treated vegetation for 8 weeks following application, unless otherwise specified.

8.1 - Cereal and Grain Crops

LABELED CROPS: Barley, Buckwheat, Millet (Pearl and Proso), Oats, Rice, Rye, Quinoa, Teff, Teosinte, Triticale, Wheat (All), Wild rice

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.0	See Use Directions in Section 8.0	See Section 8.0
Pre-Plant, Pre-Emergence, At-Planting	This product may be applied before, during or after planting of cereal crops. Applications must be made prior to emergence of the crop.	Do not treat rice fields or levees when the field contains floodwater.
Red Rice Control (prior to planting rice)	Apply 2.25 pints (36.0 fl oz) of this product in 5.0 to 10.0 gallons of water per acre. Flush fields prior to application to obtain uniform germination and stand of red rice. Make application when the majority of the red rice plants are in the 2-leaf stage and no more than 4 inches tall. Red rice plants with less than 2 true leaves may only be partially controlled. Avoid spraying during low humidity conditions, as reduced control may result.	Do not treat rice field or levees when the fields contain flood water. Do not re-flood treated fields for 8 days following application.
Spot treatment (except rice)	This product may be applied as a spot treatment in cereal crops. Apply this product before heading in small grains.	Do not treat more than 10 percent of the total field area to be harvested. The crop receiving spray in the treated area will be killed. Do not spray or allow drift outside target area for the same reason.
Over the Top Wiper applications (Feed barley and wheat only)	Wiper applications may be used in wheat. To control common rye or cereal rye, apply after the weeds have headed and achieved maximum growth, when the rye is at least 6 inches above the wheat crop.	Allow at least 35 days between application and harvest. Do not use roller applicators.
Pre-harvest (Feed barley and wheat only)	This product provides weed control when applied prior to harvest of wheat. Apply after the hard-dough stage of grain (30% or less grain moisture) and at least 7 days prior to harvest. Wheat stubble may be grazed immediately after harvest. This product may be applied using either aerial or ground spray equipment. For ground applications, apply this product in 10.0 to 20.0 gallons of water per acre. For aerial applications, apply this product in 3.0 to 10.0 gallons of water per acre.	Do not apply more than 1.5 pints of this product per acre. Do not apply to wheat or barley grown for seed. Allow 7 days between application and harvest or grazing.
Post-harvest	This product may be applied after harvest of cereal crops. Higher rates may be required for control of large weeds which were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.	For any crop not listed on this label, applications must be made at least 30 days prior to planting the next crop. Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.

8.2 - Corn (Non-Roundup Ready)

LABELED CROPS: Field corn, Seed corn, Silage corn, Sweet corn and Popcorn

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS																														
See Section 8.0 Pre-plant, Pre-emergence, At planting	<p>See Use Directions in Section 8.0</p> <p>This product may be applied before, during or after planting corn. Applications must be made prior to emergence of the crop.</p> <p>TANK MIXTURES: Apply these tank mixtures in 10.0 to 20.0 gallons of water or 10.0 to 60.0 gallons of nitrogen solution per acre. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <table> <tr> <td>2,4-D</td><td>Distinct</td><td>Lariat</td></tr> <tr> <td>Aim</td><td>Dual Magnum</td><td>Intro</td></tr> <tr> <td>Atrazine</td><td>Dual II Magnum</td><td>Linex/Lorox</td></tr> <tr> <td>Axiom</td><td>Epic</td><td>Marksman</td></tr> <tr> <td>Balance</td><td>Frontier/Outlook</td><td>Micro-Tech</td></tr> <tr> <td>Bicep Magnum</td><td>Fultime</td><td>Prowl</td></tr> <tr> <td>Bicep II Magnum</td><td>Guardsman/Leadoff</td><td>Python</td></tr> <tr> <td>Bullet</td><td>Harness</td><td>simazine</td></tr> <tr> <td>Degree</td><td>Harness Xtra</td><td>Topnotch</td></tr> <tr> <td>Degree Xtra</td><td>Harness Xtra 5.6L</td><td></td></tr> </table> <p>For difficult to control annual weeds such as fall panicum, barnyardgrass, crabgrass, shattercane and broadleaf signal grass up to 2 inches tall and Pennsylvania smartweed up to 6 inches tall, apply this product at 1.5 pints (24.0 fl oz) per acre in these tank mixtures. For other labeled weeds, apply 1.0 to 1.5 pints (16.0 to 24.0 fl oz) of this product per acre when weeds are less than 6 inches tall, 1.5 to 2.25 pints (24.0 to 36.0 fl oz) when weeds are over 6 inches tall. When using nitrogen solutions as the carrier, use rate may need to be increased to the 2.25 pints (36.0 fl oz) rate for acceptable weed control.</p>	2,4-D	Distinct	Lariat	Aim	Dual Magnum	Intro	Atrazine	Dual II Magnum	Linex/Lorox	Axiom	Epic	Marksman	Balance	Frontier/Outlook	Micro-Tech	Bicep Magnum	Fultime	Prowl	Bicep II Magnum	Guardsman/Leadoff	Python	Bullet	Harness	simazine	Degree	Harness Xtra	Topnotch	Degree Xtra	Harness Xtra 5.6L		<p>See Section 8.0</p> <p>Do not apply in nitrogen solutions to tough-to-control grasses such as barnyardgrass, fall panicum, broadleaf signalgrass, annual ryegrass and any perennial weeds in the following area:</p> <p>From Route 50 South in Illinois and Indiana and the following states: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, New Jersey, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia.</p>
2,4-D	Distinct	Lariat																														
Aim	Dual Magnum	Intro																														
Atrazine	Dual II Magnum	Linex/Lorox																														
Axiom	Epic	Marksman																														
Balance	Frontier/Outlook	Micro-Tech																														
Bicep Magnum	Fultime	Prowl																														
Bicep II Magnum	Guardsman/Leadoff	Python																														
Bullet	Harness	simazine																														
Degree	Harness Xtra	Topnotch																														
Degree Xtra	Harness Xtra 5.6L																															
Spot treatment	For spot treatments, apply this product prior to silking of corn.	<p>Do not treat more than 10 percent of the total field area to be harvested.</p> <p>The crop receiving spray in the treated area will be killed. Do not spray or allow drift outside target area for the same reason.</p>																														
Hooded sprayers	<p>This product may be used through hooded sprayers for weed control between the rows of corn. Only hooded sprayers that completely enclose the spray pattern may be used.</p> <p>See additional instructions for the use of hooded sprayers in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.</p> <p>Precaution: Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. To the extent consistent with applicable law, such damage shall be the sole responsibility of the applicator.</p>	<p>Corn must be at least 12 inches tall, measured without extending leaves.</p> <p>Do not apply more than 1.5 pints (24.0 fl oz) of this product per acre for each application and no more than 2.25 quarts (72.0 fl oz) per acre per year for hooded sprayer applications.</p>																														

8.2 - Corn (Non-Roundup Ready)

LABELED CROPS: Field corn, Seed corn, Silage corn, Sweet corn and Popcorn

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-harvest	<p>Make applications at 35 percent grain moisture or less. Ensure that maximum kernel fill is complete and the corn is physiologically mature (black layer formed).</p> <p>For ground applications, apply up 2.25 quarts (72.0 fl oz) of this product per acre.</p> <p>For aerial applications, apply up to 3.0 pints (48.0 fl oz) of this product per acre.</p>	<p>Allow a minimum of 7 days between application and harvest.</p> <p>Do not make applications to corn grown for seed.</p>
Post-harvest	<p>This product may be applied after harvest of corn. Higher rates may be required for control of large weeds which were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used.</p>	<p>Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.</p>

8.3 - Cotton (Non-Roundup Ready)

LABELED CROPS: Cotton

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.0	See Use Directions in Section 8.0	See Section 8.0
Pre-plant, Pre-emergence, At-planting	<p>This product may be applied before, during or after planting cotton.</p>	<p>Applications must be made prior to emergence of the crop.</p>
Hooded sprayer, Selective equipment	<p>This product may be applied through hooded sprayers, shielded applicators or wiper applicators in cotton.</p>	<p>See the "Selective Equipment" part of the "Application Equipment and Techniques" section of this label for information on proper use and calibration of this equipment.</p> <p>Allow at least 7 days between application and harvest.</p>
Spot treatment	<p>For spot treatments, apply this product prior to boll opening of cotton.</p>	<p>Do not treat more than 10 percent of the total field area to be harvested.</p> <p>The crop receiving spray in the treated area will be killed. Do not spray or allow drift outside target area for the same reason.</p>
Pre-harvest	<p>This product provides weed control and cotton regrowth inhibition when applied prior to harvest of cotton. For weed control, apply at rates given in the annual, perennial and woody brush tables. Apply 12.0 to 48.0 fl oz of this product per acre for cotton regrowth inhibition.</p> <p>Apply up to 3.0 pints (48.0 fl oz) of this product using either aerial or ground spray equipment. Apply after sufficient bolls have developed to produce the desired yield of cotton. Applications made prior to this time could affect maximum yield potential.</p>	<p>Allow at least 7 days between application and harvest.</p> <p>Do not apply to cotton grown for seed, as a reduction in germination or vigor may occur.</p> <p>The use of additives other than those listed on this label, for preharvest application to cotton is prohibited.</p>

8.3 - Cotton (Non-Roundup Ready)

LABELED CROPS: Cotton

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Pre-harvest cont'd</i>	TANK MIXTURES: This product may be tank mixed with DEF [®] 6, Folex [®] , Ginstar or Prep [™] to provide additional enhancement of cotton leaf drop. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.	

8.4 - Fallow Systems

LABELED CROPS: This product may be applied during the fallow period prior to planting or emergence of any crop on this label.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Chemical Fallow	<p>See Use Directions in Section 8.0</p> <p>This product may be applied during the fallow period prior to planting or emergence of any crop listed on this label.</p> <p>This product may be used as a substitute for tillage to control annual weeds in fallow fields. Also, broadcast or spot treatments will control or suppress many perennial weeds in fallow fields. Ground or aerial application equipment may be used. Tank mixtures with 2,4-D and dicamba may be used. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>Applications up to 3.0 pints (48.0 fl oz) per acre may be made by aerial application in fallow sites where there is sufficient buffer to prevent injury due to drift onto adjacent crops.</p>	<p>See Section 8.0</p> <p>For any crop not listed on this label, applications must be made at least 30 days prior to planting.</p> <p>Do not apply dicamba tank mixtures by air in California.</p> <p>Refer to the specific product labels for crop rotation restrictions and cautionary statements of all products used in tank mixtures.</p>
Pre-plant Fallow Beds	<p>This product may be applied to fallow beds prior to planting or emergence of any crop listed on this label. This product will control weeds listed in the annual, perennial and woody brush tables.</p> <p>TANK MIXTURES: It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>In addition, 9.0 fl oz of this product plus the labeled rate of Goal[®] 2XL (or generic equivalent) per acre will control the following weeds with the maximum height or length indicated: 3" - Common cheeseweed, Chickweed, Groundsel; 6" - London rocket, Shepherdspurse.</p>	

8.4 - Fallow Systems

LABELED CROPS: This product may be applied during the fallow period prior to planting or emergence of any crop on this label.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Pre-plant Fallow Beds cont'd</i>	<p>12.0 fl oz of this product plus the labeled rate of Goal[®] 2XL (or generic equivalent) per acre will control the following weeds with the maximum height or length indicated: 6" - Common cheeseweed, Groundsel, Maretail (Conyza canadensis), 12" - Chickweed, London rocket, Shepherdspurse.</p> <p>PRECAUTION: Some crop injury may occur if dicamba is applied within 45 days of planting.</p>	
Aid-to-Tillage	<p>This product may be used in conjunction with tillage practices in fallow systems or pre-plant to labeled crops to control downy brome, cheat, volunteer wheat, tansy mustard and foxtail. Apply 9.0 fl oz of this product in 3.0 to 10.0 gallons of water per acre. Make applications before weeds are 6 inches in height. Application must be followed by conventional tillage practices no later than 15 days after treatment and before regrowth occurs.</p> <p>PRECAUTION: Tank mixtures with residual herbicides may result in reduced performance. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p>	Allow at least 1 day after application before tillage.

8.5 - Grain Sorghm (Milo)

LABELED CROPS: Grain Sorghum (Milo)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS								
See Section 8.0	See Use Directions in Section 8.0	See Section 8.0								
Pre-Plant, Pre-Emergence, At-Planting	<p>This product may be applied alone or in tank mixture before, during or after planting grain sorghum. Applications must be made prior to emergence of the crop.</p> <p>TANK MIXTURES: Apply these tank mixtures in 10.0 to 20.0 gallons of water or 10.0 to 60.0 gallons of nitrogen solution per acre. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <table><tr><td>Atrazine</td><td>Lariat</td></tr><tr><td>Bicep II Magnum</td><td>Lasso</td></tr><tr><td>Bullet</td><td>Micro-Tech</td></tr><tr><td>Dual II Magnum</td><td>Milo-Pro</td></tr></table> <p>For difficult-to-control annual weeds such as Fall panicum, Barnyardgrass, Crabgrass, Shattercane and Broadleaf signalgrass up to 2 inches tall, and Pennsylvania smartweed up to 6 inches tall, apply this product at 1.5 pints (24.0 fl oz) per acre in these tank mixtures. For other labeled annual weeds, apply 18.0 to 24.0 fl oz of this product per</p>	Atrazine	Lariat	Bicep II Magnum	Lasso	Bullet	Micro-Tech	Dual II Magnum	Milo-Pro	<p>For spot treatment, do not treat more than 10 percent of the total field area to be harvested.</p> <p>The crop receiving spray in the treated area will be killed. Do not spray or allow drift outside target area for the same reason.</p> <p>For wiper applicators, allow at least 40 days between application and harvest.</p> <p>Do not use roller applicators.</p> <p>Do not feed or graze treated milo fodder. Do not ensile treated vegetation.</p>
Atrazine	Lariat									
Bicep II Magnum	Lasso									
Bullet	Micro-Tech									
Dual II Magnum	Milo-Pro									

8.5 - Grain Sorghm (Milo)

LABELED CROPS: Grain Sorghum (Milo)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Pre-Plant, Pre-Emergence, At-Planting cont'd</i>	acre when weeds are less than 6 inches tall, and 1.5 to 2.25 pints (24.0 to 36.0 fl oz) when weeds are over 6 inches tall. When using nitrogen solutions as the carrier, the 2.25 pints (36.0 fl oz) use rate may need to be increased for acceptable weed control.	
Spot Treatment, Over-the-Top Wiper Applications	This product may be applied as a spot treatment in grain sorghum. Make spot treatments before heading of milo. This product may be applied with wiper applicators to control or suppress the weeds listed under "WIPER APPLICATORS" in the "SELECTIVE EQUIPMENT" section of this label.	
Hooded Sprayers	<p>This product may be used through hooded sprayers for weed control between the rows of milo. Only hooded sprayers that completely enclose the spray pattern may be used. See additional instruction for the use of hooded sprayers in the "APPLICATIONS EQUIPMENT AND TECHNIQUES" section of this label.</p> <p>Treat before milo sends tillers between the drill rows. If such tillers are contacted with the spray solution, the main plant may be killed. Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. To the extent consistent with applicable law, such damage is the responsibility of the applicator.</p> <p>Crop injury may occur when the foliage of treated weeds comes into direct contact with leaves of the crop. Droplets, mist, foam or splatter of the herbicide solution may contact the crop and cause discoloration, stunting or destruction.</p>	<p>Milo must be at least 12 inches tall, measured without extending leaves.</p> <p>Do not graze or feed milo forage or fodder following applications of this product through hooded sprayers.</p> <p>Do not apply more than 1.5 pints (24.0 fl oz) of this product per acre per application and no more than 2.25 quarts (72.0 fl oz) per acre for hooded sprayer applications.</p> <p>Do not apply this product when the leaves of the crop are growing in direct contact with weeds to be treated.</p>
Pre-harvest	<p>Make applications at 30% grain moisture or less.</p> <p>As with other herbicides that cause sudden plant death, avoid pre-harvest applications of this product to milo infected with charcoal rot as lodging can occur.</p>	<p>Do not apply more than 3.0 pints (48.0 fl oz) of this product per acre.</p> <p>Allow a minimum of 7 days between application and harvest of sorghum.</p> <p>The use of this product for pre-harvest grain sorghum (milo) is not registered in California.</p> <p>Do not make applications to sorghum grown for seed.</p>
Post-harvest	<p>This product may be applied after harvest of grain sorghum. A 2.25 pints (36.0 fl oz) rate may be required for control of large weeds which were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used.</p> <p>This product may be applied to grain sorghum (milo) stubble following harvest to suppress or control regrowth. Apply 1.5 pints (24.0 fl oz) of this product per acre for control, or 18.0 fl oz of this product per acre for suppression.</p>	<p>Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.</p>

8.6 - Herbs And Spices

LABELED CROPS: Allspice, Angelica, Star anise, Annatto (seed), Balm, Basil, Borage, Burnet, Chamomile, Caper buds, Caraway, Black caraway, Cardamom, Cassia bark, Cassia buds, Catnip, Celery seed, Chervil (dried), Chive, Chinese chive, Cilantro (seed), Cinnamon, Clary, Clove buds, Coriander leaf (cilantro or Chinese parsley), Coriander seed (cilantro), Costmary, Culantro (leaf), Cumin, Curry (leaf), Dill (dillweed), Dill (seed), Epazote, Fennel seed (common and Florence), Fenugreek, White ginger flower, Grains of paradise, Horehound, Hyssop, Juniper berry, Lavender, Lemongrass, Lovage (leaf and seed), Mace, Marigold, Marjoram (including oregano), Mexican oregano, Miaga flower, Mustard (seed), Nasturtium, Nutmeg, Parsley (dried), Pennyroyal, Pepper (black and white), Pepper leaves, Peppermint, Perilla, Poppy (seed), Rosemary, Rue, Saffron, Sage, Savory (summer and winter), Spearmint, Stevia leaves, Sweet bay, Tansy, Tarragon, Thyme, Vanilla, Wintergreen, Woodruff, Wormwood.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.0	<p>See Use Directions in Section 8.0</p> <p>PRECAUTION: This product could cause crop injury. When applying this product prior to transplanting or direct-seeding crops into plastic mulch, care must be taken to remove product residues from the plastic prior to planting.</p> <p>Residual product can be removed by a single 0.5-inch application of water, either by natural rainfall or via a sprinkler system. Care must be taken to ensure that the washwater flushes off the plastic mulch and does not enter transplant holes. Applications made at emergence will result in injury or death to emerged seedlings. For some crops below, applications must be made 3 days before transplanting or planting.</p>	See Section 8.0
<p>Over-the-Top Wiper Application, Spot Treatment</p> <p>(Peppermint and Spearmint only)</p>	<p>This product may be applied as a spot treatment or over the top of peppermint or spearmint with wiper applications in spearmint and peppermint. Apply spot treatments on a spray-to-wet basis with hand-held equipment, such as backpack sprayers, pump-up pressure sprayers, hand-guns, hand-wands or any other hand-held or motorized spray equipment used to direct the spray solution to a limited area.</p> <p>In wiper applications, the applicator must be adjusted so that the wiper contact point is at least 2 inches above the crop. Weeds should be a minimum of 6 inches taller than the crop.</p> <p>PRECAUTION: Contact of the herbicide solution with the crop may result in discoloration, stunting, or destruction.</p> <p>Further applications may be made in the same area at 30-day intervals.</p>	<p>Allow at least 7 days between application and harvest.</p> <p>In spot treatment applications, no more than 10 percent of the total field area to be harvested can be treated at one time.</p> <p>The crop receiving spray in the treated area will be killed. Do not spray or allow drift outside target area for the same reason.</p>

8.7 Oil Seed Crops

LABELED CROPS: Borage, Buffalo gourd (seed), Canola (non-Roundup Ready), Crambe, Flax, Jojoba, Lesquerella, Meadowfoam, Mustard (seed), Rape, Safflower, Sesame, Sunflower.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.0	<p>See Use Directions in Section 8.0</p> <p>This product may be applied before, during or after planting oil seed crops listed in this section. Broadcast applications must be made prior to crop emergence. Wiper applications or hooded sprayers may be used between the rows once the crop is established.</p>	<p>See Section 8.0</p> <p>For use with canola, do not apply more than 1.5 quarts (48.0 fl oz) of this product per acre.</p>

8.7 Oil Seed Crops

LABELED CROPS: Borage, Buffalo gourd (seed), Canola (non-Roundup Ready), Crambe, Flax, Jojoba, Lesquerella, Meadowfoam, Mustard (seed), Rape, Safflower, Sesame, Sunflower.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.0 <i>cont'd</i>	TANK MIXTURES: For sunflowers, a tank mixture with Prowl may be applied according to the labeled directions for that product.	For use with sunflowers, do not apply more than 0.75 quart (24.0 fl oz) of this product per acre as a single pre-plant or pre-emergence application per year. Do not feed or graze sunflower forage following application of this product.
Pre-Harvest (Sunflower and safflower)	This product provides weed control when applied as a harvest aid to a physiologically mature crop prior to harvest of sunflower or safflower. For safflower, apply when seed has lost its opaque character, approximately 20 to 30 days after the end of flowering of the secondary branches. For sunflower, apply when the backsides of sunflower heads are yellow and bracts are turning brown and seed moisture content is less than 35%.	Allow a minimum of 7 days between treatment and harvest or livestock feeding. Apply no more than 72.0 fl oz (2.25 quarts) of this product at a pre-harvest timing to safflower. Apply no more than 1.5 pints (24.0 fl oz) of this product at a pre-harvest timing to sunflower.
Post-Harvest (Sunflower and safflower)	This product may be applied after harvest of safflower or sunflower. A 2.25 pints (36.0 fl oz) per acre rate may be required for control of large weeds, which are growing in the crops at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.	Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation. Applications must be made at least 30 days prior to planting any crop not listed on the Glyphosate 53.8% label booklet.

8.8 - Soybeans

LABELED CROPS: Soybeans (non-Roundup Ready)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.0 Pre-Plant, Pre-Emergence, At-Planting	See Use Directions in Section 8.0 This product may be applied before, during or after planting soybeans. Applications must be made prior to emergence of the crop. Products that can be tank mixed with this product are in the table below. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. This product may be tank-mixed with 2,4-D or 2,4-DB. See the 2,4-D label for intervals between application and planting.	See Section 8.0 The tank mix directions in this section are not registered in California.

8.8 - Soybeans

LABELED CROPS: Soybeans (non-Roundup Ready)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS																														
<i>Pre-Plant, Pre-Emergence, At-Planting cont'd</i>	<p>For difficult-to-control weeds such as fall panicum, barnyardgrass, crabgrass, shattercane and broadleaf signalgrass up to 2 inches tall, and Pennsylvania smartweed up to 6 inches tall, apply this product at 1.5 pints (24.0 fl oz) per acre in these tank mixtures. For other labeled annual weeds, apply 18.0 to 24.0 fl oz of this product per acre when weeds are less than 6 inches tall, and 1.5 to 2.25 pints (24.0 to 36.0 fl oz) when weeds are over 6 inches tall.</p> <p>TANK MIXTURES:</p> <table border="0"> <tr> <td>Aim</td><td>Firstate</td><td>Micro Tech Prowl</td></tr> <tr> <td>Assure II Authority</td><td>Flexstar</td><td>Pursuit</td></tr> <tr> <td>Boundry Canopy</td><td>Frontline/Outlook</td><td>Pursuit Plus Reflex</td></tr> <tr> <td>Canopy XL</td><td>Fusion</td><td>Scepter</td></tr> <tr> <td>Command Domain</td><td>Gauntlet</td><td>Sencor/Lexone</td></tr> <tr> <td>Dual</td><td>Intrro</td><td>Squadron</td></tr> <tr> <td>Dual II Magnum</td><td>Linex</td><td>Steel</td></tr> <tr> <td></td><td>Lorox/Linuron</td><td>Valor</td></tr> <tr> <td></td><td>Lorox Plus</td><td></td></tr> <tr> <td></td><td>Magnum</td><td></td></tr> </table>	Aim	Firstate	Micro Tech Prowl	Assure II Authority	Flexstar	Pursuit	Boundry Canopy	Frontline/Outlook	Pursuit Plus Reflex	Canopy XL	Fusion	Scepter	Command Domain	Gauntlet	Sencor/Lexone	Dual	Intrro	Squadron	Dual II Magnum	Linex	Steel		Lorox/Linuron	Valor		Lorox Plus			Magnum		
Aim	Firstate	Micro Tech Prowl																														
Assure II Authority	Flexstar	Pursuit																														
Boundry Canopy	Frontline/Outlook	Pursuit Plus Reflex																														
Canopy XL	Fusion	Scepter																														
Command Domain	Gauntlet	Sencor/Lexone																														
Dual	Intrro	Squadron																														
Dual II Magnum	Linex	Steel																														
	Lorox/Linuron	Valor																														
	Lorox Plus																															
	Magnum																															
Spot treatment	<p>For spot treatments, apply this product prior to initial pod set in soybeans.</p> <p>The crop receiving spray in the treated area will be killed.</p>	<p>Do not treat more than 10 percent of the total field area to be harvested.</p> <p>Do not spray or allow drift outside target area for the same reason.</p>																														
Pre-harvest	<p>This product provides weed control when applied prior to harvest of soybeans.</p> <p>Apply at rates given in the annual, perennial and woody brush tables.</p> <p>This product may be applied using either aerial or ground spray equipment.</p> <p>Apply after pods have set and lost all green color. Care should be taken to avoid excessive seed shatter loss due to ground application equipment.</p>	<p>Do not apply more than 3.75 quarts (120 fl oz) per acre of this product for pre-harvest applications.</p> <p>Do not apply more than 3.0 pints (48.0 fl oz) per acre of this product by air.</p> <p>Allow a minimum of 7 days between application and harvest of soybeans.</p> <p>Do not graze or harvest treated hay or fodder for livestock feed within 25 days of last pre-harvest application. (If the application rate is 1.5 pints (24.0 fl oz) per acre or lower, the grazing restriction is reduced to 14 days after the last pre-harvest application.)</p> <p>Do not apply to soybeans grown for seed.</p>																														
Selective equipment	<p>This product may be applied through shielded applicators, hooded sprayers, wiper applicators or sponge bars in soybeans.</p> <p>See the "Selective Equipment" part of the "APPLICATION EQUIPMENT and TECHNIQUES" section of this label for information on proper use and calibration of this equipment.</p>	<p>Allow at least 7 days between application and harvest.</p>																														

8.9 - Sugarcane

LABELED CROPS: Sugarcane

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.0	See Use Directions in Section 8.0	See Section 8.0
Pre-plant, Pre-emergence, At-planting	This product may be applied in or around sugarcane fields or in fields prior to the emergence of plant cane.	Do not apply to vegetation in or around ditches, canals or ponds containing water to be used for irrigation.
Spot Treatment	<p>This product may be applied as a spot treatment in sugarcane. For control of volunteer or diseased sugarcane, make a 1 percent solution of this product in water and spray to wet the foliage of vegetation to be controlled. Volunteer or diseased sugarcane should have at least 7 new leaves.</p> <p>Avoid spray contact with healthy cane plants since severe damage or destruction may result.</p>	Do not feed or graze treated sugarcane foliage following application.
Fallow treatments	<p>This product may be used as a replacement for tillage in fields that are lying fallow between sugarcane crops. This product may also be used to remove the last stubble of ratoon cane. For removal of last stubble of ratoon cane, apply 3.0 to 3.75 quarts (96.0 to 120 fl oz) of this product in 10.0 to 40.0 gallons of water per acre to new growth having at least 7 new leaves.</p> <p>Ground or aerial application equipment may be used. Applications up to 4.5 pints (72.0 fl oz) per acre may be made by aerial application in fallow sites where there is sufficient buffer to prevent injury due to drift onto adjacent crops. Tank mixtures with 2,4-D and dicamba may be used. It is the pesticide user's responsibility to ensure that all products are registered for the intended use.</p> <p>Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p>	Allow 7 or more days after application before tillage.
Hooded sprayers	<p>This product may be used through hooded sprayers for weed control between the rows of sugarcane. See Section 7.0 for "APPLICATION EQUIPMENT and TECHNIQUES" for additional use directions. Minimize the potential for spray particles to escape from under the hood by operating the sprayer at appropriate ground speeds, nozzle pressures and wind speeds. Operation on rough or sloping ground may result in spray particles escaping from the hood.</p> <p>When applying to sugarcane that is grown on raised beds, ensure that the hood is designed to completely enclose the spray. If necessary, extend the front and rear flaps of the hoods to reach the ground in furrows between the rows.</p> <p>PRECAUTION: Droplets, mist, foam or splatter of the herbicide solution settling on the crop may result in discoloration, stunting or destruction.</p> <p>To the extent consistent with applicable law, such damage shall be the sole responsibility of the applicator.</p>	Do not allow treated weeds to come into contact with the crop.

8.9 - Sugarcane

LABELED CROPS: Sugarcane

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<p>FOR AID IN SUGARCANE RIPENING</p> <p>(FLORIDA, HAWAII, LOUISIANA, PUERTO RICO AND TEXAS)</p>	<p>This product is a foliar-applied plant growth regulator to hasten ripening and increase the level of sucrose in sugarcane. It is effective in both low and high- tonnage sugarcane.</p> <p>When applied as directed under the conditions described, this product will hasten ripening and extend the period of high sucrose level in sugarcane.</p> <p>As a result of leaf desiccation, improved trash burn can be expected.</p> <p>Most of the sucrose increase is concentrated in the top nodes of the treated cane stalk. In order to recover the maximum sugar where topping is practiced during harvest, top at the base of the fourth leaf.</p> <p>Prior to application, consult your state sugarcane authority or local Loveland Products, Inc. representative regarding the degree of sucrose response anticipated from the variety of sugarcane to be treated.</p> <p>APPLICATION RATES: Use the following application rates and timing instructions according to the State in which the sugarcane is grown.</p> <p>PRECAUTION: Application of this product may initiate development of shooting eyes. This product may not increase the sucrose content of sugarcane under conditions of good nature ripening. Within 2 to 3 weeks after application, this product may product a slight yellowing to pronounced browning and drying of leaves, and a shortening of upper internodes. Spindle death may occur.</p> <p>Rainfall within 6 hours after application may reduce effectiveness.</p> <p>NOTE: Use the higher rate within the labeled range when treating sugarcane under adverse ripening conditions or when less responsive varieties are to be treated.</p> <p>FLORIDA - Apply 3.75 to 9.0 fl oz of this product per acre 3 to 6 weeks before harvest of LAST RATTON CANE ONLY.</p> <p>HAWAII - Apply 6.75 to 15.75 fl oz of this product per acre 4 to 10 weeks before harvest.</p> <p>LOUISIANA - Apply 2.6 to 9.0 fl oz of this product per acre 3 to 7 weeks before harvest of RATOON CANE ONLY.</p> <p>PUERTO RICO - Apply 3.75 fl oz of this product per acre 3 to 5 weeks before harvest of RATOON CANE ONLY.</p> <p>TEXAS - Apply 3.75 to 9.0 fl oz of this product per acre 3 to 5 weeks before harvest of RATOON CANE ONLY.</p>	<p>Do not make application to sugarcane grown for seed.</p> <p>Do not feed or graze treated sugarcane forage following application.</p> <p>Do not apply for enhanced ripening to any crops other than sugarcane.</p> <p>Do not plant subsequent crops in treated fields other than the following for 30 days after application: alfalfa or other forage legumes, beans (all types), corn (all types), cotton, melons (all types), pasture grasses, peanuts, potatoes (Irish or sweet), sorghum (milo), soybeans, squash (all types) or wheat.</p>

8.10 - Vegetable Crops

This "VEGETABLE CROPS" section gives directions that apply to all listed vegetable crops within section 8.10 grouped alphabetically below. See the individual crop categories for specific instructions, preharvest intervals, precautions and restrictions.

TYPES OF APPLICATIONS

Chemical Fallow, Preplant Fallow Beds, Preplant, Preemergence, Prior to Transplanting Vegetables, At-Planting, Hooded Sprayers in Row Middles, Shielded Sprayers in Row Middles, Wiper Applications in Row Middles, and Post Harvest, Directed Applications (Non-Bearing Ginseng), Over-the-top Wiper Applications (Rutabagas Only).

PRECAUTIONS

- When applying this product prior to transplanting or direct-seeding crops into plastic mulch, care must be taken to remove residues of this product, which could cause crop injury, from the plastic prior to planting.
- Residues can be removed by single 0.5-inch application of water, either by natural rainfall or via a sprinkler system. Care must be taken to insure that the wash water flushed off the plastic mulch and does not enter transplant holes.
- Applications made at emergence will result in injury or death to emerged seedlings.
- Apply before seed germination in coarse sandy soils to further minimize the risk of injury.
- Avoid contact of herbicide with foliage, green shoots or stems, bark, exposed roots (including those emerging from plastic mulch), or fruit of crops because severe injury or destruction may result.

RESTRICTIONS

- When making pre-emergence and at planting applications, applications must be made before crop emergence to avoid severe crop injury.
- In crops with vines, hooded sprayer, shielded sprayer and wiper applications to row middles must be made prior to vine development to prevent severe injury or destruction.
- Unless otherwise specified in this product's labeling, treatments with selective equipment including wipers and hooded sprayers must be made at least 14 days prior to harvest.
- Post-harvest or fallow applications must be made at least 30 days prior to planting any non-labeled crop.

See "Application Equipment and Techniques" section of this label for additional information.

8.10.1 - Brassica Vegetables

LABELED CROPS: Broccoli, Broccoli (raab), Brussels sprouts, Cabbage, Cabbage (Chinese), Cabbage (Chinese mustard), Cauliflower, Cavalo broccolo, Chinese broccoli (gai lon), Chinese cabbage (bok choy and napa), Collards, Kale, Kohlrabi, Mizuna, Mustard greens, Mustard spinach, Rape greens

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.10	See Use Directions under Section 8.0	See Section 8.10

8.10.2 - Bulb Vegetables

LABELED CROPS: Garlic, Great-headed garlic, Leek, Onion (dry bulb and green), Shallot, Welsh onion, Shallot

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.10	See Use Directions under Section 8.0	See Section 8.10

8.10.3 - Cucurbit Vegetables and Fruits

LABELED CROPS: Chayote (fruit), Chinese waxgourd, Citron melon, Cucumber, Gherkin, Gourds, Gourds (edible including hyotan, cucuzza, hechima, Chinese okra), Melons (All), Momordica spp. (includes balsam apple, balsam pear, bittermelon, Chinese cucumber), Muskmelon (cantaloupe, casaba, crenshaw, golden pershaw, honeydew, honey ball, mango melon and Persion, pineapple, Santa Claus, snake), Pumpkin, Summer Squash (including crookneck, scallop, straightneck, vegetable marrow, zucchini) Winter squash (including butternut, calabaza, hubbard, acorn, spaghetti), Watermelon

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.10	See Use Directions under Section 8.0	For Cantaloupe, Casaba melon, Crenshaw melon, Cucumber, Gherkin, Gourds, Honeydew melon, Honey ball melon, Mango melon, Melons (all) Muskmelon, Persian melon, Pumpkin, Squash (summer and winter), AND Watermelon, allow at least 3 days between application and planting.

8.10.4 - Leafy Vegetables

LABELED CROPS: Amaranth (Chinese spinach), Arrugula (roquette), Beet greens, Cardoon, Celery, Celery (Chinese), Celtuce, Chaya, Chervil, Chrysanthemum (edible leaved), Chrysanthemum (Garland), Corn salad, Cress (garden and upland), Dandelion, Dock (sorrel), Dokudami, Endive (escarole), Fennel (Florence), Gow kee, Lettuce (head and leaf), Orach, Parsley, Purslane (garden and winter), Radicchio (red chicory), Rhubarb, Spinach (All), Swiss Chard, Watercress (upland), Water Spinach

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.10	See Use Directions under Section 8.0 For Watercress, avoid application within 3 days prior to seeding and during the period between seeding and emergence to minimize the risk of injury.	See Section 8.10

8.10.5 - Fruiting Vegetables

LABELED CROPS: Eggplant, Ground cherry (Physalis spp.), Pepino, Pepper (includes bell, chili, cooking, pimento, sweet), Tomatillo, Tomato

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.10	See Use Directions under Section 8.0	See Section 8.10 For Eggplant, Ground cherry, Pepino, Pepper (all), Tomatillo and Tomato, allow at least 3 days between application and planting. Do not use hooded or shielded sprayer applications in row middles of tomatoes.

8.10.6 - Legume Vegetables (succulent or dried)

LABELED CROPS: Bean (Lupinus: includes grain lupin, sweet lupin, white lupin, and white sweet lupin), Bean (Phaseolus: includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean), Bean (Vigna: includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean), Broad bean (fava), Chickpea (garbanzo), Guar, Jackbean, Lablab bean, Lentil, Pea (Pisum: includes dwarf pea, edible podded pea, English pea, field pea, garden pea, green pea, snowpea, sugar snap pea), Pigeon pea, Soybean (immature seed), Sword bean

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.10	See Use Directions under Section 8.0	See Section 8.10
Pre-harvest broadcast spray (Dry beans)	This product may be applied as an over the top broadcast spray to control labeled weeds prior to the harvest of dry beans. Apply up to 1.5 pints (24.0 fl oz) stage of the legume seed (30 percent grain moisture or less). Either ground broadcast or aerial applications may be made.	Apply at least 7 days before harvest for Dry Beans, Dry Peas, Lentils and Chickpeas. Only make one application per year. Do not combine a pre-harvest spray with a spot treatment on the same crop area.
Pre-harvest broadcast spray (Dry Peas, Lentils and Chickpeas)	This product may be applied as an over the top broadcast spray to control labeled weeds prior to the harvest of dry peas, lentils, and chickpeas. Apply up to 3.0 pints (48.0 fl oz) in 3.0 to 20.0 gallons of water per acre at the hard dough stage of the legume seed (30 percent grain moisture or less). Either ground broadcast or aerial applications may be made.	Do not feed treated vines and hay from these crops to livestock. Do not apply this product through any type of irrigation system. Do not treat field (feed) peas, since these are considered to be grown as livestock feed. Do not make pre-harvest applications to Dry Beans, Dry Peas, Lentils and Chickpeas grown for seed.
Spot treatment (Dry beans, Dry Peas, Lentils, Chickpeas)	This product may be applied as spot treatment to control troublesome weeds such as Canada thistle, quackgrass, mayweed (dog fennel), and milkweed in dry beans. Apply up to 19.5 fl oz in 10.0 to 20.0 gallons of water through ground spray equipment or use a 2 percent solution in a handheld sprayer. For best results, make applications at or beyond the bud stage of growth. The crop receiving spray in treated areas will be killed.	Apply at least 14 days before harvest Only one application per year may be made. Do not combine a pre-harvest spray with a spot treatment on the same crop area. Do not feed treated vines and hay from these crops to livestock. Do not apply this product through any type of irrigation system. Do not treat field cowpeas, since these are considered to be grown as livestock feed.

8.10.7 - Root and Tuber Vegetables

LABELED CROPS: Arracacha, Arrowroot, Artichoke (Chinese and Jerusalem), Beet (garden), Burdock, Canna, Carrot, Cassava (bitter and sweet), Celeriac, Chayote (root), Chervil, Chicory, Chufa, Dasheen, Galangal, Ginger, Ginseng, Horseradish, Leren, Kava, Parsley, Parsnips, Potato (Irish), Radish, Radish (Oriental), Rutabaga, Salsify, Salsify (Black and Spanish), Skirret, Sweet potato, Tanier, Tumeric, Turnip, Wasabi, Yacon, Yams, Yam bean, Yam (True)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.10	See Use Directions under Section 8.0	See Section 8.10
Direct Application (Non-bearing Ginseng)	<p>This product may be used for weed control in established non-bearing ginseng. Applications may be made with boom equipment, CDA, shielded sprayers, hand-held and high volume wands, lances, and orchard guns or with wiper application equipment.</p> <p>PRECAUTION: Extreme care must be exercised to avoid contact of herbicide solution, spray, drift or mist with foliage or green bark of trunk, branches, suckers, fruit or other parts of desirable plants. Contact of this product with other than matured brown bark can result in serious crop damage.</p>	Applications must be made at least one year prior to harvest.
Over-the-Top Wiper Application (Rutabaga Only)	Wiper applicators may be used over-the-top of rutabagas.	Allow at least 14 days between application and harvest of rutabagas.

8.11 - Miscellaneous Crops

LABELED CROPS: Aloe vera, Asparagus, Bamboo shoots, Globe artichoke, Okra, Peanut (ground nut), Pineapple, Strawberry, Sugar Beet (non-Roundup Ready)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 8.10	<p>See Use Directions under Section 8.0</p> <p>Avoid contact of herbicide with foliage, green shoots or stems. Bark, exposed roots (including those emerging from plastic mulch), or fruit of crops because severe injury or destruction may result.</p>	<p>See Section 8.10</p> <p>When making pre-emergence and at planting applications, applications must be made before crop emergence to avoid serious crop injury. Apply before seed germination in coarse sandy soils to further minimize the risk of injury. In crops with vines, hooded sprayer, shielded sprayer and wiper applications to row middles must be made prior to vine development.</p> <p>Treatments with selective equipment including wipers and hooded sprayers must be made at least 14 days prior to harvest.</p> <p>Post harvest or fallow applications must be made at least 30 days prior to planting any non-labeled crop.</p>
Weed control, Site preparation	This product may be applied for weed control or for site preparation prior to planting or transplanting crops listed in this section.	Do not apply within a week before the first asparagus spears emerge. Do not feed or graze treated pineapple forage following application.

8.11 - Miscellaneous Crops

LABELED CROPS: Aloe vera, Asparagus, Bamboo shoots, Globe artichoke, Okra, Peanut (ground nut), Pineapple, Strawberry, Sugar Beet (non-Roundup Ready)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Weed control, Site preparation cont'd	When applying this product prior to transplanting or direct seeding crops into plastic mulch, care must be taken to remove residues of this product from the plastic prior to transplanting. Residues can be removed by 0.5 inch natural rainfall or by applying water via a sprinkler system. Care must be taken to insure that the wash water flushes off the plastic mulch and does not enter transplant holes. Injury made at emergence will result in injury or death to emerged seedlings.	
Spot treatment (Asparagus)	This product may be applied immediately after cutting, but prior to the emergence of new spears.	Do not treat more than 10 percent of the total field area to be harvested. Do not harvest within 5 days of treatment.
Post-harvest (Asparagus)	This product may be applied after the last harvest and all spears have been removed. If spears are allowed to re-grow, delay application until ferns have developed. Make delayed treatments as a directed or shielded spray in order to avoid contact of the spray with ferns, stems or spears. Select and use recommended types of spray equipment for post-emergence postharvest applications. A directed spray is any application where the spray pattern is aligned in such a way as to avoid direct contact of the spray with the crop. A shielded spray is any application where a physical barrier is positioned and maintained between the spray and the crop to prevent contact of spray with the crop.	Do not allow direct contact of the spray with the asparagus which will result in serious crop injury.

9.0 - TREE, VINE, and SHRUB CROPS (Alphabetical)

This section gives directions that apply to all listed tree, vine and shrub crops within section 9.0 crop groups. Individual crops may have more specific instructions, pre-harvest intervals, precautions and restrictions.

TYPES OF APPLICATIONS

Pre-plant (Site Preparation) Broadcast Sprays, Weed control, Middles (between rows of trees, vines or shrubs), Strips (within rows of trees, vines or shrubs), Selective Equipment (shielded sprayers, wiper treatments), Directed Sprays, Spot Treatments, Perennial Grass Suppression, Cut Stump.

Applications may be made with boom equipment, CDA, shielded sprayers, hand-held and high-volume wands, lances, orchard guns or with wiper applicator equipment, except as directed.

USE DIRECTIONS

This product may be applied in middles (between rows of trees or vines), strips (within rows of trees or vines), and for weed control or perennial grass suppression in established tree fruit and tree nut groves, orchards, berries and vineyards. This product may also be used for site preparation prior to planting or transplanting these crops. Apply at 12.0 to 120 fluid ounces per acre according to the "Annual Weeds" and "Perennial Weeds" rate tables sections of this label. Utilize rates at the higher end of the labeled rate range when weeds are stressed, growing in dense populations or are greater than 12 inches tall. Repeat applications may be made up to a maximum of 7.8 quarts (250 fluid ounces) per acre per year.

The maximum use rates stated throughout this product's labeling apply to this product combined with the use of all other herbicides containing glyphosate or sulfosate as the active ingredient, whether applied as mixtures or separately. Calculate the application rates and ensure that the total use of this and other glyphosate or sulfosate containing products does not exceed stated maximum use rate.

PRECAUTIONS

- Extreme care must be exercised to avoid contact of herbicide solution, spray, drift or mist with foliage or green bark of trunk, branches, suckers, fruit or other part of the trees, canes and vines.
- Avoid applications when recent pruning wounds or other mechanical injury has occurred.
- Contact of this product other than matures brown bark can result in serious crop damage or destruction.
- For applications in strips (within rows of trees), only selective equipment (directed sprays, hooded sprayers, shielded applicators, or wipers) must be used to minimize the potential for leakage or drift of herbicide sprays onto crop.

See "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for additional directions and precautions.

RESTRICTIONS

- Only wipers or shielded applicators capable of preventing all contact with crop may be used.
- Only shielded or directed sprayers may be used in crops with potential for crop contact, and then only where there is sufficient clearance.
- For berry crops, hooded or shielded sprayers must be fully enclosed including top, sides, front and back.
- Allow a minimum of 3 days between applications and transplanting.

Middles (between rows of trees, vines or bushes)

USE DIRECTIONS

This product will control or suppress annual and perennial weeds and ground covers growing between the rows of labeled tree and vine crops. If weeds are under drought stress, irrigate prior to application. Reduced control may result if weeds have been mowed prior to application.

TANK MIXTURES

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

A tank mixture of this product plus Goal® 2XL (or generic equivalent) may be used for annual weeds in middles between rows of citrus crops, tree fruits, tree nuts and vine crops. This mixture is recommended when weeds are stressed or growing in dense populations. 12.0 to 24.0 fluid ounces per acre of this product plus the labeled rate of Goal® 2XL will control annual weeds with a maximum height or diameter of 6 inches, including Crabgrass, Common groundsel, Junglerice, Common lambsquarters, Redroot pigweed, London rocket, Common ryegrass, Shepherdspurse, Annual sowthistle, Common cheeseweed (malva), Filaree (suppression), Horseweed/marestail (Conyza canadensis), Stinging nettle and Common purslane (suppression). 12.0 to 24.0 fluid ounces per acre of this product plus labeled rate of Goal® 2XL will control Common cheeseweed (malva) or Hairy fleabane (Conyza bonariensis), with a maximum height or diameter of 3 inches.

Strips (in rows of trees, vines or bushes)

TANK MIXTURES

This product may be applied in rows of tree or vine crops and may also be tank mixed with the following products (or generic equivalent). It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

DEVRIOL® 50 DF	KARMEX® DF	PROWL®	SIMAZINE 80W	SULFLAN®AS
DIREX® 4L	KROVAR® I	PRINCEP® CALIBER 90	SIM-TROL™ 4L	SURFLAN® 75W
GOAL® 2XL	KROVAR® II	SIMAZINE 4L	SOLICAM® DF	

Restriction: Do not apply these tank mixtures in Puerto Rico.

PERENNIAL GRASS SUPPRESSION

This product will suppress perennial grasses such as Bahiagrass, Bermudagrass, Tall fescue, Orchardgrass, Kentucky bluegrass, and Quackgrass that are grown as ground covers in tree and vine crops.

For suppression of Tall fescue, Fine fescue, Orchardgrass and Quackgrass, apply 6.0 fluid ounces of this product in 10.0 to 20.0 gallons of water per acre.

For suppression of Kentucky bluegrass covers, apply 4.5 fluid ounces of this product per acre. Do not add ammonium sulfate.

For best results, mow cool season grass covers in the spring to even their height and apply this product 3 to 4 days after mowing.

For suppression of vegetative growth and seedhead inhibition of Bahiagrass for approximately 45 days, apply 4.5 fluid ounces of this product in 10.0 to 25.0 gallons of water per acre. Apply 1 to 2 weeks after full green-up or after mowing to a uniform height of 3 to 4 inches. This application must be made prior to seedhead emergence.

For suppression up to 120 days, apply 3.0 fluid ounces of this product per acre, followed by an application of 1.5 to 3.0 fluid ounces per acre about 45 days later. Make no more than 2 applications per year.

For burndown of Bermudagrass, apply 1.5 to 3.0 pints (24.0 to 48.0 fluid ounces) of this product in 3.0 to 20.0 gallons of water per acre. Use this treatment only if reduction of the Bermudagrass stand can be tolerated. When burndown is required prior to harvest, allow at least 21 days to ensure sufficient time for burndown to occur.

For suppression of Bermudagrass, apply 4.5 to 12.0 fluid ounces of this product per acre east of the Rocky Mountains and 12.0 fluid ounces of this product per acre west of the Rocky Mountains. Apply in a total spray volume of 3.0 to 20.0 gallons per acre, no sooner than 1 to 2 weeks after full green-up. If the Bermudagrass is mowed prior to application, maintain a minimum of 3 inches in height. Sequential applications up to the maximum labeled rate may be made when regrowth occurs and Bermudagrass injury and stand reduction can be tolerated. East of the Rocky Mountains, use rates of 4.5 to 7.5 fluid ounces per acre in shaded conditions or where a lesser degree of suppression is desired.

9.1 Cut Stumps (Tree crops)

LABELED CROPS:

Citrus Trees: Calamondin, Chironja, Citron, Citrus hybrids, Grapefruit, Kumquat, Lemon, Lime, Mandarin (Tangerine), Orange (all), Pummelo, Tangelo, Tangor.

Fruit Trees: Apply, Apricot, Cherry (sweet, sour), Crabapple, Loquat, Mayhaw, Nectarine, Olive, Peach, Pear, Plum/Prune (all), Quince.

Nut Trees: Almond, Beechnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (hazelnut), Hickory Nut, Macadamia, Pecan, Pistachio, Walnut (black, English).

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Suitable Hand-held Equipment	<p>Cut stump applications of this product may be made during site preparation or site renovation, prior to transplanting tree crops. This product will control regrowth of cut stumps and resprouts of many types of tree species, some of which are listed below.</p> <p>Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut trees or resprouts close to the soil surface. Apply a 50 to 100 percent solution of this product to the freshly cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, make applications during periods of active growth and full leaf expansion.</p> <p>PRECAUTION: Some sprouts, stems, or trees may share the same root system. Adjacent trees having a similar age, height and spacing may signal shared roots. Whether grafted or shared, injury is likely to occur to non-treated stems/trees when one or more trees sharing common roots are treated.</p>	Do not make cut stump applications when the roots of adjacent desirable trees may be grafted to the roots of the cut stump. Injury resulting from root grating may occur in adjacent trees.

9.2 - Berry Crops

LABELED CROPS: Blackberry (including bingleberry, black satin berry, Boysenberry, Cherokee blackberry, Chesterberry, Cheyenne blackberry, Coryberry, Darrowberry, Dewberry, Dirksen thronless berry, Himalayaberry, Hullberry, Juneberry, Lavacaberry, Lowberry, Lucretiaberry, Marionberry, Nectarberry, Olallie berry, Oregon evergreen berry, Phenomenalberry, Rangeberry, Ravenberry, Rosssberry, Shawnee blackberry, and Youngberry), Blueberry, Cranberry, Currant, Elderberry, Gooseberry, Huckleberry, Loganberry, Raspberry (Black, Red), Salal

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	See Use Directions under Section 9.0	<p>See Section 9.0</p> <p>Do not permit herbicide solution to contact desirable vegetation, including green shoots, canes or foliage.</p> <p>Allow a minimum of 14 days between last application and harvest of labeled berry crops.</p> <p>Allow a minimum of 30 days between last application and harvest of cranberries.</p> <p>Do not make directed sprays within the cranberry bush areas prior to berry harvest.</p>
Spot Treatment (Cranberry production)	<p>May be used to control weeds growing in dry ditches (interior and perimeter) of cranberry production areas. Handheld sprayers or other appropriate application equipment listed under "APPLICATION EQUIPMENT and TECHNIQUES" in this label may be used. Drop water level to remove standing water in ditches prior to application. In hand-held sprayers, use 1 to 2 percent solution of this product. Spray to wet vegetation, not to run-off.</p> <p>For treatments after draw down of water in dry ditches, allow 2 or more days after treatment before reintroduction of water to achieve maximum weed control.</p> <p>Apply this product within 1 day after draw down to ensure application to actively growing weeds.</p> <p>Use nozzles that emit medium- to large-sized droplets to minimize drift in order to avoid crop injury.</p>	<p>Allow a minimum of 30 days between last application and harvest of cranberries.</p> <p>Do not apply this material through irrigation system. Do not make applications by air. Do not apply directly to water.</p>
Post-harvest (Cranberry Production)	<p>Best results will be obtained if applications are made to vines that appear dormant (after they have turned red). Hand-held sprayers, wipers or other appropriate application equipment listed under "APPLICATION EQUIPMENT and TECHNIQUES" in this label may be used. If using hand-held sprayers, use a 0.5 to 1 percent solution of this product.</p> <p>Spray to wet vegetation, not to run off. If using hand-held boom sprayers, apply 1.5 to 3.0 quarts (48.0 to 96.0 fl oz) of this product per acre.</p> <p>PRECAUTION: Even though vines appear dormant, contact of the herbicide solution with desirable vegetation may result in damage or severe plant injury. Cranberry plants that are directly sprayed may be killed.</p>	<p>Do not treat more than 10 percent of the total bog.</p> <p>Allow a minimum of 6 months after the last application and next harvest of cranberries.</p> <p>Do not apply this product through the irrigation system. Do not make applications by air. Do not apply directly to water.</p> <p>Make applications only after cranberries have been harvested to control weeds growing within the field.</p>

9.3 - Citrus

LABELED CROPS: Calamondin, Chironja, Citron, Citrus Hybrids, Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Orange (All), Pummelo, Satsuma Mandarin, Tangelo (ugli), Tangor

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	<p>See Use Directions under Section 9.0</p> <p>Florida and Texas only: For burn down or control of the weeds listed below, apply the labeled rates of this product in 3.0 to 40.0 gallons of water per acre. Where weed foliage is dense, use 10.0 to 30.0 gallons of water per acre.</p> <p>For goatweed, apply 1.5 to 2.25 quarts (48.0 to 72.0 fl oz) of this product per acre. Apply in 20.0 to 30.0 gallons of water per acre when plants are actively growing. Use 3.0 pints (48.0 fl oz) per acre when plants are less than 8 inches tall and 2.25 pints (72.0 fl oz) per acre when plants are greater than 8 inches tall. If goatweed is greater than 8 inches tall, the addition of Krovar[®] II or Karmex[®] may improve control.</p> <p>It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p>	<p>See Section 9.0</p> <p>Allow a minimum of 1 day between last application and harvest.</p> <p>For citron groves apply as directed sprays only.</p>

Mad Dog 5.4 Rate Per Acre (pint)

Perennial Weed	1.5 pints (24.0 fl oz)	1.5 quarts (48.0 fl oz)	2.25 quarts (72.0 fl oz)	3.75 quarts (120 fl oz)
Bermudagrass	B	-	PC	C
Guinea grass (Texas and Florida Ridge)	B	C	C	C
(Florida Flatwoods)	-	B	C	C
Paragrass	B	C	C	C
Torpedograss	S	-	PC	C
S=Suppression	B=Burndown	PC=Partial Control	C=Control	

9.4 - Miscellaneous Tree Food Crops

LABELED CROPS: Cactus (fruits and pads), Palm (heart, leaves), Palm (oil)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	See Use Directions under Section 9.0	See Section 9.0

9.5 - Non-Food Tree Crops

LABELED CROPS: Pine, Poplar, Eucalyptus, Christmas Trees, Other Non-food Tree Crops.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	See Use Directions under Section 9.0	See Section 9.0
Directed sprays, Spot treatments, Wiper applications	<p>This product may be used as a post-directed spray and spot treatment around established poplar, eucalyptus, Christmas Trees and other non-food tree crops.</p> <p>PRECAUTION: Care must be exercised to avoid contact of spray drift or mist with foliage or green bark of established Christmas trees and other pine trees. Desirable plants may be protected from the spray solution by using shields or coverings made of cardboard or other impermeable material.</p>	Do not use this product as an over-the-top broadcast spray in Christmas trees and other pine tree.
Site Preparation	<p>This product may be used prior to planting non-food tree crops.</p> <p>Precautions must be taken to protect non-target plants during site preparations applications.</p>	
Directed Spray (Eucalyptus and Poplar Production)	<p>This product can be used around established eucalyptus and poplar trees to control undesirable vegetation.</p> <p>Use a 1 to 2 percent spray solution to control herbaceous weeds in eucalyptus farms. Use a 2 percent spray solution for control of undesirable woody brush and trees. For "hard-to-control" weeds, use a 5 to 10 percent spray solution. Avoid contact of spray, drift, or mist with foliage, green bark or non-woody surface roots of plants.</p>	Do not allow herbicide spray to contact desirable vegetation.
Wiper Application (Eucalyptus and Poplar Production)	<p>This product may be used through wick or other suitable wiper applicators for control or partial control of grass and broadleaf weeds listed in the "WEEDS CONTROLLED" section of this label. For wick applicators, mix 3.0 quarts (96.0 fl oz) of this product with 2.0 gallons water to make a 33% solution. For wiper systems that can handle thicker solutions, such as force-fed systems, a 33 to 100% solution may be used. For best results, ensure that the herbicide solution is allowed to contact the maximum amount of leaf surface. As weed densities increase, decrease equipment speed to allow sufficient herbicide flow to wet all weed surfaces contacted. Weeds not contacted will be unaffected.</p>	

9.6 - Pome Fruit

LABELED CROPS: Apple, Crabapple, Loquat, Mayhaw, Pear (including oriental pear), Quince

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	See Use Directions under Section 9.0	See Section 9.0
		Allow a minimum of 1 day between last application and harvest in pome fruits.

9.7 - Stone Fruit

LABELED CROPS: Apricot, Cherry (Sweet, Tart), Nectarine, Olive, Peach, Plum/Prune (All types), Plumcot.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	See Use Directions under Section 9.0 Avoid application near trees with recent pruning wounds or other mechanical injury.	See Section 9.0 Allow a minimum of 17 days between last application and harvest in stone fruit crops. For olive groves, apply as directed sprays only.

RESTRICTIONS ON APPLICATION EQUIPMENT:

For cherries, any application equipment listed in Section 9.0 may be used in all states.

Any application equipment listed in Section 9.0 may be used in apricots, nectarines, peaches and plums/prunes growing in Arizona, California, Colorado, Idaho, Kansas, Kentucky, New Jersey, North Dakota, Oklahoma, Oregon, Texas, Utah and Washington, except for peaches grown in the states specified in the following paragraph. In AK, AL, AR, CT, DE, FL, GA, HI, IA, IL, IN, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, NE, NH, NM, NV, NY, OH, PA, RI, SC, SD, TN, VA, VT, and WI, use wiper equipment only.

For Peaches grown in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee only, apply with a shielded boom spray or shielded wiper applicator, which prevents any contact of this product with the foliage or bark of trees. Apply no later than 90 days after first bloom. Applications made after this time may result in severe damage. Remove suckers and low hanging limbs at least 10 days prior to application. Apply only near trees that have been planted in the orchard for 2 or more years.

EXTREME CARE MUST BE TAKEN TO ENSURE NO PART OF THE PEACH TREE IS CONTACTED.

9.8 - Tree Nuts

LABELED CROPS: Almond, Beechnut, Betelnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Coconut, Filbert (Hazelnut), Hickory nut, Macadamia, Pecan, Pine nut, Pistachio, Walnut (Black, English)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	See Use Directions under Section 9.0	See Section 9.0 Allow a minimum of 3 days between last application and harvest of tree nuts, except coconut. Allow 14 days between application and harvest in coconuts.

9.9 - Tropical Crops and Subtropical Trees and Fruits

LABELED CROPS: Ambarella, Atemoya, Avocado, Banana, Barbados Cherry (acerola), Biriba, Blimbe, Breadfruit, Cacao (cocoa) bean, Canistel, Carambola (starfruit), Cherimoya, Coffee, Custard apple, Dates, Durian, Feijoa, Figs, Governor's plum, Guava, Ilama, Imbe, Imbu, Jaboticaba, Jackfruit, Longan, Lychee, Mamey apple, Mango, Mangosteen, Marmaladebox (genip), Mountain papaya, Papaya, Pawpaw, Plantain, Persimmon, Pomegranate, Pulasan, Rambutan, Rose apple, Sapodilla, Sapote (black, mamey, white), Spanish lime, Soursop, Star apple, Sugar apple, Surinam cherry, Tamarind, Tea, Ti (roots and leaves), Wax jambu.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	See Use Directions under Section 9.0 This product may be applied for weed control or for site preparation prior to transplanting crops listed in this section.	See Section 9.0 Allow a minimum of 1 day between last application and harvest of banana, guava, papaya and plantain crops.

9.9 - Tropical Crops and Subtropical Trees and Fruits

LABELED CROPS: Ambarella, Atemoya, Avocado, Banana, Barbados Cherry (acerola), Biriba, Blimbe, Breadfruit, Cacao (cocoa) bean, Canistel, Carambola (starfruit), Cherimoya, Coffee, Custard apple, Dates, Durian, Feijoa, Figs, Governor's plum, Guava, Ilaa, Imbe, Imbu, Jaboticaba, Jackfruit, Longan, Lychee, Mamey apple, Mango, Mangosteen, Marmaladebox (genip), Mountain papaya, Papaya, Pawpaw, Plantain, Persimmon, Pomegranate, Pulasan, Rambutan, Rose apple, Sapodilla, Sapote (black, mamey, white), Spanish lime, Soursop, Star apple, Sugar apple, Surinam cherry, Tamarind, Tea, Ti (roots and leaves), Wax jambu.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	See Use Directions under Section 9.0	<p>Allow a minimum of 14 days between last application and harvest of any other tropical or subtropical tree fruit.</p> <p>Allow a minimum of 28 days between last application and harvest in coffee crops.</p> <p>In coffee and banana, delay applications 3 months after transplanting to allow the new coffee or banana plant to become established.</p>
Bananacide (Banana only)	<p>See Use Directions under Section 9.0</p> <p>This product may be used to destroy banana plants infected with the Banana Bunchy Top Virus as well as non-infected banana plants to establish a disease free buffers around plantations.</p> <p>Remove all fruit from the plants within the treatment area prior to treatment. Inject 1 mL of this product's concentrate per 2 to 3 inches of pseudostem diameter. Make the injection at least one foot above ground, except for very small plants, which should be injected vertically into the top. Any subsequent regrowth must also be destroyed. All plants and mats (or units) adjacent (within a 4-foot radius) to a treated mat shall be mechanically destroyed.</p> <p>For control of the Banana Bunchy Top Virus, it is critical that the grower follow a strict control program involving monitoring for diseased plants, spraying to control the aphid vector, and destruction of all infected mats (or units). An infected plant may not show symptoms of the disease for up to 125 days, therefore it is critical that the entire mat (or unit) containing the diseased plant be destroyed immediately.</p>	<p>See Section 9.0</p> <p>Do not apply more than 11.25 mL of this product's concentrate per mat (or units). Remove all fruit from plants and mats (or units) prior to treatment.</p> <p>Do not harvest any fruit or plant materials from treated mats (or units) following injection.</p> <p>Do not allow livestock to consume treated materials.</p> <p>Following transplant of new banana plants into treated areas, allow plants to become established for 3 months before applying this product for weed control.</p>

9.10 - Vine Crops

LABELED CROPS: Grapes (raisin, table, wine), Hops, Kiwi, Passion fruit

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
See Section 9.0	<p>See Use Directions under Section 9.0</p> <p>In the northeast and Great Lakes regions, applications must be made prior to the end of bloom stage of grapes to avoid injury, or make applications with shielded sprayers or wiper equipment.</p>	<p>See Section 9.0</p> <p>Allow a minimum of 14 days between last application and harvest.</p> <p>Do not use selective equipment in kiwi</p> <p>Applications must not be made when green shoots, canes or foliage are in the spray zone.</p>

10.0 - PASTURE GRASSES, FORAGE LEGUMES and RANGELANDS

10.1 - Alfalfa, Clover, and Other Forage Legumes

LABELED CROPS: Alfalfa, Clover, Kenaf, Kudzu, Lespedeza, Leucaena, Lupin, Sainfoin, Trefoil, Velvet bean, Vetch (all types)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, Pre-emergence, At-Planting	<p>This product may be applied before, during or after planting crops listed.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p>	<p>If a single application is made at rates of 1.5 quarts (48.0 fl oz) per acre or less, no waiting period between treatment and feeding or grazing is required.</p> <p>If application rates greater than 1.5 quarts (48.0 fl oz) per acre are made, remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.</p>
Spot treatment, Over-the-Top Wiper applications (Alfalfa and Clover only)	<p>This product may be applied as a spot treatment in alfalfa or clover. This product may be applied with wiper applicators to control or suppress the weeds listed under "WIPER APPLICATORS" in the "SELECTIVE EQUIPMENT" section of this label.</p> <p>Applications may be made in the same area at 30-day intervals.</p>	<p>For spot treatment and wiper applications, apply in areas where the movement of domestic livestock can be controlled.</p> <p>No more than one-tenth of any acre can be treated at one time.</p> <p>Remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.</p>
Dormant (Alfalfa Only)	<p>This product will control or suppress many weeds including quackgrass, downy brome and cheatgrass in dormant alfalfa. Apply 6.0 to 9.0 fl oz per acre of this product. Apply in the spring to alfalfa that is dormant. Make applications after spring temperatures have warmed enough to encourage resumption of weed growth, but prior to initiation of trifoliate leaf expansion of the alfalfa. Applications made after expansion of the first trifoliate leaf of the alfalfa will cause growth reduction and reduced crop yield.</p> <p>Slight discoloration of the alfalfa may occur, but the alfalfa will regreen and regrow under moist soil conditions as effects of this product wear off.</p> <p>PRECAUTION: Application of this product can cause crop injury.</p>	<p>Do not use ammonium sulfate when spraying dormant alfalfa with this product.</p> <p>Do not use this product where a slight yield reduction in the first cutting of alfalfa cannot be tolerated.</p> <p>Do not make more than one application per year.</p> <p>Allow 36 hours after application before grazing livestock or harvesting.</p>
Pre-harvest (Alfalfa Only)	<p>This product may be used in declining alfalfa stands or any stand of alfalfa where crop destruction is acceptable. This application will severely injure or destroy the stand of alfalfa. This product will control annual and perennial weeds including Quackgrass, when applied prior to the harvest of Alfalfa.</p> <p>Use up to 1.5 pints (24.0 fl oz) of this product per acre. Applications may be made at any time of the year. For control of Quackgrass, apply in the spring, late summer or fall when Quackgrass is actively growing. Treatments for Quackgrass must be followed by deep tillage for complete control.</p>	<p>Make only one application to an existing stand of Alfalfa per year.</p> <p>Do not apply more than 1.5 quarts (48.0 fl oz) of this product per acre as a pre-harvest treatment.</p> <p>Do not use for alfalfa grown for seed.</p> <p>Wait 36 hours before treated crop and weeds can be harvested and fed to livestock.</p>

10.1 - Alfalfa, Clover, and Other Forage Legumes

LABELED CROPS: Alfalfa, Clover, Kenaf, Kudzu, Lespedeza, Leucaena, Lupin, Sainfoin, Trefoil, Velvet bean, Vetch (all types)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Renovation	<p>This product may be applied as a broadcast spray to existing stands of Alfalfa, Clover, and other labeled forage legumes. Labeled crops may be planted into the treated area.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds and Wood Brush and Trees Rate Tables in this label.</p>	<p>Remove domestic livestock before application.</p> <p>If application rates of 1.5 quarts (48.0 fl oz) per acre or less are used wait 36 hours after application before grazing or harvesting.</p> <p>If application rates greater than 1.5 quarts (48.0 fl oz) per acre are used, wait 8 weeks after application before grazing or harvesting.</p>

10.2 - Conservation Reserve Program (CRP)

LABELED CROPS: Conservation Reserve Program (CRP) Acres

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Renovation (rotating out of CRP), Site preparation	<p>This product may be used to prepare CRP land for crop production. Refer to Federal, state or local use guides for CRP renovation recommendations.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds and Wood Brush and Trees Rate Tables in this label.</p> <p>PRECAUTION: Some stunting of CRP perennial grasses will occur if broadcast applications are made when plants are not dormant.</p>	<p>Do not apply more than 2.25 quarts (72.0 fl oz) per acre per year onto CRP grasses.</p> <p>For any crop not listed in the "CROPS" sections of this label applications must be made at least 30 days prior to planting.</p>
Post-emergence Weed control in Dormant Acres, Over-the-Top Wiper Application	<p>This product may be used to suppress competitive growth and seed production of undesirable vegetation in CRP acres. Such applications may be made with wiper application equipment or as a broadcast or spot treatment to dormant CRP grasses. For selective applications with broadcast spray equipment, apply 9.0 to 12.0 fl oz of this product per acre in early spring before desirable CRP grasses, such as crested and tall Wheatgrass, break dormancy and initiate green growth. Late fall applications can be made after desirable perennial grasses have reached dormancy.</p>	

10.3 - Grass or Turfgrass Seed Production

LABELED CROPS: Any grass (Gramineae family) except corn, sorghum, sugarcane and those listed under "CEREAL CROPS"

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, Pre-emergence, Renovation, Site preparation	<p>This product may be applied before, during, or after planting or for renovation of turf or forage grass areas grown for seed production.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds and Wood Brush and Trees Rate Tables in this label.</p>	<p>Do not disturb soil or underground plant parts before treatment. Tillage or renovation techniques such as vertical mowing, coring or slicing must be delayed for 7 days after application to allow proper translocation into underground plant parts.</p>

10.3 - Grass or Turfgrass Seed Production

LABELED CROPS: Any grass (Gramineae family) except corn, sorghum, sugarcane and those listed under "CEREAL CROPS"

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Pre-plant, Pre-emergence, Renovation, Site preparation cont'd</i>	<p>Applications must be made prior to the emergence of the crop to avoid injury.</p> <p>For maximum control of existing vegetation, delay planting to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm-season grasses, such as Bermudagrass, summer or fall applications provide best control.</p>	<p>If application rates total 2.25 quarts (72.0 fl oz) per acre or less, no waiting period between treatment and feeding or livestock grazing is required.</p> <p>If the rate is greater 2.25 quarts (72.0 fl oz) per acre, remove domestic livestock and wait 8 weeks following application before grazing or harvesting.</p>
Shielded Sprayer	<p>Apply 24.0 to 72.0 fl oz of this product as a broadcast spray in 10.0 to 20.0 gallons of total spray volume per acre. Uniform planting in straight rows aid in shielded sprayer applications. Best results are obtained when the grass seed crop is small enough to easily pass by or through the protective shields.</p> <p>PRECAUTION: Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage.</p> <p>To the extent consistent with applicable law, grower assumes all responsibility for crop losses from misapplication.</p>	
Over-the-Top Wiper Applications	<p>This product may be applied with wiper applicators to control or suppress the weeds listed under "WIPER APPLICATORS" in the "SELECTIVE EQUIPMENT" section of this label.</p> <p>Contact of the herbicide solution with desirable vegetation may result in damage or destruction. Applicators must be adjusted so that the wiper contact point is at least 2 inches above the desirable vegetation.</p> <p>Weeds should be a minimum of 6 inches above the desirable vegetation. Better results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations, or when weed height varies so that not all weeds are contacted. In these instances, repeat treatments up to the maximum application rate may be necessary. Better results may be obtained if 2 applications are made in opposite directions.</p>	
Spot treatments	<p>Use a 1 to 1.5 percent solution.</p> <p>Apply this product prior to heading of grasses.</p>	<p>The crop receiving the spray in the treated area will be killed. Do not allow drift or spray outside of the target area for the same reason.</p>

10.3 - Grass or Turfgrass Seed Production

LABELED CROPS: Any grass (Gramineae family) except corn, sorghum, sugarcane and those listed under "CEREAL CROPS"

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Creating Rows in Annual Ryegrass	<p>Use 12.0 to 24.0 fl oz of this product per acre. Use the higher rate when the ryegrass is greater than 6 inches tall. Best results are obtained when applications are made before the ryegrass reaches 6 inches in height.</p> <p>PRECAUTION: Set nozzle height to allow the establishment of the desired row spacing while preventing spray droplets, spray fines, or drift to contact the ryegrass plants not treated. Use low-pressure nozzles, or drop nozzles designed to target the application over a narrow band.</p> <p>To the extent consistent with applicable law, grower assumes all responsibility for crop losses from misapplication.</p>	

10.4 - Pastures

LABELED CROPS: Any grass (Gramineae family) except corn, sorghum, sugarcane and those listed under "CEREAL CROPS". Including Bahiagrass, Bermudagrass, Bluegrass, Brome, Fescue, Guinea grass, Kikuygrass, Orchardgrass, Pangola grass, Ryegrass, Timothy, Wheatgrass

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Spot treatment, Over-the Top Wiper Applications	<p>This product may be applied as a spot treatment or with wiper applicators in pastures.</p> <p>Applications may be made in the same area at 30-day intervals.</p> <p>For spot treatments or wiper application methods using rates of 2.25 quarts (72.0 fl oz) per acre or less, the entire field or any portion of it may be treated.</p>	<p>When spot treatment or wiper applications are made using rates above 2.25 quarts (72.0 fl oz) per acre, no more than 10 percent of the total pasture may be treated at any one time.</p> <p>Remove domestic livestock before application and wait 7 days after application before grazing livestock or harvesting.</p>
Pre-plant, Pre-emergence, Pasture renovation, Stand Removal	<p>This product may be applied prior to planting or emergence of forage grasses. In addition, this product may be used to control perennial pasture species listed on this label prior to re-planting.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds and Wood Brush and Trees Rate Tables in this label.</p>	<p>If application rates total 2.25 quarts (72.0 fl oz) per acre or less, no waiting period between treatment and feeding or livestock grazing is required.</p> <p>If the rate is greater than 2.25 quarts (72.0 fl oz) per acre, remove domestic livestock and wait 8 weeks following application before grazing or harvesting.</p>
Chemical Mowing (Bermudagrass Pastures Prior To Spring Growth Or Immediately After First Cutting)	<p>This product may be applied at 12.0 fl oz per acre to control the weeds listed below and most other winter annual grass and broadleaf weeds in established coastal Bermudagrass pastures.</p> <p>Annual bluegrass, Cheat, Crabgrass, Henbit, Johnsongrass seedling, Little barley, Oats, Ryegrass, Sandbur field, Wheat, Wild mustard</p> <p><u>Applications prior to spring growth:</u> Apply this product in the late winter or early spring but before new coastal Bermudagrass growth begins in the spring.</p>	<p>Labeled application rates totaling 2.25 quarts (72.0 fl oz) per acre or less do not require a waiting period between treatment and feeding or livestock grazing.</p> <p>If the rate is greater than 2.25 quarts (72.0 fl oz) per acre, remove domestic livestock and wait 8 weeks following application before grazing or harvesting.</p> <p>Only make one application per year to treated fields.</p>

10.4 - Pastures

LABELED CROPS: Any grass (Gramineae family) except corn, sorghum, sugarcane and those listed under "CEREAL CROPS". Including Bahiagrass, Bermudagrass, Bluegrass, Brome, Fescue, Guinea grass, Kikuygrass, Orchardgrass, Pangola grass, Ryegrass, Timothy, Wheatgrass

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
	<p>Applications to new growth can damage the Bermudagrass.</p> <p><u>Applications following the first cutting:</u> Apply this product after the first Bermudagrass cutting when the Bermudagrass has not yet begun to regrow. Applications made after regrowth has begun can damage the Bermudagrass.</p>	<p>Do not make a spring application prior to growth and an application following the first cutting on the field during the same year.</p>

STATE SPECIFIC DIRECTIONS FOR PASTURES

Colorado, Idaho, Iowa, Kansas, Montana, Nebraska, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming Only

Bromus Species: This product may be used to treat downy brome (*Bromus tectorum*), Japanese brome (*Bromus japonicus*), soft chess (*Bromus mollis*) and cheatgrass (*Bromus secalinus*) found in industrial, rangeland and pasture sites. Apply 6.0 to 12.0 fluid ounces of product per acre on a broadcast basis. For best results, coincide applications with early seedhead emergence of the most mature plants. Delaying the application until this growth stage will maximize the emergence of other weedy grass flushes. Applications should be made to the same site each year until seed banks are depleted and the desirable perennial grasses are able to become reestablished on the site.

Medusahead: To treat Medusahead, apply 12.0 fluid ounces of this product per acre as soon as plants are actively growing, and prior to the 4 leaf stage. Applications may be made in the fall or spring.

Application Equipment and Techniques: Applications may be made using ground or aerial equipment. Aerial applications for these uses may be made using fixed wing or helicopter equipment. For aerial applications, apply in 2.0 to 10.0 gallons of water per acre. For applications using ground equipment, apply in 10.0 to 20.0 gallons of water per acre.

When applied as directed there are no grazing restrictions.

10.5 - Rangelands

LABELED CROPS: Rangeland (Perennial cool and warm season grass rangelands)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Post-emergence	<p>This product will control or suppress many annual weeds growing in perennial cool and warm-season grass rangelands.</p> <p>Preventing viable seed production is key to the successful control and invasion of annual grassy weeds in rangelands. Follow-up applications in sequential years should eliminate most of the viable seeds.</p> <p>Delay grazing of treated areas to encourage growth of desirable perennials. Allowing desirable perennials to flower and reseed in the treated area will encourage successful transition.</p> <p>Apply 9.0 to 12.0 fl oz per acre to control or suppress many annual weeds growing in perennial cool and warm-season grass rangelands including Downy brome, Cheat grass, Cereal rye and Jointed goatgrass.</p>	<p>Do not use ammonium sulfate when spraying rangeland grasses with this product.</p> <p>Do not apply more than 2.25 quarts (72.0 fl oz) per acre per year.</p>

10.5 - Rangelands

LABELED CROPS: Rangeland (Perennial cool and warm season grass rangelands)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Post-emergence cont'd</i>	<p>Apply when most mature brome plants are in early flower and before the plants, including seedheads, turn color. Allowing for secondary weed flushes to occur in the spring following rain events further depletes the seed reserve and encourage perennial grass conversion on weedy sites. Fall applications are possible, and recommended, where spring moisture is usually limited and fall germination allows for good weed growth.</p> <p>For Medusahead, apply 12.0 fl oz per acre at the 3-leaf stage. Delaying applications beyond this stage will result in reduced or unacceptable control. Fire may be useful in eliminating the thatch layer produced by slow decaying culms prior to application. Allow new growth to occur before spraying after a burn.</p> <p>Slight discoloration of the desirable grasses may occur, but they will regreen and regrow under moist soil conditions as effects of this product wear off.</p>	

10.6 - Turf Grass Sod Production

LABELED CROPS: Turfgrass for Sod

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, Pre-emergence, Renovation, Site Preparation	<p>This product controls most existing vegetation prior to renovating turf grass areas or establishing turf grass grown for sod. Broadcast of hand-held equipment may be used to control sod remnants or other unwanted vegetation after sod is harvested. For maximum control of existing vegetation, delay planting or sodding to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm-season grasses such as Bermudagrass, summer or fall applications provide the best control. Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds and Wood Brush and Trees Rate Tables in this label.</p> <p>Desirable turfgrasses may be planted following the above procedures.</p>	<p>If application rates total 2.25 quarts (72.0 fl oz) per acre or less, no waiting period between treatment and feeding or livestock grazing is required. If the rate is greater than 2.25 quarts (72.0 fl oz) per acre, remove domestic livestock and wait 8 weeks following application before grazing or harvesting.</p> <p>Do not disturb soil or underground plant before treatment. Tillage or renovation techniques such as vertical mowing, coring, or slicing must be delayed for 7 days after application to allow translocation into underground plant parts.</p>

10.6 - Turf Grass Sod Production

LABELED CROPS: Turfgrass for Sod

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Spot treatment	Hand-held equipment may be used for spot treatment of unwanted vegetation growing in existing turf grass	
Turfgrass Renovation for sod production	<p>This product controls most existing vegetation prior to renovating turfgrass areas or establishing turfgrass grown for seed or sod. For maximum control of existing vegetation, delay planting or sodding to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm-season grasses such as Bermudagrass, summer or fall applications provide the best control. Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray.</p> <p>Delay tillage or renovation techniques such as vertical mowing, coring or slicing for 7 days after application to allow translocation into underground plant parts.</p> <p>Desirable turfgrass may be planted following the above procedures.</p> <p>Hand-held equipment may be used for spot treatment of unwanted vegetation growing in existing turfgrass. Broadcast or hand-held equipment may be used to control sod remnants or other unwanted vegetation after sod is harvested.</p>	<p>Do not feed or graze turfgrass grown for seed or sod production for 8 weeks following application.</p> <p>Do not disturb soil or underground plant parts before treatment.</p>

10.7 - Release of Bermudagrass or Bahiagrass

Dormant applications:

This product may be used to control or partially control many winter annual weeds and tall fescue for effective release of dormant Bermudagrass or Bahiagrass. Treat only when turf is dormant and prior to spring greenup. This product may also be tank-mixed with Oust® for residual control. Tank mixtures of this product with Oust® may delay greenup. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

For best results on winter annuals, treat when plants are in an early growth stage (below 6 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is at or beyond the 4 to 6-leaf stage.

Apply 6.0 to 48.0 fluid ounces of this product per acre alone or in a tank mixture with the labeled rate of Oust®. Apply the labeled rates in 10.0 to 40.0 gallons of water per acre. Use only in areas where Bermudagrass or Bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated.

Actively growing Bermudagrass:

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing Bermudagrass. Apply 12.0 to 36.0 fluid ounces of this product in 10.0 to 40.0 gallons of spray solution per acre. Use the lower rate when treating annual weeds below 6 inches in height (or runner length). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation. These rates will also provide partial control of the following perennial species:

Bahiagrass	Bluestem, silver	Fescue, tall	Johnsongrass	Trumpetcreeper	Vaseygrass
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This product may be tank-mixed with Oust®. If tank-mixed, use no more than 12.0 to 24.0 fluid ounces of this product with the labeled rate of Oust® per acre. These rates will also provide partial control of the following perennial weeds:

Bahiagrass	Bluestem, silver	Broomsedge	Dallisgrass	Dock, curley	Dogfennel
Fescue, tall	Johnsongrass	Poorjoe	Trumetcreeper	Vaseygrass	Vervain, blue

RESTRICTIONS

- Use only on well-established bermudagrass.
- Bermudagrass injury may result from the treatment, but regrowth will occur under moist conditions.
- Do not repeat applications of the tank mix in the same season since severe injury may occur.

Actively growing bahiagrass

For suppression of vegetative growth and seedhead inhibition of Bahiagrass for approximately 45 days, apply 4.5 fluid ounces of this product in 10.0 to 40.0 gallons of water per acre. Apply 1 to 2 weeks after full green-up or after mowing to a uniform height of 3 to 4 inches. This application must be made prior to seedhead emergence.

For suppression up to 120 days, apply 3.0 fluid ounces of this product per acre, followed by an application of 1.5 to 3.0 fluid ounces per acre about 45 days later. Make no more than 2 applications per year.

A tank mixture of this product plus Oust® may be used. Apply 4.5 fluid ounces of this product plus the labeled rate of Oust® per acre 1 to 2 weeks following an initial spring mowing. Make only one application per year.

11.0 - ROUNDUP READY® CROPS

The following instructions or those separately published on Loveland Products, Inc. Supplemental labeling include all applications which can be made onto the specified Roundup Ready crops during the complete cropping season. Do NOT combine these instructions with those listed for crop varieties that do not contain the Roundup Ready gene, in the "ANNUAL AND PERENNIAL CROPS (ALPHABETICAL)" section of this label.

THIS PRODUCT IS TO BE USED FOR POSTEMERGENCE APPLICATION ONLY ON CROP VARIETIES DESIGNATED AS CONTAINING A ROUNDUP READY GENE OR GLYPHOSATE TOLERANT GENE.

Applying this product to crop varieties that are not designated as glyphosate tolerant will result in severe crop injury and yield loss. Avoid contact with foliage, green stems, or fruit of crops, or any desirable plants that do not contain a Roundup Ready or glyphosate tolerant gene, since severe injury or destruction will result.

The Roundup Ready designation indicates that the crop variety contains a patented gene that provides tolerance to this product. Information on Roundup Ready crop varieties may be obtained from your seed supplier. Roundup Ready crop varieties must be purchased from an authorized licensed seed supplier.

NOTE: Roundup Ready seed, and the method of selectivity controlling weeds using glyphosate on a Roundup Ready crop, are protected under several U.S. Patents. A license to use Roundup Ready seed must be obtained prior to use.

For Ground Applications with broadcast equipment, apply this product in 5.0 to 20.0 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment use flat spray nozzles. Check for even distribution of spray droplets.

For Aerial Applications apply this product in 3.0 to 15.0 gallons of water per acre. See the "**APPLICATION EQUIPMENT and TECHNIQUES**" section of this label for procedures to avoid spray drift that may cause injury to any vegetation not intended for treatment. Use of appropriate buffer zones will help prevent injury to adjacent vegetation.

ATTENTION: AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS WHICH DO NOT CONTAIN A GLYPHOSATE TOLERANT GENE.

See the "MIXING and APPLICATION EQUIPMENT AND TECHNIQUES" sections of this label for additional directions and restrictions on the application of this product.

To prevent crop injury, tank mixtures with other herbicides, insecticides, fungicides, micronutrients or fertilizers may result in reduced weed control or crop injury and are not recommended for over-the-top applications of this product unless otherwise specified in this product label, or supplemental labeling published separately by Loveland Products, Inc.

Ammonium sulfate may be mixed with this product for applications to Roundup Ready crops. Refer to the "MIXING" section for USE DIRECTIONS for ammonium sulfate.

Sprayer Preparation: It is important that sprayer and mixing equipment be clean and free of pesticide residue before making applications of this product. Follow the cleaning procedures specified on the label of the product(s) previously used. **THOROUGHLY CLEAN THE SPRAY TANK AND ALL LINES AND FILTERS TO ELIMINATE POTENTIAL CONTAMINATION FROM OTHER HERBICIDES PRIOR TO MIXING AND APPLYING THIS PRODUCT.**

NOTE: The following use directions are based on a clean start at planting by using a burndown application or tillage to control existing weeds before crop emergence. In no-till and stale seedbed systems, use a preplant burn-down treatment of this product to control existing weeds prior to crop emergence. Some weeds, such as black nightshade, broadleaf signalgrass, sicklepod, Texas panicum, sandbur, annual morningglory, woolly cupgrass, shattercane, wild proso millet, burcucumber, and giant ragweed with multiple germination times or suppressed (stunted) weeds may require a second application of this product for complete control. Make the second application after some regrowth has occurred and at least 10 days after a previous application of this product.

11.1- Roundup Ready Alfalfa

FOR POSTEMERGENCE APPLICATION ONLY ON ALFALFA VARIETIES DESIGNATED AS CONTAINING A ROUNDUP READY GENE.

The Roundup Ready designation indicates that the alfalfa contains a patented gene, which provides tolerance to this product. Information on Roundup Ready alfalfa varieties may be obtained from your seed supplier or Loveland Products, Inc. representative. Roundup Ready crop varieties must be purchased from an authorized licensed seed supplier.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-planting, Pre-emergence and Post-emergence	<p>This product will control many troublesome emerged weeds with over-the-top applications in Roundup Ready alfalfa.</p> <p>For ground applications with broadcast equipment, apply this product in 3.0 to 40.0 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.</p> <p>For aerial application: Use the labeled rates of this product in 3.0 to 15.0 gallons of spray solution per acre.</p>	<p>Do not exceed 3.0 pints (48.0 fl oz) of this product per acre when making applications by air.</p> <p>Any single over-the-top application of this product must not exceed 3.0 pints (48.0 fl oz) per acre. Sequential applications of this production must be at least 7 days apart.</p> <p>The combined total per year for all in-crop applications in newly established and established stands must not exceed 4.5 quarts (144 fl oz) per acre.</p> <p>Remove domestic livestock before application and wait a minimum of 5 days after last application before grazing, or cutting and feeding of Roundup Ready alfalfa forage and hay.</p>

11.1- Roundup Ready Alfalfa

FOR POSTEMERGENCE APPLICATION ONLY ON ALFALFA VARIETIES DESIGNATED AS CONTAINING A ROUNDUP READY GENE.

The Roundup Ready designation indicates that the alfalfa contains a patented gene, which provides tolerance to this product. Information on Roundup Ready alfalfa varieties may be obtained from your seed supplier or Loveland Products, Inc. representative. Roundup Ready crop varieties must be purchased from an authorized licensed seed supplier.

TYPES OF APPLICATIONS		USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-planting, Pre-emergence and Post-emergence cont'd	New Stand Establishment (seeding year) Prior to First Cutting During New Stand Establishment:		
	From emergence up to 4 trifoliate leaves	3.0 pints (48.0 fl oz) per acre	
	From 5 trifoliate leaves up to 5 days before first cutting	3.0 pints (48.0 fl oz) per acre	
	After First Cutting in Newly Established Stands:		
	In-crop application, per cutting, up to 5 days before cutting	3.0 pints (48.0 fl oz) per acre	
	Established Stands (non-seeding year)		
	In-Crop applications, per cutting, up to 5 days before cutting	3.0 pints (48.0 fl oz) per acre	
	During stand establishment, due to the biology and breeding constraints of alfalfa, up to 10% of the seedlings may not contain the Roundup Ready gene and will not survive after the first application of this product. To eliminate the undesirable effects of stand gaps created by the loss of plants not containing a Roundup Ready gene, apply a single application of at least 1.5 pints (24.0 fl oz) per acre of this product at or before the 3 to 4 trifoliate growth stage.		
	In both newly seeded and established stands, in order to maximize yield and quality potential of forage and hay, make applications of this product after weeds have emerged but before alfalfa growth or re-growth interferes with application spray coverage of the target weeds.		
	In addition to those weeds listed in the Mad Dog 5.4 herbicide label booklet, this product will suppress or control the parasitic weed, Dodder (<i>Cuscuta</i> spp.) in Roundup Ready alfalfa. Repeat applications may be necessary for complete control.		
Over-the-top applications	This product may be applied post-emergence to Roundup Ready alfalfa from emergence until 5 days prior to cutting. Any single over-the-top applications of this product must not exceed 3.0 pints (48.0 fl oz) per acre.		Sequential applications of this production must be at least 7 days apart. Tank mixtures with other herbicides, insecticides, or fungicides may result in crop injury or reduced weed control and must not be used for over-the-top applications of this product.

11.1- Roundup Ready Alfalfa

FOR POSTEMERGENCE APPLICATION ONLY ON ALFALFA VARIETIES DESIGNATED AS CONTAINING A ROUNDUP READY GENE.

The Roundup Ready designation indicates that the alfalfa contains a patented gene, which provides tolerance to this product. Information on Roundup Ready alfalfa varieties may be obtained from your seed supplier or Loveland Products, Inc. representative. Roundup Ready crop varieties must be purchased from an authorized licensed seed supplier.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Over-the-top applications cont'd</i>	ATTENTION: Where Roundup Ready alfalfa is grown with a companion or cover crop, or is over seeded with a second species, over-the-top applications of this product will eliminate the non-Roundup Ready species.	

MAXIMUM ALLOWABLE APPLICATION RATES

Combined total per year for all applications, including pre-plant during year of establishment	5.8 quarts (186 fl oz) per acre
Combined total per year for in-crop applications for newly established and established stands	4.5 quarts (144 fl oz) per acre
Pre-plant, At-planting and Pre-emergence single applications	3.0 pints (48.0 fl oz) per acre

11.2 - Roundup Ready Canola (Spring Varieties)

LABELED CROPS: Roundup Ready spring canola is defined as those Roundup Ready canola varieties that are seeded in the spring and harvested in the fall and do not enter a winter dormancy period.

Do not use this product on spring canola with a Roundup Ready gene planted in the following states: Alabama, Delaware Florida, Georgia, Kentucky, Maryland, New Jersey, North Carolina, South Carolina, Tennessee, Virginia and West Virginia, except for uses in wildlife food plots that will not be for human or livestock food.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-Planting, Pre-emergence	This product may be applied before, during or after planting Roundup Ready spring canola.	Maximum quantity of this product that may be applied for all pre-plant, at-planting and pre-emergence applications combined is 3.0 pints (48.0 fl oz) per season.
Post-emergence (In-crop)	<p>This product may be applied post-emergence to Roundup Ready spring canola from emergence through the 6-leaf stage of development. Applications made during bolting or flowering may result in crop injury and yield loss. To maximize yield potential, make applications early to eliminate competing weeds.</p> <p><u>Single Application</u> – 8.25 to 12.0 fl oz of this product per acre no later than the 6-leaf stage for the control of annual weeds. Avoid overlapping applications as this may result in temporary yellowing, delayed flowering, and or growth reduction. Similar crop injury may result when applications of more than 8.25 fl oz per acre are applied after the 4-leaf stage.</p> <p><u>Sequential Application</u> – Apply 8.25 fl oz of this product per acre to 1- to 3-leaf canola followed by a sequential application at a minimum interval of 10 days, but no later than the 6-leaf stage. Sequential applications can be made for early emerged annual weeds and perennial weeds such as Canada thistle and Quackgrass, or when multiple applications are needed for adequate weed control.</p>	<p>No more than two in-crop (over-the-top) broadcast applications may be made from crop emergence through the 6-leaf stage of development and the total of all in-crop applications must not exceed 16.5 fl oz of this product per acre.</p> <p>Allow a minimum of 60 days between last application and canola harvest.</p>

11.2 - Roundup Ready Canola (Spring Varieties)

MAXIMUM ALLOWABLE APPLICATION RATES

Total of all Pre-plant, At Planting, Pre-emergence applications	3.0 pints (48.0 fl oz) per acre
Total of all In-crop applications from emergence to 6-leaf stage	1.5 pints (24.0 fl oz) per acre

11.3 - Roundup Ready Canola (Fall and Winter Varieties)

LABELED CROPS: Roundup Ready winter canola is defined as those Roundup Ready canola varieties that are seeded in early fall and harvested the following spring or summer. Winter canola varieties are intended to enter a cold period dormancy in the winter.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-Planting, Pre-emergence	This product may be applied before, during or after planting Roundup Ready winter canola.	Maximum quantity of this product that may be applied for all pre-plant, at-planting and pre-emergence applications combines is 3.0 pints (48.0 fl oz) per acre per season.
Post-emergence (In-crop)	<p>This product may be applied to Roundup Ready winter canola varieties from emergence to canopy closure in the fall and prior to bolting in the spring. Applications made during or after bolting may result in crop injury and yield loss. To maximize yield potential, make applications early to eliminate competing weeds.</p> <p>Some weeds with multiple germination times, or suppressed (stunted) weeds, or weeds that have overwintered may require sequential applications of this product for control. Make the second application after some re-growth has occurred and at least 60 days after a previous application of this product.</p> <p><u>Single Application</u> - Apply 16.5 to 24.0 fl oz of this product per acre in the fall. Make applications in the fall when weeds are small and actively growing. Use the higher rate in the labeled range when weed densities are high, when weeds have overwintered or when weeds become large and well established. Applications of greater than 12.0 fl oz per acre prior to the 6-leaf stage may result in reduced crop growth in the fall. Avoid overlaps. Spray overlaps may result in temporary yellowing and/or growth reduction.</p> <p><u>Sequential Applications</u> - Apply 12.0 to 24.0 fl oz of this product per acre to 2-leaf or larger canola in the fall, followed by a sequential application at the same rate and at a minimum interval of 60 days, but before bolting in the spring. Sequential applications can be made for early emerging annual weeds and winter emerging weeds such as Downy brome, Jointed goatgrass and Ryegrass, and for weeds that have overwintered. This product will control or suppress most of perennial weeds. For some perennial weeds, sequential applications may be required to reduce competition with the crop.</p>	<p>No more than two over-the-top broadcast applications may be made from crop emergence up to the onset of bolting, and the total in-crop application must not exceed 3.0 pints (48.0 fl oz) of this product per acre.</p> <p>Allow a minimum of 60 days between last application and harvest of canola grain.</p> <p>No waiting period is required between application and open grazing of livestock.</p>

11.3 - Roundup Ready Canola (Fall and Winter Varieties)

MAXIMUM ALLOWABLE APPLICATION RATES

Total of all Pre-plant, At Planting, Pre-emergence applications	3.0 pints (48.0 fl oz) per acre
Total of all In-crop applications from emergence to canopy closure or prior to bolting in the spring	3.0 pints (48.0 fl oz) per acre

11.4 - Roundup Ready Corn

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, Pre-emergence, At-Planting	<p>This product may be applied alone or in a tank-mixture before, during or after planting corn.</p> <p>TANK MIXTURES: This product may be tank mixed with Bullet, Degree, Degree Xtra, Harness, Harness Xtra, Harness Xtra 5.6L, Lariat, Lasso or Micro-Tech at 50 to 100 percent of labeled rate. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>If less than the maximum rates of the above listed residual products were used in pre-plant and pre-emergence treatment then apply a post-emergence (in-crop) application of this product for maximum weed control.</p> <p>Avoid drift. Extreme care must be used when applying this product to prevent injury to desirable plants and crops which do not contain glyphosate tolerant gene.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p>	<p>Do not apply this product to crop varieties that are not designated as glyphosate tolerant.</p> <p>Do not allow contact with foliage, green stems, or fruit of crops, or any desirable plants that do not contain a Roundup Ready or glyphosate tolerant gene, since severe injury or destruction will result.</p> <p>Avoid drift. Extreme care must be used when applying this product to prevent injury to desirable plants and crops which do not contain a glyphosate tolerant gene.</p> <p>See the "Mixing and Application Equipment and Techniques" sections of this label for additional directions and restrictions on the application of this product.</p>
Post-emergence (in-crop)	<p>When applied as directed, this product controls labeled annual grass and broadleaf weeds in Roundup Ready corn. Many perennial grasses and broadleaf weeds will be controlled or suppressed with one or more application of this product. The post-emergent application of 18.0 to 36.0 fl oz per acre of this product should be made before the weeds reach a height and/or density that the weeds become competitive with the crop, generally 4 inch tall weeds or less.</p> <p>This product may be applied over-the-top to Roundup Ready corn from emergence through the V8 stage (8 leaves with collars) or until corn height reaches 48 inches, whichever comes first.</p> <p>Use drop nozzles when corn height is 24 to 30 inches (free standing), for optimum spray coverage and weed control.</p>	<p>Single in-crop applications of this product are not to exceed 2.25 pints (36.0 fl oz) per acre.</p> <p>The maximum combined total of multiple in-crop applications from emergence through the 48-inch stage is 4.5 pints (72.0 fl oz) per acre.</p> <p>Allow a minimum of 10 days between in-crop applications of this product.</p> <p>Allow a minimum of 50 days between application of this product and harvest of corn forage.</p>

11.4 - Roundup Ready Corn

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS									
<i>Post-emergence (in-crop) cont'd</i>	<p>For corn heights 30 to 48 inches (free standing), apply this product ONLY using ground application equipment with drop nozzles adjusted to avoid spraying into the whorls of the corn plants.</p> <p>If product is applied to whorls of corn, plant injury and yield reduction can occur.</p> <p>Maximum single in-crop application rate of this product up to 48-inch corn is 2.25 pints (36.0 fl oz) per acre.</p> <p>See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops.</p> <p>TANK MIXTURES: This product may be applied in tank mixture with Bullet, Degree, Degree Xtra, Harness, Harness Xtra, Harness Xtra 5.6L, and Micro-Tech at 50 to 100 percent of labeled rate. This product may be applied in tank mixture with Permit and Atrazine at labeled rates. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>Tank-mix Partner</p> <table border="0"> <tr> <td>Degree</td><td>Harness Xtra</td><td>Micro-Tech*</td></tr> <tr> <td>Degree Xtra</td><td>Harness Xtra 5.6L</td><td>Atrazine</td></tr> <tr> <td>Harness</td><td>Bullet*</td><td></td></tr> </table> <p>* Bullet and Micro-Tech are not registered for use as a post-emergence application in Texas.</p>	Degree	Harness Xtra	Micro-Tech*	Degree Xtra	Harness Xtra 5.6L	Atrazine	Harness	Bullet*		
Degree	Harness Xtra	Micro-Tech*									
Degree Xtra	Harness Xtra 5.6L	Atrazine									
Harness	Bullet*										
Pre-Harvest	<p>In Roundup Ready corn, up to 1.5 pints (24.0 fl oz) per acre of this product can be applied pre-harvest. Make applications at 35 percent grain moisture or less. Ensure that maximum kernel fill is complete and the corn is physiologically mature (black layer formed).</p>	<p>Allow a minimum of 7 days between application and harvest.</p>									
Post-Harvest	<p>This product may be applied after harvest of corn. A 2.25 pints (36.0 fl oz) per acre rate may be required for control of large weeds that were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used.</p>	<p>Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.</p>									

11.4 - Roundup Ready Corn

MAXIMUM ALLOWABLE APPLICATION RATES

Combined total per year for all applications	6.0 quarts (192 fl oz) per acre
Total of all Pre-plant, Pre-emergence, At-Planting applications	3.75 quarts (120 fl oz) per acre
Total in-crop applications from emergence through 48-inch corn	4.5 pints (72.0 fl oz) per acre
Maximum single in-crop application rate up to 48-inch corn	2.25 pints (36.0 fl oz) per acre
Maximum pre-harvest application rate after maximum kernel fill is complete and the crop is physiologically mature (black layer formation) until 7 days before harvest	1.5 pints (24.0 fl oz) per acre

11.5 - Roundup Ready Cotton

Use of this product in accordance with label directions is expected to result in normal growth of Roundup Ready cotton. However, various environmental conditions, agronomic practices and other factors make it impossible to eliminate all risks associated with this product, even when application are made in conformance with the label specifications. In some cases, these factors can result in boll loss, delayed maturity and/or yield loss.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, Pre-emergence, At-planting	<p>This product may be applied before, during or after planting cotton.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops.</p>	
Post-emergence (Over-the-Top)	<p>This product may be applied by aerial or ground application equipment at rates up to 1.5 pints (24.0 fl oz) per acre per application post-emergence to Roundup Ready cotton from the ground cracking stage until the 4-leaf (node) stage of development (until the fifth true leaf reaches the size of a quarter). Over-the-top applications made after the 4-leaf (node) stage of development may result in boll loss, delayed maturity and/or yield loss.</p> <p>Salvage Treatment. This treatment may be used after the 4-leaf stage of development and must only be used where weeds threaten to cause the loss of the crop. 1.5 pints (24.0 fl oz) per acre may be applied either as an over-the-top applications or as a post-directed treatments sprayed higher on the cotton plants and over the weeds.</p> <p>Salvage treatments will result in significant boll loss, delayed maturity and/or yield loss.</p> <p>See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops.</p>	<p>The combined total application of this product from cotton emergence until harvest must not exceed 4.5 quarts (144 fl oz) per acre.</p> <p>No more than two over-the-top broadcast applications may be made from crop emergence through the 4-leaf (node) stage of development.</p> <p>No more than two applications may be made from the 5-leaf stage through layby sequential in-crop over-the-top or post-directed applications of this product must be at least 10 days apart and cotton must have at least two nodes of incremental growth between applications. Allow a minimum of 7 days between application and harvest.</p> <p>Do not apply more than one salvage treatment per growing season.</p>
Selective Equipment	<p>This product may be applied using precision post-directed or hooded sprayers at rates up to 1.5 pints (24.0 fl oz) per acre per application to Roundup Ready cotton through layby. At this stage, post-directed</p>	<p>See the "SELECTIVE EQUIPMENT" part of the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for information on proper use and calibration of this equipment.</p>

11.5 - Roundup Ready Cotton

Use of this product in accordance with label directions is expected to result in normal growth of Roundup Ready cotton. However, various environmental conditions, agronomic practices and other factors make it impossible to eliminate all risks associated with this product, even when application are made in conformance with the label specifications. In some cases, these factors can result in boll loss, delayed maturity and/or yield loss.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Selective Equipment cont'd</i>	<p>equipment must be used which directs the spray to the base of the cotton plants.</p> <p>Avoid contact of the spray with cotton leaves to the maximum extent possible. To minimize spray onto the leaves of the cotton plants, place nozzles in a low position directing a horizontal spray pattern under the cotton leaves to contact weeds in the row, and maintain low spray pressure (less than 30 psi). For best results, make applications while weeds are small (less than 3 inches).</p>	
Pre-harvest	<p>This product may be applied for pre-harvest annual and perennial weed control as a broadcast treatment to Roundup Ready cotton after 20 percent boll crack. Up to 3.0 pints (48.0 fl oz) of this product may be applied using either aerial or ground spray equipment.</p> <p>Do not apply this product to cotton grown for seed, as a reduction in germination or vigor may occur.</p> <p>TANK MIXTURES: This product may be tank mixed with DEFTM 6, FolexTM, Ginstar, or PrepTM (or generic equivalents). It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>Refer to manufacturers labels for use of additives (such as surfactants, stickers and spreaders) for preharvest application to cotton.</p> <p>This product will not enhance the performance of these harvest aids when applied to Roundup Ready cotton.</p>	Allow a minimum of 7 days between application and harvest of cotton.

MAXIMUM ALLOWABLE APPLICATION RATES

Combined total per year for all applications	6.0 quarts (192 fl oz) per acre
Total of all Pre-plant, Pre-emergence, At-Planting applications	3.75 quarts (120 fl oz) per acre
Total in-crop applications from ground cracking to layby	3.0 quarts (96.0 fl oz) per acre
Maximum pre-harvest application rate	1.5 quarts (48.0 fl oz) per acre

11.6 - Roundup Ready® Flex Cotton

ATTENTION: USE OF THIS PRODUCT IN ACCORDANCE WITH LABEL DIRECTIONS IS EXPECTED TO RESULT IN NORMAL GROWTH OF ROUNDUP READY COTTON, HOWEVER, VARIOUS ENVIRONMENTAL CONDITIONS, AGRONOMIC PRACTICES AND OTHER FACTORS MAKE IT IMPOSSIBLE TO ELIMINATE ALL RISKS ASSOCIATED WITH THIS PRODUCT, EVEN WHEN APPLICATIONS ARE MADE IN CONFORMANCE WITH THE LABEL SPECIFICATIONS. IN SOME CASES, THESE FACTORS CAN RESULT IN BOLL LOSS, DELAYED MATURITY AND/OR YIELD LOSS.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, Pre-emergence, At-planting	<p>This product may be applied before, during or after planting Roundup Ready Flex cotton. Always plant into a weed free seedbed. In no-till and stale seedbed systems, always burn down existing weeds before cotton emerges.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops.</p>	
Post-emergence (Over-the- Top)	<p>When applied in accordance with this label, this product will control labeled annual grasses and broadleaf weeds in Roundup Ready Flex cotton. To maximize yield potential spray cotton early to eliminate competing weeds. Many perennial weeds will be controlled or suppressed with one or more applications of this product.</p> <p>In-crop application rates above 1.5 pints (24.0 fl oz) per acre made alone or with the addition of other crop chemical products containing surfactant may cause a crop response including leaf speckling or leaf necrosis.</p> <p>Make an initial application of 1.5 pints (24.0 fl oz) per acre on 1 to 3 inch tall annual grass and broadleaf weeds. This product may be applied by ground application equipment at rates up to 2.25 pints (36.0 fl oz) per acre per application post-emergence to Roundup Ready Flex cotton. In addition to broadcast applications, post-directed equipment may be used to achieve weed coverage.</p> <p>Application after 10th leaf or 10th node may result in plant injury and yield loss.</p> <p>NOTE: For specific rates of application and instructions, refer to the "ANNUAL WEEDS" and "PERENNIAL WEEDS RATE SECTION" in the label booklet for Mad Dog 5.4 herbicide.</p>	<p>The maximum rate for any single in-crop application of this product is 2.25 pints (36.0 fl oz) per acre made using ground application equipment.</p> <p>Except for pre-harvest use, do not exceed a maximum rate of 1.5 pints (24.0 fl oz) per acre of this product when making applications by air.</p> <p>Between layby and 60 percent open bolls, the maximum combined total rate of this product that may be applied is 3.0 pints (48.0 fl oz) per acre.</p> <p>The maximum combined total of all applications made from crop emergence through 60 percent open bolls must not exceed 144 fl oz (4.5 quarts) per acre.</p>
Pre-harvest	<p>This product may be applied for pre-harvest annual and perennial weed control as a broadcast treatment to Roundup Ready Flex cotton after 60 percent boll crack. Up to 3.0 pints (48.0 fl oz) of this product may be applied using either aerial or ground spray equipment.</p>	<p>Allow a minimum of 7 days between application and harvest of cotton.</p> <p>Do not apply this product to cotton grown for seed, as a reduction in germination or vigor may occur.</p>

11.6 - Roundup Ready® Flex Cotton

ATTENTION: USE OF THIS PRODUCT IN ACCORDANCE WITH LABEL DIRECTIONS IS EXPECTED TO RESULT IN NORMAL GROWTH OF ROUNDUP READY COTTON, HOWEVER, VARIOUS ENVIRONMENTAL CONDITIONS, AGRONOMIC PRACTICES AND OTHER FACTORS MAKE IT IMPOSSIBLE TO ELIMINATE ALL RISKS ASSOCIATED WITH THIS PRODUCT, EVEN WHEN APPLICATIONS ARE MADE IN CONFORMANCE WITH THE LABEL SPECIFICATIONS. IN SOME CASES, THESE FACTORS CAN RESULT IN BOLL LOSS, DELAYED MATURITY AND/OR YIELD LOSS.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Pre-harvest cont'd</i>	NOTE: This product will not enhance the performance of harvest aids when applied to Roundup Ready Flex cotton.	The use of additives, other than those listed on this label, for preharvest application to cotton is prohibited.

MAXIMUM ALLOWABLE APPLICATION RATES

Combined total per year for all applications (Calculate the combined rate to be used for all pre-plant, in-crop and pre-harvest applications)	6.0 quarts (192 fl oz) per acre
Total of all Pre-plant, At-planting, Pre-emergence applications	3.75 quarts (120 fl oz) per acre
Total in-crop applications from ground cracking to 60 percent open bolls	4.5 quarts (144 fl oz) per acre
Maximum allowed from 60 percent bolls open to 7 days prior to harvest	1.5 quarts (48.0 fl oz) per acre

11.7 - Roundup Ready Soybeans

The use of this product for in-crop applications over Roundup Ready Soybeans may not be practiced in California unless the applicator has at the time of application a California approved supplemental label specifying the accepted directions for use.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, Pre-emergence, At-planting	<p>This product may be applied before, during or after planting soybeans. Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops.</p>	
Post-emergence (In-Crop)	<p>When applied as directed, this product will control labeled annual grasses and broadleaf weeds in Roundup Ready soybeans. Applications of this product can be made in Roundup Ready soybeans from emergence (cracking) throughout flowering. Refer to the "ANNUAL WEEDS RATE TABLE" in this label for specific rates on various annual weeds.</p> <p>Make an initial application of 1.5 pints (24.0 fl oz) per acre on 2- to 8-inch tall weeds for best results. Weeds will generally be 2 to 8 inches tall, 2 to 5 weeks after planting. If the initial application is delayed and weeds are larger, apply a higher rate of this product. This product may be used up to 3.0 pints (48.0 fl oz) per acre in any single in-crop application for control of annual weeds and where heavy weed densities exist.</p> <p>A 1.5 to 3.0 pints (24.0 to 48.0 fl oz) per acre per acre rate (single or multiple applications) of this product will control or suppress perennial weeds such as: Bermudagrass, Canada thistle, Common milkweed, Field bindweed, Hemp dogbane, Horsenettle, Maretail (horseweed), Nutsedge, Quackgrass, Rhizome johnsongrass, Redvine, Trumpetcreeper, Swamp smartweed and Wirestem muhly. For best results, allow perennial weed species to achieve at least 6 inches of growth</p>	<p>The combined total application from crop emergence through harvest must not exceed 4.5 pints (72.0 fl oz) per acre. The maximum rate for any single in-crop application is 3.0 pints (48.0 fl oz) per acre per acre.</p> <p>The maximum combined total of this product that can be applied during flowering is 3.0 pints (48.0 fl oz) per acre.</p>

11.7 - Roundup Ready Soybeans

The use of this product for in-crop applications over Roundup Ready Soybeans may not be practiced in California unless the applicator has at the time of application a California approved supplemental label specifying the accepted directions for use.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Post-emergence (In-Crop) cont'd</i>	<p>before spraying with this product.</p> <p>Under adverse growing conditions such as drought, hail, wind damage or a poor soybean stand that slows or delays canopy closure, a sequential application of this may be necessary to control late flushes of weeds. In the Southern States, a sequential application of this product will be required to control new flushes of weeds in the Roundup Ready Soybean crop. To control giant ragweed, apply up to 1.5 pints (24.0 fl oz) per acre of this product when the weed is 8 to 12 inches tall to increase control and possibly avoid the need for a sequential application.</p>	

11.8 - Roundup Ready® Sugar Beets

The Roundup Ready designation indicates that the sugar beet contains a patented gene, which provides tolerance to this product. Information on Roundup Ready sugarbeet may be obtained from your seed supplier or Loveland Products, Inc. representative. Roundup Ready crop varieties must be purchased from an authorized licensed seed supplier.

Do NOT combine these instructions with those listed for crop varieties that do not contain a Roundup Ready gene listed in the "ANNUAL AND PERENNIAL CROPS (Alphabetical)" sections of the Mad Dog 5.4 herbicide label booklet.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-Planting, Pre-emergence	<p>This product may be applied before, during or after planting of Roundup Ready sugar beets.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p>	Maximum quantity of this product that may be applied for all pre-plant, at-planting and pre-emergence applications combined is 3.75 quarts (120 fl oz) per acre per season.
Post-emergence (In-crop)	This product may be applied over the top of Roundup Ready sugar beets for control of annual grasses and broadleaf weeds from emergence to 30 days prior to harvest. To maximize yield potential, spray sugar beets early to eliminate competing weeds. Up to 4 sequential applications of this product may be made with at least 10 days between applications. This product will control or suppress most perennial weeds. For some perennial weeds, repeat applications may be required to eliminate crop competition throughout the growing season.	<p>The combined total application from crop emergence through harvest must not exceed 6.75 pints (108 fl oz) per acre.</p> <p>The maximum rate for any single application between emergence to the 8 leaf stage is 2.25 pints (36.0 fl oz) per acre.</p> <p>The maximum rate for any single application between the 8 leaf stage and canopy closure is 1.5 pints (24.0 fl oz) per acre.</p> <p>Allow a minimum of 30 days between last application and sugar beet harvest.</p>

MAXIMUM ALLOWABLE APPLICATION RATES

Combined total per year for all application	6.0 quarts (192 fl oz) per acre
Total of all Pre-plant, Pre-emergence applications	7.5 pints (120 fl oz) per acre
Emergence to 8 leaf stage	3.75 pints (60.0 fl oz) per acre
Between 8 leaf stage and canopy closure	3.0 pints (48.0 fl oz) per acre

12.0 - NON-CROP USES AROUND THE FARMSTEAD

12.1 - Weed Control and Trim-And-Edge

LABELED SITES: Non-crop Areas including building foundations, along and in fences, in dry ditches and canals, along ditchbanks, farm roads, shelterbelts, prior to landscape plantings and equipment storage areas.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS																											
Any suitable application equipment described in the APPLICATION EQUIPMENT and TECHNIQUES section of this label	<p>This product may be used to control annual weeds, perennials weeds and woody brush which are found in any part of the farmstead.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>TANK MIXTURES: This product may be tank mixed with the following products (or generic equivalents). Refer to these product labels for approved farmstead sites and application rates. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>For annual weeds, use 1.5 pints (24.0 fl oz) per acre of this product when weeds are less than 6 inches tall and 2.25 pints (36.0 fl oz) per acre when weeds are greater than 6 inches tall. For perennial weeds, apply 1.5 to 3.75 quarts (48.0 to 120 fl oz) per acre in these tank mixes.</p> <p>For tank mixtures with these products through backpack sprayers, handguns or other high-volume spray-to-wet applications, see the "HAND-HELD OR HIGH VOLUME EQUIPMENT" section of this label for allowable application rates.</p> <table><tr><td>Arsenal</td><td>Oust</td><td>Sahara</td></tr><tr><td>Barricade</td><td>Pendulum 3.3</td><td>Simazine</td></tr><tr><td>65WG Diuron</td><td>EC</td><td>Surflan</td></tr><tr><td>Endurance</td><td>Pendulum</td><td>Elar</td></tr><tr><td>Escort</td><td>WDG</td><td>Vanquish</td></tr><tr><td>Karmex DF</td><td>Plateau</td><td>2,4-D</td></tr><tr><td>Krovar DF</td><td>Princep DF</td><td></td></tr><tr><td></td><td>Princep Liquid</td><td></td></tr><tr><td></td><td>Ronstar 50 WP</td><td></td></tr></table>	Arsenal	Oust	Sahara	Barricade	Pendulum 3.3	Simazine	65WG Diuron	EC	Surflan	Endurance	Pendulum	Elar	Escort	WDG	Vanquish	Karmex DF	Plateau	2,4-D	Krovar DF	Princep DF			Princep Liquid			Ronstar 50 WP		Do not apply this product with dicamba tank mixtures by air in California.
	Arsenal	Oust	Sahara																										
	Barricade	Pendulum 3.3	Simazine																										
	65WG Diuron	EC	Surflan																										
	Endurance	Pendulum	Elar																										
Escort	WDG	Vanquish																											
Karmex DF	Plateau	2,4-D																											
Krovar DF	Princep DF																												
	Princep Liquid																												
	Ronstar 50 WP																												
	<p>For control or partial control of the following perennial weeds, apply 1.5 to 3.0 pints (24.0 to 48.0 fl oz) of this product plus the labeled rate of Oust® per acre.</p> <table><tr><td>Bahiagrass</td><td>Fescue, tall</td></tr><tr><td>Bermudagrass</td><td>Johnsongrass</td></tr><tr><td>Broomsedge</td><td>Poorjoe</td></tr><tr><td>Dallisgrass</td><td>Quackgrass</td></tr><tr><td>Dock, curly</td><td>Vaseygrass</td></tr><tr><td>Dogfennel</td><td>Vervain, blue</td></tr></table>	Bahiagrass	Fescue, tall	Bermudagrass	Johnsongrass	Broomsedge	Poorjoe	Dallisgrass	Quackgrass	Dock, curly	Vaseygrass	Dogfennel	Vervain, blue																
Bahiagrass	Fescue, tall																												
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Broomsedge	Poorjoe																												
Dallisgrass	Quackgrass																												
Dock, curly	Vaseygrass																												
Dogfennel	Vervain, blue																												

12.2 - Greenhouse/Shadehouse

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Spot Spray, Directed Spray	<p>This product may be used to control weeds in and around greenhouses and shadehouses.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p>	<p>Air circulation fans must be turned off during application.</p> <p>Desirable vegetation must not be present during application.</p>

12.3 - Chemical Mowing

LABELED USES: Farm Ditches and Other Parts of Farmsteads

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Any suitable application equipment described in the APPLICATION EQUIPMENT and TECHNIQUES section of this label	<p>This product will suppress perennial grasses listed in this section to serve as a substitute for mowing. Use 6.0 fl oz of this product per acre when treating Tall fescue, Fine fescue, Orchardgrass or Quackgrass covers. Use 4.5 fl oz of this product per acre when treating Kentucky bluegrass. Use 12.0 fl oz of this product when treating Bermudagrass. Use 3.0 pints (48.0 fl oz) of this product when treating Torpedograss or Paragrass. Apply treatments in 10.0 to 20.0 gallons of spray solution per acre.</p>	Use only in areas where some temporary injury or discoloration of perennial grasses can be tolerated.

12.4 - Cut Stumps

LABELED USES: Cut Stumps (on any non-crop site listed on this label)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS												
Suitable Hand-Held Equipment	<p>This product will control regrowth of cut stumps and resprouts of many types of woody brush and tree species, some of which are listed below. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut trees or resprouts close to the soil surface. Apply a 50 to 100 percent solution of this product to the freshly-cut surface immediately after cutting.</p> <p>Delays in application may result in reduced performance. For best results, make applications during periods of active growth and full leaf expansion.</p> <p>Some sprouts, stems, or trees may share the same root system. Adjacent trees having a similar age, height and spacing may signal shared roots. Whether grafted or shared, injury is likely to occur to non-treated stems/trees when one or more trees sharing common roots are treated.</p> <table> <tr> <td>Alder</td><td>Pepper, brazilian</td><td>Sweetgum</td></tr> <tr> <td>Eucalyptus</td><td>Pine, Austrian</td><td>Tan oak</td></tr> <tr> <td>Madrone</td><td>Reed, giant</td><td>Willow</td></tr> <tr> <td>Oak</td><td>Salt cedar</td><td></td></tr> </table>	Alder	Pepper, brazilian	Sweetgum	Eucalyptus	Pine, Austrian	Tan oak	Madrone	Reed, giant	Willow	Oak	Salt cedar		
Alder	Pepper, brazilian	Sweetgum												
Eucalyptus	Pine, Austrian	Tan oak												
Madrone	Reed, giant	Willow												
Oak	Salt cedar													

12.5 - Habitat Management

LABELED USES: Habitat Restoration and Maintenance, Wildlife Food Plots

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Any suitable application equipment described in the APPLICATION EQUIPMENT and TECHNIQUES of this label	<p>This product may be used to control exotic and other undesirable vegetation in habitat management and natural areas including rangeland and wildlife refuges. Applications can be made to allow recovery of native plant species, prior to planting desirable native species, and for similar broad spectrum vegetation control requirements in habitat management areas.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>Spot treatments can be made to selectively remove unwanted plants for habitat maintenance and enhancement.</p> <p>This product may be used as a site preparation treatment to control annual and perennial weeds prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area.</p>	If tillage is needed to prepare a seedbed, wait 7 days after application before tillage to allow translocation into underground plant parts.

13.0 - FORESTRY, INDUSTRIAL, TURF and ORNAMENTAL

13.1 - Forestry Site Preparation

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Boom Sprayers, Shielded Boom Sprayers, High-Volume Off-Center Nozzles, Hand-Held Equipment, And Similar Equipment.	<p>This product can be used for the control or partial control of woody brush, trees and herbaceous weeds in forestry, as well as for use in preparing or establishing wildlife openings with these sites and maintaining logging roads.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>This product can be used in site preparation prior to planting any tree species, including Christmas trees, Eucalyptus, hybrid tree cultivars and silvicultural nursery sites.</p> <p>Use higher rates of this product within the labeled range for control or partial control of woody brush, trees and hard-to-control perennial herbaceous weeds. For best results, apply to actively growing woody brush and trees after full leaf expansion and before fall color and leaf drop. Increase rates within the labeled range for control of perennial herbaceous weeds any time after emergence and before seedheads, flowers or berries appear.</p> <p>Use the lower rates of this product within the labeled range for control of annual herbaceous weeds and actively growing perennial herbaceous weeds after seedheads, flowers or berries appear. Apply to the foliage of actively growing annual herbaceous weeds any time after emergence.</p>	Do not apply this product as an over-the-top broadcast spray for forestry conifer or hardwood release.

13.1 - Forestry Site Preparation

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS								
<i>Boom Sprayers, Shielded Boom Sprayers, High-Volume Off- Center Nozzles, Hand-Held Equipment, And Similar Equipment cont'd</i>	<p>TANK MIXTURES: Tank mixtures of this product may be used to increase the spectrum of vegetation controlled. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>Any labeled rate of this product may be used in a tank mix with the following products (or generic equivalents) for forestry site preparation.</p> <table><tr><td>Arsenal Applicators Concentrate</td><td>Garlon 4A</td></tr><tr><td>Chopper</td><td>Landmark XP</td></tr><tr><td>Escort or Escort XP</td><td>Oust or Oust XP</td></tr><tr><td>Garlon 3A</td><td>Westar</td></tr></table> <p>For control of herbaceous weeds, use the lower labeled tank mixture rates. For control of dense stands or tough-to-control woody brush and trees, use the higher labeled rates.</p>	Arsenal Applicators Concentrate	Garlon 4A	Chopper	Landmark XP	Escort or Escort XP	Oust or Oust XP	Garlon 3A	Westar	
Arsenal Applicators Concentrate	Garlon 4A									
Chopper	Landmark XP									
Escort or Escort XP	Oust or Oust XP									
Garlon 3A	Westar									

13.2 - Noncrop Areas and Industrial Sites

LABELED USES: Non-crop areas including airports, apartment complexes, commercial sites, Conservation Reserve Program (CRP) areas, ditch banks, dry ditches, dry canals, fencerows, gold courses, greenhouses, industrial sites, landscape areas, lumber yards, manufacturing sites, municipal sites, natural areas, office complexes, ornamentals, parks, parking areas, pastures, petroleum tank farms and pumping installations, plant nurseries, public areas, railroads, rangeland, recreational areas, residential areas, rights-of-way, roadsides, schools, sports complexes, storage areas, substations, turfgrass areas, utility sites, warehouse areas, and wildlife management areas.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<p>This product may be applied with any suitable application equipment described in APPLICATION EQUIPMENT and TECHNIQUES section of this label.</p>	<p>This product may be used to trim-and-edge around objects in non-crop sites, for spot treatment of unwanted vegetation and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting an areas to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>Repeated applications of this product may be used, as weeds emerge, to maintain bare ground.</p> <p>TANK MIXTURES: This product may be tank mixed with the following products (or generic equivalents) provided that the specific product is registered for use on the target site. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the</p>	<p>Do not apply this product with dicamba tank mixtures by air in California.</p>

13.2 - Noncrop Areas and Industrial Sites

LABELED USES: Non-crop areas including airports, apartment complexes, commercial sites, Conservation Reserve Program (CRP) areas, ditch banks, dry ditches, dry canals, fencerows, gold courses, greenhouses, industrial sites, landscape areas, lumber yards, manufacturing sites, municipal sites, natural areas, office complexes, ornamentals, parks, parking areas, pastures, petroleum tank farms and pumping installations, plant nurseries, public areas, railroads, rangeland, recreational areas, residential areas, rights-of-way, roadsides, schools, sports complexes, storage areas, substations, turfgrass areas, utility sites, warehouse areas, and wildlife management areas.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS																																												
<p><i>13.2 Cont'd:</i></p> <p>This product may be applied with any suitable application equipment described in APPLICATION EQUIPMENT and TECHNIQUES section of this label.</p>	<p>applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <table><tr><td>Arsenal</td><td>Outrider®</td></tr><tr><td>atrazine</td><td>pendimethalin</td></tr><tr><td>Barricade 65WG</td><td>Plateau</td></tr><tr><td>Certainty®</td><td>Crossbow® L</td></tr><tr><td>dicamba</td><td>Landmark II MP</td></tr><tr><td>diuron</td><td>Landmark II</td></tr><tr><td>Endurance</td><td>Poast®</td></tr><tr><td>Escort</td><td>Ronstar 50 WP</td></tr><tr><td>Escort XP</td><td>simazine</td></tr><tr><td>Gallery® 75DF</td><td>Surflan AS</td></tr><tr><td>Garlon 3A</td><td>Surflan WDG</td></tr><tr><td>Garlon 4</td><td>Transline®</td></tr><tr><td>Goal 2XL</td><td>Velpar® DF</td></tr><tr><td>Krovar I DF</td><td>Velpar L</td></tr><tr><td>Oust</td><td>2,4-D</td></tr><tr><td>Oust XP</td><td></td></tr></table> <p>When applied as a tank mixture for bare ground, this product provides control of the emerged annual weeds and control of partial control of emerged perennial weeds, woody brush and trees.</p> <p>For control or partial control of the following perennial weeds, apply 1.5 to 3.0 pints (24.0 to 48.0 fl oz) of this product plus the labeled rate of Oust or Oust XP per acre.</p> <table><tr><td>Bahiagrass</td><td>Dock, curly</td><td>Poorjoe</td></tr><tr><td>Bermudagrass</td><td>Dogfennel</td><td>Quackgrass</td></tr><tr><td>Broomsedge</td><td>Fescue, tall</td><td>Vaseygrass</td></tr><tr><td>Dallisgrass</td><td>Johnsongrass</td><td>Vervain, blue</td></tr></table>	Arsenal	Outrider®	atrazine	pendimethalin	Barricade 65WG	Plateau	Certainty®	Crossbow® L	dicamba	Landmark II MP	diuron	Landmark II	Endurance	Poast®	Escort	Ronstar 50 WP	Escort XP	simazine	Gallery® 75DF	Surflan AS	Garlon 3A	Surflan WDG	Garlon 4	Transline®	Goal 2XL	Velpar® DF	Krovar I DF	Velpar L	Oust	2,4-D	Oust XP		Bahiagrass	Dock, curly	Poorjoe	Bermudagrass	Dogfennel	Quackgrass	Broomsedge	Fescue, tall	Vaseygrass	Dallisgrass	Johnsongrass	Vervain, blue	
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Dallisgrass	Johnsongrass	Vervain, blue																																												

13.3 - Injection and Frill (Woody Brush and Trees)

LABELED SITES: Woody brush and Trees in non-crop areas

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Injection or Frill Applications	<p>Apply this product using suitable equipment which must penetrate into the living tissue. Apply the equivalent of 0.75 mL of this product per each 2 to 3 inches of trunk diameter at breast height (DBH). This is best achieved by applying a 50 to 100 percent concentration of this product either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter</p>	<p>Do not use application techniques that allow runoff to occur from frilled or cut areas in species that exude sap freely.</p> <p>In species such as this, make the frill or cuts at an oblique angle to produce a cupping effect and use a 100 percent concentration of this</p>

13.3 - Injection and Frill (Woody Brush and Trees)

LABELED SITES: Woody brush and Trees in non-crop areas

LABELLED ON: Woody bark and roots in non-sap areas												
TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS										
Injection or Frill Applications cont'd	<p>increases in size, better results are achieved by applying diluted material to a continuous frill or more closely spaced cuttings.</p> <p>For best results, make application during periods of active growth and after full leaf expansion. This product will control many species, some of which are listed below:</p> <table><tr><td><u>Control</u></td><td><u>Partial Control</u></td></tr><tr><td>Oak</td><td>Black gum</td></tr><tr><td>Poplar</td><td>Dogwood</td></tr><tr><td>Sweetgum</td><td>Hickory</td></tr><tr><td>Sycamore</td><td>Maple, red</td></tr></table>	<u>Control</u>	<u>Partial Control</u>	Oak	Black gum	Poplar	Dogwood	Sweetgum	Hickory	Sycamore	Maple, red	product.
<u>Control</u>	<u>Partial Control</u>											
Oak	Black gum											
Poplar	Dogwood											
Sweetgum	Hickory											
Sycamore	Maple, red											

13.4 - Hollow Stem Injection

LABELED SITES: Hollow-stem plants growing in any non-crop site specified on this label.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Hand-Held Injection Devices That Deliver Labeled Amounts Of This Product	<p>For control of the following hollow-stem plants, use the application rates below:</p> <p>Japanese Knotweed, <i>Polygonum cuspidatum</i> Inject 3.75 mL per stem of this product between second and third internode.</p> <p>Bohemian Knotweed, <i>Polygonum bohemicum</i> Inject 3.75 mL per stem of this product between the second and third internode.</p> <p>Giant Hogweed, <i>Heracleum mantegazzianum</i> Inject one leaf cane per plant 12 inches above the root crown with 3.75 mL of a 5% v/v solution of this product.</p> <p>Poison Hemlock, <i>Conium maculatum</i> Inject one leaf cane per plant 10 to 12 inches above the root crown with 3.75 mL a 5% v/v solution of this product.</p> <p>Field horsetail, <i>Equisetum arvense</i> Inject one segment above the root crown with 3.75 mL per stem of this product. Use a small syringe that calibrates to this rate.</p> <p>Canada Thistle, <i>Cirsium arvense</i> Cut 8 to 9 of the tallest plants at bud stage in a clump with clippers. Use a cavity needle that is pushed into the stem center and then slowly removed as 3.75 mL per stem of this product is injected into the stem.</p>	<p>The combined total for all treatments must not exceed 5.25 quarts (168 fl oz) of this product per acre.</p> <p>5.25 quarts (168 fl oz) treats approximately 1300 stems per acre.</p>

13.5 - Ornamentals, Plant Nurseries and Christmas Trees

LABELED SITES: Plant Nurseries, Christmas Tree farms and other non-food tree production sites

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Post-Directed, Trim-and-Edge	<p>This product may be used as a post-directed spray around established woody ornamental species (including Arborvitae, Azalea, Boxwood, Crabapple, Eucalyptus, Euonymus, Fir, Douglas fir, Jojoba, Hollies, Lilac, Magnolia, Maple, Oak, Poplar, Privet, Pine, Spruce and yew, growing in plant nurseries, on Christmas tree farms, or on other non-food tree production sites), or to trim and edge around trees, buildings, sidewalks, roads, potted plants and other objects in a production setting.</p> <p>Apply at a concentration labeled in the ANNUAL WEEDS, PERENNIAL WEEDS, WOODY BRUSH and TREES sections, appropriate to the species of weed to be controlled.</p> <p>Avoid contact of spray, drift or mist with foliage or green bark of desirable ornamental species. Desirable plants may be protected from the spray solution by using shields or coverings made of cardboard or other impermeable material.</p>	This product is not allowed for use as an over-the-top broadcast spray in ornamentals and Christmas trees.
Site Preparation	This product may be used prior to planting any tree, shrub or vine, including Christmas tree species, in a nursery or production setting.	
Wiper Application	This product may be used through wick or other suitable wiper applicators to control or partially control undesirable vegetation around established trees, shrubs or vines. See the "SELECTIVE EQUIPMENT" section of this label for further information about the proper use of wiper applicators.	

13.6 - Parks, Recreational and Residential Areas

LABELED SITES: Around Trees, Fences, Paths, Driveways, Around Buildings, Patios, Sidewalks, Flower Beds, Around Shrubs and other Ornamental Plants

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Trim-and-Edge, Spot Treatment	<p>This product may be used to eliminate unwanted weeds growing in areas listed above.</p> <p>Use suitable hand held equipment for directed spraying according to instructions in Section 6.4 "MIXING FOR HAND-HELD SPRAYERS".</p> <p>If necessary, use cardboard or plastic to shield desirable plants.</p>	<p>Do not allow spray, drift or mist to contact foliage or green bark of desirable ornamental species.</p> <p>Do not use for spot weed control in lawns since desirable lawn grass will also be killed.</p>
Site Preparation, Lawn Renovation	<p>This product may be used prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), lawn renovation or prior to laying asphalt or beginning construction projects.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>Apply using suitable broadcast or directed spray equipment.</p>	

13.6 - Parks, Recreational and Residential Areas

LABELED SITES: Around Trees, Fences, Paths, Driveways, Around Buildings, Patios, Sidewalks, Flower Beds, Around Shrubs and other Ornamental Plants

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Site Preparation, Lawn Renovation cont'd</i>	<p>For lawn renovation, thorough coverage is necessary to kill all weeds and old lawn.</p> <p>For best results, apply when daytime temperatures are at least 60° F. Do not mow for 7 days before or after treatment.</p> <p>7 days after application, soil may be tilled, fertilized and seeded.</p>	

13.7 - Railroads

LABELED SITES: Railroad Rights-of-Way, Railroad Ballast areas

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS														
Boom Sprayers, Shielded Boom Sprayers, High-Volume Off- Center Nozzles, Hand-Held Equipment	<p>Observe application precautions in the APPLICATION EQUIPMENT and TECHNIQUES section of this label.</p> <p>All of the instructions in the "NONCROP AREAS AND INDUSTRIAL SITES" section apply to railroads. Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>This product may be used to maintain bare ground on railroad ballast and shoulders. Repeat applications of this product may be used, as weeds emerge, to maintain bare ground. This product may be used to control tall-growing weeds to improve line-of-sight at railroad crossings and reduce the need for mowing along rights-of-way. For crossing applications, up to 80 gallons of spray solution per acre may be used.</p> <p>Avoid application to non-target plants due to drift, overspray or runoff.</p> <p>TANK MIXTURES: This product may be tank mixed with the following products (or generic equivalent) for ballast, shoulder, spot, bare ground and crossing treatments provided that the specific product is registered for use on such sites. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <table><tr><td>ARSENAL®</td><td>KROVAR® I DF</td></tr><tr><td>Dicamba</td><td>OUST®</td></tr><tr><td>DIURON</td><td>SAHARA®</td></tr><tr><td>ESCORT®</td><td>SPIKE®</td></tr><tr><td>GARLON® 3A</td><td>TELAR®</td></tr><tr><td>GARLON® 4</td><td>VELPAR®</td></tr><tr><td>HYVAR® X</td><td>2,4-D</td></tr></table>	ARSENAL®	KROVAR® I DF	Dicamba	OUST®	DIURON	SAHARA®	ESCORT®	SPIKE®	GARLON® 3A	TELAR®	GARLON® 4	VELPAR®	HYVAR® X	2,4-D	
ARSENAL®	KROVAR® I DF															
Dicamba	OUST®															
DIURON	SAHARA®															
ESCORT®	SPIKE®															
GARLON® 3A	TELAR®															
GARLON® 4	VELPAR®															
HYVAR® X	2,4-D															

13.7 - Railroads

LABELED SITES: Railroad Rights-of-Way, Railroad Ballast areas

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS												
<i>Boom Sprayers, Shielded Boom Sprayers, High-Volume Off- Center Nozzles, Hand-Held Equipment cont'd</i>	<p>Brush control</p> <p>This product may be used to control woody brush and trees on railroad rights-of- way. Apply 3.0 to 7.5 quarts (96.0 to 240 fl oz) of this product per acre as a broadcast spray, using boom-type or boomless nozzles. Up to 80.0 gallons of spray solution per acre may be used. Apply a ¾ to 2 percent solution of this product when using high- volume spray-to-wet applications. Apply a 5 to 10 percent solution of this product when using low volume directed sprays for spot treatment. This product may be mixed with the following products (or generic equivalent) for enhanced control of woody brush and trees:</p> <table><tr><td>ARSENAL®</td><td>TELAR DF</td></tr><tr><td>ESCORT®</td><td>TORDON® K</td></tr><tr><td>KERNITE</td><td>TORDON 22K</td></tr><tr><td>GARLON 4</td><td>TRANSLINE</td></tr><tr><td>GARLON® 3A</td><td>VELPAR</td></tr><tr><td></td><td>VANQUISH</td></tr></table>	ARSENAL®	TELAR DF	ESCORT®	TORDON® K	KERNITE	TORDON 22K	GARLON 4	TRANSLINE	GARLON® 3A	VELPAR		VANQUISH	
ARSENAL®	TELAR DF													
ESCORT®	TORDON® K													
KERNITE	TORDON 22K													
GARLON 4	TRANSLINE													
GARLON® 3A	VELPAR													
	VANQUISH													

13.8 - Roadsides

LABELED SITES: Roadside Rights of Way areas (including Shoulders, Guardrails and Signposts)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS																		
Boom Sprayers, Shielded Boom Sprayers, High-Volume Off- Center Nozzles, Hand-Held Equipment, And Similar Equipment.	<p>Observe application precautions in in the APPLICATION EQUIPMENT and TECHNIQUES section of this label.</p> <p>All the instructions in the "NONCROP AREAS AND INDUSTRIAL SITES" section apply to roadsides.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>This product may be used on road shoulders, under guardrails and around signposts and other objects along roadsides that may be obstacles to mowing.</p> <p>Avoid application to non-target plants due to drift, overspray or runoff.</p> <p>TANK MIXTURES: This product may be tank-mixed with the following products (or generic equivalent) for shoulder, guardrail, spot and bare ground treatments:</p> <table><tr><td>BANVEL®</td><td>PRINCEP® LIQUID</td></tr><tr><td>DIURON</td><td>RONSTAR® 50 WP</td></tr><tr><td>ENDURANCE®</td><td>SAHARA®</td></tr><tr><td>ESCORT®</td><td>SIMAZINE</td></tr><tr><td>KROVAR® I DF</td><td>SURFLAN®</td></tr><tr><td>OUST®</td><td>TELAR®</td></tr><tr><td>PENDULUM® WDG</td><td>VANQUISH®</td></tr><tr><td>PENDULUM® 3.3 EC</td><td>2,4-D</td></tr><tr><td>PRINCEP® DF</td><td></td></tr></table>	BANVEL®	PRINCEP® LIQUID	DIURON	RONSTAR® 50 WP	ENDURANCE®	SAHARA®	ESCORT®	SIMAZINE	KROVAR® I DF	SURFLAN®	OUST®	TELAR®	PENDULUM® WDG	VANQUISH®	PENDULUM® 3.3 EC	2,4-D	PRINCEP® DF		
BANVEL®	PRINCEP® LIQUID																			
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PENDULUM® 3.3 EC	2,4-D																			
PRINCEP® DF																				

13.8 - Roadsides

LABELED SITES: Roadside Rights of Way areas (including Shoulders, Guardrails and Signposts)

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
<i>Boom Sprayers, Shielded Boom Sprayers, High-Volume Off- Center Nozzles, Hand-Held Equipment, And Similar Equipment cont'd</i>	<p>It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>See the "NONCROP AREAS AND INDUSTRIAL SITES" section of this label for instructions for tank mixing.</p>	
Spot treatment	This product may be used as a spot treatment to control unwanted vegetation growing along roadsides.	

13.9 - Utility Sites

LABELED SITES: Electrical Power, Pipeline And Telephone Rights-Of-Way, And In Other Sites Associated With These Rights-Of-Way, Including Substations, Roadsides, Railroads Or Similar Rights-Of-Way That Run In Conjunction With Utilities.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Boom Sprayers, Shielded Boom Sprayers, High-Volume Off- Center Nozzles, Hand-Held Equipment, And Similar Equipment.	<p>Observe application precautions in in the APPLICATION EQUIPMENT and TECHNIQUES section of this label.</p> <p>This product may be used in utility sites and substations to control unwanted vegetation and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting a utility site to ornamentals, flowers, turfgrass (sod or seed), or beginning construction projects.</p> <p>Make applications according to the rates listed in Annual Weeds, Perennial Weeds, and Woody Brush and Trees rate tables in this label.</p> <p>Avoid application to non-target plants due to drift, overspray or runoff.</p> <p>A follow up application of this product may be used, up to the maximum labeled rate, as weeds emerge, to maintain bare ground.</p> <p>This product can also be used when preparing or establishing wildlife openings within these sites, maintaining access roads and for side trimming along utility rights-of-way.</p> <p>For control of herbaceous weeds, use the lower labeled tank mixture rates. For control of dense stands of tough-to-control woody brush and trees, use the higher labeled rates.</p> <p>TANK MIXTURES: Tank mixtures of this product may be used to increase the spectrum of control for herbaceous weeds, woody brush and trees. This product may be tank mixed with the following products or generic equivalent). Refer to these products' labels for approved non-crop sites and application rates. It is the pesticide user's responsibility to ensure that all products are registered for the intended use.</p>	

13.9 - Utility Sites

LABELED SITES: Electrical Power, Pipeline And Telephone Rights-Of-Way, And In Other Sites Associated With These Rights-Of-Way, Including Substations, Roadsides, Railroads Or Similar Rights-Of-Way That Run In Conjunction With Utilities.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS																														
<i>Boom Sprayers, Shielded Boom Sprayers, High-Volume Off-Center Nozzles, Hand-Held Equipment, And Similar Equipment.</i>	<p>Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <table> <tr> <td>Arsenal</td><td>Krenite</td><td>simazine</td></tr> <tr> <td>atrazine</td><td>Krovar 1 DF</td><td>Surflan AS</td></tr> <tr> <td>Barricade 65WG</td><td>Oust</td><td>Surflan WDG</td></tr> <tr> <td>dicamba</td><td>Oust XP</td><td>Telar DF</td></tr> <tr> <td>diuron</td><td>Outrider</td><td>Transline</td></tr> <tr> <td>Endurance</td><td>pendimethalin</td><td>2,4-D</td></tr> <tr> <td>Escort</td><td>Plateau</td><td>Velpar DF</td></tr> <tr> <td>Escort XP</td><td>Princep</td><td>Velpar L</td></tr> <tr> <td>Garlon 4</td><td>Ronstar 50WP</td><td>Vanquish</td></tr> <tr> <td>Garlon 3A</td><td>Sahara</td><td></td></tr> </table>	Arsenal	Krenite	simazine	atrazine	Krovar 1 DF	Surflan AS	Barricade 65WG	Oust	Surflan WDG	dicamba	Oust XP	Telar DF	diuron	Outrider	Transline	Endurance	pendimethalin	2,4-D	Escort	Plateau	Velpar DF	Escort XP	Princep	Velpar L	Garlon 4	Ronstar 50WP	Vanquish	Garlon 3A	Sahara		
Arsenal	Krenite	simazine																														
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diuron	Outrider	Transline																														
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Escort	Plateau	Velpar DF																														
Escort XP	Princep	Velpar L																														
Garlon 4	Ronstar 50WP	Vanquish																														
Garlon 3A	Sahara																															

14.0 ANNUAL WEEDS RATE TABLES (Alphabetical By Species)

Water carrier volumes of 3.0 to 10.0 gallons per acre for ground applications and 3.0 to 5.0 gallons per acre for aerial applications are required.

This product may be used up to 2.25 pints (36.0 fluid ounces) per acre where heavy weed densities exist. For weeds that have been mowed, grazed or cut, allow regrowth to occur prior to treatment.

RESTRICTIONS:

Do not tank mix with soil residual herbicides when using these rates unless otherwise specified.

West Region	Alaska, Arizona, California, Colorado, Idaho, Kansas (west of Highway 83), Montana, Nebraska (west of Highway 83), Nevada, New Mexico, North Dakota (west of Highway 83), Oregon, South Dakota (west of Highway 83), Texas, Utah, Washington, Wyoming
North Region	Connecticut, Indiana (north of I-70), Iowa, Kansas (east of Highway 83 and north of I- 35), Maine, Massachusetts, Minnesota, Missouri (north of I-44), Nebraska (east of Highway 83), New Hampshire, New Jersey, New York, North Dakota (east of Highway 83), Ohio, Pennsylvania, Rhode Island, South Dakota (east of Highway 83), Vermont, Wisconsin
South Region	Alabama, Arkansas, Delaware, Florida, Georgia, Hawaii, Illinois(south of I-70), Indiana (south of I-70), Kansas (east of Highway 83 and south of I-35), Kentucky, Louisiana, Maryland, Mississippi, Missouri (south of I-44), North Carolina, Oklahoma (east of I-35), South Carolina, Tennessee, Texas (east of I-35), Virginia, Washington DC, West Virginia

ANNUAL WEEDS RATE TABLE, NORTH AND SOUTH REGIONS

WEED SPECIES	REGION	RATE						
		(FLUID OUNCES PER ACRE)						
			9.0	12.0	18.0	24.0	30.0	36.0
			MAXIMUM HEIGHT/LENGTH					
Annoda, spurred			-	1"	2"	3"	5"	8"
Barley			-	18"	18"+	-	-	-
Barnyardgrass	South		-	3"	5"	7"	9"	12"
	North		-	-	6"	12"	-	-
Bassia, fivehook			-	-	-	6"	-	-
Bittercress			-	12"	20"	-	-	-
Bluegrass, annual			-	10"	-	-	-	-
Brome, downy			6"	-	-	-	-	-
Brome, Japanese			-	6"	-	24"	-	-
Browntop panicum			-	6"	8"	12"	-	24"
Burcucumber			-	-	6"	12"	-	-
Buttercup			-	12"	20"	-	-	-
Carolina foxtail			-	20"	-	-	-	-
Carolina geranium			-	-	-	4"	-	9"
Carpetweed			-	-	6"	12"	-	-
Cheat			-	6"	20"	-	-	-
Chervil			-	20"	-	-	-	-
Chickweed			-	12"	18"	-	-	-
Cocklebur			-	12"	18"	24"	-	-
Copperleaf, hophornbeam			-	1"	2"	3"	4"	6"
Copperleaf, Virginia			-	1"	2"	3"	4"	6"
Corn			-	12"	20"	-	-	-
Corn speedwell			-	12"	-	-	-	-
Crabgrass			-	12"	18"	-	-	-
Cutleaf evening primrose			-	-	-	3"	3"	6"
Dwarf dandelion			-	20"	-	-	-	-
Eastern manna grass			-	8"	12"	-	-	-
Eclipta			-	4"	8"	12"	-	-
Fall panicum	South		-	4"	6"	8"	12"	24"
	North		-	6"	12"	18"	-	-
Falsedandelion			-	20"	-	-	-	-
Falseflax, smallseed			-	12"	-	-	-	-
Fiddleneck			-	-	-	6"	6"	12"
Field pennycress			-	6"	12"	-	-	-
Filaree			-	-	-	-	-	12"
Fleabane, annual			-	6"	20"	-	-	-
Fleabane, hairy (<i>Conyza bonariensis</i>)			-	6"	-	-	-	-
Fleabane, rough			-	3"	6"	12"	-	-
Florida pusley			-	-	-	4"	4"	6"
Foxtail	South		-	8"	12"	20"	-	-
	North		18"	18"+	-	-	-	-
Goatgrass, jointed			-	6"	-	-	-	-
Goosegrass			-	3"	5"	8"	-	18"
Grain sorghum (milo)			-	6"	12"	20"	-	-

WEED SPECIES	REGION	RATE						
		(FLUID OUNCES PER ACRE)						
			9.0	12.0	18.0	24.0	30.0	36.0
		MAXIMUM HEIGHT/LENGTH						
Groundsel, common			-	6"	-	-	-	-
Hemp sesbania			-	-	2"	4"	6"	8"
Henbit			-	-	-	6"	-	20"
Horseweed/Marestail (<i>Conyza canadensis</i>)	South		-	-	12"	30"	-	-
Itchgrass			-	6"	12"	18"	-	-
Johnsongrass, seedling	South		-	-	18"	-	-	-
	North		-	12"	18"	-	-	-
Junglerice			-	3"	5"	7"	9"	12"
Knotweed			-	3"	8"	12"	-	20"
Kochia ¹			-	3 to 6"	12"	-	-	-
Lambsquarters			-	6"	8"	12"	-	20"
Little barley			-	20"	-	-	-	-
London rocket			-	6"	-	-	-	-
Mayweed			-	-	2"	6"	12"	18"
Morningglory (<i>Ipomoea spp.</i>)			-	-	2"	4"	-	6"
Mustard, blue			6"	-	-	-	-	-
Mustard, tansy			6"	12"	20"	-	-	-
Mustard, tumble			6"	-	-	-	-	-
Mustard, wild			6"	12"	18"	-	-	-
Nightshade, black			-	6"	12"	-	-	-
Nightshade, hairy			-	6"	12"	-	-	-
Oats			-	-	6"	20"	-	-
Pigweed			-	12"	18"	24"	-	-
Prickly lettuce			-	6"	12"	20"	-	-
Purslane			-	-	-	6"	6"	12"
Ragweed, common	South		-	4"	6"	8"	-	11"
	North		-	6"	12"	18"	-	-
Ragweed, giant			-	-	4"	6"	-	11"
Red rice			-	-	-	4"	-	-
Russian thistle			-	-	-	6"	-	-
Rye	South		-	6"	20"	60"	-	-
	North		-	18"	18"+	-	-	-
Ryegrass			-	-	-	6"	-	7"+
Sandbur, field			12"	-	-	-	-	-
Shattercane			-	12"	18"	-	-	-
Sheperd's purse			-	6"	12"	-	-	-
Sicklepod			-	-	2"	4"	-	8"
Signalgrass, broadleaf			-	3"	5"	7"	9"	12"
Smartweed, ladysthumb			-	4"	6"	8"	-	12"
Smartweed, Pennsylvania			-	4"	6"	8"	-	12"
Sowthistle, annual			-	-	-	6"	-	12"
Spanishneedles			-	-	-	8"	-	18"
Speedwell, purslane			-	12"	-	-	-	-
Sprangletop			-	6"	12"	20"	-	-

WEED SPECIES	REGION	RATE						
		(FLUID OUNCES PER ACRE)						
			9.0	12.0	18.0	24.0	30.0	36.0
		MAXIMUM HEIGHT/LENGTH						
Spurge, prostrate			-	6"	12"	20"	-	-
Spurge, spotted			-	6"	12"	20"	-	-
Spurry, umbrella			6"	-	-	-	-	-
Stinkgrass			12"	-	-	-	-	-
Sunflower			-	12"	18"	-	-	-
Teaweed/Prickly sida			-	1"	2"	3"	4"	6"
Texas panicum			-	6"	8"	12"	-	24"
Velvetleaf	South		-	2"	3"	4"	5"	8"
	North		-	3"	6"	12"	-	-
Virginia pepperweed			-	18"	-	-	-	-
Waterhemp			-	-	6"	12"	-	-
Spurge, spotted			-	6"	12"	20"	-	-
Wheat	South		-	6"	30"	-	-	-
	North		-	18"	18"+	-	-	-
Wheat (overwintered)			-	6"	18"	-	-	-
Wild oats			-	12"	-	-	-	-
Wild Proso Millet			-	-	6"	12"	12"	18"
Witchgrass			-	12"	-	-	-	-
Woolly cupgrass			-	6"	12"	-	-	-
Yellow rocket			-	-	12"	20"	-	-

¹Do not treat kochia in the button stage.

ANNUAL WEEDS RATE TABLE, WEST REGION

WEED SPECIES	RATE					
	(FLUID OUNCES PER ACRE)					
		9.0	12.0	18.0	24.0	36.0
		MAXIMUM HEIGHT/LENGTH				
Barley		12"	-	-	-	-
Barnyardgrass		6"	-	-	-	-
Bluegrass, annual		6"	-	-	-	-
Bluegrass, bulbous		-	6"	-	-	-
Brome, downy ¹		6"	-	-	-	-
Buttercup		-	12"	-	-	-
Cheat		-	6"	-	-	-
Chickweed		-	6"	-	-	-
Cocklebur		-	12"	-	-	-
Corn		-	6"	-	-	-
Crabgrass		-	12"	-	-	-
Dwarf dandelion		-	12"	-	-	-
Fall panicum		-	12"	-	-	-
Falseflax, smallseed		-	12"	-	-	-
Field pennycress		-	6"	-	-	-
Filaree		-	-	-	-	12"
Fleabane, hairy (<i>Conyza bonariensis</i>)		-	6"	-	-	-

WEED SPECIES	RATE					
	(FLUID OUNCES PER ACRE)					
		9.0	12.0	18.0	24.0	36.0
Florida pusley		-	-	-	12"	-
Foxtail		6.0 fl oz for up to 12"				
Goatgrass, jointed		-	6"	-	-	-
Groundsel, common		-	6"	-	-	-
Henbit		-	6"	-	-	-
Horseweed/Marestail (<i>Conyza canadensis</i>)		-	6"	-	-	-
Johnsongrass, seedling		-	12"	-	-	-
Lambsquarters		-	6"	-	-	-
London rocket		-	6"	-	-	-
Morningglory (<i>Ipomoea spp.</i>)		-	2"	-	-	-
Mustard, blue		6"	-	-	-	-
Mustard, tansy		6"	-	-	-	-
Mustard, tumble		6"	-	-	-	-
Mustard, wild		6"	-	-	-	-
Pigweed		-	12"	-	-	-
Rye		12"	-	-	-	-
Ryegrass, Italian		-	6"	-	-	-
Sandbur, field		12"	-	-	-	-
Shattercane		12"	-	-	-	-
Sheperd's purse		-	6"	-	-	-
Sowthistle, annual		-	6"	-	-	-
Spurge, annual		-	6"	-	-	-
Stinkgrass		12"	-	-	-	-
Texas panicum		-	12"	-	-	-
Wheat		18"	-	-	-	-
Wild oats		-	12"	-	-	-
Witchgrass		-	12"	-	-	-

¹For control of Downy brome in no-till systems, use 12.0 fluid ounces per acre.

14.1 Annual Weeds – 10.0 to 40.0 Gallons Per Acre in Water

Apply 1.5 pints to 2.25 pints of this product per acre. Use 1.5 pints per acre if weeds are less than 6 inches tall and 2.25 pints per acre if weeds are over 6 inches tall.

These rates will provide control of weeds listed in the annual weed control tables when water carrier volumes are 10.0 to 40.0 gallons per acre for ground applications.

14.2 Annual Weeds - Tank Mixtures with 2,4-D or Banvel®

9.0 to 12.0 fluid ounces of this product plus the labeled rate of Banvel® or the labeled rate of 2,4-D per acre will control the following weeds with the maximum height or length indicated: Prickly lettuce, Marestail/horseweed (*Conyza canadensis*), Morningglory (*Ipomoea spp.*), Kochia (Banvel® only); Cocklebur, Lambsquarters, Pigweed, Russian thistle.

12.0 fluid ounces of this product plus the labeled rate of 2,4-D per acre will control the following weeds when they are a maximum height or length of 6 inches: Common ragweed, Giant ragweed, Pennsylvania smartweed, and Velvetleaf.

9.0 fluid ounces of the product plus the labeled rate of Banvel® or the labeled rate of 2,4-D per acre will control Foxtail.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

RESTRICTION:

DO NOT APPLY BANVEL® TANK MIXTURES BY AIR IN CALIFORNIA.

15.0 PERENNIAL WEEDS RATE TABLE (Alphabetical By Species)

Apply to actively growing perennial weeds.

A second treatment may be necessary to control weeds regenerating from underground parts or seed. The second treatment must be made prior to crop emergence.

Unless otherwise stated, allow 7 or more days after application before tillage.

RESTRICTION:

If weeds have been mowed or tilled, do not treat until plants have resumed active growth and have reached the labeled stages.

Best results are obtained when soil moisture is adequate for active weed growth.

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Alfalfa	1.5 to 3.0	3.0 to 10.0	1.5%	Make applications after the last hay cutting in the fall. Allow alfalfa to regrow to a height of 6 to 8 inches or more prior to treatment. Follow applications with deep tillage at least 7 days after treatment, but before soil freeze-up.
Alligatorweed	6.0	3.0 to 20.0	1.25%	Partial control. Apply when most of the plants are in bloom. Repeat applications will be required to maintain control.
Anise (fennel)	-	-	0.75 to 1.5%	Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.
Bahiagrass	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants have reached the early head stage.
Bentgrass	2.25	10.0 to 20.0	1.5%	For suppression in grass seed production areas. For ground applications only. Ensure entire crown area has resumed growth prior to a fall application. Bentgrass should have at least 3 inches of growth. Do not till prior to treatment. Till 7 to 10 days after application for best results.
Bermudagrass	4.5 to 7.5	3.0 to 20.0	1.5%	For control, apply 7.5 pints of this product per acre. For partial control, apply 4.5 pints per acre. Treat when bermudagrass is actively growing and seedheads are present. A second treatment may be necessary to maintain control.

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Bermudagrass, water (knotgrass)	1.5 to 2.25	5.0 to 10.0	1.5%	<p>Apply 2.25 pints of this product in 5.0 to 10.0 gallons of water per acre. Apply when water bermudagrass is 12 to 18 inches in length. Allow 7 or more days before tilling, flushing or flooding the field.</p> <p>Fall applications only: Apply 1.5 pints of this product in 5.0 to 10.0 gallons of water per acre.</p> <p>Till fallow fields prior to application.</p> <p>Apply prior to frost on water bermudagrass that is 12 to 18 inches in length.</p> <p>RESTRICTION: This product is not registered in California for use on water bermudagrass</p>
Bindweed, field	0.75 to 7.5	3.0 to 20.0	1.5%	<p>Do not treat when weeds are under drought stress as good soil moisture is necessary for active growth.</p> <p>For control, apply 6.0 to 7.5 pints of this product per acre west of the Mississippi River and 4.5 to 6.0 pints east of the Mississippi River.</p> <p>Apply when the weeds are at or beyond full bloom. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost.</p> <p>Also for control, apply 3.0 pints of this product plus the labeled rate of Banvel® in 10.0 to 20.0 gallons of water per acre. Do not apply by air.</p> <p>For suppression on irrigated agricultural land, apply 1.5 to 3.0 pints of this product plus the specified label rate of a 2,4-D product in 10.0 to 20.0 gallons of water per acre with ground equipment only.</p> <p>It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>Make applications following harvest or in fall fallow ground when the bindweed is actively growing and the majority of runners are 12 inches or more in length. The use of at least one irrigation will promote active bindweed growth.</p> <p>For suppression, apply 12.0 fluid ounces of this product plus the specified label rate of a 2,4-D product in 3.0 to 10.0 gallons of water per acre for ground applications and 3.0 to 5.0 gallons of water per acre for aerial applications.</p> <p>Apply by air in fallow and reduced tillage systems only. Delay applications until maximum emergence has occurred and when vines are between 6 to 18 inches in length.</p> <p>In California only, apply 1.5 to 7.5 pints of this product per acre.</p> <p>Actual rate needed for suppression or control will vary within this range depending on local conditions. For suppression on irrigated</p>

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
<i>Bindweed, field cont'd</i>	0.75 to 7.5	3.0 to 20.0	1.5%	land where annual tillage is performed, apply 1.5 pints of this product in 3.0 to 10.0 gallons of water per acre. Apply to bindweed that has reached a length of 12 inches or greater. Allow maximum weed emergence and runner growth. Allow 3 or more days after application before tillage.
Bluegrass, Kentucky	1.5 to 3.0	3.0 to 40.0	1.5%	Apply 3.0 pints of this product in 10.0 to 40.0 gallons of water per acre when most plants have reached boot- to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1.5 to 2.25 pints of this product in 3.0 to 10.0 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.
Blueweed, Texas	4.5 to 7.5	3.0 to 40.0	1.5%	Apply 6.0 to 7.5 pints of this product per acre west of the Mississippi River and 4.5 to 6.0 pints per acre east of the Mississippi River. Apply when plants are at or beyond full bloom. New leaf development indicates active growth. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost.
Brackenfern	4.5 to 6.0	3.0 to 40.0	0.75 to 1.5%	Apply to fully expanded fronds which are at least 18 inches long.
Bromegrass, smooth	1.5 to 3.0	3.0 to 40.0	1.5%	Apply 3.0 pints of this product in 10.0 to 40.0 gallons of water per acre when most plants have reached boot- to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1.5 to 2.25 pints of this product in 3.0 to 10.0 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.
Bursage, woolly- leaf	-	3.0 to 20.0	1.5%	For control, apply 3.0 pints of this product plus the labeled rate of Banvel® per acre. For partial control, apply 1.5 pints of this product plus the labeled rate of Banvel® per acre. Apply when plants are producing new active growth which has been initiated by moisture for at least 2 weeks and when plants are at or beyond flowering.
Canarygrass, reed	3.0 to 4.5	3.0 to 40.0	1.5%	For best results, apply when most plants have reached the boot-to-head stage of growth.
Cattail	4.5 to 7.5	3.0 to 40.0	1.5%	Apply when most plants have reached the early head stage.
Clover; red, white	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants have reached the early bud stage.
Cogongrass	4.5 to 7.5	10.0 to 40.0	1.5%	Apply when cogongrass is at least 18 inches tall in late summer or fall. Due to uneven stages of growth and the dense nature of vegetation preventing good spray coverage, repeat treatments may be necessary to maintain control.

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Dallisgrass	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants have reached the early head stage.
Dandelion	4.5 to 7.5	3.0 to 40.0	1.5%	<p>Apply when most plants have reached the early bud stage of growth.</p> <p>Also for control, apply 12.0 fluid ounces of this product plus the specified label rate of a 2,4-D product in 3.0 to 10.0 gallons of water per acre.</p> <p>It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p>
Dock, curly	4.5 to 7.5	3.0 to 40.0	1.5%	<p>Apply when most plants have reached the early bud stage of growth.</p> <p>Also for control, apply 12.0 fluid ounces of this product plus the specified label rate of a 2,4-D product in 3.0 to 10.0 gallons of water per acre.</p>
Dogbane, hemp	6.0	3.0 to 40.0	1.5%	<p>Apply when most plants have reached the late bud to flower stage of growth. Following crop harvest or mowing, allow weeds to regrow to a mature stage prior to treatment. For best results, apply in late summer or fall.</p> <p>For suppression, apply 12.0 fluid ounces of this product plus the labeled rate of 2,4-D in 3.0 to 10.0 gallons of water per acre for ground applications and 3.0 to 5.0 gallons of water per acre for aerial applications.</p> <p>Delay applications until maximum emergence of dogbane has occurred.</p>
Fescue (except tall)	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants have reached the early head stage.
Fescue, tall	1.5 to 4.5	3.0 to 40.0	1.5%	<p>Apply 4.5 pints of this product per acre when most plants have reached boot-to-early seedhead stage of development.</p> <p>Fall applications only: Apply 1.5 pints of this product in 3.0 to 10.0 gallons of water per acre.</p> <p>Apply to fescue in the fall when plants have 6 to 12 inches of new growth.</p> <p>A sequential application of 12.0 fluid ounces per acre of this product will improve long-term control and control seedlings germinating after fall treatments or the following spring.</p>
Guineagrass	4.5	3.0 to 40.0	0.75%	<p>Apply when most plants have reached at least the 7- leaf stage of growth.</p> <p>Ensure thorough coverage when using hand-held equipment.</p>
Horsenettle	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants have reached the early bud stage.
Horseradish	6.0	3.0 to 40.0	1.5%	<p>Apply when most plants have reached the late bud to flower stage of growth.</p> <p>For best results, apply in late summer or fall.</p>

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Iceplant	-	-	1.5%	Iceplant should be at or beyond the early bud stage of growth. Thorough coverage is necessary for best control.
Jerusalem artichoke	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants are in the early bud stage.
Johnsongrass	0.75 to 4.5	3.0 to 40.0	0.75%	In annual cropping systems apply 1.5 to 3.0 pints of this product per acre. Apply 1.5 pints of this product in 3.0 to 10.0 gallons of water per acre. Use 3.0 pints of this product when applying 10.0 to 40.0 gallons of water per acre. In noncrop, or areas where annual tillage (no-till) is not practiced, apply 3.0 to 4.5 pints of this product in 10.0 to 40.0 gallons of water per acre. For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost. Allow 7 or more days after application before tillage. Do not tank-mix with residual herbicides when using the 1-quart per acre rate. For burndown of Johnsongrass, apply 12.0 fluid ounces of this product in 3.0 to 10.0 gallons of water per acre before the plants reach a height of 12 inches. For this use, allow at least 3 days after treatment before tillage. Spot treatment (partial control or suppression) - Apply a 3/4 percent solution of this product when Johnsongrass is 12 to 18 inches in height. Coverage must be uniform and complete.
Kikuyugrass	3.0 to 4.5	3.0 to 40.0	1.5%	Spray when most kikuyugrass is at least 8 inches in height (3 or 4-leaf stage of growth). Allow 3 or more days after application before tillage.
Knapweed	6.0	3.0 to 40.0	1.5%	Apply when most plants have reached the late bud to flower stage of growth. For best results, apply in late summer or fall.
Lantana	-	-	0.75 to 1.0%	Apply at or beyond the bloom stage of growth. Use the higher application rate for plants that have reached the woody stage of growth.
Lespedeza	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants have reached the early bud stage.
Milkweed, common	4.5	3.0 to 40.0	1.5%	Apply when most plants have reached the late bud to flower stage of growth.
Muhly, wirestem	1.5 to 3.0	3.0 to 40.0	1.5%	Use 1.5 pints of this product in 3.0 to 10.0 gallons of water per acre. Use 3.0 pints of this product when applying 10.0 to 40.0 gallons of water per acre or in pasture, sod, or noncrop areas. Spray when the Wirestem muhly is 8 inches or more in height. Do not till between harvest and fall applications or in the fall or spring prior to spring applications. Allow 3 or more days after application before tillage.
Mullein, common	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants are in the early bud stage.

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Napiergrass	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants are in the early head stage.
Nightshade, silverleaf	3.0	3.0 to 10.0	1.5%	Make applications when at least 60 percent of the plants have berries. Fall treatments must be applied before a killing frost.
Nutsedge; purple, yellow	0.75 to 4.5	3.0 to 40.0	0.75 to 1.5%	Apply 4.5 pints of this product per acre or apply a $\frac{3}{4}$ to 1 $\frac{1}{2}$ percent solution for control of nutsedge plants and immature nutlets attached to treated plants. Treat when plants are in flower or when new nutlets can be found at rhizome tips. Nutlets which have not germinated will not be controlled and may germinate following treatment. Repeat treatments will be required for long-term control of ungerminated tubers. Sequential applications: 1.5 to 3.0 pints of this product in 3.0 to 10.0 gallons of water per acre will also provide control. Make applications when a majority of the plants are in the 3 to 5-leaf stage (less than 6 inches tall). Repeat this application, as necessary, when newly emerging plants reach the 3 to 5-leaf stage. Subsequent applications will be necessary for long-term control. For partial control of existing plants, apply 12.0 fluid ounces to 3.0 pints of this product in 3.0 to 40.0 gallons of water per acre. Treat when plants have 3 to 5 leaves and most are less than 6 inches tall. Repeat treatments will be required to control subsequent emerging plants or regrowth of existing plants.
Orchardgrass	1.5 to 3.0	3.0 to 40.0	1.5%	Apply 3.0 pints of this product in 10.0 to 40.0 gallons of water per acre when most plants have reached boot- to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1.5 to 2.25 pints of this product in 3.0 to 10.0 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height. Orchardgrass sods going to no-till corn: Apply 1.5 to 2.25 pints of this product in 3.0 to 10.0 gallons of water per acre. Apply to orchardgrass that is a minimum of 12 inches tall for spring applications and 6 inches tall for fall applications. Allow at least 3 days following application before planting. A sequential application of atrazine will be necessary for optimum results.
Pampasgrass	-	-	1.5%	Pampasgrass should be at or beyond the boot stage of growth. Thorough coverage is necessary for best control.
Paragrass	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants are in the early head stage.
Phragmites	4.5 to 7.5	10.0 to 40.0	0.75 to 1.5%	For partial control. For best results, treat during late summer or fall months or when plants are actively growing and in full bloom.

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
<i>Phragmites cont'd</i>	4.5 to 7.5	10.0 to 40.0	0.75 to 1.5%	Treatment before or after this stage may lead to reduced control. Due to the dense nature of the vegetation, which may prevent good spray coverage or uneven stages of growth, repeat treatments may be necessary to maintain control. Visual control symptoms will be slow to develop.
Poison hemlock	-	-	0.75 to 1.5%	Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.
Pokeweed, common	1.5	3.0 to 40.0	1.5%	Apply to actively growing plants up to 24 inches tall.
Quackgrass	1.5 to 4.5	3.0 to 40.0	1.5%	In annual cropping systems, or in pastures and sods followed by deep tillage: Apply 1.5 pints of this product in 3.0 to 10.0 gallons of water per acre. For 10.0 to 40.0 gallons of water per acre, apply 3.0 pints of this product. Do not tank mix with residual herbicides when using the 1.5 pint rate. Spray when Quackgrass is 6 to 8 inches in height. Do not till between harvest and fall applications or in fall or spring prior to spring application. Allow 3 or more days after application before tillage. In pastures or sods, use a moldboard plow for best results. In pastures, sods or noncrop areas where deep tillage does not follow application: Apply 3.0 to 4.5 pints of this product in 10.0 to 40.0 gallons of water per acre when the Quackgrass is greater than 8 inches tall.
Redvine	1.25 to 3.0	5.0 to 10.0	1.5%	For suppression, apply 18.0 fluid ounces of this product per acre at each of two applications 7 to 14 days apart or a single application of 3.0 pints per acre. Apply labeled rates in 5.0 to 10.0 gallons of water per acre. Apply in late September or early October to plants which are at least 18 inches tall and have been growing 45 to 60 days since the last tillage operation. Make applications at least 1 week before a killing frost.
Reed, giant	-	-	1.5%	Best results are obtained when applications are made in late summer to fall.
Ryegrass, perennial	1.5 to 4.5	3.0 to 40.0	0.75%	In annual cropping systems apply 1.5 to 3.0 pints of this product per acre. Apply 1.5 pints of this product in 3.0 to 10.0 gallons of water per acre. Use 3.0 pints of this product when applying 10.0 to 40.0 gallons of water per acre. In noncrop, or areas where annual tillage (no-till) is not practiced, apply 3.0 to 4.5 pints of this product in 10.0 to 40.0 gallons water per acre. For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost. Do not tank-mix with residual herbicides when using the 1.5 pint per acre rate.

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Smartweed, swamp	4.5 to 7.5	3.0 to 40.0	1.5%	<p>Apply when most plants have reached the early bud stage of growth.</p> <p>Also for control, apply 12.0 fluid ounces of this product plus the specified label rate of a 2,4-D product in 3.0 to 10.0 gallons of water per acre in the late summer or fall.</p> <p>It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p>
Sowthistle, perennial	3.0 to 4.5	3.0 to 40.0	1.5%	<p>Apply when most plants are at or beyond the bud stage of growth. After harvest, mowing or tillage in the late summer or fall, allow at least 4 weeks for initiation of active growth and rosette development prior to the application of this product.</p> <p>Fall treatments must be applied before a killing frost. Allow 3 or more days after application before tillage.</p>
Spurge, leafy	-	3.0 to 10.0	1.5%	<p>For suppression, apply 12.0 fluid ounces of this product plus the specified label rate of a 2,4-D product in 3.0 to 10.0 gallons of water per acre in the late summer or fall.</p> <p>If mowing has occurred prior to treatment, apply when most of the plants are 12 inches tall.</p>
Starthistle, yellow	3.0	10.0 to 40.0	1.5%	<p>Best results are obtained when applications are made during the rosette, bolting and early flower stages.</p>
Sweet potato, wild	-	-	1.5%	<p>Partial control. Apply to plants that are at or beyond the bloom stage of growth.</p> <p>Repeat applications may be required.</p>
Thistle, artichoke	-	-	1.5%	<p>Partial control. Apply to plants that are at or beyond the bloom stage of growth.</p> <p>Repeat applications may be required.</p>
Thistle, Canada	3.0 to 4.5	3.0 to 40.0	1.5%	<p>Apply when most plants are at or beyond the bud stage of growth.</p> <p>After harvest, mowing or tillage in the late summer or fall, allow at least 4 weeks for initiation of active growth and rosette development prior to the application of this product.</p> <p>Fall treatments must be applied before a killing frost. Allow 3 or more days after application before tillage.</p> <p>For suppression, apply 1.5 pints of this product, or 12.0 fluid ounces of this product plus the specified label rate of a 2,4-D product in 3.0 to 10.0 gallons of water per acre in the late summer or fall after harvest, mowing or tillage. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>Allow rosette regrowth to a minimum of 6 inches in diameter before treating.</p>

Perennial Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
<i>Thistle, Canada cont'd</i>	3.0 to 4.5	3.0 to 40.0	1.5%	Applications can be made as long as leaves are still green and plants are actively growing at the time of application. Allow 3 or more days after application before tillage. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
Timothy	3.0 to 4.5	3.0 to 40.0	1.5%	For best results, apply when most plants have reached the boot-to-head stage of growth.
Torpedograss	6.0 to 7.5	3.0 to 40.0	1.5%	For partial control. Apply when most plants are at or beyond the seedhead stage of growth. Repeat applications will be required to maintain control. Fall treatments must be applied before frost.
Trumpetcreeper	3.0	5.0 to 10.0	1.5%	Partial control. Apply in late September or October, to plants which are at least 18 inches tall and have been growing 45-60 days since the last tillage operation. Make applications at least 1 week before a killing frost.
Vaseygrass	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants are in the early head stage.
Velvetgrass	4.5 to 7.5	3.0 to 20.0	1.5%	Apply when most plants are in the early head stage.
Wheatgrass, western	3.0 to 4.5	3.0 to 40.0	1.5%	For best results, apply when most plants have reached the boot-to-head stage of growth.

16.0 WOODY BRUSH and TREES RATE TABLE (Alphabetical By Species)

Apply this product after full leaf expansion, unless otherwise directed. Use the higher rate for larger plants and/or dense areas of growth. On vines, use the higher rate for plants that have reached the woody stage of growth. Best results are obtained when application is made in late summer or fall after fruit formation.

In arid areas, best results are obtained when applications are made in the spring to early summer when brush species are at high moisture content and are flowering.

Ensure thorough coverage when using hand-held equipment. Symptoms may not appear prior to frost or senescence with fall treatments.

Allow 7 or more days after application before tillage, mowing or removal. A second treatment may be necessary to control plants regenerating from underground parts or seed. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Reduced performance may result if fall treatments are made following a frost.

Woody Brush and Trees Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Alder	4.5 to 6.0	3.0 to 40.0	0.75 to 1.5%	For control
Ash	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Aspen, quaking	3.0 to 4.5	3.0 to 40.0	0.75 to 1.5%	For control
Bearmat (Bearclover)	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Beech	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Birch	3.0	3.0 to 40.0	0.75%	For control

Woody Brush and Trees Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Blackberry	4.5 to 6.0	10.0 to 40.0	0.75 to 1.5%	For control. Make applications after plants have reached full leaf maturity. Best results are obtained when applications are made in late summer or fall. Applications may also be made after leaf drop and until a killing frost or as long as stems are green. After berries have set or dropped in late fall, blackberry can be controlled by applying a ¾ percent solution of this product. For control of blackberries after leaf drop and until a killing frost or as long as stems are green, apply 4.5 to 6.0 pints of this product in 10.0 to 40.0 gallons of water per acre.
Blackgum	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	For control
Bracken	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	For control
Broom; French, Scotch	-	-	1.5%	For control
Buckwheat, California	-	-	0.75 to 1.5%	For partial control. Thorough coverage of foliage is necessary for best results.
Cascara	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Catsclaw	-	-	0.75 to 1.5%	Partial control
Ceanothus	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Chamise	-	-	0.75%	For control. Thorough coverage of foliage is necessary for best results.
Cherry; bitter, black, pin	3.0 to 4.5	3.0 to 40.0	0.75 to 1.5%	For control
Coyote brush	-	-	1.5%	For control. Apply when at least 50 percent of the new leaves are fully developed.
Dogwood	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Elderberry	3.0	3.0 to 40.0	0.75%	For control
Elm	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Eucalyptus	-	-	1.5%	For control of eucalyptus resprouts, apply when resprouts are 6 to 12 feet tall. Ensure complete coverage. Avoid application to drought-stressed plants.
Florida holly (Brazilian Peppertree)	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Gorse	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Hasardia	-	-	0.75 to 1.5%	Partial control. Thorough coverage of foliage is necessary for best results.
Hawthorn	3.0 to 4.5	3.0 to 40.0	0.75 to 1.5%	For control
Hazel	3.0	3.0 to 40.0	0.75%	For control
Hickory	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Honeysuckle	3.0 to 6.0	3.0 to 40.0	0.75 to 1.5%	For control
Hornbeam, American	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Kudzu	6.0	3.0 to 40.0	1.5%	For control. Repeat applications may be required to maintain control.
Locust, black	3.0 to 6.0	3.0 to 40.0	0.75 to 1.5%	Partial control
Madrone resprouts	-	-	1.5%	Partial control. Apply to resprouts that are 3 to 6 feet tall. Best results are obtained with spring/early summer treatments.
Manzanita	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Maple, red	3.0 to 6.0	3.0 to 40.0	0.75 to 1.5%	For control, apply a 0.75 to 1.5 percent solution when at least 50 percent of the new leaves are fully developed. For partial control, apply 3.0 to 6.0 pints of this product per acre.
Maple, sugar	-	-	0.75 to 1.5%	For control. Apply when at least 50 percent of the new leaves are fully developed.
Monkey flower	-	-	0.75 to 1.5%	Partial control. Thorough coverage of foliage is necessary for best results.

Woody Brush and Trees Weed Species	Rate (PT/A)	Water Volume	Hand-Held % Solution	Directions
Oak; black, white	3.0 to 6.0	3.0 to 40.0	0.75 to 1.5%	Partial control
Oak, post	4.5 to 6.0	3.0 to 40.0	0.75 to 1.5%	For control
Oak; northern, pin	-	-	0.75 to 1.5%	For control. Apply when at least 50 percent of the new leaves are fully developed.
Oak, southern, red	3.0 to 4.5	3.0 to 40.0	0.75 to 1.5%	For control
Persimmon	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Pine	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	For control
Poison ivy/Poison oak	6.0 to 7.5	3.0 to 40.0	1.5%	For control. Repeat applications may be required to maintain control. Fall treatments must be applied before leaves lose green color.
Poplar, yellow	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Redbud, eastern	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	For control
Rose, multiflora	3.0	3.0 to 40.0	0.75%	For control. Make treatments prior to leaf deterioration by leaf-eating insects.
Russian olive	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Sage, black	-	-	0.75%	For control. Thorough coverage of foliage is necessary for best results.
Sage, white	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Sage brush, California	-	-	0.75%	For control. Thorough coverage of foliage is necessary for best results.
Salmonberry	3.0	3.0 to 40.0	0.75%	For control
Salt-cedar	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	For control
Sassafras	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Sourwood	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Sumac; poison, smooth, winged	3.0 to 6.0	3.0 to 40.0	0.75 to 1.5%	Partial control
Sweetgum	3.0 to 4.5	3.0 to 40.0	0.75 to 1.5%	For control
Swordfern	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Tallowtree, Chinese	-	-	0.75%	For control. Thorough coverage of foliage is necessary for best results.
Tan oak resprouts	-	-	1.5%	For partial control. Apply to resprouts that are less than 3 to 6 feet tall. Best results are obtained with fall applications.
Thimbleberry	3.0	3.0 to 40.0	0.75%	For control
Tobacco, tree	-	-	0.75 to 1.5%	Partial control
Salt-cedar	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	For control
Sassafras	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Sourwood	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Sumac; poison, smooth, winged	3.0 to 6.0	3.0 to 40.0	0.75 to 1.5%	Partial control
Sweetgum	3.0 to 4.5	3.0 to 40.0	0.75 to 1.5%	For control
Swordfern	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Tallowtree, Chinese	-	-	0.75%	For control. Thorough coverage of foliage is necessary for best results.
Tan oak resprouts	-	-	1.5%	For partial control. Apply to resprouts that are less than 3 to 6 feet tall. Best results are obtained with fall applications.
Thimbleberry	3.0	3.0 to 40.0	0.75%	For control
Tobacco, tree	-	-	0.75 to 1.5%	Partial control
Trumpet creeper	3.0 to 4.5	3.0 to 40.0	0.75 to 1.5%	For control
Vine maple	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Virginia creeper	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	For control
Waxmyrtle, southern	3.0 to 7.5	3.0 to 40.0	0.75 to 1.5%	Partial control
Willow	4.5	3.0 to 40.0	0.75%	For control

17.0 STORAGE AND DISPOSAL

Do not contaminate water, food, feed or seed by storage or disposal.

PESTICIDE STORAGE: Store above 10 °F (-12 °C) to keep product from crystallizing. Crystals will settle to the bottom. If allowed to crystallize, place in a warm room 68 °F (20 °C) for several days to redissolve and roll or shake container or recirculate in mini-bulk or bulk container to mix well before using.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product that cannot be used or chemically reprocessed must be disposed of in a landfill approved for pesticide disposal or in accordance with applicable federal, state, or local procedures. Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleansed, reconditioned, or destroyed.

CONTAINER HANDLING: Nonrefillable container. Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at www.acrecycle.org. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For packages up to and equal to 5 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For packages greater than 56 gallons: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

For refillable containers: Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC - 1-800-424-9300.

18.0 CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT, read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

Follow the Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop or other plant injury, ineffectiveness, or other unintended consequences may result from such risks as weather or crop conditions, mixture with other chemicals not specifically identified in this product's label, or use of this product contrary to the label instructions, all of which are beyond the control of LOVELAND PRODUCTS, INC. and the seller. The buyer or user of this product assumes all such inherent risks.

Subject to the foregoing inherent risks, LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use when the product is used in strict accordance with such Directions for Use under normal conditions of use. EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS PRODUCT IS SOLD "AS IS," AND LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ELIGIBILITY OF THIS PRODUCT FOR ANY PARTICULAR TRADE USAGE. IN THE UNLIKELY EVENT THAT BUYER OR USER BELIEVES THAT LOVELAND PRODUCTS, INC. HAS BREACHED A WARRANTY CONTAINED IN THIS LABEL AND TO THE EXTENT REQUIRED BY APPLICABLE LAW, BUYER OR USER MUST SEND WRITTEN NOTICE OF ITS CLAIM TO THE FOLLOWING ADDRESS: LOVELAND PRODUCTS, INC., ATTENTION: LAW DEPARTMENT, P.O. BOX 1286, GREELEY, CO 80632-1286.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT, INCLUDING BUT NOT LIMITED TO CLAIMS OF BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORTS, SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

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**FORMULATED FOR
LOVELAND PRODUCTS, INC.
P.O. BOX 1286, GREELEY, COLORADO 80632-128**



SAFETY DATA SHEET

SDS NUMBER: 000929-17-LPI

SDS REVISIONS: SEC 1, 2, 13, 15

DATE OF ISSUE: 01/20/17

MAD DOG® 5.4

SUPERSEDES: 01/14/16

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

- 1.1 **PRODUCT IDENTIFIER:** EPA REG. NO. 34704-929
TRADE NAME: MAD DOG® 5.4#
- 1.2 **RECOMMENDED USE:** GROUP 9 HERBICIDE
- 1.3 **SUPPLIER DETAILS:**
LOVELAND PRODUCTS, INC.
P.O. Box 1286 • Greeley, CO 80632-1286
- 1.4 **24 Hour Emergency Phone:** 1-800-424-9300 - **Medical Emergencies:** 1-866-944-8565 – **Product Information:** 1-888-574-2878 (LPI-CUST)
U.S. Coast Guard National Response Center: 1-800-424-8802

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to 29 CFR 1910.1200

Not classified

2.2 Label elements

None

Signal word:

Hazard Statement: H303 – May be harmful if swallowed.
H333 – May be harmful if inhaled.

Precautionary

Statement: P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.
(Prevention): P262 – Do not get in eyes, on skin, or on clothing.
P264 – Wash thoroughly after handling.
P102 – Keep out of reach of children.

Precautionary

Statement: P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
(Response): P101 – If medical advice is needed, have the product container or label at hand.

Precautionary

Statement: P402+P234 – Store above 10 °F (-12 °C) to keep product from crystallizing. Keep only in original container.
(Storage): P405 – Store locked up.

2.3 Other hazards

None known



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3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Concentration [%]
Isopropylamine salt of Glyphosate	38641-94-0	53.80
*Other ingredients	n/a	46.20

*Ingredients not specifically listed are non-hazardous or are to be considered proprietary or confidential business information per 29 CFR 1910.1200(i)

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

Inhalation:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Ingestion:	Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. Call a poison control center or doctor for treatment advice.
Skin Contact:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing eye. Call a poison control center or doctor for treatment advice.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.
FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565
Take container, label or product name with you when seeking medical attention.

NOTES TO PHYSICIAN: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Dry chemical, carbon dioxide (CO₂), alcohol foam, foam, water spray or fog. Do not use water jet as this will spread the fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: During a fire, hazardous by-products can be released.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.



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6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to Remove residual contamination. Never return spills to original containers for re-use.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling: Avoid inhalation of mists, vapors / spray and contact with eyes, skin and clothing. Do not breathe mists or vapor. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers: Store above 10 °F (-12.2 °C) to keep product from crystallizing. Crystals will settle to the bottom of the container. If allowed to crystallize, place in a warm room at 68 °F (20 °C) for several days to redissolve and roll or shake container or recirculate in mini-bulk or bulk containers to mix well before using. Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH) TLVs

Components	Type	Value
No data available.		

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
No data available.		

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:

Engineering Measures

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Long-sleeved shirt and long pants. Shoes plus socks.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapors, use suitable respiratory equipment such as MSHA/NIOSH TC-21C or NIOSH approved respirator with N, R, P or HE filter. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.



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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE :	Clear viscous liquid
ODOR:	None.
ODOR THRESHOLD:	No data available.
COLOR:	Blue.
pH:	4.5 – 5.0 (1% solution)
MELTING POINT / FREEZING POINT:	No data available
BOILING POINT:	No data available
FLASH POINT:	>200 °F / >93.3 °C.
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOR PRESSURE:	No data available.
SOLUBILITY:	Miscible
PARTITION CO-EFFICIENT, n-OCTANOL / WATER:	No data available.
AUTO-IGNITION TEMPERATURE:	No data available.
DECOMPOSITION TEMPERATURE:	No data available
VISCOSITY: (kinematic):	No data available
SPECIFIC GRAVITY (Water = 1):	1.205 – 1.227 g/ml
DENSITY:	10.06 – 10.24 lbs./gal / 1.21 – 1.23 kg/L

Note: These physical data are typical values based on material tested but may vary from sample to sample.
Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

Stable

10.2 CHEMICAL STABILITY

Stable under normal temperature conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No data available. Will not polymerize.

10.4 CONDITIONS TO AVOID

Use of galvanized or unlined steel.

10.5 INCOMPATIBLE MATERIALS

This product and its spray solutions will react with galvanized or unlined steel to produce hydrogen gas that may form a highly combustible gas mixture, which could flash or explode if ignited. Acids and bases.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Will emit toxic fumes as it burns.

11. TOXICOLOGICAL INFORMATION

11.3 LIKELY ROUTES OF EXPOSURE

Inhalation. Ingestion.

LC₅₀ (rat): >2.09 mg/L (4 HR) (Data from a similar product)

LD₅₀ Oral (rat): > 5,000 mg/kg

LD₅₀ Dermal (rat): > 5,000 mg/kg

Acute Toxicity Estimates: No data available

Skin Irritation (rabbit): Slight irritant.

Eye Irritation (rabbit): Minimal irritant

Specific Target Organ Toxicity: Single exposure: No data available.

Aspiration: No data available

Skin Sensitization (guinea pig): Not a sensitizer

Carcinogenicity: No data available

Germ Cell Mutagenicity: No data available

Interactive Effects: None known



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12 ECOLOGICAL INFORMATION

12.3 ECOTOXICITY

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Ecotoxicological Data

	Species	Test Results
Glyphosate acid	Rainbow trout	5.4 mg/L – 96-hour LC ₅₀
	Bluegill	7.3 mg/L – 96-hour LC ₅₀
	Bee	>100µ/bee – Contact LD ₅₀

Drift or runoff may adversely affect non-target plants.

Do not apply directly to water.

Do not contaminate water when disposing of equipment wash water.

Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: No data available

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: No data available.

12.4 MOBILITY IN SOIL

No data available.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13 DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

PESTICIDE DISPOSAL: Wastes resulting from the use of this product that cannot be used or chemically reprocessed must be disposed of in a landfill approved for pesticide disposal or in accordance with applicable federal, state, or local procedures. Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleansed, reconditioned, or destroyed.

CONTAINER HANDLING: Nonrefillable container. Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at www.acrecycle.org. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For packages up to and equal to 5 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. **For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. **For packages greater than 56 gallons:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. **For refillable containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Do not contaminate water, food or feed by storage or disposal.



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14 TRANSPORT INFORMATION

14.3 LAND TRANSPORT

DOT Shipping Description: NOT REGULATED BY USDOT

U.S. Surface Freight Classification: COMPOUND, TREE OR WEED KILLING, NOI (NMFC 50320, SUB 2: CLASS 60)

15 REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings:

NFPA

1	Health	0	Least
0	Flammability	1	Slight
1	Instability	2	Moderate
		3	High
		4	Severe

HMIS

1	Health
0	Flammability
1	Reactivity
C	PPE

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:	Immediate	<u>Y</u>	Fire	<u>N</u>	Sudden Release of Pressure	<u>N</u>
	Delayed	<u>N</u>	Reactive	<u>N</u>		

Reportable Quantity (RQ) under U.S. CERCLA: Not listed.

SARA, Title III, Section 313: Not listed.

RCRA Waste Code: Not listed.

CA Proposition 65: Not applicable

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Domestic Animals: This product is considered to be relatively nontoxic to dogs and other domestic animals; however, ingestion of this product or large amounts of freshly sprayed vegetation may result in temporary gastrointestinal irritation (vomiting, diarrhea, colic, etc.). If such symptoms are observed, provide the animal with plenty of fluids to prevent dehydration. Call a veterinarian if symptoms persist for more than 24 hours.

16 OTHER INFORMATION

SDS STATUS: Sections 1, 2, 13, and 15 revised.

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

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EPA REG. NO.: 34704-929

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Clash® Herbicide
EPA Reg. No.: 8-615
Product Type: Herbicide
Company Name: Nufarm Americas Inc.
 1101 S. Austin Avenue
 Alsip, IL 60803
 1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
 Call CHEMTREC Day or Night: 1-800-424-9300
 For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

Serious eye damage/eye irritation Category 1A
 Specific target organ toxicity - Repeated exposure Category 1

SIGNAL WORD:

WARNING

HAZARD STATEMENTS

Causes serious eye irritation.



PRECAUTIONARY STATEMENTS

Wash hands and face thoroughly after handling.

Wear protective gloves. Wear protective clothing. Wear eye protection.

If IN CONTACT Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. If eye irritation persists Get medical attention.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Diglycolamine Salt of Dicamba	104040-71-1	55 - 58.5
Other Ingredients	Trade Secret	Trade Secret

Synonyms: Mixture containing Dicamba DGA-DGA Salt of Dicamba

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If Swallowed: Call poison control center or doctor immediately for treatment advice. Have person sit or lie down after ingestion to slow absorption. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call poison control center or doctor for treatment advice.

If on Skin or Clothing: Take contaminated clothing off. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call poison control center or doctor for treatment advice.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call poison control center or doctor for further treatment advice.

Most Important symptoms/effects, acute and delayed: Eye irritation, Skin irritation.

Indication of Immediate medical attention and special treatment if needed: For ingestion there is no specific antidote available. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical, foam or CO₂ extinguishing media.

Special Fire Fighting Procedures: Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Direct fire to prevent runoff and contamination of other sources. Discontinue fire control after fire.

Unusual Fire and Explosion Hazards: During a fire, irritating and possibly toxic gases may be generated upon thermal decomposition or combustion.

Hazardous Decomposition Materials (Under Fire Conditions): May produce oxides of carbon, hydrogen and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering aquatic sewer systems or other waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using sorbent or inert materials such as clay granules, sand, or equivalent material for disposal. Collect and contain contaminated sorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump up free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13 DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8800) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING

Avoid contact with skin, eyes, or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing if person's protective equipment immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove person's protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE:

Store in original container in a well-ventilated area separate from fertilizer, feed and foodstuffs. Avoid cross-contamination with other pesticides. Do not contaminate water, food, or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

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Personal Protective Equipment:

Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or shower should be readily accessible to the worker.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, shoes plus socks, and chemical-resistant gloves made of non-permeable material. An emergency shower or shower should be readily accessible to the worker.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/ canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Dicamba	N/A	N/A	N/A	N/A	
Other Ingredients	N/A	N/A	N/A	N/A	

N/A = Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, dark green liquid
Odor:	Odorless
Odor threshold:	No data available
pH:	7-8
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	100°F closed cup
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	1 × 10 ⁻⁶ mmHg @ 25°C dicamba
Vapor density:	No data available
Relative density:	1.05 g/mL @ 20°C
Solubility(ies):	Soluble
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

Note: Basic data are typical values, but may vary from sample to sample. A typical value should not be construed as guaranteed analysis or specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: None known

Incompatible Materials: None known

Hazardous Decomposition Products: Under fire conditions may produce oxides of carbon, hydrogen and nitrogen.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, ingestion, eye and skin contact.

Symptoms of Exposure:

Eye Contact: Moderate irritating based on toxicity studies.

Skin Contact: Slight to toxic and non-irritating based on toxicity studies.

Ingestion: Slight to toxic based on toxicity studies.

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Inhalation: Low inhalation toxicity

Delayed, immediate and chronic effects of exposure: None expected.

Toxicological Data:

Data from laboratory studies on this product are summarized below

Oral: Rat LD₅₀ 3,510 mg/kg

Dermal: Rat LD₅₀ 10,000 mg/kg

Inhalation: Rat 4-hr LC₅₀ 5.3 mg/L

Eye Irritation: Rating Moderate irritating

Skin Irritation: Rating Non-irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated exposure to dicamba may cause liver changes or a decrease in body weight.

Carcinogenicity / Chronic Health Effects: Dicamba did not cause cancer in long-term animals studies. The U.S. EPA has given dicamba a Class D classification not classifiable as to human carcinogenicity.

Reproductive Toxicity: Dicamba did not interfere with fertility in reproduction studies in laboratory animals.

Developmental Toxicity: Animal tests with dicamba have not demonstrated developmental effects.

Genotoxicity: Animal tests with dicamba did not demonstrate mutagenic effects.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Environmental Hazards:

Do not apply directly to water, or to areas where surface water is present or intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

Ecotoxicity:

Data on Dicamba DGA

6-hour LC ₅₀ Bluegill	400 mg/L	60% white pupal 8-day Diet LC ₅₀	10,048 ppm
6-hour LC ₅₀ Rainbow Trout	400 mg/L	Male 8-day Diet LC ₅₀	10,048 ppm
48-hour EC ₅₀ Daphnia	400 mg/L		

Environmental Fate:

Dicamba sorbs to soil particles, is potentially mobile in the soil and highly soluble in water. Aerobic soil metabolism is the main degradative process for dicamba with a half-life of 100 days. Degradation is slower when low soil moisture limits microbial populations. In water, microbial degradation is the main route of dicamba dissipation. Aquatic hydrolysis, photolysis, adsorption to sediments, and bioconcentration are not expected to be significant.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Triple rinse pesticide from containers and use rinsates in the pesticide application. If container is damaged or if pesticide has spilled, contain all spillage. Place in a closed, labeled container for proper disposal. In the event of a major spill, fire, or other emergency, call 1-800-444-3300, day or night. Pesticides which cannot be used according to label instructions must be disposed of on site or at an approved waste disposal facility.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container or equivalent promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mixture tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mixture tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. Incurred, stored, or disposed.

Nonrefillable Containers Larger than 5 Gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container or equivalent promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mixture tank. Fill the container

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14. Roll with roller. Release and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its other end and tip it back and forth several times. Empty the rinse into application equipment or mixture or store rinse for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or mixture and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mixture or collect rinse for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse it out 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

14. TRANSPORTATION INFORMATION

Follow the regulations indicated in Section 7. HANDLING AND STORAGE of this SDS.

DOT

< 250 gallons per complete package

Non Regulated

≥ 250 gallons per complete package

UN 308, Environmentally hazardous substance, liquid, n.o.s., Discharge, III, R

IMDG

Non Regulated

IATA

Non Regulated

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered with the United States Environmental Protection Agency and is subject to certain labeling requirements under Federal Pesticide Law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS) and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for EPA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370.66):

Acute Health Hazard, Immediate

Section 313 Toxic Chemical(s):

None

Reportable Quantity (RQ) under U.S. CERCLA:

None

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: None Listed.

16. OTHER INFORMATION

SAFETY DATA SHEET

Clash® Herbicide

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 0 Flammability: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE OSHA-ACCREDITED PRODUCT LABELING attached to and accompanying the product container. This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specific to product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in a manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein thereafter information are presented in good faith and believed to be correct as of the date hereof, NuFarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will NuFarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Revised: February 7, 2017

Supersedes: June 8, 2017

ALLIGARE

PANORAMIC 2SL

HERBICIDE

Specimen Label

For use on Conservation Reserve Program (CRP) land, paved surfaces, and pasture and rangeland.

ACTIVE INGREDIENT:	% BY WT.
Ammonium salt of imazapic (±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1 H imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid*	23.3%
OTHER INGREDIENTS:	76.7%
TOTAL	100.0%

*Equivalent to 21.9%(±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1 H-imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid

1 gallon contains 2.0 pounds of active ingredient as the free acid

EPA Reg. No. 66222-141-81927 EPA Est. No. 81927-AL-001^{PM}; 11603-ISR-001^{SR}
83996-SC-001^{NTM}; 37429-GA-001ST; 53883-TX-002^{CS}
Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

KEEP OUT OF REACH OF CHILDREN CAUTION

Distributed by: Alligare, LLC
13 N. 8th Street
Opelika, AL 36801

FIRST AID	
IF IN EYES:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
IF INHALED:	<ul style="list-style-type: none">• Move person to fresh air.• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.• Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15 to 20 minutes.• Call a poison control center or doctor for treatment advice.
IF SWALLOWED:	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious person.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact ProSAR at 1-877-250-9291 for emergency medical treatment information.	

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
 - Chemical-resistant gloves made of any waterproof material
 - Shoes plus socks
- Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

- Users should:**
- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
 - Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
 - Wash outside of gloves then remove after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.

Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, can result in ground water contamination.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers can be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Noncrop weed control is not within the scope of the Worker Protection Standard. See the definition on this label of noncrop sites.

Do not enter treated areas without protective clothing until sprays have dried.

SPRAY DRIFT MANAGEMENT

Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

Spray drift from applying this product can result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for the threatened or endangered species, non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets; high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

Importance of Droplet Size

The best drift management strategy and most effective to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications made improperly, or under unfavorable environmental conditions (see **Wind, Temperature and Humidity**, and **Temperature Inversions** section of this label).

Controlling Droplet Size

- Volume-Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure-Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of Nozzles-Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation-Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientation and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type-Use a nozzle type that is designed for the intended application. With most nozzle

PANORAMIC 2SL

types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift. Do not use nozzles producing a mist droplet spray.

- Boom Length-For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length can further reduce drift without reducing swath width.

Application Height

Making applications at the lowest possible height that is safe and practical reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and down wind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment upwind. Swath adjustment distances should increase with increasing drift potential (higher wind, smaller droplets, etc.).

Wind

Drift potential is lowest between wind speeds of 3-10 mph. However, many factors including droplet size and equipment type, determine drift potential at any given speed. Applications must be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications must not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide must only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, nontarget crops) is minimal (e.g. when wind is blowing away from the sensitive areas). Leafy vegetables and cotton, among other crops, are sensitive to Alligare Panoramic 2SL.

Wind Erosion

Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surfaces should first be settled by rainfall or irrigation.

Aerial Applications

When aerial applications are permitted, do not make aerial applications at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety.

PRODUCT INFORMATION

NONCROP AND CONSERVATION RESERVE PROGRAM (CRP) USES

For weed control and/or turf height suppression, mix Alligare Panoramic 2SL with water and an adjuvant and spray it on specified noncropland areas including those that may be grazed or cut for hay, on Federal Conservation Reserve Program (CRP) land, rangeland (see "Instructions for Rangeland Use" elsewhere in the label), and pastures.

Alligare Panoramic 2SL can be applied to the following noncropland use sites:

- rights-of-way (railroad, utility, pipeline and highway)
- railroad crossings
- utility plant sites
- petroleum tank farms
- pumping installations
- non-agricultural fence rows
- storage areas
- non-irrigation ditch banks
- prairie sites
- airports
- turf areas (on industrial, golf courses, recreation and non-residential sites)

Alligare Panoramic 2SL can be used for weed control in order to release certain legumes, wildflowers, crown vetch, native prairiegrass, wheatgrass, "wildtype" common Kentucky bluegrass, smooth brome grass, bahiagrass, bermudagrass and other grasses.

For weed control during the establishment of native prairiegrass and other grasses, use Alligare Panoramic 2SL as described in the "Revegetation with Prairiegrasses and other Forage Grasses" part of the label.

Alligare Panoramic 2SL kills plants because the herbicide inhibits the activity of the enzyme acetohydroxy acid synthase (AHAS or ALS). Plant leaves, stems and roots readily absorb Alligare Panoramic 2SL and translocate it throughout the plant where it accumulates in the meristematic tissue. Treated plants stop growing soon afterwards. Chlorosis appears first in the newest leaves, and tissue death spreads from these points. It may require several days to several weeks for susceptible weeds to die. Knowing about the activity on the AHAS or ALS enzyme is important because some naturally occurring weed biotypes of labeled weeds may not be controlled by Alligare Panoramic 2SL or other herbicides with the same inhibiting mode of action. If resistant weed biotypes are present in the field, tank-mix Alligare Panoramic 2SL and other herbicides with the same mode of action or apply sequentially with a registered herbicide with a different mode of action.

Specimen Label

Soil moisture is critical for optimum Alligare Panoramic 2SL weed control. With adequate soil moisture, Alligare Panoramic 2SL will provide residual control of susceptible germinating weeds. Control of established weeds is dependent on the weed species and depth of the root system. Alligare Panoramic 2SL is rainfast within one hour after application.

Alligare Panoramic 2SL can be applied preemergence or postemergence to control annual and perennial grasses, broadleaf weeds and vine species and provide control of labeled weeds which germinate in the treated area. Direct application of Alligare Panoramic 2SL to the foliage of certain brush species and ornamentals could lead to injury.

The best weed control is achieved when Alligare Panoramic 2SL is applied as a postemergence application, especially on perennial species. Since Alligare Panoramic 2SL must be taken up by the plant and translocated to the meristematic tissue before it becomes effective, weeds must be actively growing at the time of postemergence applications. Include an adjuvant in all spray solutions (see "Spray Adjuvants for Postemergence Applications" section of this label). Applications can be made as broadcast treatments with ground spray equipment or as spot treatments with backpack sprayers.

Even though Alligare Panoramic 2SL can be applied in the dormant or growing season, the weeds need to be actively growing for maximum control.

Alligare Panoramic 2SL can cause injury to desirable grass species if the application is made to grasses that are under stress due to disease, insect damage and/or other causes. Some yellowing of desirable grasses may occur after an application of Alligare Panoramic 2SL made during the growing season. This is dependent upon weather conditions and is usually short lived (2 to 4 weeks). Do not treat newly seeded or sprigged grass stands with Alligare Panoramic 2SL unless approved on this label (see "Revegetation with Prairiegrass and other Forage Grasses" section of this label) or authorized by Alligare, LLC in a supplemental label.

Important Precautions:

1. Do not apply Alligare Panoramic 2SL to residential lawns.
2. Desirable trees and ornamental plants can be injured if rinsate from spray equipment used to apply Alligare Panoramic 2SL is allowed to wash or move into contact with plant roots.
3. Do not apply Alligare Panoramic 2SL to the inside of irrigation ditches.
4. Alligare Panoramic 2SL can be applied to non-irrigation ditches and low lying areas as long as the water has drained.

Precautions and Restrictions to follow when making applications of Alligare Panoramic 2SL for weed control, native grass establishment, and turf growth, suppression on pastures, rangeland, and noncrop areas:

- Do not use Alligare Panoramic 2SL on food or feed crops except as specified on this or supplemental labeling provided by Alligare, LLC.
- Do not cut treated area for hay within seven days after application.
- Do not use organophosphate insecticides on newly seeded areas treated with Alligare Panoramic 2SL unless severe injury or loss of stand can be tolerated.
- Do not apply this product through any type of irrigation system.
- Do not exceed 12 ounces of Alligare Panoramic 2SL per acre in one year.
- When tank-mixing with other products, read and carefully follow all applicable use directions, precautions, restrictions, and limitations on the respective product labels. In interpreting the labels of tank-mixed products, the most restrictive label limitations must apply.
- When making new plantings of prairiegrass or wildflowers, carryover from persistent herbicides such as sulfonfyl-urea, imidazolinone, triazine, substituted urea, dinitroaniline, and other herbicides applied the previous year may result in compounded injury or death of desirable vegetation when treated with Alligare Panoramic 2SL.
- When making applications around desirable trees or ornamental plants, test small areas to determine the tolerance of a particular species to soil and/or foliar applications of Alligare Panoramic 2SL. See section entitled "Tolerance of Trees and Brush to Alligare Panoramic 2SL."
- DO NOT apply Alligare Panoramic 2SL through any type of irrigation system.

APPLICATION INSTRUCTIONS

Ground Application: Make a broadcast application of Alligare Panoramic 2SL in a minimum of 2 gallons of spray per acre using ground application equipment. Calibrate the sprayer to deliver the specified spray volume and pressure at the spray boom height to ensure proper coverage of foliage and/or soil surface. The actual minimum spray volume per acre is determined by the spray equipment used. Adequate spray coverage of weed foliage postemergence or soil surface pre-emergence is important for maximum weed control. A complete and even distribution of spray is necessary. Avoid overlaps when spraying. When applications are made using less than 10 gallons of spray mixture per acre, use special application equipment designed to make low volume applications. Use a spray pressure of 20 to 40 psi.

Aerial Application: Use 2 or more gallons of spray mix per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift. Refer to the section entitled "Spray Drift Management" for additional precautions and restrictions. When making aerial applications, be especially careful to eliminate spray drift. Fixed wing aircraft and helicopters can be used to apply Alligare Panoramic 2SL. Ensure appropriate buffer zones are maintained when using fixed wing aircraft.

Spot Treatment Application: In preparing the spray solution, mix thoroughly in water 0.25 to 1.5% (0.3 to 1.9 oz./gal. water) Alligare Panoramic 2SL plus an adjuvant (see "Spray Adjuvants for Postemergence Applications" section of this label). Use a methylated seed oil at 1% v/v as the spray adjuvant except when treating seedling prairiegrasses and wildflowers. When making spot applications, spray coverage must be sufficient to moisten the leaves but not to the point of runoff. Make sure the mixing container is opaque to sunlight or otherwise treated to shield for UV light. Alligare Panoramic 2SL breaks down when mixed with water and exposed to sunlight. Mixtures of Alligare Panoramic 2SL must be used within two days of being prepared to prevent breakdown of the active ingredient and maintain maximum effectiveness. See section on desired species and do not exceed the specified application rate per acre. Also see the sections entitled "Weeds Controlled" and "Special Weed Control."

All Applications: Do not apply during windy or dusty conditions unless applications are being made with a drift control agent and/or an enclosed shielded spray system. Do not apply if rainfall

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is threatening. Rainfall within 1 hour of an Alligare Panoramic 2SL application may reduce weed control. Uniformly apply specified rate and include a spray adjuvant (see "Spray Adjuvants for Postemergence Applications" section of this label). A foam reducing agent can be added at the specified rate if needed. Aerial applications to target species growing under the canopy of trees and brush may not receive sufficient coverage for effective control. For fall applications, delaying aerial application until trees and brush have dropped their leaves can improve coverage. See "Special Weed Control" and "Tolerance of Trees and Brush to Alligare Panoramic 2SL" sections of this label for additional details. Avoid overlapping sprays.

Immediately and thoroughly clean all spray equipment, as prolonged exposure of this product to uncoated steel (except stainless steel) surfaces can cause corrosion and failure of the exposed part.

MIXING INSTRUCTIONS

Mixing with Water: Fill the spray tank at least one-half full of clean water. With the pump and agitator running, add the specified amount of Alligare Panoramic 2SL using a calibrated measuring device. Fill the tank with the remaining water adding the surfactant near the end of the filling process. Add an antifoaming product if it is needed. Maintain agitation while spraying.

Mixing with Other Herbicide(s): Alligare Panoramic 2SL can be tank-mixed with other herbicide(s) if the use is not prohibited by the label of the other herbicide(s). Read each label carefully and follow all label instructions regarding use rates, application methods, timing, restrictions, precautions, and weeds controlled. The most restrictive label is the one that must be followed. Do not tank-mix Alligare Panoramic 2SL with any product that does not permit tank-mixing. Do not exceed label rates. Fill the spray tank at least one-half full of clean water. With the pump and agitator running, add the specified amount of Alligare Panoramic 2SL using a calibrated measuring device. Add the tank-mix herbicide, fill the tank with the remaining water adding the nonionic surfactant, organosilicate adjuvant or crop oil concentrate near the end of the filling process. Add an antifoaming product if it is needed. Maintain agitation while spraying. When mixing Alligare Panoramic 2SL with other tank-mix partners, always follow the following mixing sequence: add wettable powders, dispersible granules, or other dry formulations first, emulsifiable concentrates next, then Alligare Panoramic 2SL next, and spray adjuvants next.

SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS

To achieve control of weeds when Alligare Panoramic 2SL is applied postemergence, a spray adjuvant must be added. Adjuvants vary in their contents and by selecting the correct adjuvant phytotoxicity to desirable vegetation can be reduced or eliminated. Use low phytotoxic adjuvants. Adjuvants containing high amounts of alcohols, paraffin based petroleum oils and other compounds which can increase phytotoxicity must be avoided.

Methylated Seed Oils or Vegetable Oil Concentrate: The preferred spray adjuvant for use with Alligare Panoramic 2SL is a methylated vegetable-based seed oil concentrate containing 5 to 20% surfactant and the remainder methylated seed oil (MSO). For MSO, use a rate of 1 1/2 to 2 pints per acre. Best results are achieved when MSOs are applied with Alligare Panoramic 2SL in total spray volumes of 30 gallons per acre or less. The advantage of using the MSO decreases as the spray volume increases to higher volumes. If spray volumes above 30 gallons per acre are used, mix the MSO with Alligare Panoramic 2SL at a rate of 1% of the total spray volume. As an alternative, a non-ionic surfactant, as described below could be used when Alligare Panoramic 2SL is applied at spray volumes above 30 gallons per acre. MSOs have been shown to aid in the deposition and uptake of Alligare Panoramic 2SL in hard-to-control perennials, in weeds with waxy leaf surfaces and in weeds under stressed conditions.

Do not use a MSO on newly emerged seedling prairiegrass or wildflowers as injury could occur.

Nonionic Surfactants (NIS): Use a NIS at 0.25% v/v (i.e. 1 quart/100 gallons) or higher in the spray solution. For best results, use a NIS containing 60% surfactant in the formulated product and having a hydrophilic to lipophilic balance ratio (HLB) between 12 and 17. Do not use alcohols, fatty acids, oils, ethylene glycol, or diethylene glycol to meet these requirements.

In bermudagrass pastures and hay meadows best results will be achieved if a NIS is used with Alligare Panoramic 2SL.

Silicone-Based Surfactants: Use caution if a silicone-based surfactant is used. Although a silicone-based surfactant may allow greater spreading on the leaf surface when compared to a conventional NIS, it may dry too quickly and limit the herbicide's uptake into the plant, or at higher spray volumes it may result in greater spray "run-off" from the plant. Review the specific rate instructions on the manufacturer's label.

Fertilizer/Surfactant Blends: Use of a nitrogen-based fertilizer in combination with the specified rate of a NIS or MSO has been shown to improve the uptake of Alligare Panoramic 2SL in plants with waxy leaf surfaces. A rate of 2 to 3 pints per acre of fertilizers such as 28% N, 32% N, 10-34-0, or ammonium sulfate in combination with the specified rates of NIS or MSO will aid in the burndown control with Alligare Panoramic 2SL. Injury to desired plant species and newly emerged seedling prairiegrass and wildflowers may also be increased with the use of a fertilizer in combination with Alligare Panoramic 2SL. Weed control will likely be poor if Alligare Panoramic 2SL is applied in combination with a fertilizer without a NIS or MSO. No additional spray adjuvant is required if the fertilizer is the spray carrier for Alligare Panoramic 2SL.

TANK MIXES

For added control of late season annual grasses and certain broadleaf weeds in noncrop areas, tank-mix Alligare Panoramic 2SL with Pendulum® herbicide. Alligare Panoramic 2SL can be mixed with other herbicides for additional control in noncrop areas including Accord™, Roundup™ Pro, glyphosate, Arsenal® or Vegetation Manager® Imazapyr 2SL herbicide, Sahara® DG or Mojave 70 EG herbicide, diuron, Campaign™, Finale™, Garlon™ 3A or Vegetation Manager Triclopyr 3SL, MSMA, Vanquish™, Oust™ (or SFM 75), Escort™ (or Metsulfuron Methyl DF), Tordon™ (or Picloram 22K), or other labeled products. To test for the compatibility of any other herbicides not listed with Alligare Panoramic 2SL, use a jar test. Mixing Alligare Panoramic 2SL with 2,4-D or other phenoxy-type herbicides could lead to reduced control of perennial grass weeds.

Do not tank-mix Alligare Panoramic 2SL with organophosphate insecticides or use in the same year when using Alligare Panoramic 2SL on newly planted areas. Tank mix instructions for Alligare Panoramic 2SL use on bermudagrass pastures is found in the "Directions for Use in Bermudagrass

Pastures and Hay Meadows" part of this label. When tank-mixing, always consult manufacturer's labeling for rates and weeds controlled. Always follow the more restrictive label when using Alligare Panoramic 2SL with a tank-mix partner.

FOR WEED CONTROL IN PASTURE AND RANGELAND

To control weeds in pasture and rangeland, apply a broadcast treatment of Alligare Panoramic 2SL at 2 to 12 ounces per acre. For spot treatments, use Alligare Panoramic 2SL at 0.25% to 1% solution with 1.0% methylated seed oil. Specific use directions are found below.

Rangeland Use Instructions: Apply Alligare Panoramic 2SL to rangeland for the control of undesirable (non-native, invasive, and noxious) plant species in order to (1) aid in the establishment of desirable rangeland plant species; (2) aid in establishment of desirable rangeland vegetation after a fire; (3) aid in the reduction of vegetation that would fuel a wildfire; (4) aid in the release of existing desirable rangeland vegetation from the competitive pressure of undesirable plant species; and (5) aid in habitat improvement for wildlife.

Protection of threatened and endangered plants is important when applying Alligare Panoramic 2SL to rangeland. Therefore, federal agencies must follow NEPA regulations to ensure protection of threatened or endangered plants, state agencies must work with the Fish and Wildlife Service or the Service's designated state conservation agency to ensure protection of threatened or endangered plants, and other organizations or individuals must operate under Habitat Conservation Plan if threatened or endangered plants are known to be present on the land to be treated.

See the appropriate sections of this label for specific use directions for the vegetation management objective desired.

Do not apply Alligare Panoramic 2SL to rangeland until specific weeds appear. A single application of Alligare Panoramic 2SL can be used to control annual weeds such as cheatgrass, downy brome and medusahead rye as long as it is used in conjunction with available IPM practices. For rangeland applications to control cheatgrass, medusahead, annual mustards, etc., apply Alligare Panoramic 2SL preemergence or early postemergence prior to planting. For best results for cheatgrass control, make a late summer or fall application of Alligare Panoramic 2SL before cheatgrass emerges and prior to planting desirable species. Alligare Panoramic 2SL can be used in this same manner as a site preparation before planting sagebrush seedlings. If making an application of Alligare Panoramic 2SL in the spring when planting a tolerant grass species, use a rate of 2 to 4 ounces per acre. Rates above 4 ounces per acre may result in thinning or loss of stand, especially in seedling sideots, blue grama or buffalograss. Perennial weeds like leafy spurge, Dalmatian toadflax, and Russian knapweed can be controlled in most cases with a single broadcast application of Alligare Panoramic 2SL. Spot treatments with Alligare Panoramic 2SL may be necessary to control any weeds not controlled by the broadcast application. Long term weed control in rangeland is best achieved when Alligare Panoramic 2SL is used in conjunction with land management practices that promote growth and sustainability of desired plant species.

DIRECTIONS FOR USE IN BERMUDAGRASS PASTURES AND HAY MEADOWS

For control of winter and summer annual and perennial grasses in bermudagrass pastures and hay meadows, use a postemergence application of Alligare Panoramic 2SL at 4 to 12 ounces per acre. Specific rate and timing instructions are provided below. Use of Alligare Panoramic 2SL is acceptable on common and coastal varieties of bermudagrass including, but not restricted to Tifton 44, 78, and 85, Alicia and Russell. It is possible that bermudagrass growth may be suppressed for 30 to 45 days depending on growth conditions after application. Be aware that Jiggs bermudagrass is more sensitive to Alligare Panoramic 2SL than other bermudagrass types. If these growth responses are not acceptable, do not use Alligare Panoramic 2SL on bermudagrass.

Complete spray coverage is necessary to achieve the desired level of weed control. Be sure to use a sprayer that is calibrated to deliver the specified spray volume and pressure at the spray boom height to ensure complete coverage. Decreased weed control could result if boomless or flood type nozzles are used.

Use Restrictions: (1) Do not apply to drought stressed bermudagrass; (2) Do not apply during transitions from dormancy to full green-up; (3) Do not apply to newly aerated fields for 30 days after aerations; (4) Do not use for the establishment of sprigged or seeded bermudagrass; (5) Do not use on World Feeder varieties of bermudagrass.

Spring Applications and Bermudagrass Tolerance: Bermudagrass growth can be suppressed if Alligare Panoramic 2SL is applied before the bermudagrass has reached 100% green-up. If Alligare Panoramic 2SL is applied when the bermudagrass is in the transition from winter dormancy to 100% green-up, green-up and growth will be delayed. Carefully inspect the new bermudagrass growth in the field to be sure all stolons have begun to grow. Application of Alligare Panoramic 2SL to a field that appears green, but where some to many stolons have not begun to grow, will still cause significant reductions in bermudagrass growth and development. It is important to delay application of Alligare Panoramic 2SL until 100% green-up has been achieved.

Rate instructions: Make a postemergent application of Alligare Panoramic 2SL at 4-6 ounces per acre to control most annual and some perennial weeds in bermudagrass pastures and hay meadows. Use the lower rate against target weeds that are small and the higher rate against target weeds that are older, larger or have been cut multiple times. Specific rate instructions are given in the table below.

Postemergence Control of Summer Annual and Perennial Grass Weeds: When bermudagrass has reached complete green-up and target weeds are at the growth stage desired, apply Alligare Panoramic 2SL according to the rates and growth stages in the table below. Bermudagrass green-up and subsequent growth will be delayed if Alligare Panoramic 2SL is applied too early during the transition between dormancy and full green-up. Some bermudagrass yellowing and stolon internode shortening can occur with specified rates of Alligare Panoramic 2SL. Bermudagrass recovery will be shortened if Alligare Panoramic 2SL is applied with a nitrogen fertilizer (32-0-0 or 28-0-0) used as the spray carrier.

After complete bermudagrass green-up, apply Alligare Panoramic 2SL postemergence at 4 to 6 ounces per acre for control of summer annual grasses (2 to 4 leaf stage). Use higher rates of 6 to 8 ounces per acre when target weeds are at or above the boot stage. Always use a surfactant with Alligare Panoramic 2SL except when the spray carrier is liquid fertilizer. Some preemergence con-

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tol of some annual grasses will be obtained when Alligare Panoramic 2SL is applied postemergence to target weeds.

Summer perennial grasses are controlled when Alligare Panoramic 2SL is applied after complete bermudagrass green-up at the rate of 6 to 12 ounces per acre. If higher rates are necessary to control target weeds, make a fall application of Alligare Panoramic 2SL before a killing frost occurs. If a fall application is planned and the bermudagrass is cut for hay, be sure the target weeds have adequate regrowth before making an application of Alligare Panoramic 2SL. Always use a surfactant with Alligare Panoramic 2SL except when the spray carrier is liquid fertilizer.

Alligare Panoramic 2SL Rates for Postemergent Summer Annual Grass Control¹

Common Name	Species	Weed Height (inches) ²	Rate per Acre (fluid ounces)
Large crabgrass	<i>Digitaria sanguinalis</i>	≤4 >4	4 6
Southern crabgrass	<i>Digitaria ciliaris</i>	≤4 >4	4 6
Smooth crabgrass	<i>Digitaria ischaemum</i>	≤4 >4	4 6
Giant foxtail	<i>Setaria faberi</i>		6
Green foxtail	<i>Setaria viridis</i>	≤4 >4	4 6
Yellow foxtail	<i>Setaria glauca</i>	≤4 >4	4 6
Texas panicum	<i>Panicum texanum</i>		6
Fall panicum	<i>Panicum dichotomiflorum</i>		6
Broadleaf signalgrass	<i>Bracharia platyphylla</i>	≤4 >4	4 6
Annual jewgrass	<i>Microstegium vimineum</i>	≤4 >4	4 6
Barnyardgrass	<i>Echinochloa crus-galli</i>	≤4 >4	4 6
Sandbur	<i>Cenchrus</i> spp.	≤4 >4	4 6

¹ Be sure bermudagrass has completely greened up as an application of Alligare Panoramic 2SL could delay green-up and subsequent growth if application is made too early before full green-up. If delayed green-up will be an issue, do not apply Alligare Panoramic 2SL.

² Use the higher rate when the summer annual grasses are older, larger or have been subjected to multiple cuttings.

Alligare Panoramic 2SL Rates for Postemergent Summer Perennial Grass Control¹

Common Name	Species	Weed Height (inches) ²	Rate per Acre (fluid ounces)
Johnsongrass	<i>Sorghum halepense</i>	18-24 >24	8 12
Vaseygrass	<i>Paspalum urvillei</i>	4-8	6-8
Nutsedge	<i>Cyperus</i> spp.	≤4 >4	4 6
Bahiagrass	<i>Paspalum notatum</i>	4-8	6-8
Dallisgrass ³	<i>Paspalum dilatatum</i>	4-8	8-12
Smutgrass ³	<i>Sporobolus indicus</i>	4-8	8-12

¹ Be sure bermudagrass has completely greened up as an application of Alligare Panoramic 2SL could delay green-up and subsequent growth if application is made too early before full green-up. If delayed green-up will be an issue, do not apply Alligare Panoramic 2SL.

² Use the higher rate when the summer annual grasses are older, larger or have been subjected to multiple cuttings.

³ Suppression

Postemergent Control of Winter Annual and Perennial Grass Weeds: When bermudagrass is dormant, make a postemergent application of Alligare Panoramic 2SL at a rate of 6 to 12 ounces per acre. Be sure there is no green tissue at the root crown or on stolons because an application of Alligare Panoramic 2SL to green tissue may delay bermudagrass green-up and subsequent growth. In the deep south where mild winters often occur, bermudagrass may not go completely dormant. Consequently, avoid making an application of Alligare Panoramic 2SL if delayed green-up will be an issue. Control of larger winter annual and cool season perennial grasses will be improved if Alligare Panoramic 2SL is applied with 16 to 24 ounces per acre of Roundup Ultra™ or glyphosate equivalent. Always use a surfactant with Alligare Panoramic 2SL except when the spray carrier is liquid fertilizer.

Alligare Panoramic 2SL Rates for Postemergent Winter Annual and Cool Season Perennial Grass Control

Common Name	Species	Weed Height (inches)	Rate per Acre (fluid ounces)
Annual Ryegrass ¹	<i>Lolium multiflorum</i>	≤6 >6	6 10
Tall Fescue	<i>Festuca arundinacea</i>		12
Wild Oats	<i>Avena fatua</i>	≤6 >6	6 10
Little Barley	<i>Hordeum pusillum</i>	≤6 >6	4 6

¹ Because AHAS and ALS resistant annual ryegrass occurs throughout the southeast, tank-

mix 16 to 24 ounces per acre of Roundup Ultra or glyphosate equivalent with Alligare Panoramic 2SL when making applications to control annual ryegrass.

Spray Adjuvants: To promote the growth and recovery of bermudagrass, add 10 to 20 gallons per acre of liquid fertilizer (32-0-0 or 28-0-0) as the spray carrier with Alligare Panoramic 2SL. Do not add additional spray adjuvant when liquid fertilizer is used as the spray carrier. For additional spray adjuvant directions, go to the "Spray Adjuvants for Postemergence Applications" part of this label. Do not use crop oil concentrates (COC) as a spray adjuvant with Alligare Panoramic 2SL.

Tank Mixtures: Alligare Panoramic 2SL can be tank-mixed with a number of broadleaf herbicides for broadleaf weed control. Alligare Panoramic 2SL can be tank-mixed with Weedmaster®, Grazon™, Vegetation Manager Triclopyr 4E (or Remedy™), Redeem™, Metsulfuron Methyl DF (or Ally™), 2-4,D, and Roundup Ultra or glyphosate equivalent. Applications with tank-mixes of 2,4-D that exceed one pound active ingredient per acre and applications with tank-mixes of triclopyr amine, such as Vegetation Manager Triclopyr 3SL, that exceed 1 1/2 pounds active ingredient per acre can reduce efficacy on target grass weed species.

FOR USE ON FEDERAL CONSERVATION RESERVE PROGRAM (CRP) LAND

Use Alligare Panoramic 2SL at rates up to 12 ounces per acre per year for control of weeds on Federal Conservation Reserve Program (CRP) land. Specific instructions for each intended use can be found elsewhere in this label.

Minimum plant-back intervals vary with the rates of Alligare Panoramic 2SL used. See the minimum plant-back intervals provided below.

Rotational Crop Restrictions: The following rotational crops can be planted after applying Alligare Panoramic 2SL. Planting rotational crops earlier than the specified interval may result in crop injury.

Alligare Panoramic 2SL Use Rate (ounce/A)	Minimum Plant Back Interval (Months After Alligare Panoramic 2SL Application)				
≤4	12	12	18	26	40
5-8	12	14	22	30	44
9-12	12	18	24	36	48
Rotational Crops	Bahiagrass CLEARFIELD® corn hybrids Peanuts Rye Wheat	Snapbeans Southern peas Soybeans Tobacco	Barley Cotton¹ Grain sorghum Oats	Field corn² All crops not otherwise listed or included for use on this label²	Canola² Potatoes² Red table beets² Sugar beets²

¹ For Arizona, New Mexico, Oklahoma, and Texas only; In these states, cotton can be planted 18 to 24 months after Alligare Panoramic 2SL application unless drought conditions develop in the year of application. If less than 15 inches of rainfall or irrigation are received from the time of Alligare Panoramic 2SL application and November 1 of the same year, do not rotate to cotton at 18 to 24 months after application. If such drought conditions develop, wait to plant cotton until 26, 30, and 40 months after Alligare Panoramic 2SL application at the rates provided in the above table.

² A field bioassay of the intended rotational crop must be completed for these selected crops and for all other crops not otherwise listed or included on this label after the minimum plant back interval has elapsed. The field bioassay consists of planting a test strip across the previously treated field and grown to maturity. Be sure the test strip is planted in low areas as well as high spots and on different soil types and soil pH levels across the field. The intended rotational crop may be planted the following year if there is no crop injury in the test strip.

It is impossible to eliminate all risks associated with the use of Alligare Panoramic 2SL, therefore, plant-back crop injury is always possible even when label rates and use directions are followed. If crop injury is a concern after using Alligare Panoramic 2SL, then conduct a field bioassay with the desired crop prior to planting.

FOR FOLIAR AND SEEDHEAD SUPPRESSION OF BAHIAGRASS, COOL SEASON GRASSES, AND SUPPRESSION OF SOME ANNUAL WEEDS

Bahiagrass: In unimproved areas, apply Alligare Panoramic 2SL at 2 to 6 ounces per acre to suppress growth and seedhead development in bahiagrass. For best results, apply Alligare Panoramic 2SL after green-up. Use the lower rate of 2 ounces per acre in North and South Carolina because higher rates may result in turf thinning. Temporary turf discoloration may occur depending on the rate of Alligare Panoramic 2SL used as well as other factors such as surfactant type and environmental conditions. Severe injury may occur if Alligare Panoramic 2SL is applied to turf under any type of stress. If applied before mowing, remember that new growth will be suppressed so adjust the mower height to leave adequate existing foliage. If applied after mowing, adjust the mower to leave existing foliage or wait for re-growth before making the application. Do not use a methylated seed oil adjuvant with Alligare Panoramic 2SL.

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2 ounce	None to low	Partial to season long
3 to 6 ounce	Low to moderate	Season long

Use 8 ounces of Alligare Panoramic 2SL for control of winter annual weeds. Make the application when weeds are actively growing but while the bahiagrass is still dormant. A subsequent application of Alligare Panoramic 2SL at 3 to 4 ounces per acre can be made in the spring after bahiagrass green-up for the suppression of seedheads and foliage.

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Cool Season Grasses: KY31 Tall Fescue and "Wildtype" Common Kentucky Bluegrass: For foliar and seedhead suppression of these cool season grasses, apply Alligare Panoramc 2SL at 2 to 4 ounces per acre. Do not use a methylated seed oil adjuvant with Alligare Panoramc 2SL on these grasses. Use of an adjuvant with the lower rate will enhance performance; however use of a surfactant with the higher rate (4 ounces) could cause excessive injury or mortality of tall fescue. Application of Alligare Panoramc 2SL to turf types of tall fescue and Kentucky bluegrass could result in severe injury or stand loss.

Wheatgrass: Alligare Panoramc 2SL can be applied for foliar and seedhead suppression of crested wheatgrass and intermediate wheatgrass. Use 6 to 10 ounces per acre for crested wheatgrass and 6 to 12 ounces per acre for intermediate wheatgrass. Although other wheatgrass species may be suppressed, it is best to determine effectiveness by first applying Alligare Panoramc 2SL to a limited area. Use of 2,4-D or products containing 2,4-D in a tank-mix with Alligare Panoramc 2SL may decrease the desired effectiveness. The potential of turf injury may be reduced when Alligare Panoramc 2SL is tank-mixed with Garlon (Triclopyr 3SL or Triclopyr 4EC), Tordon (Picloram 22K), Transline™, and Vanquish. Severe injury may occur if Alligare Panoramc 2SL is applied to turf under stress.

FOR THE CONTROL OF UNDESIRABLE WEEDS IN BERMUDAGRASS NOT BEING GROWN FOR FORAGE OR HAY

Alligare Panoramc 2SL will control summer and winter annual weeds as well as some perennial weeds in bermudagrass turf found along roadsides, utility rights-of-way, railroad crossings, at airports, and in non-irrigation ditches. Tolerance to Alligare Panoramc 2SL varies with different bermudagrass types. Therefore, some foliar, stolon and seedhead suppression may occur depending on turf type, application timing and herbicide rate. When applying Alligare Panoramc 2SL to bermudagrass turf it is important to (1) make application only after full bermudagrass green-up otherwise a delay in green-up may occur; (2) add a surfactant; (3) do not apply to bermudagrass under stress; (4) allow time for bermudagrass foliage re-growth after mowing before making an application because some internode suppression (from simultaneously mow/spray operations) may prevent bermudagrass from quickly recovering from mowing.

Winter Annual Weed Control: Make application prior to winter weed germination or while winter weeds are actively growing. Use Alligare Panoramc 2SL at 4 to 12 ounces per acre. A delay in bermudagrass green-up can occur if Alligare Panoramc 2SL is applied too early in the spring.

Summer Annual Weeds: For best results, make application preemergence or early postemergence before weeds have reached a height of 6 inches. Use Alligare Panoramc 2SL at 4 to 12 ounces per acre. Control of larger weeds may be possible depending on growing conditions, species susceptibility, adjuvant selection and tank-mix partner.

Perennial Weeds: Use Alligare Panoramc 2SL at 8 to 12 ounces per acre postemergence after weeds are large enough for herbicide uptake. For control of a specific weed species, see the "Special Weed Control" part of this label. Increased control of perennial weeds can be achieved by tank-mixing Alligare Panoramc 2SL with Accord or Roundup Pro.

Bahiagrass Control: Make a postemergence application of Alligare Panoramc 2SL at 8 to 12 ounces per acre. For control of a specific weed species, see the "Special Weed Control" part of the label. Increased control of perennial weeds can be achieved by tank-mixing Alligare Panoramc 2SL with Accord or Roundup Pro at 12 to 16 ounces per acre.

ALLIGARE PANORAMIC 2SL RATES AND TIMINGS FOR SPECIFIC BERMUDAGRASS TYPES WITH REGARD TO WEED CONTROL AND TURF TOLERANCE.

Common Bermudagrass: Common bermudagrass is very tolerant to Alligare Panoramc 2SL. The weed control spectrum can be improved with tank-mixes of Alligare Panoramc 2SL with Roundup Pro, Accord, or glyphosate, however these tank-mixes may also increase turf phytotoxicity by causing stolon internode shortening and seedhead suppression for the first 8 weeks after application.

Established Coastal Bermudagrass: The use of 2 to 12 ounces per acre of Alligare Panoramc 2SL on coastal bermudagrass will control labeled weeds and provide foliar and seedhead suppression. Do not use Alligare Panoramc 2SL on World Feeder varieties of bermudagrass. Activity of Alligare Panoramc 2SL increases as the rate increases. Beware that applying a tank-mix combination of Alligare Panoramc 2SL and Roundup Pro, Accord, or glyphosate on coastal bermudagrass may result in death or excessive injury.

Turf Type Bermudagrass: Tolerance to Alligare Panoramc 2SL varies in turf type bermudagrass varieties. At rates of 2 to 6 ounces per acre, Alligare Panoramc 2SL will provide some annual weed control and foliar and seedhead suppression. Application of Alligare Panoramc 2SL at rates above 6 ounces per acre could result in excessive injury or death.

FOR THE CONTROL OF UNDESIRABLE WEEDS IN UNIMPROVED CENTIPEDE GRASS

To control annual broadleaf and grass weeds in unimproved centipede grass, apply Alligare Panoramc 2SL at 4 to 8 ounces per acre with a surfactant. Make the application after the centipede grass has reached full green-up and do not apply to grass that is under stress. Be sure to allow time for centipede grass foliage re-growth after mowing before making an application because some internode suppression (from simultaneously mow/spray operations) may prevent the centipede grass from quickly recovering from mowing.

FOR CONTROL OF UNDESIRABLE WEEDS IN SMOOTH BROMEGRASS, "WILDTYPE" COMMON KENTUCKY BLUEGRASS AND WHEATGRASSES

Smooth Bromegrass and "Wildtype" Common Kentucky Bluegrass: For control of labeled grass and broadleaf weeds (see "Weeds Controlled" and "Special Weed Control" sections of this label below) as well as growth suppression, apply Alligare Panoramc 2SL at 4 to 8 ounces per acre in the spring after these grasses have reached 100% green-up. A delay in green-up may occur if application is made before full green-up. Higher rates of 8 to 12 ounces per acre can be applied in the spring, however excessive growth suppression can result. A fall application of Alligare Panoramc 2SL at 8 to 12 ounces per acre can be made to control perennial weeds (see "Special Weed Control" section of this label below). Treatment of smooth bromegrass with Alligare Panoramc 2SL may result in foliar height and seedhead suppression.

Wheatgrass: For control of labeled grass and broadleaf weeds apply Alligare Panoramc 2SL at 4 to 12 ounces per acre. Foliar height and seedheads may be suppressed when wheatgrass is treated with Alligare Panoramc 2SL.

FOR CONTROL OF UNDESIRABLE WEEDS IN CROWN VETCH

Newly Seeded Crown Vetch: To aid in stand establishment and reduce weed competition, apply Alligare Panoramc 2SL at 4 ounces per acre to newly seeded beds.

Established Crown Vetch in Noncropland Areas: For control of labeled grass and broadleaf weeds (see the "Weeds Controlled" and "Special Weed Control" sections of this label below for specific rates), apply Alligare Panoramc 2SL at 8 to 12 ounces per acre to established crown vetch beds. Depending on time of application, some internode shortening and minor tip chlorosis may occur after application of Alligare Panoramc 2SL.

To avoid potential injury, apply Alligare Panoramc 2SL during winter dormancy or in the early spring. If applied after May, Alligare Panoramc 2SL may cause increased injury or defoliation of crown vetch. Injury will be increased if a surfactant such as a crop oil concentrate or d-Limonene based product is used. If applied during the fall when crown vetch is actively growing, Alligare Panoramc 2SL may cause severe injury or stand loss.

FOR USE IN REVEGETATION WITH PRAIRIEGRASSES AND OTHER FORAGE GRASSES

Alligare Panoramc 2SL controls many annual and perennial grass and broadleaf weeds when applied at 2 to 12 ounces per acre in newly established and existing stands of prairiegrasses (see below for details and tolerant species) grown in such areas as pasture, rangeland (see "Instructions For Rangeland Use" section of this label), Federal Conservation Reserve Program (CRP) land and noncropland areas such as roadsides, industrial sites, prairie restoration sites, drainage ditch bank and other similar locations. Note that some local ecotypes or varieties of prairiegrasses may be suppressed by Alligare Panoramc 2SL. Poor stands may also result from other factors such as poor soil, cool temperatures, poor seedling vigor, excessive moisture, dry weather after emergence and others. Herbicide residue, poor soils and other stress factors can also lead to poor seedling vigor, increased injury and possible mortality. Alligare, LLC cannot be held responsible for such unforeseen factors. If tolerance is not known, be sure to try Alligare Panoramc 2SL on a small area first. Alligare Panoramc 2SL reduces weed competition and allows grass seedlings to become established. Perennial noxious weeds in established grass stands may also be controlled with Alligare Panoramc 2SL if the application is made postemergence as a foliar treatment.

Important Considerations:

1. Always add an adjuvant with Alligare Panoramc 2SL.
2. On established grass stands, use a methylated seed oil.
3. Use a nonionic surfactant on newly emerged seedling grasses.
4. Use of a liquid fertilizer as a carrier will reduce grass tolerance and must not be used on newly emerged seedling grasses.

Stand Establishment: Since newly emerged grasses can be sensitive to Alligare Panoramc 2SL and/or the adjuvant used, best results in establishing mixed grass stands are attained when the application is made at planting before grass seedlings emerge. If grasses have started to emerge, the application of Alligare Panoramc 2SL must be delayed until the grasses have reached the five-leaf stage. Use only a nonionic surfactant or silicone-based surfactant with Alligare Panoramc 2SL on seedling grasses. Do not use a methylated seed oil at this timing as some injury could result. Annual weeds are controlled by Alligare Panoramc 2SL applied either preemergence or early postemergence (See the "Weeds Controlled" section of this label for maximum height of weeds for control). Rates and timing are discussed in the section below. Some stand thinning may result from a postemergence application of Alligare Panoramc 2SL because seedling grasses have varying tolerance to spray adjuvants. If the seedling grasses have reached the five-leaf stage, they are generally more tolerant to different spray adjuvants. Herbicide-carry-over can be a problem if grasses are planted into a field that was row cropped the previous year (see "Directions for Use" section of this label).

Rates and Control: Alligare Panoramc 2SL will provide control and/or suppression of many annual grass and broadleaf weeds. Apply 2 to 6 ounces per acre for annual weed control in fields cropped the previous year and/or fields where grass/forb mixtures are planted. In dry climates of the northernmost U.S. and for late season plantings into clean seedbeds, use lower rates. Use Alligare Panoramc 2SL as low as 2 ounces per acre when soil pH is greater than 7, there is a low CEC, or in a coarse texture soil with low clay or organic matter content. Use higher rates when there is high organic matter, high rainfall, heavy weed infestation and heavy plant residue and a long growing season (southern portions of Illinois, Indiana, Missouri, and Ohio, etc.). When controlling giant ragweed, or providing control/suppression of perennial weeds, use Alligare Panoramc 2SL at 8 to 12 ounces per acre. These high rates may, however, result in stunting or stand thinning. The length and amount of suppression will be related to soil type, environmental conditions, weed pressure and chemical residue. Additional details are provided below for specific grass timings and tolerances.

Established Stands: Application of Alligare Panoramc 2SL as an early postemergence treatment to annual grasses and broadleaf weeds will provide the best results. See the "Special Weed Control" section of this label for instructions for control of perennial weeds. Some foliar and/or seedhead height suppression may result in established grass stands when the high rates of Alligare Panoramc 2SL are used. This is especially likely when there are few weeds, little rainfall, light soils and short growing seasons. Reserve lower rates for use on light weed infestations or when desirable wildflowers and legumes are mixed in the grass stands (the "Wildflower Establishment and Maintenance" section of this label provides rate tolerance information). Higher rates will broaden and lengthen the spectrum of weeds controlled.

Buffalograss: In newly sprigged buffalograss, apply Alligare Panoramc 2SL at 2 to 4 ounces per acre for control or suppression of labeled weeds and to aid in stand establishment. Make the application immediately after planting to new growth or seedlings. Severe injury or death may occur when Alligare Panoramc 2SL is applied to new growth and small seedlings. It is best to wait to apply Alligare Panoramc 2SL to newly emerged buffalograss until the grass has at least five true leaves. It is also important to use only a nonionic or silicone-based surfactant and not to use a methylated seed oil. In established stands, apply Alligare Panoramc 2SL at 2 to 8 ounces per acre. The higher rates may result in some turf discoloration and stunting. An application of Alligare Panoramc 2SL to dormant buffalograss will control winter

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Specimen Label

annual weeds. Note that some buffalograss types may show different tolerance to Alligare Panoramic 2SL. Turf type buffalograss, for instance, may show a different tolerance to Alligare Panoramic 2SL than the wild type buffalograss. Some turf types may tolerate low rates of Alligare Panoramic 2SL applied at seeding. The seed dealer will provide details.

Sideoats and Blue Grama: Do not apply Alligare Panoramic 2SL to monoculture stands of sideoats and blue grama if stand thinning or stand loss can not be tolerated. Once new seedlings of sideoats and blue grama have emerged and reached the five-leaf stage, an application of Alligare Panoramic 2SL at 2 to 4 ounces per acre plus an adjuvant will aid in stand establishment. Stand thinning may occur if Alligare Panoramic 2SL is applied at 4 ounces per acre with methylated seed oil as the adjuvant. Satisfactory weed control in early summer plantings of sideoats and blue grama may result when lower rates of Alligare Panoramic 2SL are used, especially in the states of Wisconsin, Michigan, Minnesota, South Dakota, North Dakota, Kansas, Oklahoma, Texas, and Nebraska, and other states where growing degree days are short. Although sideoats and blue grama have shown tolerance to Alligare Panoramic 2SL at 2 to 4 ounces per acre when applied preemergence at planting, some stand thinning may occur. In established stands of sideoats and blue grama, apply Alligare Panoramic 2SL at 4 to 10 ounces per acre. Alligare Panoramic 2SL can be applied up to 12 ounces per acre; however, depending on soil type, variety, environmental conditions, surfactant choice, etc., this may result in foliar and/or seedhead suppression, or in the injury of the sideoats or blue grama.

Switchgrass (*Panicum virgatum*): Do not use Alligare Panoramic 2SL for the establishment of pure switchgrass stands as severe injury or death can result. It can, however, be applied at 2 to 4 ounces per acre if switchgrass is planted in a mixed stand with tolerant species. Even then, some stand thinning or loss of stand may result. If reclaiming a mature switchgrass stand from certain perennial weeds like tall fescue, leafy spurge and Johnsongrass, etc., use Alligare Panoramic 2SL at rates of 10 to 12 ounces per acre. Beware, however, that severe stunting and injury will occur. Do not apply Alligare Panoramic 2SL to switchgrass if severe injury cannot be tolerated.

Eastern Gamagrass: Apply Alligare Panoramic 2SL at 2 to 6 ounces per acre at planting prior to eastern gamagrass emergence only if some stand thinning or loss can be tolerated. Stand thinning and stunting will most likely result. Stand mortality could result if there are adverse conditions, poor soils or added stress to the eastern gamagrass. On established eastern gamagrass, apply Alligare Panoramic 2SL at 2 to 8 ounces per acre while the eastern gamagrass is dormant. Injury in the form of stunting will occur as the rate of Alligare Panoramic 2SL is increased. If applied during or after green-up, Alligare Panoramic 2SL may result in foliar and/or seedhead suppression and possible mortality of weak plants.

Big Bluestem, Little Bluestem and Indiangrass: To control labeled weeds in these grasses at planting, or any time thereafter (including emerged seedlings and dormant or actively growing perennial stands), Alligare Panoramic 2SL can be applied at the rate of 2 to 12 ounces per acre. See "Weeds Controlled" section of this label for the desired rate. Use lower rates in Wisconsin, Michigan, Minnesota, South Dakota, North Dakota, Kansas, Oklahoma, Texas, and Nebraska. Use higher rates in areas of where there is more rainfall and a longer growing season.

Tall Fescue Control: Tall fescue can be controlled in established stands of, or in seed bed preparations for, big bluestem, little bluestem and indiangrass when Alligare Panoramic 2SL is applied at 12 ounces per acre in combination with methylated seed oil at 2 pints per acre. Control may be aided with the addition of nitrogen fertilizer (see "Spray Adjuvants for Postemergence Applications" section of this label). Best results will be obtained if the tall fescue is actively growing. Application to tall fescue after it has reached the boot stage or summer dormancy will result in poor control. Tank-mix combinations with Alligare Panoramic 2SL could result in improved control of existing tall fescue as well as new germinating seedlings. Best results will result from a fall application of Alligare Panoramic 2SL at 6 to 12 ounces per acre plus 24 to 64 ounces per acre of Accord or Roundup Pro.

To control older, more mature fescue stands in the spring, use Alligare Panoramic 2SL at the higher end of the 6 to 12 ounces per acre rate range plus a tank-mix with Accord or Roundup Pro at 32 to 64 ounces per acre. If planting forbs, use the lower end of the 6 to 12 ounces per acre rate range of Alligare Panoramic 2SL plus a tank-mix with a glyphosate product. If Alligare Panoramic 2SL is used at 8 ounces per acre with a glyphosate product in the fall, apply only 4 ounces per acre of Alligare Panoramic 2SL in the spring at planting for annual weed and seedling fescue control. Where permitted, burning the fescue stand the following spring prior to green-up can help provide a better seedbed for planting and aid in control of seedling tall fescue. Several summer mowings of the fescue will weaken the root system and make the fescue more susceptible to herbicides. At least 10 inches of fescue re-growth is necessary following the last mowing before applying either the Alligare Panoramic 2SL or glyphosate products. Both require adequate foliage present for uptake and maximum control.

TOLERANT GRASS SPECIES¹

Prairiegrass		Alligare Panoramic 2SL Rate (ounce/acre) ²	
Common Name	Species	New Seeding	Established
Big Bluestem	<i>Andropogon gerardii</i>	2-12	2-12
Little Bluestem	<i>Schizachyrium scoparium</i>	2-12	2-12
Indiangrass	<i>Sorghastrum nutans</i>	2-12	2-12
Bushy Bluestem	<i>Andropogon glomeratus</i>	—*	2-12
King Ranch Bluestem	<i>Bothriochloa ischaemum</i>	—	2-12
Silver Beard Bluestem	<i>Bothriochloa saccharoides</i>	—	2-12
Broomsedge	<i>Andropogon virginicus</i>	—	2-12
Fingergrass, Rhodes grass	<i>Chloris</i> spp.	—	2-12
Needlegrass	<i>Stipa</i> spp.	—	2-12
Needleandthread	<i>Stipa comata</i>	—	2-12
Kearny (Plains)Threawn	<i>Aristida longespica</i>	—	2-12
Prairie Threawn	<i>Aristida oligantha</i>	—	2-12
Prairie Sandreed	<i>Calamovilfa longifolia</i>	—	2-12
Smooth Bromegrass	<i>Bromus inermis</i>	—	2-12
Kentucky Bluegrass	<i>Poa pratensis</i>	—	2-12 ⁴
Sandberg's Bluegrass	<i>Poa sandbergii</i>	—	2-12
Wheatgrasses	<i>Agropyron</i> spp.	—	2-12
Bottlebrush Squirreltail	<i>Sitanion hystrix</i>	—	2-12
Russian Wild Ryegrass	<i>Elymus junceus</i>	2-6 ²	2-12
Sideoats Grama	<i>Bouteloua curtipendula</i>	2-8 ³	2-8
Blue Grama	<i>Bouteloua gracilis</i>	2-8 ³	2-8
Buffalograss	<i>Buchloe dactyloides</i>	2-4	2-8
Eastern Gamagrass	<i>Tripsacum dactyloides</i>	2-6 ³	2-8

¹See individual grass sections for application timing.

²High rates may result in stunting and growth suppression.

³Alligare Panoramic 2SL preemergence applications to newly seeded sideoats, blue grama and Eastern gamagrass may result in thinning or loss of stand.

⁴Some bluegrass varieties are sensitive to Alligare Panoramic 2SL. Drought can delay recovery and may result in overgrazing of treated area.

*Tolerance unknown.

Tolerance of Established Grasses to 8 to 12 ounces of Alligare Panoramic 2SL applied in the Fall

Grass Species ¹	Tolerant	Suppressed ²	Not Tolerant	Tolerance Unknown
Bermudagrass	X			
Bluegrass Kentucky		X		
Bluegrass, Sandberg's	X			
Bluestem, big	X			
Bluestem, bushy	X			
Bluestem, King Ranch	X			
Bluestem, little	X			
Bluestem, silver beard	X			
Bromegrass, meadow		X	X	
Bromegrass, smooth		X		
Broomsedge	X			
Buffalograss	X	X		
Cheatgrass			X	
Creeping foxtail, Garrison				X
Downy brome			X	
Fescue, Idaho	X			
Fescue, Tall			X	
Gamagrass, eastern		X		
Grama, blue	X	X		
Grama, sideoats	X	X		
Indiangrass	X			
Medusahead			X	
Needleand-thread	X			
Needlegrass, green	X			
Orchardgrass		X		
Prairie cordgrass		X		

(continued)

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Grass Species ¹	Tolerant	Suppressed ²	Not Tolerant	Tolerance Unknown
Prairie dropseed				X
Prairie sandreed	X			
Prairie threawn	X			
Quackgrass		X		
Redtop		X	X	
Reed canarygrass		X	X	
Rhodes grass/ Fingergrass	X			
Ryegrass, annual or Italian			X	
Ryegrass, perennial		X	X	
Squirreltail, bottlebrush	X			
Switchgrass		X	X	
Timothy			X	
Wheatgrass, bluebunch	X	X		
Wheatgrass, crested	X	X		
Wheatgrass, intermediate	X	X		
Wheatgrass, pubescent	X	X		
Wheatgrass, Siberian	X			
Wheatgrass, slender	X	X		
Wheatgrass, streambank	X	X		
Wheatgrass, western	X	X		
Wild ryegrass, Basin	X			
Wild ryegrass, Canada		X		
Wild ryegrass, Russian	X			
Wild ryegrass, Virginia		X		

¹ Species with an X in more than one column means tolerance will vary depending on variety, use rate, and environmental conditions.

² Suppression may be expressed as reduction in number of seedheads, seedhead height suppression or foliage height reduction, however, full recovery of the grass can be expected.

WILDFLOWER ESTABLISHMENT AND MAINTENANCE

Tolerance among wildflowers to Alligare Panoramic 2SL varies considerably because there are so many different genotypes, ecotypes and varieties and susceptibilities depending on soil types and environmental conditions. Do not use Alligare Panoramic 2SL unless some stand thinning or mortality of wildflowers can be tolerated. The least amount of injury to tolerant species from a preemergence application of Alligare Panoramic 2SL will result from the low rate of 2 ounces per acre. Because the use of Alligare Panoramic 2SL applied postemergence can result in injury or death of some wildflower genotypes, use only as a last resort when the wildflower stand is threatened by weed competition. Certain spray adjuvants used with Alligare Panoramic 2SL can also increase injury and stand loss in wildflowers. Most legumes listed in the tolerance table are tolerant to Alligare Panoramic 2SL at 4 ounces per acre, however some stand thinning can occur. The specifications given in the tables below are for mixed grass/wildflower stands. Use on a monoculture stand could result in poor control and plant injury. Test a small area of the monoculture stand for injury before applying Alligare Panoramic 2SL to a larger area of a monoculture stand.

For prairiegrass/wildflower mixtures: If wildflower injury (stand thinning, height suppression, etc.) can be tolerated, apply Alligare Panoramic 2SL at the rate specified to achieve the weed control desired. Do not exceed the tolerance rate given in the table below. Preemergence applications of Alligare Panoramic 2SL can reduce or eliminate wildflower injury. To minimize injury to tolerant species, apply Alligare Panoramic 2SL at 2 to 4 ounces per acre. In low rainfall areas and areas where conditions are cool and dry, use the 2 ounce per acre rate of Alligare Panoramic 2SL. If a postemergence application of Alligare Panoramic 2SL is to be made to established prairiegrass/wildflower mixtures, use the lowest rates allowed to achieve the weed control desired (see "Weeds Controlled" section of this label). Postemergence application can result in stand thinning or death due to the great variation in seed sources, varieties, and genotypes of wildflowers. Test a small area to determine tolerance before making a full application to a large area. The rates listed below are for those species in which acceptable tolerance has been confirmed on the varieties/genotypes being treated.

Increased wildflower injury can result from an application of Alligare Panoramic 2SL in conjunction with an organophosphate insecticide.

Seedling Wildflower and Legume Tolerance to Alligare Panoramic 2SL (4 ounce per acre)¹ in Mixed Grass/Forb Stands.

Common Name	Genus Species	PRE	POST
Alfalfa	<i>Medicago sativa</i>	No	Yes
Aster, New England	<i>Aster novae angliae</i>	No	Yes
Aster, Prairie	<i>Aster tanacetifolia</i>	No	Yes
Baby Blue Eyes	<i>Nemophila menziesii</i>	No	Yes
Beggar ticks	<i>Bidens frondosa</i>	No	Yes
Bird's eyes	<i>Gila tricolor</i>	No	Yes
Bishop's Flower	<i>Anuni majus</i>	No	Yes
Blackeyed Susan	<i>Rudbeckia hirta</i>	Yes	Yes
Blanketflower	<i>Gaillardia aristata</i>	No	Yes
Bundleflower, Illinois	<i>Desmanthus illinoensis</i>	Yes	Yes
Catchfly	<i>Silene armeria</i>	No	Yes
Chicory	<i>Cichorium intybus</i>	Yes	Yes
Clover, Crimson	<i>Trifolium incarnatum</i>	Yes	Yes
Clover, White	<i>Trifolium repens</i>	No	Yes
Coneflower, Purple	<i>Echinacea purpurea</i>	Yes	Yes
Coneflower, Upright Prairie	<i>Ratibida columnifera</i>	Yes	Yes
Coreopsis, Dwarf Red Plains	<i>Coreopsis tinctoria</i> var. <i>Gay Feather</i>	Yes	Yes
Coreopsis, Lance Leaved	<i>Coreopsis lanceolata</i>	Yes	Yes
Coreopsis, Plains	<i>Coreopsis, tinctoria</i>	Yes	Yes
Cornflower	<i>Centaurea cyanus</i>	No	Yes
Cosmos, Garden	<i>Cosmos bipinnatus</i>	Yes	Yes
Cosmos, Yellow	<i>Cosmos sulphureus</i>	Yes	Yes
Daisy, Ox-eye	<i>Chrysanthemum leucanthemum</i>	Yes	Yes
Daisy, Shasta	<i>Chrysanthemum maximum</i>	Yes	Yes
Five Spot	<i>Nemophila maculata</i>	No	Yes
Flax, Blue	<i>Linum perenne</i>	No	Yes
Hat, Mexican	<i>Ratibida columnifera</i>	Yes	Yes
Indian Blanket	<i>Gaillardia pulchella</i>	No	Yes
Indigo, Blue False	<i>Baptisia australis</i>	Yes	No
Johnny Jump-ups	<i>Viola cornuta</i>	Yes	Yes
Lemon Mint	<i>Monarda citriodora</i>	No	Yes
Lespedeza, Bicolor	<i>Lespedeza spp.</i>	Yes	Yes
Lespedeza, Korean	<i>Lespedeza stipulacea</i>	No	Yes
Lespedeza, Sericea	<i>Lespedeza cuneata</i>	No	Yes
Lupine, Perennial	<i>Lupinus perennis</i>	Yes	Yes
Partridgepea	<i>Cassia fasciculata</i>	Yes	Yes
Pea, Calico	<i>Pisum viganasinensis</i>	Yes	Yes
Pea, Flat	<i>Lathyrus sylvestris</i>	Yes	Yes
Pea, Perennial	<i>Lathyrus latifolius</i>	Yes	Yes
Phlox, Drummond	<i>Phlox drummondii</i>	Yes	No
Poppy, California	<i>Eschscholtzia californica</i>	Yes	No
Poppy, Corn	<i>Papaver rhoeas</i>	Yes	Yes
Poppy, Red Corn	<i>Papaver spp.</i>	Yes	Yes
Prairieclover, Purple	<i>Dalea purpurea</i>	Yes	Yes
Prairieclover, White	<i>Dalea candidum</i>	Yes	Yes
Tick-trefoil, Showy	<i>Desmodium canadense</i>	No	Yes
Trefoil, Birdsfoot	<i>Lotus corniculatus</i>	No	Yes
Vetch, Crown	<i>Coronilla varia</i>	Yes	—
Vetch, Hairy	<i>Vicia villosa</i>	Yes	—
Yarrow, Gold	<i>Achillea filipendulina</i>	No	Yes

¹ For legumes, at least three true leaves should be present a postemergence application.

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Established Wildflower and Legume Tolerance to Alligare Panoramic 2SL (maximum rate¹, ounce per acre) in Mixed Grass/Forb Stands

Common Name	Genus Species	PRE	POST ²
Flax, Blue	<i>Linum perenne</i>	0	6
Indian Blanket	<i>Gaillardia pulchella</i>	0	6
Blanketflower	<i>Gaillardia aristata</i>	0	8
Chicory	<i>Cichorium intybus</i>	4	6
Daisy, Shasta	<i>Chrysanthemum maximum</i>	4	8
Prairieclover, Purple	<i>Dalea, purpurea</i>	4	12
Coneflower, Upright Prairie	<i>Ratibida columnifera</i>	6	6
Hat, Mexican	<i>Ratibida columnifera</i>	6	6
Poorjoe	<i>Diodia teres</i>	8	—
Lupine, Perennial ⁴	<i>Lupinus perennis</i>	8	12
Coneflower, Purple	<i>Echinacea purpurea</i>	8	8
Daisy, Ox-eye ³	<i>Chrysanthemum leucanthemum</i>	8	8
Leadplant	<i>Amorpha canescens</i>	8	8
Lespedeza, Bicolor	<i>Lespedeza</i>	8	8
Milkweed, Common	<i>Asclepias syriaca</i>	8	—
Pea, Prairie Scurf	<i>Psoralea esculenta</i>	8	8
Yarrow, Gold ³	<i>Achillea filipendulina</i>	8	8
Blackeyed Susan	<i>Rudbeckia hirta</i>	8	10
Johnny Jump-ups	<i>Viola cornuta</i>	8	12
Sweetclover	<i>Melilotus sp.</i>	12	8
Alfalfa	<i>Medicago sativa</i>	12	12
Bundleflower, Illinois	<i>Desmanthus illinoensis</i>	12	12
Lespedeza, Sericea	<i>Lespedeza cuneata</i>	12	12
Partridgepea	<i>Cassia fasciculata</i>	12	12
Sensitive vine	<i>Mimosa strigillosa</i>	12	12
Vetch, Crown	<i>Coronilla varia</i>	12	12
Violet, Wild	<i>Viola spp.</i>	12	12

¹ Height suppression or stand reduction may occur at maximum use rate. For legumes, some yellowing and stunting can occur at higher use rates.

² Make early post emergence application on the flowers to reduce injury and increase flower set.

³ Will not flower.

⁴ Most native rangeland lupines are tolerant to Alligare Panoramic 2SL at 12 ounces per acre postemergence.

Wildflower Establishment with Alligare Panoramic 2SL 4 ounce per acre + PENDULUM Herbicide 2 pounds active ingredient per acre¹

Common Name	Genus Species	PRE ²	POST ³
Blackeyed Susan	<i>Rudbeckia hirta</i>	Yes	Yes
Blanketflower	<i>Gaillardia aristata</i>	No	Yes
Bundleflower, Illinois	<i>Desmanthus illinoensis</i>	>50% thinning	Yes
Clover, Crimson	<i>Trifolium incarnatum</i>	>50% thinning	Yes
Coneflower, Clasping	<i>Dracopis amplexicaulis</i>	Yes	Yes
Coneflower, Upright Prairie	<i>Ratibida columnifera</i>	No	OK
Coneflower, Purple	<i>Echinacea purpurea</i>	Yes	Yes
Coreopsis, Dwarf Red Plains	<i>Coreopsis tinctoria</i> var. <i>Gay Feather</i>	OK stunting	OK stunting
Coreopsis, Plains	<i>Coreopsis tinctoria</i>	OK stunting	Yes
Coreopsis, Lance Leaved	<i>Coreopsis lanceolata</i>	25% thinning	Yes
Cornflower	<i>Centaurea cyanus</i>	No	OK 20% thinning
Cosmos, Garden	<i>Cosmos bipinnatus</i>	OK 10% thinning	OK stunting
Cosmos, Yellow	<i>Cosmos sulphureus</i>	Yes	Yes
Daisy, Ox-eye	<i>Chrysanthemum leucanthemum</i>	25% thinning	Yes
Daisy, Shasta	<i>Chrysanthemum maximum</i>	Marginal-OK- 20% thinning	Yes
Lupine, Perennial	<i>Lupinus perennis</i>	Yes	≤50% thinning
Partridgepea	<i>Cassia fasciculata</i>	25% thinning	Yes
Poppy, California	<i>Eschscholtzia californica</i>	Yes	25% injury, stunting, thinning
Yarrow, Gold	<i>Achillea filipendulina</i>	OK thinning	OK

¹ 2 lbs. active ingredient per acre = 2.4 quarts of Pendulum herbicide 3.3 EC or 3.3 lbs. of Pendulum herbicide WDG

² Preemergence at planting

³ Postemergence to seedlings

Yes = no injury

No = results in no wildflower germination or unacceptable injury to seedling flowers.

OK = can be used if thinning and/or stunting can be tolerated or if establishment is threatened by weed competition.

Beware that the response of wildflowers to Alligare Panoramic 2SL could vary greatly because of the many species and varieties that exist. Test small areas to determine toler-

ance and whether potential injury is acceptable before treating larger areas.

If Alligare Panoramic 2SL is to be used on a wildflower species that is not listed in the table below, test a small area with no more than 12 ounces per acre per year to determine the injury that may result. Evaluate the wildflowers 1 to 2 months later for possible injury. The user assumes all responsibility for any damage or other liability.

WILDLIFE HABITAT MANAGEMENT

Alligare Panoramic 2SL can be used to control exotic and other undesirable vegetation for purposes of wildlife habitat management and enhancement within terrestrial noncrop sites including riparian and tree areas. Applications can be made to control undesirable vegetation prior to the establishment of desirable species and to release desirable species that may be present in the soil, but suppressed by competitive vegetation. See specific sections of this label for weed control information.

SPECIAL WEED CONTROL

Always add an adjuvant to Alligare Panoramic 2SL (see "Spray Adjuvants For Postemergence Applications" section of this label). Best control of perennial weeds is achieved when Alligare Panoramic 2SL is mixed with a methylated seed oil. This is especially true when weeds have waxy leaves or with perennials and weeds under stress conditions. Use a methylated seed oil for best results against the weeds listed below because the use of a nonionic or silicone-based surfactant may result in less than acceptable control.

Johnsongrass and Itchgrass: When Johnsongrass and itchgrass have reached the whorl stage and 18 to 24 inches in height, apply Alligare Panoramic 2SL at 8 to 12 ounces per acre. If treating dense stands, or after these grasses have reached the culm elongation stage, control with Alligare Panoramic 2SL may be improved with the addition of Accord or Roundup Pro at the rate of 8 to 16 ounces per acre. Use the higher herbicide rates as grass density increases. Sometimes, control of Johnsongrass and itchgrass at stages taller than described above are possible.

Dallisgrass, Bahiagrass, Vaseygrass, Paspalum spp., Smutgrass: Make a postemergence application of Alligare Panoramic 2SL at 10 to 12 ounces per acre after grass has reached full green-up for control of dallisgrass, bahiagrass and smutgrass. Activity against dallisgrass and smutgrass can range from suppression to control depending upon the growth stage and growing conditions at the time of application. To control vaseygrass, make a postemergence application of Alligare Panoramic 2SL at the rate of 4 to 6 ounces per acre after the grass has reached 100% green-up and is from 3 to 8 inches in height. Efficacy will be improved with the addition of Accord or Roundup Pro at the rate of 12 to 16 ounces per acre. Use higher herbicide rates as weed growth and density increases. A preemergence application of Alligare Panoramic 2SL plus Pendulum herbicide will provide increased control of these grasses germinating from seed.

Leafy Spurge: Maximum control of leafy spurge can be obtained when Alligare Panoramic 2SL is applied in late summer or fall at 8 to 12 ounces per acre in combination with a methylated seed oil at two pints per acre. The timing is generally August through October, but it can vary due to geography and altitude. Yearly applications will improve the residual control of leafy spurge. In some areas, cool season grasses may be injured by applications of Alligare Panoramic 2SL at 12 ounces per acre in spring or fall, or 4 ounces applied in the fall followed by 8 ounces per acre in the spring. Nitrogen fertilizer (see "Spray Adjuvants For Postemergence Applications" section of this label) at two pints per acre can increase the control of leafy spurge, however it may also cause injury to grasses and forbs. Use of Alligare Panoramic 2SL with a nonionic or silicone-based surfactant will not provide control of leafy spurge. The target timing for fall applications of Alligare Panoramic 2SL for control of leafy spurge in North and South Dakota is late August through September. Further south in Nebraska and Iowa the target timing is mid-September through mid-October. Make this application before a killing frost when there is good soil moisture present and the leafy spurge has not lost its milky sap flow. Check for milky sap flow by breaking the leafy spurge main stem and if milky sap flows from the break then Alligare Panoramic 2SL can still be applied.

Tall Fescue Control: Apply Alligare Panoramic 2SL at 12 ounces per acre plus methylated seed oil at 2 pints per acre to control tall fescue. Control will be aided by the addition of Accord, glyphosate, or Roundup Pro and/or Nitrogen fertilizer (see "Spray Adjuvants For Postemergence Applications" section of this label). Only apply Alligare Panoramic 2SL when tall fescue is actively growing because application after tall fescue had reached summer dormancy will result in poor control.

Best control of existing tall fescue and germinating seedlings is obtained when Alligare Panoramic 2SL is applied in the fall at 8 to 12 ounces per acre plus Accord or Roundup Pro at 24 to 64 ounces per acre. To control mature fescue stands in the spring, use Alligare Panoramic 2SL at the higher end of the 6 to 12 ounces per acre rate range plus a tank-mix with Accord or Roundup Pro at 32 to 64 ounces per acre. If planting forbs, use the lower end of the 6 to 12 ounces per acre rate range of Alligare Panoramic 2SL plus a tank-mix with a glyphosate product. If Alligare Panoramic 2SL is used at 8 ounces per acre with a glyphosate product in the fall, apply only 4 ounces per acre of Alligare Panoramic 2SL in the spring at planting for annual weed and seedling fescue control. Where permitted, burning the fescue stand the following spring prior to green-up can help provide a better seedbed for planting and aid in control of seedling tall fescue. Several summer mowings of the fescue will weaken the root system and make the fescue more susceptible to herbicides in the fall. At least 10 inches of fescue re-growth is necessary following the last mowing before applying either the Alligare Panoramic 2SL or glyphosate products. Both require adequate foliage present for uptake and maximum control.

Russian Knapweed: To control Russian knapweed, make a fall application of Alligare Panoramic 2SL at 12 ounces per acre plus 1 quart per acre of methylated seed oil during Russian knapweed senescence. Reduced control will result if the application is made before the initiation of senescence. Although control improves as senescence progresses, Russian knapweed control can still be obtained with Alligare Panoramic 2SL if the application is made after full senescence.

Dalmation Toadflax: To control Dalmation Toadflax, make a fall application of Alligare Panoramic 2SL at 12 ounces per acre plus 1 quart per acre of methylated seed oil when the

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top quarter of the plant is necrotic, usually after a hard front (late October through November). Reduced control will result if the application is made before this timing. Good control can be achieved as long as some green stem and/or leaf tissue is remaining. Adding ammonium sulfate at 2 to 3 pints per acre may improve control.

Resistant Biotypes: Herbicides that have the ALS/AHAS enzyme inhibiting mode of action such as Alligare Panoramic 2SL, Oust and others may not control some weeds listed on this label if resistant biotypes are present. If ALS/AHAS resistant biotypes occur in the area to be sprayed, tank-mix Alligare Panoramic 2SL, or make sequential applications, with a registered herbicide with a different mode of action.

RESIDUAL BAREGROUND WEED CONTROL

For total vegetation control in sensitive areas and around desirable vegetation, use Alligare Panoramic 2SL at 12 ounces per acre in a tank-mix combination with labeled rates of Pendulum herbicide, Roundup Pro, Escort (or Vegetation Manager Metsulfuron Methyl DF), Karmex™, 2,4-D, diuron, Vegetation Manager Prodiamine 65 WDG (or Endurance™) or other labeled products to provide total vegetation control. Use 2 pints per acre of methylated seed oil as an adjuvant for maximum control.

To provide total weed control in bareground areas, apply Alligare Panoramic 2SL at 12 ounces per acre in a tank-mix with Vegetation Manager Imazapyr 2SL (or Arsenal herbicide), Mojave 70 EG (or Sahara DG herbicide), Bromacil 40/40 (or Krovar™), SFM 75 (or Oust), Picloram K (or Tordon), Vanquish, or other labeled products to provide total bareground weed control. Use 2 pints per acre of methylated seed oil as an adjuvant for maximum control.

Spot treatments: For weed control in bareground or total vegetation, Alligare Panoramic 2SL can be applied to small areas. In each gallon of water, mix Alligare Panoramic 2SL at 0.3 to 5.4 ounces with 0.25 to 5% v/v methylated seed oil adjuvant.

USE UNDER PAVED SURFACES

Establish the final grade to the soil and then apply Alligare Panoramic 2SL in sufficient water to obtain uniform wetting of the soil surface and shoulder area. Do not move the soil after the application. Using clean water and constant agitation, mix Alligare Panoramic 2SL at the rate of 12 ounces per acre. If the soil is not moist before application, weed control can be improved through incorporation of Alligare Panoramic 2SL. Mechanical incorporation to a depth of two inches with a rototiller or disc is one method. Use of rainfall and/or irrigation (one inch/Acre) is another good method to incorporate Alligare Panoramic 2SL. Do not allow treated soil to wash or move from the treated area.

TOLERANCE OF TREES AND BRUSH TO ALLIGARE PANORAMIC 2SL

When Alligare Panoramic 2SL is applied in and around desirable tree and brush species, follow these general instructions:

1. Alligare Panoramic 2SL may not be used on nursery, orchard, ornamental plantings, new plantings, seedling trees or fiber farms unless such use is provided in supplemental labeling from Alligare, LLC.
2. Apply Alligare Panoramic 2SL to a limited area to determine tolerance in the area.
3. Apply Alligare Panoramic 2SL at rates up to 12 ounces per acre to control weeds in roadsides, prairies, and areas used for wildlife cover, erosion control and windbreaks and in and around established trees or pasture or rangeland (see "Instructions for Rangeland Use" section of this label).
4. Severe injury or death may result if Alligare Panoramic 2SL is applied to tree and brush species that are under stress due to drought, insects or other factors that might make the plant more susceptible to injury.
5. Tip chlorosis and minor necrosis may be seen on some species.
6. Use application methods that decrease foliar contact as injury in the form of defoliation and terminal death may occur.
7. A list of tolerant tree and brush species to Alligare Panoramic 2SL when it is applied under the canopy and/or to the foliage are presented below.

If making a fall application of Alligare Panoramic 2SL, delay the application until after leaves have begun to senesce or drop to avoid potential foliar injury to tree and brush species. Fall applications can be made to conifer species as they are generally tolerant to Alligare Panoramic 2SL. Be sure to apply Alligare Panoramic 2SL in and around tree and brush species at the specified timing for the target weeds.

Brush and Tree Species Tolerant to Alligare Panoramic 2SL at 12 ounces per acre¹

Common Name	Species	Tolerance by Application Method²	
		Directed Below Foliage	To Foliage
Apple	<i>Malus sylvestris</i>	Yes	NR
Ash, Blue	<i>Fraxinus quadrangulata</i>	Yes	NR
Ash, Green	<i>Fraxinus pennsylvanica</i>	No	No
Azalea	<i>Rhododendron</i> spp.	No	No
Basswood	<i>Tilia heterophylla</i>	No	No
Boxelder	<i>Acer negundo</i>	Yes	Injury⁵
Buckeye, Ohio	<i>Aesculus glabra</i>	Yes	NR
Cedar-juniper, Western	<i>Thuja plicata</i>	Yes	Yes
Cherry, Black³	<i>Prunus serotina</i>	No	No
Cherry, Choke	<i>Prunus virginiana</i>	No	No
Cherry, Sweet⁴	<i>Prunus avium</i>	No	NR
Cottonwood	<i>Populus deltoides</i>	Yes	Injury⁵
Cottonwood, Narrow Leaf	<i>Populus</i> spp.	Yes	Injury⁵

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Common Name	Species	Tolerance by Application Method²	
		Directed Below Foliage	To Foliage
Current species	<i>Ribes</i> spp.	Injury⁵	No
Dogwood, Flowering	<i>Cornus</i> spp.	Yes	Yes
Dogwood, Grey	<i>Cornus racemosa</i>	Yes	Injury⁵
Dogwood, Red Twig	<i>Cornus</i> spp.	Yes	Yes
Douglas Fir	<i>Pseudotsuga menziesii</i>	Yes	Yes⁴
Elm, American	<i>Ulmus Americana</i>	Yes	Yes
Elm, Siberian	<i>Ulmus pumila</i>	Yes	No
Elm, Slippery	<i>Ulmus rubra</i>	Yes	Yes
Gooseberry	<i>Ribes</i> spp.	Injury⁵	Injury⁵
Hackberry	<i>Celtis occidentalis</i>	Yes	Yes
Hawthorn	<i>Crataegus</i> spp.	Yes	Injury⁵
Juniper, Chinese	<i>Juniperus chinensis</i>	Yes	Yes
Juniper, Western	<i>Juniperus osteosperma</i>	Yes	Yes
Lilac	<i>Syringa</i> spp.	No	No
Linden, American	<i>Tilia americana</i>	No	No
Locust, Black	<i>Robinia pseudoacacia</i>	Yes	Yes
Locust, Honey	<i>Gleditsia triacanthos</i>	Yes	Yes
Maple, Red	<i>Acer rubrum</i>	Yes	Yes
Maple, Sugar	<i>Acer saccharum</i>	Yes	Yes
Mulberry, Red	<i>Morus rubra</i>	Yes	NR
Mulberry, White	<i>Morus alba</i>	Yes	NR
Oak, Black	<i>Quercus velutina</i>	Yes	NR
Oak, Live	<i>Quercus virginiana</i>	Yes	Yes
Oak, Southern Red	<i>Quercus falcate</i>	Yes	NR
Oak, White	<i>Quercus alba</i>	Yes	NR
Olive, Russian	<i>Elaeagnus angustifolia</i>	Yes	No
Osage Orange	<i>Maclura pomifera</i>	Yes	NR
Peach (var. Elberta)³	<i>Prunus persica</i>	Yes	NR
Photinia, Red Tip	<i>Photinia fraseri</i>	Yes	Yes
Pine, Lodgepole	<i>Pinus Contorta</i>	Yes	Injury⁴
Pine, White⁴	<i>Pinus strobes</i>	Yes	Yes
Pittosporum, Japanese	<i>Pittosporum tobira</i>	Yes	Yes
Plum species	<i>Prunus</i> spp.	Yes	No
Poplar, Yellow (Tulip)	<i>Liriodendron tulipifera</i>	Yes	NR
Privet, Common	<i>Ligustrum vulgare</i>	Yes	Yes
Rabbitbrush species	<i>Chrysothamnus</i> spp.	Yes	Yes
Redbud	<i>Cercis canadensis</i>	Yes	Yes
Redcedar, Eastern	<i>Juniperus virginiana</i>	Yes	Yes
Rose, Multiflora	<i>Rosa multiflora</i>	Yes⁵	No
Sage, Big	<i>Artemisia tridentate</i>	Yes	Yes
Sage, Fringe	<i>Artemisia frigida</i>	Yes	Yes
Sage, Silver	<i>Artemisia cana</i>	Yes	Yes
Sagebrush, Big	<i>Artemisia tridentate</i>	Yes	Yes
Sagebrush, Fringed	<i>Artemisia frigida</i>	Yes	Yes
Saltcedar	<i>Tamarix</i> spp.	Yes	No
Serviceberry	<i>Amelanchier alnifolia</i>	Yes	NR
Snowberry, Western	<i>Symphoricarpos occidentalis</i>	Yes	Injury⁵
Spruce species	<i>Picea</i> spp.	Yes⁴	Yes⁴
Sugarberry	<i>Celtis laevigata</i>	Yes	Yes
Sycamore	<i>Plantanus occidentalis</i>	Yes	No
Tree of Heaven	<i>Ailanthus altissima</i>	Yes	Yes
Walnut, American Black	<i>Juglans nigra</i>	Yes	No
Willow	<i>Salix</i> spp.	Yes	Injury⁵

¹ Not intended for nursery, orchard, ornamental plantings, new plantings, or seedling trees.

² Yes = Tolerant

No = Not tolerant, severe injury or death

NR = Not recommended due to insufficient tolerance data

³ Not for use on ornamental or fruit bearing trees

⁴ Applications made just before or during candling may cause candle injury or death

⁵ Possible defoliation and/or death. Some species may exhibit tip chlorosis and minor necrosis. If spray contacts foliage, then defoliation and terminal death may occur. Injury can be reduced or eliminated if applied in fall after color change or leaf drop.

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WEEDS CONTROLLED (With 4 to 6 ounces per acre Alligare Panoramic 2SL)

Common Name	Species	PRE ¹	POST ²	ANNUAL/ BIENNIAL/ PERENNIAL ³
BROADLEAVES				
Bedstraw, Catchweed	<i>Galium aparine</i>	C	4	WA
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C	2	SA
Buffalobur	<i>Solanum rostratum</i>	—	C	SA
Buttercup, Bur	<i>Ranunculus testiculatus</i>	C	C	WA
Cocklebur, Common	<i>Xanthium strumarium</i>	S	6	SA
Lambsquarters, Common	<i>Chenopodium album</i>	C	2	SA
Halogeton	<i>Halogeton glomeratus</i>	C	C	SA
Morningglory, Entireleaf Ivyleaf Tall	<i>Ipomoea hederacea</i> <i>Ipomoea hederacea</i> <i>Ipomoea purpurea</i>	S S S	3 3 3	SA SA SA
Mustard, Wild	<i>Brassica kaber</i>	C	C	WA
Pigweed	<i>Amaranthus</i> spp.	C	6	SA
Queen Anne's Lace	<i>Daucus carota</i>	—	4	B
Radish, Wild	<i>Raphanus raphanistrum</i>	S	4	WA
Yellow Rocket	<i>Barbarea vulgaris</i>	C	4	WA
Sicklepod	<i>Senna obtusifolia</i>	C	4	SA
Sida, Prickly	<i>Sida spinosa</i>	C	2	SA
Smartweed, Ladysthumb Pennsylvania Swamp	<i>Polygonum persicaria</i> <i>Polygonum pensylvanicum</i> <i>Polygonum coccineum</i>	C C C	C C C	SA SA SA
Starbur, Bristly	<i>Acanthospermum hispidum</i>	C	2	SA
Velvetleaf	<i>Abutilon theophrasti</i>	C	6	SA
GRASS WEEDS				
Brome, Downy	<i>Bromus tectorum</i>	C	2	WA
Cheat	<i>Bromus secalinus</i>	C	2	WA
Crabgrass, Large (Hairy) Smooth	<i>Digitaria sanguinalis</i> <i>Digitaria ischaemum</i>	C C	4 4	SA SA
Foxtail, Giant Green Yellow	<i>Setaria faberi</i> <i>Setaria viridis</i> <i>Setaria glauca</i>	C C C	6 4 4	SA SA SA
Goatgrass, Jointed	<i>Aegilops cylindrica</i>	C	C	WA
Goosegrass	<i>Elusine indica</i>	S	2	SA
Johnsongrass (seedling)	<i>Sorghum halepense</i>	C	12	SA
Medusahead	<i>Taeniatherum caput-medusae</i>	C	2	WA
Panicum, Fall	<i>Panicum dichotomiflorum</i>	S	6	SA
Sandbur	<i>Cenchrus</i> spp.	S	C	A/P
Shattercane	<i>Sorghum bicolor</i>	C	12	SA
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>	C	C	SA
Stiltgrass, Japanese	<i>Microstegium vimineum</i>	C	4	A
Vaseygrass	<i>Paspalum urvillei</i>	—	8	P
SEDGES				
Nutsedge, Yellow Purple	<i>Cyperus esculentus</i> <i>Cyperus rotundus</i>	S S	4S 4S	P P
Sedge	<i>Juncus</i> spp.	S	4S	A/P

¹ C=control, S=suppression in northern US only

² Maximum plant height in inches at time of application

³ Growth habit: A=annual, SA=summer annual, WA=winter annual, B=biennial, P=perennial

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WEEDS CONTROLLED (With 8 to 12 ounces per acre Alligare Panoramic 2SL)

Common Name	Species	PRE ¹	POST ²	ANNUAL/ BIENNIAL/ PERENNIAL ³
BROADLEAVES				
Anoda, Spurred	<i>Anoda cristata</i>	C	6	SA
Baby's Breath ⁵	<i>Gysophila paniculata</i>	—	C	P
Bedstraw, Catchweed	<i>Galium aparine</i>	C	C	WA
Bedstraw, Marsh	<i>Galium</i> spp.	C	C	WA
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C	6	SA
Bindweed, Field	<i>Convolvulus arvensis</i>	—	C	P
Buffalobur	<i>Solanum rostratum</i>	—	C	SA
Burclover	<i>Medicago</i> spp.	—	4	SA
Chickweed, Common	<i>Stellaria media</i>	C	6	SA
Cocklebur, Common	<i>Xanthium strumarium</i>	C	6	SA
Cornsalad, Common	<i>Valerianella locusta</i>	—	C	WA
Crownbeard, Golden	<i>Verbisina encelioides</i>	C	2	SA
Dandelion	<i>Taraxacum officinale</i>	—	C	P
Dock, Curly	<i>Rumex crispus</i>	C	6	B
Fiddleneck	<i>Amsinckia</i> spp.	—	C	SA
Flax, Spurge	<i>Thymelaea passerina</i>	C	C	A
Fleabane, Annual	<i>Erigeron annuus</i>	—	C	A
Geranium, Carolina	<i>Geranium carolinianum</i>	—	C	WA/B
Geranium, Cranesbill	<i>Geranium maculatum</i>	C	C	WA/B
Ground Cherry	<i>Physalis heterophylla</i>	—	C	P
Hemlock, Poison	<i>Conium maculatum</i>	C	6	B
Henbit	<i>Lamium amplexicaule</i>	C	3	WA/B
Hoary Cress	<i>Cardaria</i> spp.	—	C	P
Houndstongue, Bristly	<i>Cynoglossum officinale</i>	C	C	B
Indigo, Hairy	<i>Indigofera hirsute</i>	C	2	P
Jimsonweed	<i>Datura stramonium</i>	C	6	SA
Knapweed, Russian ⁶	<i>Centaurea repens</i>	—	C*	P
Knotweed, Prostrate	<i>Polygonum aviculare</i>	C	C	SA
Kochia*	<i>Kochia scoparia</i>	C	3	SA
Lambsquarters, Common	<i>Chenopodium album</i>	C	3	SA
Morningglory, Cypressvine Entireleaf Ivyleaf Pitted Smallflower Tall	<i>Ipomoea quamoclit</i> <i>Ipomoea hederacea</i> <i>Ipomoea hederacea</i> <i>Ipomoea lacunose</i> <i>Jacquemontia tamnifolia</i> <i>Ipomoea purpurea</i>	C C C C C C	6 6 6 6 6 6	SA SA SA SA SA SA
Mustard, Wild	<i>Brassica kaber</i>	C	C	WA
Onion, Wild	<i>Allium canadense</i>	C	C	P
Pepperweed, Perennial	<i>Lepidium latifolium</i>	—	C	P
Pigweed ⁴	<i>Amaranthus</i> spp.	C	6	SA
Plantain, Narrowleaf	<i>Plantago lanceolata</i>	C	C	B
Poinsettia, Wild	<i>Euphorbia heterophylla</i>	C	6	SA
Puncture Vine	<i>Tribulus terrestris</i>	—	C	SA
Purslane, Common	<i>Portulaca oleracea</i>	C	4	SA
Pusley, Florida	<i>Richardia scabra</i>	C	4	SA
Queen Anne's Lace	<i>Daucus carota</i>	C	C	B
Ragweed, Common Giant Western	<i>Ambrosia artemisiifolia</i> <i>Ambrosia trifida</i> <i>Ambrosia psilostachya</i>	C S —	3 6 C	SA SA A/P
Rocket, Yellow	<i>Barbarea vulgaris</i>	C	C	WA
Senna, Coffee	<i>Cassia occidentalis</i>	C	4	SA
Sicklepod	<i>Senna obtusifolia</i>	C	6	SA
Sida, Prickly	<i>Sida spinosa</i>	C	6	SA
Smartweed, Ladysthumb Pennsylvania Swamp	<i>Polygonum persicaria</i> <i>Polygonum pensylvanicum</i> <i>Polygonum coccineum</i>	C C C	C C C	SA SA SA
Spurge, Leafy Spotted Toothed	<i>Euphorbia esula</i> <i>Euphorbia maculata</i> <i>Euphorbia dentata</i>	— C C	Fall* 4 4	P SA SA
Starbur, Bristly	<i>Acanthospermum hispidum</i>	—	6	SA
Sunflower	<i>Helianthus annuus</i>	—	18	SA
Tansymustard	<i>Descurainia pinnata</i>	C	C	WA
Teasel, Common	<i>Dipsacus fullonum</i>	—	C	B

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Common Name	Species	PRE ¹	POST ²	ANNUAL/ BIENNIAL/ PERENNIAL ³
Thistle, Bull Musk Platt Russian*	<i>Cirsium vulgare</i> <i>Carduus nutans</i> <i>Cirsium canescens</i> <i>Salsola iberica</i>	S — S C	C S C 3	WA/B B P A
Toadflax, Dalmatian	<i>Linaria dalmatica</i>	—	C*	P
Velvetleaf	<i>Abutilon theophrasti</i>	C	C	A
Vervain, Blue	<i>Verbena hastata</i>	—	S	WA
Vervain, Prostrate	<i>Verbena bracteata</i>	—	C	P
Whitetop	<i>Cardaria</i> spp.	—	C	P
Willowherb	<i>Epilobium</i> spp.	—	C	P
Woodsorrel, Yellow	<i>Oxalis stricta</i>	C	C	P
GRASS				
Bahiagrass	<i>Paspalum notatum</i>	S	C*	P
Barley, Little	<i>Hordeum pusillum</i>	C	4	WA
Barley, Squirrel Tail	<i>Hordeum jubatum</i>	—	C	P
Barnyardgrass	<i>Echinochloa crus-galli</i>	C	6	SA
Cheat	<i>Bromus secalinus</i>	C	C	WA
Crabgrass	<i>Digitaria</i> spp.	C	6	SA
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	C	C	SA
Dallisgrass	<i>Paspalum dilatatum</i>	S	C*	P
Downy Brome	<i>Bromus tectorum</i>	C	C	WA
Dropseed, Tall	<i>Sporobolus cryptandrus</i>	S	C	A/P
Fescue, Tall	<i>Festuca arundinacea</i>	C	C*	P
Foxtail, Giant Green Knotroot Purple Robust Yellow	<i>Setaria faberi</i> <i>Setaria viridis</i> <i>Setaria geniculata</i> <i>Setaria viridis</i> <i>Setaria glauca</i>	C C S S C	C C 6 S 4	SA SA SA SA SA
Garlic, Wild	<i>Allium vineale</i>	C	C	P
Goosegrass	<i>Elusine indica</i>	C	3S	SA
Itchgrass	<i>Rottboellia cochinchinensis</i>	—	C*	SA
Johnsongrass, Seedling Rhizome	<i>Sorghum halepense</i> <i>Sorghum halepense</i>	C —	C C*	SA P
Medusahead	<i>Taeniatherum caput-medusae</i>	C	C	WA
Panicum, Fall Texas	<i>Panicum dichotomiflorum</i> <i>Panicum texanum</i>	C C	C C	SA SA
Ryegrass, Annual (Italian)	<i>Lolium multiflorum</i>	C	C	WA
Ryegrass, Perennial	<i>Lolium perenne</i>	—	C	P
Sandbur	<i>Cenchrus</i> spp.	S	C	A/P
Shattercane	<i>Sorghum bicolor</i>	C	C	SA
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>	C	C	SA
Smutgrass	<i>Sporobolus indicus</i>	—	C	P
Stiltgrass, Japanese	<i>Microstegium vimineum</i>	C	C	A
Stinkgrass, Annual	<i>Eragrostis cilianensis</i>	C	2	SA
Torpedograss	<i>Panicum repens</i>	—	C	P
Vaseygrass	<i>Paspalum urvillei</i>	—	C	P
Wild Oats	<i>Avena fatua</i>	—	C	WA
SEDGES/RUSHES				
Nutsedge, Yellow Purple	<i>Cyperus esculentus</i> <i>Cyperus rotundus</i>	C C	C C	P P
Rush	<i>Juncus</i> spp.	S	4	A/P

¹ C=control, S=suppression in northern US only

² Maximum plant height in inches at time of application

³ Growth habit: A=annual, SA=summer annual, WA=winter annual, B=biennial, P=perennial

⁴ Some species are tolerant and resistant biotypes are possible

⁵ For annual control. The addition of 1-2 pints of 2,4-D will aid in burndown

⁶ For best control apply in the fall

*See "Special Weed Control" section of this label

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: KEEP FROM FREEZING. Do not store below 20°F.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

Nonrefillable Container (five gallons or less): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Container (greater than five gallons): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Refillable Container: Refillable container. Refill this container with imazapic only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. For final disposal, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following **CONDITIONS, DISCLAIMER OF WARRANTIES AND LIMITATIONS OF LIABILITY.**

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Alligare, LLC. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, Alligare, LLC makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of Alligare, LLC is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, Alligare, LLC disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

LIMITATIONS OF LIABILITY: To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at Alligare, LLC's election, the replacement of product.

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EPA 20101129

SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)



1. IDENTIFICATION

PRODUCT NAME: Alligare Panoramic 2SL

DESCRIPTION: A liquid herbicide.

EPA Reg. No.: 66222-141-81927

COMPANY IDENTIFICATION:

Alligare, LLC

12 N. 8th Street

Opelika, AL 36801

2. HAZARD IDENTIFICATION



WARNING

Harmful if inhaled

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Common Name</u>	<u>Chemical Name</u>	<u>CAS #</u>	<u>Composition</u>
Ammonium Salt of Imazapic	(±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid	104098-49-9	23.3%
Ammonia Water	Ammonium Hydroxide	1336-21-6	5.4%

4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact CHEMTREC at 1-800-424-9300 for emergency medical treatment information.

IF INHALED: Move person to fresh air and keep comfortable for breathing. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a doctor or poison control center if you feel unwell.

5. FIREFIGHTING MEASURES

Flash point: >100°C (>212°F)

Flammable Limits (LFL-UFL): N/A

Fire and Explosion Hazards: May thermally decompose in fire releasing irritating and toxic fumes.

Extinguishing Medium: Foam, CO₂, dry chemical, or water spray.

Fire Fighting Equipment: Firefighters should be equipped with self-contained positive pressure breathing apparatus and turnout gear.

Fire Fighting Instructions: Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water / firefighting water; do not allow to enter drains or waterways. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

Hazardous Decomposition Products: When thermally decomposed, may release hazardous and / or toxic fumes (carbon monoxide, carbon dioxide and nitrogen oxides).

NFPA Ratings: Health – 2 / Flammability – 1 / Reactivity - 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document. Extinguish sources of ignition nearby and downwind and ensure adequate ventilation.

Environmental Precautions: Do not discharge into soil / subsoil or into drains / surface water / groundwater.

Large Spills: Dike spillage and recover and retain as much free liquid as possible for reuse. Pick up remainder with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. After removal, thoroughly clean contaminated area with water. Collect wash water for approved disposal.

7. HANDLING AND STORAGE

Handling: Use only outdoors or in a well-ventilated area and avoid breathing spray mist. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Wear appropriate personal protective clothing and equipment (see Section 8 below). Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. As soon as possible, wash thoroughly and change into clean clothing.

Storage: Keep out of reach of children and animals. KEEP FROM FREEZING (do not store below 20°F). Protect from temperatures above 104°F. Protect containers from physical damage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

Pesticide Applicators and Workers: Refer to the product label attached to the product.

Engineering Controls: Workplace should be equipped with a shower and eye-wash station.

Respiratory Protection: If ventilation is inadequate, wear a NIOS-certified (or equivalent) TC23C chemical / mechanical type filter system to remove a combination of particles, gas and vapors.

Personal Protective Equipment (PPE):

Applicators and other handlers must wear –

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Yellow-Green Liquid

Odor: Faint Odor

pH: 6.65

Density: 1.101 g/ml

Viscosity: 3.751 @ 20°C; 2.130 @ 40°C

Solubility: Fully soluble

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal use and storage conditions. May decompose if heated.

CONDITIONS TO AVOID: All sources of open flame, heat and spark. Extreme temperatures. Prolonged storage.

SUBSTANCES TO AVOID: Oxidizing materials.

HAZARDOUS REACTIONS: This product is chemically stable and no hazardous reactions should occur if stored and handled as prescribed / indicated.

HAZARDOUS DECOMPOSITION PRODUCTS: When thermally decomposed, may release hazardous and / or toxic fumes (carbon monoxide, carbon dioxide and nitrogen oxides).

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ORAL TOXICITY (rat LD₅₀): > 5,000 mg/kg

DERMAL TOXICITY (rabbit LD₅₀): > 5,000 mg/kg

INHALATION TOXICITY (rat LC₅₀): > 2.38 mg/L

EYE IRRITATION: Non-irritating

SKIN IRRITATION: Non-irritating

SKIN SENSITIZATION: Not a sensitizer

CARCINOGENICITY:

EPA: Not listed.

ACGIH: Not Listed

NTP: Not Listed

IARC: Not Listed

OSHA: Not Listed

MUTAGENIC TOXICITY: Little evidence of mutagenic effects during *in vivo* and *in vitro* assays.

REPRODUCTIVE TOXICITY: No evidence in animal studies.

12. ECOLOGICAL INFORMATION

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

The following ecotoxicological information is for the active ingredient imazapic:

Mallard and Bobwhite Quail (LD₅₀): > 2,150 mg/kg

Rainbow Trout and Bluegill (LC₅₀): > 100 mg/l

Daphnia (LC₅₀): > 100 mg/l

Bees (LD₅₀): > 100 µg/bee

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product (that cannot be used according to label instructions) must be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Refer to the product label for specific container handling instructions.

14. TRANSPORT INFORMATION

US DOT (Shipped by Ground):

Not regulated by DOT.

15. REGULATORY INFORMATION

FIFRA –

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label:

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

See inside label booklet for additional Precautionary Statements and Directions for Use including Storage and Disposal instructions.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.

Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPA/TSCA.

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate

SARA Title III – Section 312 Threshold Planning Quantity

The threshold planning quantity (TPQ) for this product treated as a mixture is 10,000 lbs. This product contains no ingredients with a TPQ of less than 10,000 lbs.

SARA Title III – Section 313 Reportable Ingredients

Ammonium Hydroxide (CAS No. 1136-21-6): 5.4%

CERCLA –

N/A

CALIFORNIA PROP 65 STATUS –

This product does not contain any chemicals known to the state of California to cause cancer or reproductive harm.

CANADA –

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

16. OTHER INFORMATION

THIS INFORMATION IN THIS SDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGARE, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGARE, LLC EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

SDS Version: 2.0 (Converted from MSDS format)

Effective Date: 03/06/2015



Roundup QuikPRO[®]

SC TOTAL Herbicide

RESIDUAL NON-SELECTIVE HERBICIDE

Non-selective control of emerged and pre-emerged grasses and broadleaf weeds in Non-Crop Areas including, Paths, Parking Lots, Curbs, Sidewalks, Driveways, Around Buildings, Gravel Areas, Loading Ramps, Educational Facilities, Storage Yards, Vacant Lots, Fence Rows, Parks, Hardscapes (including crack and crevice), Municipal, Mulched Areas, Landscape Ornamental Beds, and Government Sites.

- Dual Action FORMULA Kills EXISTING WEEDS & GRASSES PLUS Prevents New Weeds & GRASSES for up to 6 Months
- Rainproof in 30 minutes
- Visible Results in Hours
- Simple, Convenient, Easy to use
- An easier way to manage large areas of unwanted weeds & grasses

ACTIVE INGREDIENTS:

Indaziflam	0.089%
Diquat dibromide	0.890%
Glyphosate isopropylamine salt	20.460%
OTHER INGREDIENTS:	78.561%
TOTAL:	100.00%

Contains 1.87 lbs Glyphosate isopropylamine salt, 0.08 lbs Diquat dibormide and 0.008 lbs Indaziflam per gal

EPA Reg. No. 432-1532

**KEEP OUT OF REACH
OF CHILDREN
CAUTION**

See Back Panel for First Aid Instructions and Booklet for Complete Precautionary Statements and Directions for Use.

**Contains
1.125 Gal. (144 Fl. Oz.)**

XXXXXXXXX

USXXXXXXXXA 160930Av2 04/22

Broadleaf Weeds • Grass Weeds



For **MEDICAL** and **TRANSPORTATION** Emergencies **ONLY** Call 24 Hours A Day 1-800-334-7577
For **PRODUCT USE** Information Call 1-800-331-2867

FIRST AID

If swallowed:	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious person.
If on skin:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15 – 20 minutes.• Call a poison control center or doctor for further treatment advice.
If in eyes:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for further treatment advice.

NOTE: Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may call toll-free 1-877-229-3763 for medical emergency information.

Active Ingredients: 20.460% glyphosate isopropylamine salt (CAS No. 38641-94-0), 0.890% diquat dibromide (CAS No. 85-00-7), and 0.089% indaziflam (CAS No. 950782-86-2).

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS

This product is toxic to fish, aquatic invertebrates, and plants. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters, or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow. This pesticide may impact water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read entire label before using this product.

PRODUCT INFORMATION

ROUNDUP QUIKPRO® SC TOTAL HERBICIDE is a non-selective, residual herbicide that offers broad-spectrum control of many annual weeds, perennial weeds, shrubs, and trees. ROUNDUP QUIKPRO SC TOTAL HERBICIDE is a highly active herbicide that provides effective weed control when applied to the soil. ROUNDUP QUIKPRO SC TOTAL HERBICIDE may damage sensitive plants, if the product is allowed to contact foliage. Carefully apply ROUNDUP QUIKPRO SC TOTAL HERBICIDE in strict accordance to the label. Be sure to follow all label restrictions.

PRODUCT RESTRICTIONS

- Do not use this product in or around vegetable gardens or in landscaped areas where young plants including ornamental bedding plants (annuals and/or perennials), trees, shrubs, and sod will soon be planted within 6 months after treatment.
- Do not allow people or pets to enter the treated area until sprays have dried.
- Seed may be planted 12 months after application.
- Do not use on desirable turfgrass.
- Do not use over-the-top of ornamentals.
- Do not apply around the root zone of herbaceous plants.
- Do not allow spray to contact desirable foliage, stems, green bark, or bare roots of turfgrasses, trees, shrubs, or other listed desirable vegetation, since severe damage may result. Apply when the air is calm to avoid spray drift onto desirable plants.
- Avoid tracking product onto desirable vegetation - do not walk on treated area until the spray has dried.
- If spraying near the base of established plants (plants that have been in the ground at the same location for one or more years), shield them from spray drift using cardboard, plastic, or other materials. If the spray accidentally contacts a desirable plant, rinse it off immediately with water.
- Do not apply using a steel sprayer, except stainless steel.
- Do not apply where heavy rainfall or irrigation can runoff into cool season lawns (e.g. Tall Fescue, Kentucky Bluegrass, Fine Fescue and Ryegrass).

USE AROUND ORNAMENTALS IN COARSE AND SANDY SOILS

Soil conditions can affect the tolerance of ornamentals to ROUNDUP QUIKPRO SC TOTAL HERBICIDE. Excessively coarse or sandy soils may allow for downward movement of ROUNDUP QUIKPRO SC TOTAL HERBICIDE into the root zone and cause significant root damage and phytotoxicity. Coarse soils, for example, may include significant quantities of sand, gravel, decomposed granite, and ground cinders.

USE DIRECTIONS

- Apply to small and actively growing weeds. Best results will be achieved when temperatures are above 60 ° F.
- Thoroughly spray existing weeds and the entire area that you want protected.
- A subsequent application of ROUNDUP QUIKPRO SC TOTAL HERBICIDE can be made 4 months after the initial application to extend weed control. Certain hard-to-control weeds can be re-sprayed 1 month after initial treatment only using spot treatment. The maximum applied rate must not exceed 32 fl oz of product/1000 sq ft. in a 12 month period.
- Add 16 oz of product per 1 gallon of water.
- Shake bottle well before use. Add appropriate amounts of water & product to spray tank.

Rate	Add To	Covers
16 fl oz Product	1 gal of water	1000 sq ft

Note: Do Not Apply more than a maximum of 32 fl oz/ 1000 sq ft per year. .

FOR BEST RESULTS

WHEN TO APPLY

- Disturbing the soil after application may reduce the effectiveness of this product by disturbing the weed preventative barrier.
- Rain or watering 30 minutes after application will not wash away effectiveness.
- Under drought conditions, it may be necessary to lightly water the product in. Irrigate to move the residual herbicide into the soil, but not to the point of visible runoff.

CLEAN UP

- Triple rinse the spray tank and flush all sprayer components with water to remove residual product. Empty the rinse water onto bare soil or gravel.

WEEDS CONTROLLED

Broadleaf Weeds	Scientific Name	Broadleaf Weeds	Scientific Name
Chickweed, Common	<i>Stellaria media</i>	Lambsquarters, common	<i>Chenopodium album</i>
Chickweed, Mouse-ear	<i>Cerastium vulgatum</i>	Lespedeza, Seresia	<i>Lespedeza cuneata</i>
Clover, White	<i>Trifolium repens</i>	London rocket	<i>Sisymbrium irio</i>
Corn speedwell	<i>Veronica arvensis</i>	Mustard, Wild	<i>Sinapis arvensis</i>
Curly dock	<i>Rumex crispus</i>	Spotted spurge	<i>Euphorbia maculata</i>
Evening primrose, Cutleaf	<i>Oenothera laciniata</i>	Prostrate spurge	<i>Euphorbia humifusa</i>
Dandelion, Common	<i>Taraxacum officinale</i>	Ragweed, Common	<i>Ambrosia artemisiifolia</i>
Filaree, redstem	<i>Erodium cicutarium</i>	Redroot pigweed	<i>Amaranthus retroflexus</i>
Fleabane, blackleaved	<i>Conyza bonariensis</i>	Shepherd's-purse	<i>Capsella bursa-pastoris</i>
Florida pusley	<i>Richardia scabra</i>	Sida, Prickly / Teaweed	<i>Sida spinosa</i>
Gromwell, Yellow	<i>Amsinckia calycina</i>	Sowthistle, Annual	<i>Sonchus olerachus</i>
Groundsel, common	<i>Senecio vulgaris</i>	Sunflower, Common	<i>Helianthus spp.</i>
Hairy fleabane	<i>Erigeron bonariensis</i>	Velvetleaf	<i>Albutilon theophrasti</i>
Henbit	<i>Lamium amplexicaule</i>	Vetch, Common	<i>Vicia sativa</i>
Horseweed/Marestail	<i>Erigeron canadensis</i>	Wild mustard	<i>Sinapis arvensis</i>
Kochia	<i>Kochia scoparia</i>		

Grass Weeds	Scientific Name	Grass Weeds	Scientific Name
Annual bluegrass/ 'Poa'	<i>Poa annua</i>	Foxtail brome	<i>Bromus rubens</i>
Barnyardgrass, common	<i>Echinochloa crus-galli</i>	Foxtail, Giant	<i>Setaria faberi</i>
Cheatgrass	<i>Bromus secalinus</i>	Foxtail, Green	<i>Setaria viridis</i>
Crabgrass	<i>Digitaria sp</i>	Foxtail, Yellow	<i>Setaria glauca</i>
Crabgrass, Henry	<i>Digitaria adscendens</i>	Goosegrass	<i>Eleusine indica</i>
Crabgrass, Large/Hairy	<i>Digitaria sanguinalis</i>	Ryegrass, Italian	<i>Lolium multiflorum</i>
Crabgrass, Smooth	<i>Digitaria ischaemum</i>	Ryegrass, Perennial	<i>Lolium perenne</i>

LANDSCAPE ORNAMENTAL USES

Use ROUNDUP QUIKPRO SC TOTAL HERBICIDE in residential, commercial, as well as federal, state and local plantings of ornamentals for non-selective weed control. Apply ROUNDUP QUIKPRO SC TOTAL HERBICIDE as a directed spray only to established (rooted) plants (plants that have been in the ground at the same location for one or more years) and not to newly rooted cuttings or seedlings. For best weed control, make applications prior to mulching. Plant damage will occur if ROUNDUP QUIKPRO SC TOTAL HERBICIDE contacts foliage.

Apply ROUNDUP QUIKPRO SC TOTAL HERBICIDE as a directed spray at 16 fl oz of product / 1000 sq ft around ornamentals. When applying ROUNDUP QUIKPRO SC TOTAL HERBICIDE with a backpack sprayer, follow all above restrictions.

When tank mixing with other products, it is the responsibility of the end-user/applicator to ensure that the tank-mix partner is registered in the state where the application is being made.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE STORAGE: Store in original container and keep tightly closed. Store in a cool dry place and protect ROUNDUP QUIKPRO SC TOTAL HERBICIDE, from freezing temperatures.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING:

Rigid Non-Refillable containers with capacities smaller or equal to 5 gallons

Non refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties, and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties, and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer CropScience LP. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

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Produced for

Bayer Environmental Science

A Division of Bayer CropScience LP

5000 CentreGreen Way, Suite 400

Cary, NC 27513



Roundup QuikPRO®

SC TOTAL Herbicide

RESIDUAL NON-SELECTIVE HERBICIDE

ACTIVE INGREDIENTS:

Indaziflam	0.089%
Diquat dibromide	0.890%
Glyphosate isopropylamine salt	20.460%
OTHER INGREDIENTS:	78.561%
TOTAL:	100.00%

Contains 1.87 lbs Glyphosate isopropylamine salt, 0.08 lbs Diquat dibromide and 0.008 lbs Indaziflam per gal

EPA Reg. No. 432-1532

FIRST AID

If swallowed:	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious person.
If on skin:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15 – 20 minutes.• Call a poison control center or doctor for further treatment advice.
If in eyes:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for further treatment advice.

NOTE: Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may call toll-free 1-877-229-3763 for medical emergency information.

Active Ingredients: 20.460% glyphosate isopropylamine salt (CAS No. 38641-94-0), 0.890% diquat dibromide (CAS No. 85-00-7), and 0.089% indaziflam (CAS No. 950782-86-2).

Produced for

Bayer Environmental Science
A Division of Bayer CropScience LP
5000 CentreGreen Way, Suite 400
Cary, NC 27513

Bayer

Contains

1.125 Gal. (144 Fl. Oz.)

XXXXXXXXXX USXXXXXXXXXA 160930Av2 04/22

KEEP OUT OF REACH OF CHILDREN CAUTION

See Back Panel for First Aid Instructions and Booklet for Complete
Precautionary Statements and Directions for Use.

For **MEDICAL** and **TRANSPORTATION** Emergencies **ONLY**

Call 24 Hours A Day 1-800-334-7577

For **PRODUCT USE** Information Call 1-800-331-2867

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS

This product is toxic to fish, aquatic invertebrates, and plants. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters, or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow. This pesticide may impact water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. **PESTICIDE STORAGE:** Store in original container and keep tightly closed. Store in a cool dry place and protect ROUNDUP QUIKPRO SC TOTAL HERBICIDE from freezing temperatures. **PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility. **CONTAINER HANDLING:** Rigid Non-Refillable containers with capacities smaller or equal to 5 gallons: Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

SAFETY DATA SHEET



ROUNDUP QUIKPRO® SC TOTAL HERBICIDE

Version 4.0 / USA
102000025082

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Print Date: 05/12/2022

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name	ROUNDUP QUIKPRO® SC TOTAL HERBICIDE
Product code (UVP)	80197926
SDS Number	102000025082
EPA Registration No.	432-1532

Relevant identified uses of the substance or mixture and uses advised against

Use	Herbicide
Restrictions on use	See product label for restrictions.
Information on supplier	
Supplier	Bayer Environmental Science A division of Bayer CropScience LP 5000 Centregreen Way, Suite 400 Cary, NC 27513 USA
Responsible Department	Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days)	1-800-334-7577
Product Information Telephone Number	1-800-331-2867

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity(Inhalation): Category 4
Skin irritation: Category 2

Labelling in accordance with regulation HCS 29CFR §1910.1200



Signal word: Warning

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Hazard statements

Harmful if inhaled.
Causes skin irritation.

Precautionary statements

Avoid breathing mist/ spray.
Use only outdoors or in a well-ventilated area.
Wear protective gloves.
Wash thoroughly after handling.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF ON SKIN: Wash with plenty of water/ soap.
Specific treatment (see supplemental first aid instructions on this label).
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.

Hazards Not Otherwise Classified (HNOC)

No health hazards not otherwise classified.
No physical hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Indaziflam	950782-86-2	0.089
Diquat dibromide	85-00-7	0.89
Isopropylamine salt of glyphosate	38641-94-0	20.46
Poly(oxy-1,2-ethanediyl), alpha.-phosphono-.omega.-butoxy, isopropylamine salt	431040-31-2	1.5

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center immediately.
Eye contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

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Ingestion Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms To date no symptoms are known.

Indication of any immediate medical attention and special treatment needed

Treatment Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Water spray, Foam, Carbon dioxide (CO₂), Dry chemical

Unsuitable High volume water jet

Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for firefighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Whenever possible, contain fire-fighting water by diking area with sand or earth.

Specific hazards from the substance or mixture which can increase the fire

Flash point >93.3 °C / 199.94 °F

Auto-ignition temperature No data available

Lower explosion limit No data available

Upper explosion limit No data available

Explosivity No data available

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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Protect from freezing. Keep away from direct sunlight.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
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Indaziflam	950782-86-2	0.56 mg/m ³ (TWA)		OES BCS*
Diquat dibromide (Total dust.)	85-00-7	0.5 mg/m ³ (TWA PEL)	09 2006	US CA OEL
Diquat dibromide	85-00-7	0.5 mg/m ³ (TWA)	06 2008	TN OEL
Diquat dibromide	85-00-7	0.5 mg/m ³ (REL)	2005	NIOSH
Diquat dibromide (Respirable fraction.)	85-00-7	0.1 mg/m ³ (TWA)	03 2014	ACGIH
Diquat dibromide (Inhalable fraction.)	85-00-7	0.5 mg/m ³ (TWA)	03 2014	ACGIH

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection

Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)

Eye protection

Safety glasses with side-shields

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form	Liquid
Colour	white to pink
Odour	slight, fruity
Odour Threshold	No data available
pH	4.0 - 6.0 (100 %) (23 °C)

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Melting point/range	No data available
Boiling Point	No data available
Flash point	> 93.3 °C / 199.94 °F
Flammability	No data available
Auto-ignition temperature	No data available
Minimum ignition energy	No data available
Self-accelarating decomposition temperature (SADT)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	1.10 g/cm ³ (20 °C)
Water solubility	soluble
Partition coefficient: n-octanol/water	Indaziflam: log Pow: 3.7 (20 °C) (pH 7) Diquat dibromide: log Pow: -4.6 Glyphosate: log Pow: -3.2
Viscosity, dynamic	300 - 800 cps (25 °C)
Viscosity, kinematic	No data available
Oxidizing properties	No data available
Explosivity	No data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.

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Conditions to avoid	Extremes of temperature and direct sunlight. freezing
Incompatible materials	No incompatible materials known.
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Ingestion, Skin Absorption, Eye contact
Immediate Effects	
Eye	May cause temporary eye irritation.
Skin	Causes skin irritation. May be harmful in contact with skin.
Ingestion	May be harmful if swallowed.
Inhalation	May be harmful if inhaled.
Information on toxicological effects	
Acute oral toxicity	LD50 (Rat) > 5,000 mg/kg
Acute inhalation toxicity	LC50 (Rat) > 2.04 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. highest concentration tested
Acute dermal toxicity	LD50 (Rat) > 2,000 mg/kg
Skin corrosion/irritation	Moderate skin irritation. (Rabbit)
Serious eye damage/eye irritation	Mild eye irritation. (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test

Assessment STOT Specific target organ toxicity – single exposure

Indaziflam: May cause damage to organs in nervous system following oral route.
Diquat dibromide: May cause respiratory irritation.
Glyphosate: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Indaziflam caused neurobehavioral effects and/or neuropathological changes in subchronic studies in rats and dogs. Indaziflam: May cause damage to organs (Nervous system) through prolonged or repeated exposure.
Diquat dibromide caused specific target organ toxicity in experimental animal studies in the following organ(s): Eyes, Kidney. Diquat dibromide caused Cataract in animal studies.
Glyphosate did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

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Indaziflam was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Diquat dibromide was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Glyphosate was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Indaziflam was not carcinogenic in lifetime feeding studies in rats and mice.
Diquat dibromide was not carcinogenic in lifetime feeding studies in rats and mice.
Glyphosate was not carcinogenic in lifetime feeding studies in rats and mice.
Important comment to IARC Listing: Our expert opinion is that classification as a carcinogen is not warranted.

ACGIH

Diquat dibromide	85-00-7	Group A4
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NTP

None.

IARC

Isopropylamine salt of glyphosate	38641-94-0	Overall evaluation: 2A
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Assessment toxicity to reproduction

Indaziflam was not a primary reproductive toxicant in a two-generation study in rats.
Diquat dibromide did not cause reproductive toxicity in a two-generation study in rats.
Glyphosate did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Indaziflam did not cause developmental toxicity in rats and rabbits.
Diquat dibromide caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Diquat dibromide are related to maternal toxicity.
Glyphosate did not cause developmental toxicity in rats and rabbits.

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) 0.572 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient indaziflam.

LC50 (Lepomis macrochirus (Bluegill sunfish)) 13.9 ppm
The value mentioned relates to the active ingredient diquat dibromide.

LC50 (Oncorhynchus mykiss (rainbow trout)) 14.8 ppm
The value mentioned relates to the active ingredient diquat dibromide.

Toxicity to aquatic

EC50 (Daphnia magna (Water flea)) > 9.88 mg/l

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invertebrates	Exposure time: 48 h The value mentioned relates to the active ingredient indaziflam. EC50 (Daphnia (water flea)) 0.77 - 1.19 ppmThe value mentioned relates to the active ingredient diquat dibromide.
Toxicity to aquatic plants	IC50 (Raphidocelis subcapitata (freshwater green alga)) 0.134 mg/l Growth rate; Exposure time: 96 h The value mentioned relates to the active ingredient indaziflam.
Biodegradability	Indaziflam: Not rapidly biodegradable Diquat dibromide: Not rapidly biodegradable Glyphosate: Not rapidly biodegradable
Koc	Indaziflam: Koc: 496 Diquat dibromide: Koc: 2184750 Glyphosate: Koc: 6920
Bioaccumulation	Indaziflam: Bioconcentration factor (BCF) 66 Does not bioaccumulate. Diquat dibromide: Bioconcentration factor (BCF) 1 Does not bioaccumulate. Glyphosate: Does not bioaccumulate.
Mobility in soil	Indaziflam: Moderately mobile in soils Diquat dibromide: Immobile in soil Glyphosate: Immobile in soil
Results of PBT and vPvB assessment	
PBT and vPvB assessment	Indaziflam: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Diquat dibromide: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Glyphosate: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Environmental precautions	Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Drift or runoff from treated areas may adversely affect non-target plants. Do not apply when weather conditions favor runoff or drift. Apply this product as specified on the label.

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SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Dispose in accordance with all local, state/provincial and federal regulations. Never place unused product down any indoor or outdoor drain.
Contaminated packaging	Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR	Not dangerous goods / not hazardous material
IMDG	
UN number	3082
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (INDAZIFLAM, DIQUAT DIBROMIDE SOLUTION)
IATA	
UN number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (INDAZIFLAM, DIQUAT DIBROMIDE SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification:	COMPOUNDS, TREE OR WEED KILLING, N.O.I. other than poison, HAVING A DENSITY OF 20 LBS OR GREATER PER CUBIC FOOT
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SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-1532

US Federal Regulations

TSCA list

Water	7732-18-5
Poly(oxy-1,2-ethanediyl),.alpha.- phosphono-.omega.-butoxy, isopropylamine salt	431040-31-2

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No export notification needs to be made.

SARA Title III - Section 302 - Notification and Information

Not applicable.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

None.

Environmental

CERCLA

None.

Clean Water Section 307(a)(1)

None.

Safe Drinking Water Act Maximum Contaminant Levels

Yes

Diquat dibromide	85-00-7
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EPA/FIFRA Information:

This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word:	Caution!
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Hazard statements:	Harmful if swallowed or absorbed through skin. Causes moderate eye irritation.
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SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 2 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: The following sections have been revised: Section 2: Hazards Identification. Section 3: Composition / Information on Ingredients. Section 11: Toxicological Information. Section 15: Regulatory information. Reviewed and updated for general editorial purposes.

Revision Date: 05/11/2022

Changes since the last version are highlighted in the margin. This version replaces all previous versions.
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This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

SUMTER™ S

Contains fosamine, the active ingredient used in Krenite® S.

Brush Control Agent

Water-Soluble Liquid

ACTIVE INGREDIENT:	(% by weight)
Ammonium salt of fosamine [ethyl hydrogen (aminocarbonyl) phosphonate]	41.5%
OTHER INGREDIENTS:	58.5%
TOTAL	100.0%

Contains 4 Lbs. of Active Ingredient per Gallon.

EPA Reg. No.: 91234-209

KEEP OUT OF REACH OF CHILDREN CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you DO NOT understand the label, find someone to explain it to you in detail.)

See inside label booklet for First Aid, Precautionary Statements and Directions for Use.

FIRST AID

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15 - 20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact SafetyCall at 1-844-685-9173 for emergency medical treatment information.

For Chemical Emergency: Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 or +1 703-527-3887 (collect calls accepted)

Sumter™ S is not manufactured, or distributed by Albaugh, Inc., seller of Krenite® S.



PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

1. Long-sleeved shirt and long pants
2. Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high-water mark. **DO NOT** contaminate water by cleaning of equipment or disposal of equipment washwaters.

POLLINATOR ADVISORY STATEMENT: This product may adversely impact the forage and habitat of local pollinators, including the monarch butterfly (and its larvae), birds, or bats if it reaches non-target areas. Protect pollinators by following label directions to minimize spray drift.

PRODUCT INFORMATION

Sumter S brush control agent is a water-soluble liquid to be diluted with water and applied as a foliar spray for control and/or suppression of many woody species.

Sumter S may be applied for use in pine plantations and non-crop sites, including highway rights-of-way, industrial sites, railroad rights-of-way, storage areas, utility and pipeline rights-of-way.

This product may be applied in pine plantations and non-crop sites that contain areas of temporary surface water caused by collection of water between planting beds, in equipment ruts, or in other depressions created by management activities. It is permissible to treat intermittent drainage, intermittently flooded low-lying sites, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present. It is also permissible to treat marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas. **DO NOT** make applications to natural or man-made bodies of water, including lakes, reservoirs, ponds, streams and canals.

Sumter S is non-flammable and nonvolatile.

ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

A **Sumter S** spray directed to only part of susceptible brush species will provide control of the portion sprayed, resulting in a trimming effect. Treatment with **Sumter S** generally does not immediately affect deciduous woody plants; they retain normal foliage for the remainder of the growing season. Treated susceptible plants **DO NOT** produce foliage or grow the following spring. Coniferous species treated with **Sumter S** generally displays visible symptoms following application.

Effectiveness may be reduced if, following treatment, rainfall occurs on the same day.

RESISTANCE MANAGEMENT

For resistance management, **Sumter S** is a Group 27 herbicide. Any weed population may contain or develop plants naturally resistant to **Sumter S** and other Group 27 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of **Sumter S** or other Group 27 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Scout before and after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Atticus, LLC at (984) 465-4754 or at www.atticusllc.com.

INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.



▫ Mandatory Spray Drift

Aerial Applications

- **DO NOT** release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For all applications, applicators are required to use a medium or coarser spray droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Ground Applications

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy.
- For all applications, applicators are required to use a medium or coarser spray droplet size (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Boom-less Ground Applications:

- Applicators are required to use a medium or coarser droplet size (ASABE S572.1) for all applications.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

▫ Spray Drift Advisories

- THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
- BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.
- IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size - Ground Boom

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size - Aircraft

- Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

▪ BOOM HEIGHT - Ground Boom

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

▪ RELEASE HEIGHT - Aircraft

Higher release heights increase the potential for spray drift. When applying aerially to crops, **DO NOT** release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

▪ SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

▪ TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

▪ TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

▪ WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

▪ Boom-less Ground Applications:

Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

▪ Handheld Technology Applications:

Take precautions to minimize spray drift.

IMPORTANT PRECAUTIONS – PINE PLANTATIONS AND NON-CROP SITES

- Cutting of treated stems of brush before they are completely dead may result in sprouting.
- Drift or spray mist contact with desirable trees, shrubs, or other plants may result in injury.
- Not registered for sale or use in California or Arizona.

TANK MIXES

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Sumter S herbicide may be tank mixed with other herbicides and/or adjuvant registered for use in pine plantations and non-crop sites. Follow all use directions, precautions, and restrictions on labels of tank-mixed products.

SPRAY EQUIPMENT

Sumter S may be applied using high volume or low volume ground sprayers as well as aircraft (helicopter only). Application equipment must be calibrated before making applications of **Sumter S**.



SPRAY ADJUVANTS

A penetrating type oil-based adjuvant (surfactant or crop oil concentrate) may be used with **Sumter S**. The adjuvant must be mixed in the spray solution at a minimum concentration of 1/4% by volume (1 quart per 100 gallons of spray solution) or at the manufacturer's specified dosage.

If foaming is a problem during mixing, an anti-foam agent may be added.

MIXING INSTRUCTIONS

1. Fill spray tank ½ full of water.
2. With the agitator running, add the desired amount of **Sumter S**.
3. If using a tank mix partner, add the specified amount. Follow the use precautions and directions on the tank mix partner label.
4. Add spray adjuvant as last ingredient prior to filling the spray tank with water.
5. Agitate the spray solution thoroughly.

After **Sumter S** has been thoroughly mixed in the spray tank, agitation of the spray solution is not required.

SPRAY CLEAN-UP

Thoroughly clean all mixing and spray equipment immediately following applications of **Sumter S**. Flush tank, pump, hoses and boom with several changes of water after removing the nozzle tips and screens (clean these parts separately). Dispose of the rinsate on a labeled site or at an approved waste disposal facility.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

DO NOT apply this product through any type of irrigation system. **DO NOT** use on food or feed crops.

Sumter S must be used only in accordance with the labeling, or in supplemental Atticus, LLC labeling.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, including plants, soil, or water, is:

- Coveralls
- Shoes plus socks

PINE PLANTATIONS PREPARATION SITE

Sumter S may be applied for the post-harvest (pre-plant) control of undesirable pine and hardwood seedlings and saplings and suppression of brush and vines to aid site planting preparation for southern pines and/or genetically improved pines.

APPLICATION INFORMATION

Apply as a foliar spray from mid-summer to when the target tree pests begin defoliation in late summer or fall. Applications of **Sumter S** may be made by ground or air (helicopter only) equipment. Use sufficient water to ensure complete coverage of the vegetation, 20 to 50 gallons per acre by ground and 10 to 15 gallons per acre by air.

USE RATES AND PLANTS CONTROLLED

Pine Seedlings and Saplings

Apply 2 to 4 quarts (2 - 4 lbs ai/A) of **Sumter S** per acre for the control of seedling and sapling pines when burning is allowed on the site. Apply 4 to 6 quarts (4 - 6 lbs ai/A) of **Sumter S** per acre to control seedling and sapling pines when burning is not allowed on the site.

Use the higher rate when either pine saplings predominate or when high infestations of seedling pines are in the area to be sprayed.

RESTRICTIONS

- **DO NOT** apply more than 6 quarts (6 lbs ai/A) of **Sumter S** per single application when burning is not allowed on the site.
- **DO NOT** apply more than 4 quarts (4 lbs ai/A) of **Sumter S** per single application when burning is allowed on the site.
- **DO NOT** apply more than 6 quarts (6 lbs ai/A) of **Sumter S** per acre per year.
- **DO NOT** make more than 2 applications per year when burning is allowed on the site.
- **DO NOT** make more than 1 application per year when burning is not allowed on the site.
- **DO NOT** make second application within 30 days of first application.

Combinations of Pine and Hardwood Seedlings and Saplings

To control a combination of pine and hardwood seedlings and saplings, apply a tank mixture of **Sumter S** at use rates indicated for spraying pine seedlings and saplings plus Imazapyr (4 pound active per gallon) at 8 to 20 ounces per acre (0.25 - 0.625 lbs ai/A). This tank mix may be applied for the control of Ash, Blackberry, Black gum, Black locust, Box elder, Cherry, Dogwood, Elms (winged, slippery), Oaks (red, white), Red maple, Sassafras, and Sourwood.

Follow all use directions, precautions and restrictions on Imazapyr product labels.

RESTRICTIONS

- **DO NOT** apply more than 6 quarts (6 lbs ai/A) of **Sumter S** per single application when burning is not allowed on the site.
- **DO NOT** apply more than 4 quarts (4 lbs ai/A) of **Sumter S** per single application when burning is allowed on the site.
- **DO NOT** apply more than 6 quarts (6 lbs ai/A) of **Sumter S** per acre per year.
- **DO NOT** make more than 2 applications per year when burning is allowed on the site.
- **DO NOT** make more than 1 application per year when burning is not allowed on the site.
- **DO NOT** make second application within 30 days of first application.

Brush and Vine Suppression

The application of **Sumter S** plus Imazapyr will also provide suppression of brush and vines, including, American beautyberry (French mulberry), Baccharis (groundsel tree), Vaccinium (blueberry) species, Wax myrtle (bayberry) and Wild grape.

*Suppression - a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.



PRECAUTIONS

- Cutting of treated stems of brush before they are completely dead may result in sprouting.
- Drift or spray mist contact with desirable trees, shrubs, or other plants may result in injury.

RESTRICTIONS

- **DO NOT** apply more than 1.5 gallons (6 lbs ai/A) of **Sumter S** per single application when burning is not allowed on the site.
- **DO NOT** apply more than 1 gallon (4 lbs ai/A) of **Sumter S** per single application when burning is allowed on the site.
- **DO NOT** apply more than 3 gallons (12 lbs ai/A) of **Sumter S** per acre per year.
- **DO NOT** make more than 2 applications per year.
- **DO NOT** make second application within 30 days of first application.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter or allow entry into treated areas until sprays have dried to perform hand tasks.

NON-CROP SITES

Sumter S may be applied for general weed control as follows: uncultivated non-agricultural areas (including airports, highway, railroad and utility rights-of-way, sewage disposal areas); uncultivated agricultural areas (non-crop producing, which includes: farmyards, fuel storage areas, fence rows, barrier strips); industrial sites (outdoor, including lumberyards, pipeline and tank farms).

APPLICATION INFORMATION

Make a foliar application of the specified rate of **Sumter S** from full leaf expansion in the spring to the development of full canopy coloration in the fall for deciduous species to be controlled. Coniferous species, listed in the "USE RATES AND PLANTS CONTROLLED" chart below, may be treated at anytime during the growing season.

LOW- AND HIGH-VOLUME DIRECTED SPRAYS

Prepare either a low-volume or high-volume spray solution of **Sumter S**. For the low-volume directed spray application, **DO NOT** exceed a spray concentration of 30% by volume. For the high-volume directed spray application, **DO NOT** use a spray concentration of less than 1.5% by volume.

Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the Spray Solution Table. Apply a quantity of spray solution which will thoroughly and uniformly cover the target plant foliage (spray to wet for high-volume applications). Rate and volume per acre will depend on the plant species, the height and density of plant growth as well as the type of application equipment used. On tall or dense stands of brush it may be necessary to spray from opposite sides in order to obtain thorough coverage of the foliage. Use the higher rate range on stands where difficult-to-control species are dominant. See the "USE RATES AND PLANTS CONTROLLED" section of the label for use rates and a listing of **difficult-to-control species.

PRECAUTIONS

- Cutting of treated stems of brush before they are completely dead may result in sprouting.

RESTRICTIONS

- **DO NOT** apply more than 3 gallons of **Sumter S** per acre (12.0 lbs ai/A) in a single application
- **DO NOT** apply more than 6 gallons of **Sumter S** per acre (24.0 lbs ai/A) per acre per year.
- **DO NOT** make more than 2 applications per year.
- **DO NOT** make second application within 30 days of first application.
- **DO NOT** use for the control of woody plants on lawns, walks, driveways, tennis courts or similar areas.

AERIAL and BROADCAST APPLICATIONS

Prepare a spray solution using 1.5 to 3 gallons (6 - 12 lbs ai/A) of **Sumter® S** in 10 to 40 gallons of water (see Spray Solution Table). For broadcast ground applications, use this product at the rate of 1.5 to 6 gallons (6 - 24 lbs ai/A) per acre. For aerial applications, use this product at the rate of 1.5 to 3 gallons (6 - 12 lbs ai/A) per acre. Use sufficient spray volume to uniformly and thoroughly cover the foliage. Use the higher concentrations on stands in which difficult-to-control species are predominant (see "USE RATES AND PLANTS CONTROLLED" section for a listing of **difficult-to-control species).

RESTRICTIONS

- **DO NOT** apply more than 6 gallons per acre (24.0 lbs ai/A) when using ground equipment.
- **DO NOT** apply more than 3 gallons of **Sumter S** per acre (12.0 lbs ai/A) when using aerial equipment.

SPRAY SOLUTION TABLE

Desired Volume	Amount of Sumter S						
	1.5%	2%	3%	4%	10%	20%	30%
5 Gal	**	**	**	0.8 qt	0.5 gal	1 gal	1.5 gal
10 Gal	0.6 qt	0.8 qt	1.2 qt	1.6 qt	1 gal	2 gal	3 gal
20 Gal	1.2 qt	1.6 qt	0.6 gal	0.8 gal	2 gal	4 gal	6 gal
30 Gal	0.45 gal	0.6 gal	0.9 gal	1.2 gal	3 gal	6 gal	**
40 Gal	0.6 gal	0.8 gal	1.2 gal	1.6 gal	4 gal	**	**
50 Gal	0.75 gal	1 gal	1.5 gal	2 gal	5 gal	**	**
100 Gal	1.5 gal	2 gal	3 gal	4 gal	**	**	**



USE RATES AND PLANTS CONTROLLED

Sumter S effectively controls or suppresses (**difficult-to-control listings) the following plants when applied at the use rates shown.

**Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

1.5 to 6 gal (6 – 24 lbs ai/A) Sumter S per acre			
Alder, red	<i>Alnus rubra</i>	Oak, red	<i>Quercus rubra</i>
Ash, white	<i>Fraxinus Americana</i>	Oak, water	<i>Quercus arkansana</i>
Aspen, quaking	<i>Populus tremuloides</i>	Oak, white	<i>Quercus alba</i>
Birch	<i>Betula</i> sp.	Persimmon**	<i>Diospyros virginiana</i>
Blackberry	<i>Rubus</i> sp.	Pine, loblolly	<i>Pinus taeda</i>
Blackgum	<i>Nyssa sylvatica</i>	Pine, Virginia	<i>Pinus virginiana</i>
Cherry, black**	<i>Prunus serotina</i>	Poplar, yellow (tulip tree)**	<i>Liriodendron tulipifera</i>
Cherry, pin	<i>Prunus pensylvanica</i>	Salmonberry	<i>Rubus spectabilis</i>
Chokecherry, common**	<i>Prunus virginiana</i>	Sassafras**	<i>Sassafras sassafras</i>
Elm**	<i>Ulmus</i> sp.	Sourwood**	<i>Oxydendrum arboretum</i>
Fern, bracken	<i>Pteridium aquilinum</i>	Spurge, leafy***	<i>Euphorbia esula</i>
Hawthorn**	<i>Crataegus</i> sp.	Sumac	<i>Rhus</i> sp.
Hickory**	<i>Carya</i> sp.	Sweetgum	<i>Liquidambar styraciflua</i>
Locust, black	<i>Robinia pseudoaccacia</i>	Tallow, Chinese	<i>Sapium Sebiferum</i>
Maple, bigleaf**	<i>Acer macrophyllum</i>	Thimbleberry	<i>Rubus parviflorus</i>
Maple, red**	<i>Acer rubrum</i>	Willow**	<i>Salix</i> sp.
Maple, vine	<i>Acer circinatum</i>		
2 to 6 gal (3 – 24 lbs ai/A) Sumter S per acre			
Basswood, American**	<i>Tilia Americana</i>	Grape, wild	<i>Vitis</i> sp.
Bindweed, field***	<i>Convolvulus arvensis</i>	Pine, Eastern white	<i>Pinus strobes</i>
Cottonwood, Eastern	<i>Populus deltoids</i>	Plum, wild	<i>Prunus munsoniana</i>
Elder, American	<i>Sambucus canadensis</i>	Rose, multiflora	<i>Rosa multiflora</i>
Elm, slippery	<i>Ulmus rubra</i>	Sycamore	<i>Platanus occidentalis</i>
Elm, winged**	<i>Ulmus alata</i>	Tree-of-heaven	<i>Ailanthus altissima</i>

**Difficult-to-control or Suppression

Suppression – A visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

***Make applications after plants begin to bloom.

TANK MIXTURES

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Sumter S plus metsulfuron methyl

Sumter S plus metsulfuron methyl herbicide may be applied for the control of Eastern red cedar and improved control of Ailanthus (tree of heaven), Ash, Cherry, Elm and Red maple.

Apply 1.5 to 3 gallons (6 – 12 lbs ai/A) of **Sumter S** plus specified application rate of metsulfuron methyl per acre. Apply a quantity of spray solution that will thoroughly and uniformly cover the target brush/trees without causing unnecessary run-off (spray to wet). If the site contains difficult-to-control species (see ** in "USE RATES AND PLANTS CONTROLLED" section), use the higher rates of both **Sumter S** and metsulfuron methyl.

Follow the use directions, precautions and restrictions on the metsulfuron methyl label.

Sumter S plus imazapyr

Sumter S plus imazapyr herbicide (2 pounds active ingredient per gallon) may be applied for the control of Box elder, Hackberry, Persimmon, Wild pecan and Dogwood and for improved control of Ash, Black Cherry, Elm, Maple, Sassafras and Willow.

Apply 1.5 to 3 gallons (6 – 12 lbs ai/A) of **Sumter S** plus 8 to 20 ounces of imazapyr per acre. Apply a quantity of the spray solution that will thoroughly and uniformly cover the target brush without causing unnecessary run-off (spray to wet). If the site contains difficult-to-control species (see ** in "USE RATES AND PLANTS CONTROLLED" section), use the higher rates of both **Sumter S** and imazapyr.

Follow the use directions, precautions and restrictions on the Imazapyr label.

Sumter S plus picloram

Sumter S plus picloram (2 pound active per gallon) herbicide may be applied for the control of Hackberry, Persimmon, and Walnut for improved control of Cherry, Elm, Hickory, Locust, Oak, Poplar, Sassafras, Sumac, and Sweet gum.

Apply 1.5 to 3 gallons (6 – 12 lbs ai/A) of **Sumter S** plus 1 to 2 pints of picloram per acre. Apply a quantity of the spray solution that will thoroughly and uniformly cover the target brush without causing unnecessary run-off (spray to wet). If the site contains difficult-to-control species (see ** in "USE RATES AND PLANTS CONTROLLED" section), use the higher rates of both **Sumter S** and picloram.

Follow the use directions, precautions and restrictions on the picloram label.

SIDE TRIMMING

For control of only a portion of a plant, direct the spray solution to thoroughly cover (spray to wet) only the portion of the plant to be controlled.

PRECAUTIONS

- Drift or spray mist contact with desirable trees, shrubs, or other plants may results in injury.

RESTRICTIONS

- **DO NOT** apply more than 3 gallons of **Sumter S** per acre (12.0 lbs ai/A) in a single application.
- **DO NOT** apply more than 6 gallons of **Sumter S** per acre (24.0 lbs ai/A) per acre per year.
- **DO NOT** make more than 2 applications per year.
- **DO NOT** make second application within 30 days of first application.
- Not registered for sale or use in California or Arizona.



CUT SURFACE APPLICATIONS

Sumter S may be used for controlling the re-sprouting of cut stumps of the plants listed in the "USE RATES AND PLANTS CONTROLLED" section. Control of re-sprouting in plants listed as "difficult to control" may not be as effective.

Sumter S may either be used undiluted or mixed with water. Use the method that is best suited for the particular application equipment. When mixing with water a ratio of no less than 1 part **Sumter S** to 1 part water on a volume basis must be used. Apply the undiluted or mixed solution to wet the area adjacent to the cambium and bark around the entire circumference and the sides of the cut stumps. The sides of the stumps must be wet down to the root collar area.

Apply with appropriate application equipment using low spray pressure. Applications can be made any time of the year, except during periods of heavy sap flow in the spring. Applications must be made soon after cutting, before the stump surface forms a layer of callous tissue (hardens off).

To prevent freezing of the spray solution, add ethylene glycol (commercial antifreeze) to the water used in preparing the spray solution. Add the antifreeze according to the manufacturer's label for preventing freezing of water at the lowest expected ambient temperature. **Sumter S** will freeze at -11°F. A 1:1 aqueous dilution of **Sumter S** will freeze at 21°F.

A spray pattern indicator may be used in the spray solution to facilitate application. The user must check the compatibility of the spray indicator with the spray solution prior to using large quantities.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store in a tightly closed container in a cool, dry place. Store in original container and out of reach of children, preferably in a locked storage area.

PESTICIDE DISPOSAL: Pesticide spray mixture or rinsate that cannot be used must be disposed of in a landfill approved for pesticides. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

For plastic containers ≤ 5 gallons: Nonrefillable Container: DO NOT reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple Rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by other procedures allowed by state and local authorities.

For plastic containers > 5 gallons: Nonrefillable container. DO NOT reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple Rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Recap and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by other procedures allowed by state and local authorities.

LIMITATION OF WARRANTY AND LIABILITY

IMPORTANT: READ BEFORE USE. Read the entire Directions for Use, Conditions of Warranties and Limitations of Liability before using this product. If these terms and conditions are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Disclaimer of Warranties and Limitations of Liability. **CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, injury, and other unintended consequences may result because of such factors as manner of use or application (including misuse), the presence of other materials, weather conditions, and other unknown factors, all of which are beyond the control of ATTICUS, LLC. To the extent consistent with applicable law, all such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, ATTICUS, LLC makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond statements on this label. **LIMITATIONS OF LIABILITY:** To the extent consistent with applicable law, neither ATTICUS, LLC the manufacturer, nor the Seller shall be liable for any indirect, special, incidental or consequential damages resulting from the use, handling, application, storage, or disposal of this product. To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use, handling, application, or storage of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid.

Sumter S is a trademark of Atticus, LLC
Krenite® S is a registered trademark of Albaugh, Inc.

F20200917a



SUMTER™ S

SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)

1. IDENTIFICATION

PRODUCT NAME: Sumter S
DESCRIPTION: Liquid herbicide
EPA REG. NO.: 91234-209
COMPANY IDENTIFICATION: Atticus, LLC
940 NW Cary Parkway, Suite 200
Cary, NC 27513

2. HAZARD IDENTIFICATION

WARNING

Causes eye irritation (H320)
Harmful to aquatic life (H402)

HAZARD CLASSIFICATION

Health Hazards	Category	Physical Hazards	Category
Serious eye damage/eye irritation	2B	None	-
Environmental Hazards		Category	
Hazardous to the aquatic environment, short-term		3	

HAZARDS NOT REQUIRING CLASSIFICATION

None

PRECAUTIONARY STATEMENTS

Wash hands and exposed skin thoroughly after handling. (P264)
Avoid release to the environment not in accordance with the product label. (P273)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. **If eye irritation persists:** Get medical advice/attention. (P305+P351+P337+P313)
Dispose of contents / container in accordance with local regulations. Refer to the product label for specific disposal instructions. (P501)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name	Chemical Name	CAS #	Composition
Ammonium salt of Fosamine	phosphonic acid, (amino-carbonyl)-, monoethyl ester, monoammonium salt	25954-13-6	41.5%
Inert Ingredients	N/A	Trade Secret	58.5%

NOTE: Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency medical assistance, call SafetyCall: 1-844-685-9173. For chemical emergency: spill, leak, fire, exposure or accident, call CHEMTREC: 1-800-424-9300.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

5. FIREFIGHTING MEASURES

Flash Point: 106°C (222.8°F)

Fire and Explosion Hazards: May decompose in fire due releasing irritating or toxic gases.

Extinguishing Medium: Use water spray, foam, or dry chemical.

Fire Fighting Equipment: Firefighters should wear full protective clothing and self-contained breathing apparatus.

Fire Fighting Instructions: Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water / firefighting water; do not allow to enter drains or waterways. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

Hazardous Combustion Products: None known.

NFPA Ratings: Health - 1 / Flammability - 1 / Reactivity - 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Spill Cleanup:

Small Spill: Absorb small spills on sand, vermiculite, or other inert absorbent. Place contaminated material in appropriate container for disposal.

Large Spill: Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify and scrape up for disposal. After removal, scrub the area with detergent and water and neutralize with dilute alkaline solutions of soda ash, or lime. Minimize use of water to prevent environmental contamination

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes or clothing.

Storage: Do not store below 10°F. Store product in original container only. Store in a cool, dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits (8-hour TWA, ppm):

COMPONENT	OSHA PEL	ACIGH TLV
Ammonium salt of Fosamine	Not listed	Not listed

Engineering Controls: Proper ventilation is required when handling or using this product to minimize exposure to airborne contaminants. Local mechanical exhaust ventilation may be required. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Protective Clothing: Safety glasses or goggles when mixing, loading, or cleaning equipment is recommended. Applicators and other handlers must wear: long sleeved shirt and long pants and shoes plus socks. Waterproof gloves when mixing, loading or cleaning equipment is recommended.

General: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	colorless liquid
Odor:	odorless
Melting/freezing point:	not available
Boiling point/Boiling range:	not available
Flammability:	not available
Flammability limits (upper/lower):	not available
Flash point (cc):	106°C (222.8°F)
Auto-ignition temperature:	not available
Decomposition temperature:	not available
pH:	6-7 (1% w/v)
Viscosity:	13.38 mm ² s (20°C) 9.21 mm ² s (40°C)
Solubility:	not available
Partition coefficient:	not available
Vapor pressure:	not available
Density:	1.1838 g/mL 20±0.5°C
Bulk Density:	not available
Relative vapor density:	not available
Particle characteristics:	not available

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Avoid temperatures above (115°F, 46°C) and below 25°F (-5°C).

CHEMICAL STABILITY: Stable, however may decompose if heated.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong oxidizers or bases, mild and galvanized steel.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, Nitrogen oxides, phosphorous oxides.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

The following data is from a similar substance:

ORAL TOXICITY (rat LD₅₀): >5,000 mg/kg

DERMAL TOXICITY (rat LD₅₀): > 2,000 mg/kg

INHALATION TOXICITY (rat LC₅₀): > 4.1 mg/L (4-hr)

EYE IRRITATION: Slight irritant (Rabbit)

SKIN IRRITATION: Slight irritant (Rabbit)

SKIN SENSITIZATION: Guinea pig – Non-sensitizer

CARCINOGENICITY:

EPA: No data available

ACGIH: Not Listed

NTP: Not Listed

IARC: Not Listed

OSHA: Not Listed

MUTAGENIC TOXICITY: No evidence of mutagenic effects during *in vivo* and *in vitro* assays.

REPRODUCTIVE TOXICITY: Not known to cause reproductive or birth defects at normal exposure levels.

12. ECOLOGICAL INFORMATION

This pesticide is slightly toxic to non-vascular plants.

The following information is for the active ingredient, Fosamine ammonium:

AQUATIC TOXICITY

Fish (Rainbow Trout) (96-hour LC₅₀): 330 mg/kg

Fish (Bluegill Sunfish) (96-hour LC₅₀): 590 mg/L

Daphnia Magna (Water Flea) (48-hour LC₅₀): 1,524 mg/L

Algae (48-hour EC₂₅): >15 mg/L

AVIAN TOXICITY

Bobwhite Quail (LD₅₀): > 5,000 mg/kg

Mallard Duck (LD₅₀): >5,000 mg/kg

HONEY BEE TOXICITY

Bee (LD₅₀): >100µg/Bee

FATE

Fosamine is slightly persistent with a soil half-life of 1 - 2 weeks. It is moderately mobile depending on soil type.

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Refer to the product label for specific container disposal instructions.

14. TRANSPORT INFORMATION

US-DOT:

Not regulated

IMDG:

Not regulated

IATA:

Not regulated

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

FIFRA –

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label:

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Causes moderate eye irritation. Avoid contact with eyes or clothing.

ENVIRONMENTAL HAZARDS

Pollinator Advisory Statement: This product may adversely impact the forage and habitat of local pollinators, including the monarch butterfly (and its larvae), birds, or bats if it reaches non-target areas. Protect pollinators by following label directions to minimize spray drift.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPA/TSCA.

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate (acute)

SARA Title III – Section 312 Threshold Planning Quantity

The threshold planning quantity (TPQ) for this product treated as a mixture is 10,000 lbs. This product contains no ingredients with a TPQ of less than 10,000 lbs.

SARA Title III – Section 313 Reportable Ingredients

None

CERCLA Reportable Quantity (RQ) –

Not listed

CALIFORNIA PROP 65 STATUS –

This product does not contain any chemical known to the State of California to cause cancer or other reproductive harm.

CANADA –

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

16. OTHER INFORMATION

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

To the extent consistent with applicable law, neither Atticus, LLC nor Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ATTICUS, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF ATTICUS, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SDS Version: 1.1

Effective Date: 12/09/2020



Manufactured for:
Atticus, LLC
940 NW Cary Parkway, Suite 200
Cary, NC 27513

SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)



1. IDENTIFICATION

PRODUCT NAME: Alligare Triclopyr 3

DESCRIPTION: A liquid herbicide.

EPA Reg. No.: 81007-13

COMPANY IDENTIFICATION:

Alligare, LLC

1565 5th Avenue

Oakville, AL 36801

2. HAZARD IDENTIFICATION

DANGER

Causes serious eye damage H318

Harmful if swallowed or inhaled H302H332

May cause an allergic skin reaction H317

May be harmful in contact with skin H313

Irritant liquid and vapor H360



HAZARD CLASSIFICATION

Health Hazard

Eye Damage Irritation

Acute Toxicity Oral

Acute Toxicity Inhalation

Acute Toxicity Dermal

Sensitization, Skin

Category

1

4

4

5

1

Other Hazards

Irritant Liquids

Category

3

PRECAUTIONARY STATEMENTS

Wear eye protection and protective gloves. Avoid breathing fumes or spray. Use only outdoors or in well-ventilated area. Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. H8006100710064007000700

IF ON SKIN: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison control center or doctor. H305H351H338H310

IF SWALLOWED: Call a poison control center or doctor if you feel unwell. Rinse mouth. H301H310H330

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison control center or doctor if you feel unwell.

IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash it before reuse. H302H352H333H313H360H364

Keep away from flames and hot surfaces. No smoking. H100

IN CASE OF FIRE: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish. H370H378

Store in well-ventilated place and keep cool. H403H350

Dispose of contents and container in accordance with local regulations. Refer to the product label for specific disposal instructions. H501

3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name	Chemical Name	CAS #	Composition
Triclopyr	3,5,6-trichloro-2-pyridinolacetic acid, triethoxymine salt	5713-60-1	44.4%
Triethoxymine	N,N-Diethylethoxymine	101-44-8	16.5%
2,4,6-trinitrophenol	N,N'-1,4-bis(2,4,6-trinitrophenyl)-N,N'-bis(2-methoxyethyl)ethylenediamine trisodium salt	60-00-4	1.5%

4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-441-3000 for emergency medical treatment information.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor or poison control center.

IF SWALLOWED: Immediately call a doctor or poison control center. Rinse mouth.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor or poison control center if you feel unwell.

IF ON SKIN OR CLOTHING: Wash with plenty of water. If skin irritation or rash occurs, Get medical advice/attention. Take contaminated clothing and wash it before reuse.

5. FIREFIGHTING MEASURES

Fire and Explosion Hazards: May decompose in fire due to thermal decomposition, releasing irritating and toxic gases.

Means of Extinction: Use water spray, CO₂, foam or dry chemical.

Fire Fighting Instructions: Evacuate area and fight fire upwind from a safe distance to avoid possible hazardous fumes and decomposition products. Do not run and do not allow runoff to enter sewers, storm drains or waterways. Foam and dry chemical extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

Firefighting Equipment: Self-contained breathing apparatus with full face piece and full body protection.

Hazardous Combustion Products: Hydrogen chloride, oxides of nitrogen, chlorinated hydride, phosgene.

NFPA Ratings: Health 3 Flammability 0 Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Clean up spills immediately observing the precautions in Section 8 of this SDS. Isolate the hazard area and keep unnecessary and unprotected personnel from entering. Prevent material from contaminating soil or from entering sewage and drainage systems and bodies of water.

Small Spills: Absorb small spills on sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal.

Large Spills: Dig large spills using absorbent or impervious materials such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, scrape up and place in an appropriate container for disposal. After removal, flush contaminated area thoroughly with water, observing all environmental regulations. Recover wash liquid with additional absorbent and place in container for disposal.

7. HANDLING AND STORAGE

Handling: Do not allow to come into contact with skin, eyes and clothing. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove shoes immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a secured storage area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an emergency station and safety shower.

Protective Clothing: Long-sleeved shirt, long pants and shoes plus socks, protective eyewear, and chemical resistant gloves of 14 mils such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber.

General: Wash thoroughly with soap and water after handling. Discard clothing and other absorbent materials that have been heavily contaminated with this product do not reuse them. Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions or washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light tan liquid	pH:	8.5 to 10
Odor:	Slight ammoniac-like	Kinematic viscosity:	not available
Melting/freezing point:	not available	Solubility:	soluble
Boiling point/Boiling range:	not available	Partition coefficient:	not available
Flammability:	not available	Vapor pressure:	not available
Flammability limits (upper/lower):	not available	Density:	1.14 g/mL (9.51 lb/gal)
Flash point:	43.3°C (110°F)	Relative vapor density:	not available
Auto-ignition temperature:	not available	Particle characteristics:	not available
Decomposition temperature:	not available		

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Temperatures above 105°F (40°C) and below 40°F (6°C)

CHEMICAL STABILITY: Stable under normal use and transportation situations.

HAZARDOUS DECOMPOSITION PRODUCTS: Heat may cause decomposition generating hydrogen chloride, oxides of nitrogen, chlorinated benzene and carbon monoxide.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong acids and oxidizing agents.

HAZARDOUS REACTIONS: None known.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ORAL TOXICITY (rat LD₅₀): 1,500 mg/kg

DERMAL TOXICITY (rat LD₅₀): 1,000 mg/kg

INHALATION TOXICITY (rat LC₅₀): 0.5 mg/L (4-hour)

EYE IRRITATION: Rating is Corrosive

SKIN IRRITATION: Rating is Slightly irritating

SKIN SENSITIZATION: Guinea pig is potential sensitizer after repeated exposure to concentrate

CARCINOGENICITY:

EPA: Not Listed

ACGIH: Not Listed

IARC: Not Listed

NTP: Not Listed

OSHA: Not Listed

MUTAGENIC TOXICITY: Little evidence of mutagenic effects during *in vivo* or *in vitro* studies.

REPRODUCTIVE TOXICITY: No evidence in animal studies.

12. ECOLOGICAL INFORMATION

This herbicide is injurious to plants at extremely low concentrations. Non-target plants may be adversely affected from drift and run-off. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water. Under certain conditions, oxygen depletion or loss due to marsh result due to decomposition of dead plants, which may contribute to fish suffocation.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by disposal.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, or rinse is a violation of Federal L. These wastes cannot be disposed of use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Refer to the product label for specific container handling instructions.

14. TRANSPORT INFORMATION

UN Number:	UN1003
Proper Shipping Name:	Flammable liquid, N.O.S. Contains triethamine
Transport Hazard Class:	3
Packing Group:	III
Hazard Zone:	A
Marine Pollutant:	No
Hazardous Substance RQ:	None
Labels / Placards:	Flammable Liquid ¹ IMDG, IATA Class 3 Flammable Liquid ²
Emergency Guide:	118 NAERG North American Emergency Response Guide
US-DOT Note:	Not regulated for ground transportation when shipped in containers 119 gal 450 Liters. Labeled in 119NA1003, Flammable Liquid, N.O.S. Contains triethamine, PG III.
IMDG / IATA Note:	Not regulated when shipped in single or inner packaging ≤ 1.3 gal (5 L).

This information is not intended to convey all specific regulatory or operational requirements information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

FIFRA –

This chemical is a pesticide product registered with the Environmental Protection Agency and is subject to certain labeling requirements under Federal Pesticide Law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for for-hire labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes irreversible eye damage. Harmful if absorbed through skin or swallowed. Do not get in eyes or on clothing.

See inside label booklet for additional Precautionary Statements and Directions for Use including Storage and Disposal instructions.

ENVIRONMENTAL HAZARDS

For terrestrial uses, do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

For aquatic uses, under certain conditions, treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants, which may contribute to fish suffocation. This loss can cause fish suffocation. Therefore, to minimize this hazard, do not treat more than one-third to one-half of the water area in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency for fish and game before applying to aquatic water to determine if a permit is needed.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPCATA.

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate, Delayed, Fire

SARA Title III – Section 312 Threshold Planning Quantity

NA

SARA Title III – Section 313 Reportable Ingredients

Triethamine (CAS No. 101-44-8) 16.5%

CERCLA –

Triethamine (CAS No. 101-44-8) 16.5%, R 5,000

HTDA (CAS No. 60-00-4) 5%, R 5,000

CALIFORNIA PROP 65 STATUS –

This product does not contain any chemical known to the state of California to cause cancer or reproductive toxicity.

CANADA –

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

16. OTHER INFORMATION

THIS INFORMATION IN THIS SDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGAR, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE RELIABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUALS OR PERSONS OR PURPOSES IS NECESSARILY THE INDIVIDUALS OR PERSONS RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGAR, LLC EXTENDS NO WARRANTY, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR RELIABILITY OF SUCH INFORMATION OR APPLICATION TO THE INDIVIDUALS PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE DATA APPROVED PRODUCT LABELING attached to and accompanying the product container. This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities general other than product use, while the labeling provides that information specifically for product use in the ordinary course.

SDS Version 4.0

Effective Date 03/28/2023



TRICLOPYR 4

Specimen Label

A Herbicide for Control of Woody Plants, Annuals and Perennial Broadleaf Weeds in Forests, Grass Pastures, Rangeland, CRP acres, Rights-of-Way, and in Non-Crop Areas and Ornamental Turf, Industrial Sites and Non-Irrigation Ditch Banks

ACTIVE INGREDIENT:	% BY WT.
*Triclopyr BEE: (3,5,6 Trichloro-2-Pyridinyl) oxyacetic acid, butoxyethyl ester	61.6%
OTHER INGREDIENTS:	38.4%
TOTAL:	100.0%

Contains petroleum distillates

*Contains 4 pounds of triclopyr acid equivalent per gallon (44.3%)

EPA Reg. No. 81927-11

EPA Est. No. 42750-MO-001^{ALB}

37429-GA-001^{BT}; 53883-TX-002^{CSI}

81134-CHN-001^{CHN}; 81927-AL-001^{PM}

Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

KEEP OUT OF REACH OF CHILDREN CAUTION / PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
If swallowed:	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious person.• Do not give liquid to the person.
If in eyes:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
If on skin or clothing:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	
NOTE TO PHYSICIAN	
May pose an aspiration hazard. Contains petroleum distillates.	

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category E on an EPA chemical resistance category selections chart.

Applicators and other handlers who handle this pesticide for any use covered by the Worker Protection Standard (40 CFR Part 170) – in general, agricultural-plant uses are covered – must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber, or viton
- Shoes plus socks

Applicators and other handlers who handle this pesticide for any use not covered by the Worker Protection Standard (40 CFR Part 170) – in general, only agricultural-plant uses are covered by the WPS – must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables are given, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Physical or Chemical Hazards

Combustible: Do not use or store near heat or open flame. Do not cut or weld container.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber, or Viton
- Protective eyewear
- Shoes plus socks

NONAGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, or greenhouses.

Do not enter or allow others to enter the treated area until sprays have dried, unless applicator and other handler PPE is worn.

Product Information

Alligare Triclopyr 4 is a herbicide used to control unwanted woody plants and annual and perennial broadleaf weeds

- in forests
- on permanent grass pastures, rangelands, and conservation reserve program (CRP) acres (including non-irrigation ditch banks and fence rows within these areas)
- on non-crop areas including industrial manufacturing and storage sites
- on rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, and railroads
- on fence rows
- on non-irrigation ditch banks
- around farm buildings
- on perennial bluegrass, perennial ryegrass, and tall fescue ornamental turf (including sod farms, commercial turf, and golf courses)

Alligare Triclopyr 4 use on these sites may include application to grazed areas as well as for the establishment and maintenance of wildlife openings.

Use Precautions

- Local conditions may affect the use of herbicides. Consult your local specialist for advice in selecting treatments from this label to best fit local conditions.
- Avoid direct application to Christmas trees as conifer injury may result. When treating unwanted vegetation in Christmas tree plantations, use sprays directed away from conifers.

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- While Alligare Triclopyr 4 is formulated as a low volatile ester, the combination of spray contact with impervious surfaces (such as roads and rocks) and increasing ambient air temperatures may result in an increase in the volatility potential for this herbicide, increasing a risk for off-target injury to sensitive crops such as grapes and tomatoes.
- Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition, et. al. v. EP, C01-0132C, (W.D. WA). For further information, please refer to <http://www.epa.gov/espwp/wtc>.

Use Restrictions

- Agricultural Use Requirements for Forestry Uses: For use of this product on forestry sites, follow PPE and Reentry restrictions in the Agricultural Use Requirements section of this label
- Use Requirements for Non-Cropland Areas: No worker protection Standard worker entry restrictions or worker notification requirements apply when this product is applied to non-cropland.
- Alligare Triclopyr 4 may injure certain turfgrass species. Do not apply to bahiagrass, bentgrass, bermudagrass, centipedegrass, St. Augustine grass, or zoysiagrass, unless turf injury can be tolerated.
- Do not apply Alligare Triclopyr 4 to exposed roots of shallow rooted trees and shrubs.
- Do not apply Alligare Triclopyr 4 to golf course greens.
- Do not apply more than 2 qts. of Alligare Triclopyr 4 per acre in a single application when spot treating.
- On use sites other than grazable areas and forestry sites, do not apply more than 8 lbs. ae per acre per year of triclopyr (8 qts./A/yr Alligare Triclopyr 4).
- On use sites that may be grazed, including rights-of-way, pasture, fence rows, and rangeland, do not apply more than 2 lbs. ae per acre per year of triclopyr (2 qts./A/yr of Alligare Triclopyr 4).
- On forestry use sites, do not apply more than 6 lbs. ae per acre per year of triclopyr (6 qts./A/yr of Alligare Triclopyr 4).
- In Arizona: The state of Arizona has not approved Alligare Triclopyr 4 for use on plants grown for commercial production; specifically on designated grazing areas or use on sod farms.
- Do not apply this product through any type of irrigation system.
- Do not apply to ditches used to transport irrigation water. Do not apply where runoff or irrigation water may flow onto agricultural land as injury to crops may result.
- It is permissible to treat non-irrigation ditch banks, seasonably dry wetlands, flood plains, deltas, marshes, swamps, bogs and transitional areas between upland and lowland sites. Do not apply to open water such as lakes, reservoirs, rivers, streams, creeks, salt water bays, or estuaries.
- Do not apply this product through mist blowers unless a drift control additive, high viscosity inverting system, or equivalent is used to control spray drift.
- Do not make direct applications or allow spray mists to drift onto cotton, fruit or orchard trees, shrubs, grapes, peanuts, soybeans, tobacco, vegetable crops, flowers, citrus, or other desirable broadleaf plants.
- Many forbs (herbaceous broadleaves) are susceptible to Alligare Triclopyr 4. Unless injury or loss of such plants can be tolerated, do not spray pastures containing desirable broadleaf forbs (especially legumes such as clover). After applications the stand and growth of established grasses is usually improved, especially when rainfall is adequate and grazing is deferred.
- While established grasses are tolerant to this product, newly seeded grasses may be injured until well established (as indicated by vigorous growth, tillering and the development of a secondary root system). Do not reseed treated areas for a minimum of three weeks after treatment.
- Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lbs. ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Grazing and Haying Restrictions

Except for lactating dairy animals, there are no grazing restrictions following application of this product.

- **Grazing Lactating Dairy Animals:** Do not allow lactating dairy animals to graze treated areas until the next growing season following application of this product.
- Do not harvest hay for 14 days after application.

Slaughter Restrictions:

Withdraw livestock from grazing treated grass or consumption of treated hay at least 3 days before slaughter. This restriction applies to grazing during the season following treatment or hay harvested during the season following treatment.

APPLICATION DIRECTIONS

RATES

This table assists in determining proper volumes of Alligare Triclopyr 4 in the spray tank to avoid exceeding the maximum use rates listed:

Spray Volume Per Acre	Alligare Triclopyr 4 Quarts per 100 gallons of spray volume		
	2 quarts/acre	6 quarts/acre	8 quarts/acre
400	Do not use	1.5	2
300	Do not use	2	2.7
200	Do not use	3	4
100	2	6	8
50	4	12	16
20	10	30	40
10	20	60	80

Spray Additives

Surfactants - If a standard agricultural surfactant is used, use at a rate of 1 to 2 quarts per acre.

Drift Control Agents – Agriculturally registered spray thickening drift control agents or high viscosity invert systems may be used with Alligare Triclopyr 4. When using these agents, follow all use directions and precautions on the product label. Do not use a thickening agent with the Microfoil boom, Thru Valve boom, or other systems that cannot accommodate thick sprays.

Mixing Directions

Apply Alligare Triclopyr 4 foliarly by diluting with water or as an oil-water emulsion. NOTE: An oil-water emulsion performs more dependably under a broader range of conditions than a straight water dilution for woody plant control and is recommended for aerial applications.

Oil-Water Emulsions

NOTE: Prior to preparing oil-water emulsion sprays in the mixing tank, conduct a jar test to check spray mix compatibility.

Prepare the oil-water emulsion using diesel fuel, fuel oil, or kerosene plus an emulsifier such as Sponto 712 or Triton X-100.

- **Ground Application:** Add oil at a rate of 5 to 10% of the total to the spray mix (up to a maximum of 1 gallon of oil per acre) and use an agricultural spray emulsifier according to mixing instructions below.
- **Aerial Application:** Add a 1:5 ratio of oil and water (1 part oil to 5 parts water) to the spray mixture (up to a maximum of 1 gallon of oil per acre) according to the mixing instructions below.

Oil Mixture Sprays for Basal Treatment

When preparing an oil mixture, be sure to read and follow the use directions and precautions on the manufacturer's product label. Prepare oil-based spray mixtures using either diesel fuel, No. 1 or No. 2 fuel oil, kerosene or a commercially available basal oil. Substitute other oils or diluents only as recommended by the oil or diluent's manufacturer. Add Alligare Triclopyr 4 to the required amount of oil in the spray tank or mixing tank and mix thoroughly. Reagitate if the mixture stands for over 4 hours.

Water Dilutions

To provide improved wetting of foliage using water dilutions, an agricultural surfactant at the manufacturer's recommended rate may be added to the spray mixture. To help minimize spray drift, a drift control and deposition aid cleared for application to growing crops is recommended.

Tank Mixing

Alligare Triclopyr 4 may be applied in combination with labeled rates of other herbicides provided:

- The tank mix product(s) are labeled for the timing and method of application for the use site to be treated; and,
- Tank mixing is not prohibited by the label of the tank mix product(s).

NOTE: The following compatibility test (jar test) should be conducted prior to mixing ingredients in the spray tank when tank mixing Alligare Triclopyr 4 with other materials:

1. Use a clear glass quart jar with lid and mix the tank mix ingredients in the required order and their relative proportions.
2. Invert the jar containing the mixture several times and observe the mixture for approximately ½ hour.
3. If the mixture balls-up, forms flakes, sludges, jells, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing Order for Tank Mixes: Add one-half of the needed water to the mixing tank and begin agitation. Add the tank mix partners in the order indicated below, allowing time for complete dispersion and mixing after the addition of each product.

1. Water soluble herbicide (if used)
2. Premix of oil, emulsifier, Alligare Triclopyr 4 and other oil-soluble herbicide (if used); see below

Add the remaining water. During the final filling of the tank, a drift control and deposition aid cleared for application to growing crops may be added, as well as an agricultural surfactant if a water dilution rather than an oil-water emulsion spray is used. To ensure spray uniformity, maintain continuous agitation of the spray mixture during mixing, final filling and throughout application.

Premixing: Prepare a premix of oil, emulsifier (if oil-water emulsion), and Alligare Triclopyr 4 plus other oil-soluble herbicides if used (for example 2,4-D ester). **Note:** Do not allow water or mixtures containing water to get into the premix or Alligare Triclopyr 4 since a thick "invert" (water in oil) emulsion may form that will be difficult to break. An emulsion may also be formed if the premix or Alligare Triclopyr 4 is put into the mixing tank prior to the addition of water.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, limitations and precautions in the respective product labels.
- Do not exceed specified application rates. If products containing the same active ingredient are tank mixed, do not exceed the maximum allowable active ingredient use rates.
- When using spray equipment where the product formulations will be mixed in undiluted form (such as direct injection), special care should be taken to ensure tank mix compatibility.

Mixing with Liquid Fertilizer for Broadleaf Weed Control

For weed control and fertilization of grass pastures, Alligare Triclopyr 4 may be tank mixed with liquid nitrogen fertilizer and applied foliarly. Use Alligare Triclopyr 4 according to the use directions in this label for grass pastures, and apply at the rates recommended by your sup-

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Specimen Label

plier or Extension Service Specialist provided that no maximum application rates specified on this label are exceeded. **Note:** Because foliage burn caused by liquid fertilizer may reduce herbicide effectiveness on woody plants, Alligare Triclopyr 4 is not recommended for use with liquid fertilizer on woody plants (brush).

Test for mixing compatibility using the desired procedure and spray mix proportions in clear glass jar before mixing in spray tank. A compatibility aid such as Unite or Compex may be needed in some situations, and in difficult situations premixing Alligare Triclopyr 4 with 1 to 4 parts water may help. **NOTE: Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K solutions or suspensions may not be satisfactory even with the addition of a compatibility aid.**

Fill the spray tank approximately half full with the liquid fertilizer, then begin agitating and add the herbicide. Complete filling the tank with fertilizer and apply immediately maintaining continuous agitation in the spray tank during application. **Do not store liquid fertilizer spray mixtures.** Because the likelihood of mixing or compatibility problems with liquid fertilizer increases under cold conditions, application during very cold weather (near freezing) is not recommended.

Note: Do not use spray equipment for other applications to land planted (or to be planted) to susceptible crops or desirable plants **unless** it has been determined that all phytotoxic herbicide residue has been removed by thoroughly cleaning the equipment.

APPLICATION EQUIPMENT AND TECHNIQUES

Avoid drift. Very small quantities of spray may seriously injure susceptible plants. Do not spray when wind is blowing toward susceptible desirable vegetation. The applicator may detect the potential for drift by producing smoke at or near the spray site and observing for a temperature inversion or for potential of off-site movement. If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

Broadcast Applications

Alligare Triclopyr 4 may be applied aerially by fixed wing aircraft or helicopter to rangeland, permanent grass pastures, and conservation reserve program acres. For all other use sites listed on this label, Alligare Triclopyr 4 may only be applied aerially by helicopter.

For aerial application to rangeland, permanent grass pastures, and conservation reserve program acres:

Air (Fixed wing aircraft or Helicopter) – For aerial applications to rangeland, permanent grass pastures, and conservation reserve program acres, apply Alligare Triclopyr 4 through a Microfoil or Thru-Valve boom, or use an agriculturally labeled drift control additive. Do not use a thickening agent with the Microfoil or Thru-Valve booms, or other systems that cannot accommodate thick sprays. Keep spray pressures low enough to provide coarse spray droplets and spray only when the wind velocity is low (follow state regulations). Avoid application during air inversions.

Air (Helicopter Only) – When making aerial applications on rights-of-way or other areas near susceptible crops, efforts should be made to minimize drift. Applications should be made with nozzles and pressures which provide adequate plant coverage, but minimize the production of fine spray particles. Drift can be minimized by applying through the Microfoil boom or Thru-Valve boom. Drift control agents or high viscosity invert systems can also be used to minimize drift. Do not use the high viscosity invert system unless it is as effective as the booms listed or as effective as available drift control agents. Use of low pressure nozzles; and operating these nozzles in the lower end of the manufacturer's recommendations is advised. To minimize drift, use a spray boom that is no longer than $\frac{3}{4}$ the rotor length, spray when wind velocities are low; or by using an approved drift control system.

Note: Reference within this label to equipment produced by or available from other parties is provided without consideration for use by the reader at its discretion and subject to the reader's independent circumstances, evaluation, and expertise. Such reference by Alligare, LLC is not intended as an endorsement of such equipment, shall not constitute a warranty (express or implied) of such equipment, and is not intended to imply that other equipment is not available and equally suitable. Any discussion of methods of use of such equipment does not imply that the reader should use the equipment other than is advised in directions available from the equipment's manufacturer. The reader is responsible for exercising their own judgment and expertise, or consulting with sources other than Alligare, LLC, in selecting and determining how to use its equipment.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backwards parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. [This section is advisory in nature and does not supersede the mandatory label requirements]

Aerial Drift Reduction Advisory

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are

made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles – Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.)

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential.

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small-suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

Ground – Applications should be made with nozzles and pressures which provide adequate plant coverage, but minimize the production of fine spray particles. Large droplet producing equipment, such as the Radiarc sprayer may aid in reducing off-target drift. Drift control agents or high viscosity invert systems can also be used to minimize drift. Use of low pressure nozzles; and operating these nozzles in the lower end of the manufacturer's specified rates is advised. To minimize drift, keep the spray boom as low as possible, apply in ≥ 20 gallons of spray volume per acre, spray when wind velocities are low; or use an approved drift control agent.

High Volume Leaf-Stem Treatments: Make applications no higher than brush tops with low pressure and coarse spray droplets to minimize spray drift. A drift control agent may be used to reduce spray drift.

Application Directions for Rights-of-Way, Industrial Sites, Non-Crop Areas, Non-Irrigation Ditch Banks, Forests, and Wildlife Openings including Grazed Areas on these Sites

Refer to Tables 1 and 2 of this label for a list of woody plants and broadleaf weeds that are controlled by Alligare Triclopyr 4.

Foliar Applications

Apply Alligare Triclopyr 4 at rates of 1 to 8 quarts per acre for the control of broadleaf weeds and woody plants. Do not exceed the maximum use rate for the use site being treated. Consult the Use Restrictions section of this label for maximum use rates. Apply in enough water to provide uniform and complete coverage of the plants to be controlled. For best results make applications when woody plants and weeds are actively growing. Use higher doses within the range when brush averages 15 feet or more in height or when brush covers $> 60\%$ of the area to be treated.

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For hard-to-control species such as ash, black gum, choke cherry, elm, maples (other than vine or big leaf), oaks, pines, or winged elm; during late summer applications when plants are mature; or during drought; use higher rates of Alligare Triclopyr 4 alone or use in combination with Tordon® 101 Mixture or Tordon® or Picloram K. If lower rates are used on hard-to-control species, re-sprouting may occur in the year following treatment.

If easy to control brush species dominate, rates less than those specified may be effective. Consult state or local extension personnel for information.

When making applications of Alligare Triclopyr 4 in a tank mix with 2,4-D low volatile ester herbicide, use higher rates of Alligare Triclopyr 4 within the range for satisfactory brush control.

When tank mixing, refer to the individual product labels for precautionary statements, restrictions, specified rates, approved uses, and a list of weeds and woody plants controlled.

Foliar Applications with Ground Equipment

High Volume Foliar Applications

For control of woody plants, apply Alligare Triclopyr 4 at 1 to 3 quarts per 100 gallons of spray mixture. Coverage should be thorough to wet all leaves, stems, and root collars. See Table in **RATES** section for relationship between mixing rate, spray volume and maximum application rate.

Tank Mixing: 1 to 3 quarts of Alligare Triclopyr 4 may be tank mixed with labeled rates of 2,4-D low volatile ester herbicide, Tordon® or Picloram K, or Tordon® 101 Mixture diluted to make 100 gallons of spray. These applications should be made in 100 to 400 gallons of total spray per acre depending on size and density of woody plants. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, specified rates, approved uses, and a list of weeds and woody plants controlled.

Low Volume Foliar Applications

For control of woody plants, mix up to 20 quarts of Alligare Triclopyr 4 in 10 to 100 gallons of spray solution. Adjust the spray concentration of Alligare Triclopyr 4 and total spray volume per acre to match the size and density of target woody plants and kinds of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars. For best results, a surfactant should be added to all spray mixtures. See the **SPRAY ADDITIVES** section for a rate recommendation.

Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 PSI may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush. See Table in **RATES** section for relationship between mixing rate, spray volume and maximum application rate.

Tank Mixing: Up to 12 quarts of Alligare Triclopyr 4 may be applied in tank mix combinations with labeled rates of Tordon® or Picloram K, or Tordon® 101 Mixture as a low volume foliar spray. These applications should be made in 10 to 100 gallons of spray solution. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadcast Application With Ground Equipment

Use equipment that will assure thorough and uniform coverage at spray volumes applied.

Woody Plant Control

Foliage Treatment: Apply 4 to 8 quarts of Alligare Triclopyr 4 in a minimum of 5 gallons of spray solution per acre. Alligare Triclopyr 4 at 1.5 to 3 quarts per acre may be tank mixed with labeled rates of 2,4-D low volatile ester, Tordon® 101 Mixture, or Tordon® or Picloram K in a minimum of 5 gallons of spray solution per acre. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadleaf Weed Control

Apply 1 to 4 quarts of Alligare Triclopyr 4 in a minimum of 5 gallons of spray solution per acre. Apply at any time weeds are actively growing. Alligare Triclopyr 4 at 0.25 to 3 quarts per acre may be tank mixed with labeled rates of 2,4-D amine or low volatile ester; Tordon® or Picloram K; or Tordon® 101 Mixture to improve the spectrum of activity. For thickened (high viscosity) spray mixtures, Alligare Triclopyr 4 can be mixed with diesel oil or other inverting agent. When using an inverting agent, read and follow the use directions and precautions on the product label. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Aerial Application (Helicopter Only) - Aerial sprays should be applied using suitable drift control. See the **SPRAY ADDITIVES** and the **APPLICATION EQUIPMENT AND TECHNIQUES** section.

Foliage Treatment (Utility and Pipeline Rights-of-Way) – Apply 4 to 8 quarts of Alligare Triclopyr 4 alone per acre or tank mix 3 to 4 quarts per acre of Alligare Triclopyr 4 with labeled rates of 2,4-D low volatile ester; Tordon® 101 Mixture; or Tordon® or Picloram K. Do not apply more than 2 quarts per acre of Alligare Triclopyr 4 alone or in tank mix to areas that may be grazed unless the requirements specified in the Use Restrictions section are followed. Apply in total spray volume of 1 to 30 gallons per acre. Use the higher rates and volumes when plants are dense or under drought conditions. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Basal Bark and Dormant Brush Treatments

To control woody plants in rights-of-way, in other non-crop areas, forests, rangeland and permanent grass pastures; use Alligare Triclopyr 4 in oil or oil-water mixtures prepared and

applied as described in the “Mixing Directions – Oil Mixture Sprays for Basal Treatment” section of this label. Do not graze treated areas following use of oil or oil-water mixtures. For non-foliar applications on rangeland and permanent grass pastures, apply no more than 2 quarts of Alligare Triclopyr 4 (2 lb. ae of triclopyr) per acre per year.

Oil Mixture Sprays - Add Alligare Triclopyr 4 to the required amount of oil in the spray tank or mixing tank and mix thoroughly. If the mixture is allowed to stand for more than 4 hours, agitation is required.

Oil-Water Mixture Sprays - Prepare a premix of Alligare Triclopyr 4, oil, and surfactant in a separate container. Do not allow any water or mixtures containing water to get into the Alligare Triclopyr 4 or the premix. Mix in spray tank as follows:

1. Fill spray tank ½ full with water.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add premix
4. Continue moderate agitation.
5. Fill remainder of spray tank.

Note: If the premix is put in the tank without any water, the first water added may form a thick “invert” (water in oil) emulsion which will be hard to break.

Oil - Water Mixtures of Alligare Triclopyr 4 and Tordon® or Picloram K: When mixed together in oil, these herbicides are incompatible and will not form a stable mixture. Stable tank mixtures of Alligare Triclopyr 4 and Tordon® or Picloram K for basal bark application can be made if each product is first combined with a compatibility agent prior to final mixing in oil in the desired ratio. (See product bulletin for mixing instructions.)

Basal Bark Treatment - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 1 to 5 gallons of Alligare Triclopyr 4 in enough oil to make 100 gallons of spray solution. Apply with knapsack sprayer or power spraying equipment using low pressure (20-40 PSI). Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground. Thorough wetting is necessary for good control. Spray until runoff at the ground line is noticeable. Old or rough bark requires more spray than smooth young bark. Apply at any time, including the winter months, except when snow or water prevents spraying to the ground line.

Low Volume Basal Bark Treatment - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 20 to 30 gallons of Alligare Triclopyr 4 in enough oil to make 100 gallons of spray solution. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks in a manner which thoroughly wets the lower stems, including the root collar area, but not to the point of runoff. Herbicide concentration should vary with size and susceptibility of species treated. Apply at any time, including the winter months, except when snow or water prevents spraying to the ground line or when stem surfaces are saturated with water.

Alligare Triclopyr 4 Plus Tordon® or Picloram K in Oil Tank Mix – Alligare Triclopyr 4 and Tordon® or Picloram K may be applied as a low volume basal bark treatment to improve control of certain woody species such as ash, elm, maple, poplar, aspen, hackberry, oak, oceanspray, birch, hickory, pine, tanoak, cherry, locust, sassafras, and multiflora rose. (See product bulletin for mixing instructions.)

Streamline Basal Bark Treatment - To control or suppress susceptible woody plants, mix 20 to 30 gallons of Alligare Triclopyr 4 with 10% penetrant such as Cide-Kick or similar penetrant in enough oil to make 100 gallons of spray solution. Apply with a backpack or knapsack sprayer using equipment which provides a directed straight stream spray. For stems less than 3 inches in basal diameter, apply sufficient spray to one side of the stems to form a treated zone that is 6 inches in height. When the optimum amount of spray mixture is applied, the treated zone should widen to encircle the stem within approximately 30 minutes.

Treat both sides of stems which are 3 to 4 inches in basal diameter. Direct the spray at bark that is approximately 12 to 24 inches above the ground. Pines (loblolly, slash, shortleaf, and Virginia) up to 2 inches in diameter breast height (dbh) can be controlled by directing the spray at a point approximately 4 feet above ground. Vary spray mixture concentration with size and susceptibility of the species being treated.

Best results are achieved when applications are made to young vigorously growing stems which have not developed the thicker bark characteristic of slower growing, under-story trees in older stands. This technique is not recommended for scrub and live oak species, including blackjack, turkey, post, live, bluejack and laurel oaks, or bigleaf maple. Apply from approximately 6 weeks prior to hardwood leaf expansion in the spring until approximately 2 months after leaf expansion is completed. Do not apply when snow or water prevent spraying at the desired height above ground level.

Low Volume Stem Bark Band Treatment (North Central and Lake States) - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 20 to 30 gallons of Alligare Triclopyr 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6 to 10 inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results apply the band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made at any time, including winter months.

Thinline Basal Bark Treatment - To control susceptible woody plants with stems less than 6 inches in diameter, apply Alligare Triclopyr 4 either undiluted or mixed at 50-75% v/v with oil in a thin stream to all sides of the lower stems. The stream should be directed horizontally to apply a narrow band around each stem or clump. Use a minimum of 2 to 15 milliliters of Alligare Triclopyr 4 or oil mixture with Alligare Triclopyr 4 to treat single stems and from 25 to 100 milliliters to treat clumps of stems. Use an applicator metered or calibrated to deliver the small amounts required.

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Dormant Stem Treatment

Dormant stem treatments can be used to control susceptible woody plants and vines with < 2 inch diameter stems. Plants with > 2 inch diameter stems may not be controlled and resprouting may occur. This application method works best in dense areas with small diameter brush. Dormant stem treatments of Alligare Triclopyr 4 can also be used as a chemical side-trim to control lateral branches of larger trees that encroach onto roadside, utility, or other rights-of-way.

Mix 4 to 8 quarts of Alligare Triclopyr 4 in 2 to 3 gallons of crop oil concentrate or other recommended oil. Add this mixture to enough water to make 100 gallons of spray solution. Use continuous agitation to maintain mix. Apply in 70 to 100 gallons per acre with Radiarc, OC or equivalent nozzles, or handgun to ensure uniform stem coverage. In western states, apply anytime after woody plants are dormant. In other areas, apply anytime within 10 weeks of bud break, generally February through April. Do not apply to wet or saturated bark as poor control may result.

For improved control of black cherry, mix Alligare Triclopyr 4 with 4 quarts of Weedone 170 herbicide. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

For root suckering species such as sumac, sassafras and locust, also spray the ground under the plant to cover small root suckers which may not be visible above the soil surface.

Cut Stump Treatment

Resprouting of cut stumps of susceptible species can be controlled by mixing 20 to 30 gallons of Alligare Triclopyr 4 in enough oil to make 100 gallons of spray solution. Apply at low pressure with a backpack or knapsack sprayer; using either solid cone or flat fan nozzles. Apply to the root collar area, sides of the stump, and the outer portion of the cut surface including cambium. The treated area should be thoroughly wet, but do not apply to the point of runoff. Vary spray mixture concentration according to size and susceptibility of treated species. Applications can be made at any time of the year, including in winter months. Do not apply when snow or water prevent application to the ground line.

Cut Stump Treatment in Western States

Resprouting of cut stumps of salt-cedar and other *Tamarix* spp., bigleaf maple, tanoak, Oregon myrtle, and other susceptible species can be controlled by treating the cambium and adjacent wood around the circumference of the cut stump to wet. Applications may be made at any time during the year, however, reduced control may occur during periods of moisture stress as can occur in late summer. Use an applicator which can be calibrated to deliver small amounts.

Note: All basal bark and dormant brush treatments may be used on grazed range and permanent pasture land provided that no more than 2 quarts/acre/year of Alligare Triclopyr 4 are applied. Large plants or species requiring higher rates of Triclopyr may not be completely controlled. See the **Use Restrictions** section for grazing restrictions.

Chemical Mowing on Non-Cropland Sites Infested with Annual and Perennial Broadleaf Weeds or Woody Plants

To control annual and perennial broadleaf weeds and for suppression and stem density reduction of woody plants that occur on rights-of-way, airport grounds, petroleum tank farms or other industrial sites, Alligare Triclopyr 4 may be applied to the cut surfaces of weed or brush stubble under the deck of a rotary mower such as the Lucas "64" System or other approved equipment that is designed to uniformly apply the herbicide. Apply when growing conditions are favorable and the weeds are actively growing.

Broadleaf Weed Control: Using a minimum spray volume of 3 gallons per acre, apply the rate specified in the "Broadcast Applications with Ground Equipment – Broadleaf Weed Control" section of this label. To improve weed control or broaden the spectrum of weeds controlled, follow the label directions for herbicides that may be applied in tank mix combination with Alligare Triclopyr 4.

Woody Plant Control: For suppressing and reducing stem density of woody species, use 3 to 6 quarts of Alligare Triclopyr 4 in a minimum spray volume of 5 gallons per acre. To improve woody plant control or broaden the spectrum of woody plants controlled, follow label directions for herbicides that may be applied in tank mix combination with Alligare Triclopyr 4.

Forest Management Applications

For broadcast applications, apply the specified rate of Alligare Triclopyr 4 in a total of 5 to 25 gallons per acre by air or in 10 to 100 gallons per acre by ground. Use sufficient spray volumes to provide thorough coverage of treated foliage. Use application systems designed to prevent spray drift to off-target sites. Nozzles or additives used for drift minimization that produce larger droplets may require higher spray volumes to provide adequate plant coverage.

Conifer Plant Back Interval – Conifer injury may occur if conifers are planted sooner than 1 month after Alligare Triclopyr 4 treatments at rates up to 4 quarts per acre; or if conifers are planted sooner than 2 months after treatment with rates of 4 to 6 quarts per acre. When herbicide tank mixtures are used for forest site preparation, use the longest plant back waiting period recommended on any tank mix partner.

Forest Site Preparation (Not For Conifer Release)

Broadcast Applications in Southern States (Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia) - To control susceptible woody plants and broadleaf weeds, apply 4 to 6 quarts per acre of Alligare Triclopyr 4. Alligare Triclopyr 4 may be applied at a rate of 2 to 4 quarts per acre in a tank mix combination with labeled rates of Tordon® 101 Mixture or Picloram K to broaden the spectrum of woody plants and broadleaf weeds controlled. Tordon® 101 Mixture and Tordon® or Picloram K are not registered for use in California and Florida. For grass control, Alligare Triclopyr 4, alone or in combination with Tordon® or Picloram K or Tordon® 101 Mixture, may be tank mixed with other herbicides registered for grass control in forests.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadcast Applications in All Other States (Except those listed as Southern States) -

To control susceptible woody plants and broadleaf weeds, apply 3 to 6 quarts per acre of Alligare Triclopyr 4. Alligare Triclopyr 4 may be applied at a rate of 1.5 to 3 quarts per acre in a tank mix combination with labeled rates of Tordon® 101 Mixture, Tordon® or Picloram K, or 2,4-D low volatile ester to broaden the spectrum of woody plants and broadleaf weeds controlled. Tordon® 101 Mixture and Tordon® or Picloram K are not registered for use in California and Florida. For grass control, Alligare Triclopyr 4, alone or in combination with Tordon® or Picloram K or Tordon® 101 Mixture, may be tank mixed with other herbicides registered for grass control in forests.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Site Preparation in Southern Coastal Flatwoods - To control susceptible broadleaf weeds

and woody species such as gallberry and wax-myrtle, and for partial control of saw-palmetto, apply 2 to 4 quarts per acre of Alligare Triclopyr 4. To control species such as fetterbush, staggerbush, titi, and grasses, apply Alligare Triclopyr 4 at 2 to 3 quarts per acre in a tank mix combination with labeled rates of Arsenal Applicator's Concentrate or Imazapyr 4SL herbicide. To control gallberry, wax-myrtle, broadleaf weeds, and grasses, 2 to 3 quarts per acre of Alligare Triclopyr 4 may be applied in tank mix combination with labeled rates of Glyphosate 4 herbicide.

Apply as broadcast applications during site preparation of flat planted or bedded sites; or as bands over the tops of beds on bedded sites. Best results will occur if applications are made in late summer or fall. Efficacy may not be satisfactory for early season applications made prior to August.

Note: Do not apply after planting pines.

Conifer Release Applications

Note: Conifer release applications may cause temporary damage and growth suppression of conifers where direct contact occurs; however, injured conifers should recover and grow normally. Over-the-top spray applications can kill pines.

Directed Sprays

To release conifers from competing hardwoods and brush such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, hickory, alder, birch, aspen, pin cherry, *Ceanothus* spp., blackberry, chinquapin, and poison oak, mix 4 to 20 quarts of Alligare Triclopyr 4 in enough water to make 100 gallons of spray mixture. Direct the spray onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent. Make applications any time after the hardwoods and brush have reached full leaf size, but before autumn coloration. The majority of treated hardwoods and brush should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct the spray solution away from conifer foliage, particularly foliage of desirable pines. See the **RATES** Table in the **APPLICATIONS DIRECTIONS** section for relationship between mixing rate, spray volume and maximum application rate.

Mid-Rotation Understory Brush Control in Southern Coastal Flatwoods Pine Stands (Ground Equipment Only)

Make broadcast applications of Alligare Triclopyr 4 at 2 to 4 quarts per acre for control of broadleaf weeds and susceptible woody plant species such as gallberry and wax-myrtle. To broaden the spectrum of woody plants controlled to include fetterbush, staggerbush, and titi, apply 2 to 3 quarts per acre of Alligare Triclopyr 4 in a tank mix with labeled rates of Arsenal Applicators Concentrate. Saw-palmetto will be partially controlled by use of Alligare Triclopyr 4 at 4 quarts per acre or by a tank mix of Alligare Triclopyr 4 at 2 to 3 quarts per acre with either Arsenal Applicator's Concentrate, Imazapyr 4SL, Escort, or Metsulfuron Methyl 60DF herbicide.

These mixtures should be broadcast applied over target understory brush species, **but to prevent injury to pines, make applications underneath the foliage of pines.** For best results, apply 30 or more gallons per acre of spray solution. Make applications in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadcast Applications for Conifer Release in the Pacific Northwest and California

Dormant Conifers Before Bud Swell (Excluding Pines) -To control or suppress deciduous hardwoods such as vine maple, bigleaf maple, alder, scotch broom, or willow **before leaf-out** or evergreen hardwoods such as madrone, chinquapin, and *Ceanothus* spp., use Alligare Triclopyr 4 at 1 to 2 quarts per acre. Diesel or fuel oil may be used as diluents. If applying in water, add 1 to 2 gallons per acre of diesel oil, a suitable surfactant, or an oil substitute at manufacturer's recommended rates.

Conifer Plantations (Excluding Pines) Before Conifer Bud Break and After Hardwoods Begin Growth ("Early Foliar" Hardwood Stage) – Apply Alligare Triclopyr 4 at 1 to 1.5 quarts per acre alone or in a tank mix with 2,4-D low volatile ester herbicide in water carrier. Apply no more than 3 pounds acid equivalent per acre from both products. After conifer bud break, these sprays may cause more serious injury to the crop trees. Use of a surfactant may cause unacceptable injury to conifers especially after bud break.

Conifer Plantations (Excluding Pines) After Conifers Harden Off in Late Summer and While Hardwoods Are Still Growing Actively – Apply Alligare Triclopyr 4 at 1 to 1.5 quarts per acre alone or in a tank mix with 2,4-D low volatile ester in water carrier. Apply no more than 3 pounds acid equivalent per acre from both products. Treat as soon after conifer bud hardening as possible so that hardwoods and brush are actively growing. Use of oil, oil substitute, or surfactant may cause unacceptable injury to the conifers.

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Broadcast Applications for Conifer Release in the Eastern United States
To release spruce, fir, red pine, and white pine from competing hardwoods such as red maple, sugar maple, striped maple, alder, birch (white, yellow, and grey), aspen, ash, pin cherry, and *Rubus* spp. and perennial and annual broadleaf weeds, apply Alligare Triclopyr 4 at 1.5 to 3 quarts per acre alone or in a tank mix with 2,4-D amine or low volatile ester. Apply no more than 4 pounds acid equivalent per acre from both products. Make applications in late summer or early fall after conifers have formed their over-wintering buds; and hardwoods are in full leaf prior to autumn coloration.

Broadcast Applications for Conifer Release in the Lake States Region
To release spruce, fir, and red pine from competing hardwoods such as aspen, birch, maple, cherry, willow, oak, hazel, and *Rubus* spp. and perennial and annual broadleaf weeds, apply Alligare Triclopyr 4 at rates of 1.5 to 3 quarts per acre. Make applications in late summer or early fall after conifers have formed their over-wintering buds and hardwoods are in full leaf prior to autumn coloration.

Application Directions for Rangeland, Permanent Grass Pastures, and Conservation Reserve Program (CRP) Acres

Refer to Tables 1 and 2 of this label for a list of woody plants and broadleaf weeds that are controlled by Alligare Triclopyr 4.

Florida: Alligare Triclopyr 4 may be applied to non-irrigation ditchbanks and fencerows on farms and ranches in addition to those uses listed in this section of the label.

Application Methods

Foliage Treatment with Ground Equipment
Use sufficient spray volume to completely and uniformly cover foliage using 10 or more gallons of total spray volume per acre. To ensure adequate coverage of plants with increased depth and density of foliage, and particularly for treatment of woody plants, use higher spray volumes.

High-Volume Foliage Treatment
To control susceptible woody plants, use the specified rate of Alligare Triclopyr 4 alone or in a tank mix to make 100 gallons of spray mixture. For rangeland and permanent pasture sites, make 1 application per year and apply no more than 2 quarts of Alligare Triclopyr 4 (2 lbs. ae of triclopyr) per acre. Alligare Triclopyr 4 may be tank mixed with other herbicides at directed rates (see application rates table below) to control a broader spectrum of woody plants and broadleaf weeds. Be sure to follow all applicable use directions, precautions, and limitations on the respective product labels when tank mixing.

Apply sufficient spray volume to thoroughly wet all leaves, stems, and root collars. Minimize spray drift by using the minimum spray pressure that provides adequate plant coverage without forming a mist and direct sprays no higher than the top of the target plants. A drift control additive cleared for application to growing crops may also be used to reduce spray drift. For best results, apply when woody plants and weeds are actively growing.

Application Rates per 100 Gallons of Spray		
Alligare Triclopyr 4	Plus Tank Mix Product	Rate (qt)
1-4 qt	—	—
1-2 qt	Grazon® P+D specialty herbicide	4
1-2 pt	2,4-D low volatile ester herbicide	1-2
1-2 qt	Tordon® or Picloram 22K specialty herbicide	1-2
2 qt	Reclaim® specialty herbicide ^{1,2}	2

¹Reclaim® is registered for use only in Arizona, Texas, Oklahoma and New Mexico.
²See directions for Mesquite Control Using High Volume Foliage Treatment below.

Mesquite Control Using High Volume Foliage Treatment: To control low to moderate density mesquite infestations, apply a tank mixture of Alligare Triclopyr 4 and Reclaim® to individual plants with a backpack or hand-held sprayer or a vehicle-mounted sprayer with hand-held spray wand or spray gun. For individual plant treatment, use 2 quarts of Alligare Triclopyr 4 with 2 quarts of Reclaim® per 100 gallons of total spray solution (1/2 % v/v of each product). Apply in water or as an oil-water emulsion as described in the Mixing Directions Section. If an oil-water emulsion is used, add the oil at a rate of 5% of the total spray volume. Apply as a complete spray-to-wet foliar application, including all leaves. Thorough coverage is necessary for good results, but do not spray to the point of runoff. This application method works best for brush less than 8 feet tall since efficient treatment and thorough coverage of taller brush is difficult to achieve using this method. Do not apply when mesquite foliage is wet. The total amount of Reclaim® applied should not exceed 1 1/3 pints per acre. For best results, follow information given elsewhere in this label concerning effect of environmental conditions and application timing on control. To minimize drift, select a spray nozzle and pressure that generates a coarse spray and provides good coverage. Drift may be reduced by directing sprays no higher than the top of target plants and by using the minimum pressure necessary to obtain plant coverage without forming a mist. If desired, a spray dye may be added to the spray mixture to mark the treated plants.

Broadcast Application With Aerial or Ground Equipment
Brush and weed control results are influenced by environmental conditions and application timing; for best results, apply when woody plants and weeds are actively growing. For woody species, apply when leaf tissue is fully expanded and terminal growth has slowed after the rapid growth period of early spring. To ensure adequate foliage for herbicide absorption, brush regrowth should be at least 4 ft. high prior to treatment. The presence of healthy foliage at the time of application as well as adequate soil moisture before and after treatment are important factors contributing to optimal herbicidal activity.

Apply sufficient spray volume to completely and uniformly cover foliage using 10 or more gallons of total spray volume per acre for ground applications and at least 2 gallons of total spray volume per acre for aerial applications. To ensure adequate coverage of plants with increased depth and density of foliage, and particularly for treatment of woody plants, use

higher spray volumes.

Mesquite: The herbicidal response of mesquite is strongly influenced by foliage condition, growth stage and environmental conditions. For best results, apply when soil moisture is adequate for plant growth, the soil temperature is above 75°F at a depth of 12 to 18 inches, and new growth foliage has turned from light to dark green. Apply within 60 days after the 75°F minimum soil temperature at the 12 to 18 inch depth has been reached (the rate of soil warm-up at the 12 to 18 inch depth may vary with soil texture and drainage with coarse-textured (sandy) soils warming up sooner than fine-textured (clay) soils and dry soils warming up more quickly than wet soils). If the application is made before mesquite foliage has turned from light to dark green or if foliage has been injured or removed by late frost, insects, hail or plant diseases, product performance may be adversely affected. Do not treat if mesquite exhibits new (light green) terminal growth in response to recent heavy rainfall during the growing season and to ensure adequate foliage for herbicide absorption, mesquite regrowth should be at least 4 ft. high prior to treatment.

Mesquite Only
Apply ½ to 1 pint of Alligare Triclopyr 4 per acre in combination with 2/3 to 1 1/3 pints per acre of Reclaim®. Refer to the Reclaim® label for additional treatment recommendations and information on mesquite control. Apply as an oil/water emulsion in 4 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application.

Mesquite and Pricklypear Cactus
For pricklypear cactus in association with mesquite, apply a tank mix of ½ to 1 pint of Alligare Triclopyr 4 with 1 to 2 pints of Tordon® or Picloram 22K per acre. For a higher and more uniform plant kill of pricklypear, use the 2 pint per acre rate of Tordon® or Picloram 22K. To control pricklypear while providing improved control of mesquite, Tordon® or Picloram 22K may also be applied in combination with Reclaim®. Refer to the Tordon® or Picloram 22K and Reclaim® labels for additional information and treatment recommendations. Apply as an oil/water emulsion in 4 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application.

South Texas Mixed Brush (Mesquite, Pricklypear Cactus, Blackbrush, Twisted Acacia and Granjeno)
If pricklypear is a problem, apply 1 to 2 pints of Alligare Triclopyr 4 in a tank mixture with 2 pints of Tordon® or Picloram 22K per acre. If mesquite is the prevalent species apply 1 to 2 pints of Alligare Triclopyr 4 with 2/3 to 1 1/3 pints of Reclaim® per acre. Alligare Triclopyr 4 contributes to the control of non-legume species such as granjeno and oaks; however, for improved control if primarily woody legume species are present, apply 2 pints of Tordon® or Picloram 22K per acre in combination with 2/3 to 1 1/3 pints of Reclaim® per acre. Refer to the Tordon® or Picloram 22K and Reclaim® labels for additional information and treatment recommendations. Apply as an oil/water emulsion in 4 gallons or more total volume per acre for aerial applications or in 15 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application. For acceptable brush control, an oil/water emulsion and good spray coverage is critical.

Sand Shinnery Oak Suppression
In Texas, New Mexico and Oklahoma, for suppression of shinnery oak growing on sandy soils apply Alligare Triclopyr 4 alone at a rate of ½ to 2 pints per acre. Following suppression, grass response may be significant if rainfall is adequate. Deferring grazing after application together with proper grazing management is recommended to allow for the reestablishment of grass stands.

Post Oak and Blackjack Oak – Regrowth Stands
Apply when oak leaves are fully developed (expanded) in late spring to early summer (May-July). Use 2 quarts of Alligare Triclopyr 4 alone or in tank mix combination with 0.5 to 1 pint of 2,4-D low-volatile ester herbicide per acre. Apply as an oil/water emulsion or water surfactant dilution in at least 5 gallons per acre total volume by fixed-wing aircraft or helicopter or 15 to 25 gallons per acre total volume by ground equipment. Use no more than 1 gallon of oil per acre for both aerial and ground application. For suppression only, lower rates may be used. Control will require at least 3 consecutive treatments. **Note:** Because regrowth plants have a large root mass relative to top growth, delay broadcast treatment until top growth is at least 4 ft. tall in order for the top growth to intercept and translocate sufficient herbicide to control the roots.

High Volume Foliage Treatment: For regrowth less than 4 ft tall, apply 2 quarts of Alligare Triclopyr 4 per 100 gallons of water and 2 quarts of ag surfactant alone or in tank mix combination with 1 gallon of Grazon® P+D or 1 quart of Tordon® or Picloram 22K. Apply to individual plants as a high volume leaf-stem treatment using ground equipment.

Post Oak and Blackjack Oak – Mature Stands
To control mature stands (greater than 5 ft tall), apply 2 quarts of Alligare Triclopyr 4 per acre when oak leaves are fully developed (expanded) in late spring to early summer (May-July). When using Alligare Triclopyr 4 alone, some understory species such as winged elm, buckbrush, tree huckleberry and ash occurring in some areas will be suppressed or defoliated but not controlled. Where these understory species occur, control may be improved by tank mixing 2 quarts of Alligare Triclopyr 4 with 1 quart of Tordon® or Picloram 22K or 4 quarts of Grazon® P+D per acre. For best results, apply using fixed-wing aircraft or helicopter as an oil/water emulsion in a total volume of 5 or more gallons per acre.

Other Susceptible Woody Plants
Apply 2 to 4 pints of Alligare Triclopyr 4 alone or in combination with 2 to 3 quarts of 3.8 lb/gal 2,4-D low volatile ester or amine formulation per acre. If applications are made when plants are mature late in the summer, during drought conditions, or if difficult to control species such as ash, choke cherry, elm, maple or oaks are prevalent on the site, use the higher rates of Alligare Triclopyr 4, alone or with 2,4-D. For increased control of certain species, Alligare Triclopyr 4 may also be applied in a tank mixture with Grazon® P+D or Tordon® or Picloram 22K, refer to the labels for Grazon® P+D and Tordon® or Picloram 22K for additional information and treatment recommendations. Apply in 4 gallons or more total volume per acre aerially or in 10 gallons or more total volume per acre when using ground equipment. Apply during or

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after bloom for best results on blackberry. For management of kudzu, use 1 quart of Alligare Triclopyr 4 per acre. To achieve the desired level of control, repeat applications may be necessary.

Susceptible Broadleaf Weeds

When weeds are actively growing, apply 2 pints of Alligare Triclopyr 4 per acre as a broadcast spray in a total volume of 10 or more gallons per acre by ground equipment or in a total volume of 2 or more gallons per acre aerially. Alligare Triclopyr 4 at a rate of ½ to 3 pints may be tank mixed with 1 to 2 quarts of 3.8 lb/gal 2,4-D amine or low volatile ester.

Growing Point and Leaf Base (Crown) Treatment of Yucca

Prepare a 2% v/v solution of Alligare Triclopyr 4 in diesel or fuel oil (13 fl oz of Alligare Triclopyr 4 in 5 gallons of spray mixture). Thoroughly wet the center of the plant including growing point and leaf bases to the soil surface. Complete coverage of leaves is not necessary.

Conservation Reserve Program (CRP) for Established Permanent Grass Stands

NOTE: Use Alligare Triclopyr 4 on CRP acres only after perennial grasses are well established.

Broadcast Application Ground or Aerial: For small weed control, apply 1 to 2 pints of Alligare Triclopyr 4 per acre. For deep-rooted perennial and susceptible woody species control apply up to 1 ½ quarts of Alligare Triclopyr 4 per acre. Apply in 2 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications.

Restrictions:

- Apply no more than 1 ½ quarts of Alligare Triclopyr 4 per acre per growing season on CRP acres.
- When applying to CRP lands, follow all applicable state and federal regulations. Follow the most severe grazing restriction imposed by the pesticide label or by the USDA Acreage Conservation Reserve Program. After that time period, follow local (CRP) guidelines regarding cropping and hay restrictions. If legumes are a desired cover crop during CRP, do not use Alligare Triclopyr 4.

Application Directions for Ornamental Turf

Refer to Table 2 for a list of broadleaf weeds controlled by Alligare Triclopyr 4.

For spot treatments, do not apply more than 2 qts. of Alligare Triclopyr 4 per acre in a single application.

Foliar sprays should be applied during warm weather, from early spring through fall, when weeds are actively growing. Broadleaf weeds germinate at different times. Only emerged weeds present at the time of application will be controlled. Newly seeded turf should be mowed 2 or 3 times before being treated. When making applications to mature plants, hard-to-control species, or during drought conditions, use higher rates. Application under drought conditions may provide less than desirable results. Use low pressure sprays to minimize spray drift. Do not water for 24 hours after application.

Mixing Instructions

When Alligare Triclopyr 4 is mixed with water it forms an emulsion (not a solution) and separation may occur unless the spray mixture is agitated continuously.

Add about one-half the required amount of clean water to the spray tank. Start agitation and add the specified amount of Alligare Triclopyr 4. Provide moderate agitation while completing the addition of water and during application.

Reseeding Precaution: Do not reseed for 3 weeks after application. (This precaution does not apply when bermudagrass turf is overseeded with perennial ryegrass at a minimum reseeding of 400 lbs. per acre.)

Broadcast Treatment of Ornamental Turf

Apply ½ to 1 quart per acre of Alligare Triclopyr 4 in enough water to provide uniform coverage of the target area to control actively growing broadleaf weeds growing in perennial bluegrass, perennial ryegrass, or tall fescue. Do not use on other turfgrass species (see Use Precautions section of this label) unless injury can be tolerated. To minimize turf injury, do not treat if turf is under heat-or drought-stress and make repeat applications at least 4 weeks apart.

Tank Mixing: To improve the spectrum of activity, Alligare Triclopyr 4 may be tank mixed at a rate of ½ to 1 pint per acre with directed rates of low volatile amine or ester formulations of 2,4-D, MCPP, or other labeled postemergence broadleaf herbicides. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

Spot Treatment of Ornamental Turf

Mix 3/8 to ¾ ounces of Alligare Triclopyr 4 per 1000 square feet in enough water to provide uniform coverage of the target area and apply at any time broadleaf weeds are susceptible. **Note:** Do not apply more than 2 quarts per acre or 1.5 ounces per 1000 square feet of Alligare Triclopyr 4 in a single application.

Control of Kikuyugrass

Apply Alligare Triclopyr 4 at a rate of ½ to 1 quart per acre. To improve activity, MSMA herbicide may be tank mixed with the ½ quart per acre rate of Alligare Triclopyr 4. Three to four additional applications at 4 to 6 week intervals may be required to achieve control of kikuyugrass.

Suppression of Bermudagrass

Apply Alligare Triclopyr 4 at the rate of 1 quart per acre. Three to four additional applications at 4 week intervals will be required to give adequate suppression of bermudagrass and allow fescue or other desired turfgrass species to dominate. To improve suppression and control

of bermudagrass, 1 quart per acre of Alligare Triclopyr 4 may be tank mixed with a postemergence grass herbicide registered for this use pattern. Three to four additional applications of this tank mix at 4 week intervals should be made to achieve control. Reseeding following application will accelerate the transition to cool season turf (see Reseeding Precautions above).

Table 1

Woody Plants Controlled by Alligare Triclopyr 4

Alder	Dogwood	Oaks	Thimbleberry
Arrowwood	Douglas fir	Osage Orange	Tree-of-Heaven (<i>Ailanthus</i>) ¹
Ash	Elderberry	Pepper Vine ²	Trumpet Creeper ³
Aspen	Elm	Persimmon	Tulip Poplar
Bear Clover (Bearnat)	Galberry	Persimmon, Eastern	Twisted Acacia
Beech	Gorse	Pine	Virginia Creeper ³
Birch	Granjeno	Poison Ivy	Wax Myrtle
Blackberry	Guajillo	Poison Oak	Wild Rose
Blackbrush	Guava ²	Poplar	Willow
Black gum	Hawthorn	Salmonberry	Winged elm
Boxelder ¹	Hazel	Saltbush (<i>Braccharis spp.</i>)	
Brazilian Pepper	Hickory	Saltbush (silver myrtle) ²	
Buckthorn	Hornbeam	Salt Cedar ¹	
Cascara	Huisache (suppression)	Sassafras	
Ceanothus	Kudzu ²	Scotch Broom	
Cherry	Locust	Sumac	
Chinquapin	Madrone	Sweetbay Magnolia	
Choke Cherry	Maples	Sweet Gum	
Cottonwood	Milkweed Vine ³	Sycamore	
Crataegus (hawthorn)	Mulberry	Tan Oak	

¹For best control, use either a basal bark or cut stump treatment.

²For complete control, retreatment may be necessary.

³Basal or dormant stem applications only

Table 2

Annual and Perennial Broadleaf Weeds Controlled by Alligare Triclopyr 4

Black Medic	Curly dock	Matchweed	Sulfur Cinquefoil (2)
Bull Thistle	Dandelion	Mustard	Sweet Clover
Burdock	Dogfennel	Oxalis	Tropical Soda Apple (3)
Canada Thistle	Field Bindweed	Plantain	Vetch
Chicory	Goldenrod	Purple Loosetrife	Wild Carrot (Queen Anne's Lace)
Cinquefoil	Ground Ivy	Ragweed	Wild Lettuce
Clover	Lambsquarters	Sericea Lespedeza (1)	Wild Violet
Creeping Beggarweed	Lespedeza	Smartweed	Yarrow

(1) **Sericea lespedeza:** Apply 1 to 2 pints of Alligare Triclopyr 4 per acre. For best results, apply after maximum foliage development in the late spring to early summer, but prior to bloom.

(2) **Sulfur cinquefoil:** Apply 1 to 2 pints of Alligare Triclopyr 4 per acre. For best results, apply to plants in the rosette stage.

(3) **Tropical soda apple:** When plants reach the first flower stage, apply 2 pints of Alligare Triclopyr 4 per acre. For best results, apply using ground equipment in a total spray volume of 40 gallons per acre. To provide more complete wetting and coverage of the foliage, an agricultural surfactant may be added at the manufacturer's recommended rate. To control sparse plant stands, use spot treatments. For spot treatment use a 1 to 1.5% solution of Alligare Triclopyr 4 in water (1 to 1 ½ gallons of Alligare Triclopyr 4 in 100 gallons total spray mixture) and spray the entire plant to completely wet the foliage. In Florida, control of tropical soda apple may be improved by using the following management practices:

- Mow plants to a height of 3 inches every 50 to 60 days or whenever they reach flowering. Continue mowing on this schedule through April.
- In late May to June (50 to 60 days after the April mowing), apply a broadcast treatment of Alligare Triclopyr 4.
- To control any remaining plants or to thin stands of plants that germinate following a broadcast treatment, use spot treatments.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store above 28°F or agitate before use.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product (that cannot be used according to label instructions) must be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

[NONREFILLABLE CONTAINERS:]

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable container ≤ 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

(Nonrefillable > 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

[REFILLABLE CONTAINERS:]

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

LIMITED WARRANTY, TERMS OF SALE, AND LIMITATION OF LIABILITY

Upon purchase or use of this product, purchaser and user agree to the following terms:

Warranty: Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. No such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

Terms of Sale: The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

Limitation of Liability: To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income, and any such claims are hereby waived. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

*Trademark of Dow AgroSciences

EPA 20130123

SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)



1. IDENTIFICATION

PRODUCT NAME: Alligare Triclopyr 4

DESCRIPTION: A liquid herbicide.

EPA Reg. No.: 81007-11

COMPANY IDENTIFICATION:

Alligare, LLC

1565 5th Avenue

Owensboro, KY 40301

2. HAZARD IDENTIFICATION

DANGER

May be fatal if swallowed and enters airways. H304

Harmful if swallowed. H302

Causes mild skin irritation. H316

May cause an allergic skin reaction. H317

Irritant to aquatic life. H400

Combustible liquid. H227



HAZARD CLASSIFICATION

Health Hazard

Aspiration Hazard

Sensitization, Skin

Skin Corrosion/Irritation

Acute Toxicity, Oral

Category

1

1

2

4

Physical Hazards

Flammable Liquids

Category

4

Environmental Hazards

Hazardous to the aquatic environment, short-term

Category

1

PRECAUTIONARY STATEMENTS

Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. P64 P70

Avoid breathing mist/sprays. Contaminated clothing should not be allowed out of the workplace. Wear protective gloves. P61 P73 P80

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves protective clothing eye protection face protection. P10 P73

Avoid release to the environment not in accordance with the product label. P73 **IF SWALLOWED:** Immediately call Poison Control Center or doctor. Rinse mouth. Do NOT induce vomiting. P301 P310 P330 P331

IF ON SKIN: Wash with plenty of water. **If skin irritation or rash occurs:** Get medical advice or attention. Specific treatment (See Section 4 for additional medical information). Take off immediately all contaminated clothing. P30 P35 P333 P313 P361 P364

Collect spillage. P301

Store locked up. P405

Dispose of contents/containers in accordance with local, State and Federal regulations. Refer to the product label for specific disposal instructions. P501

3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name

Triclopyr

Aromatic Hydrocarbons

Chemical Name

3,5,6-trichloro-2-pyridinol 2-methyl ester

Solvent Naphtha Petroleum, Heavy Aromatic

CAS

64700-56-7

64740-44-5

Composition

61.6%

35.0%

4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact CHEMTREC at 1-800-424-3000 for emergency medical treatment information.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. Do not give liquid to the person.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. If eye irritation persists, Get medical attention.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If skin irritation or rash occurs, Get medical attention.

NOTE TO PHYSICIAN: May cause aspiration hazard. Contains petroleum distillates.

5. FIREFIGHTING MEASURES

Fire and Explosion Hazards: Thermal decomposition may release irritating gases and fumes (see Section 10).

Extinguishing Medium: Foam, dry chemical, CO₂ or water fog.

Fire Fighting Equipment: Firefighters should be equipped with self-contained positive pressure breathing apparatus and full protective gear.

Fire Fighting Instructions: Evacuate area and fight fire upwind from a safe distance to avoid possible hazardous fumes and decomposition products. Do not allow runoff to enter sewers, storm drains or waterways. Foam and dry chemical extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

Hazardous Combustion Products: Hydrogen chloride, oxides of nitrogen, phosgene.

NFPA Ratings: Health – 3, Irritant – 2, Reactivity – 0

6. ACCIDENTAL RELEASE MEASURES

Clean up spills immediately observing the precautions in Section 8 of this MSDS. Isolate the hazard area and keep unnecessary and unprotected personnel from entering. Prevent material from contaminating soil or from entering sewage and drainage systems and bodies of water.

SMALL SPILLS: Absorb spill with sand, vermiculite or other inert absorbent. Place contaminated material into an appropriate container for disposal.

LARGE SPILLS: Dig large spills using absorbent or inert materials such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, scrape up and place in an appropriate container for disposal. After removal, flush contaminated area thoroughly with water, observing all environmental regulations. Recover wash liquid with additional absorbent and place in container for disposal.

7. HANDLING AND STORAGE

Avoid contact with skin, eyes and clothing. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove shoes immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Do not use or store near heat or open flame. Do not cut or weld container. Store above 8°F in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a secured storage area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an exhaust station and a safety shower. Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below exposure limits. Local mechanical exhaust ventilation may be required.

Protective Clothing: Long-sleeved shirt, long pants and shoes plus socks, and chemical resistant gloves of 14 mils such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber.

General: Wash thoroughly with soap and water after handling. Discard clothing and other absorbent materials that have been heavily contaminated with this product do not reuse them. Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Americ liquid	pH:	4.0 – 5.0
Odor:	Aromatic Solvent	Kinematic viscosity:	not available
Melting/freezing point:	not available	Solubility:	miscible
Boiling point/Boiling range:	not available	Partition coefficient:	not available
Flammability:	not available	Vapor pressure:	not available
Flammability limits (upper/lower):	not available	Density:	1.075 g/mL (8.7 lb/gal)
Flash point:	61.8°C (143.0°F)	Relative vapor density:	not available
Auto-ignition temperature:	not available	Particle characteristics:	not available
Decomposition temperature:	not available		

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Temperatures above 40°C (105°F) and below -22°C (-8°F)

CHEMICAL STABILITY: Stable under all normal use and storage conditions. May thermally decompose.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may generate hydrogen chloride, oxides of nitrogen and phosgene.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong acids and oxidizing agents.

POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ORAL TOXICITY (rat LD₅₀): > 1,000 mg/kg

DERMAL TOXICITY (rabbit LD₅₀): > 2,000 mg/kg

INHALATION TOXICITY (rat LC₅₀): > 5.0 mg/L

EYE IRRITATION: Mildly irritating

SKIN IRRITATION: Moderately irritating

SKIN SENSITIZATION: Potential sensitizer after repeated exposures to concentrate.

CARCINOGENICITY:

EPA: Not listed.

ACGIH: Not Listed

NTP: Not Listed

IARC: Not Listed

OSHA: Not Listed

MUTAGENIC TOXICITY: Little evidence of mutagenic effects during *in vivo* and *in vitro* assays.

REPRODUCTIVE TOXICITY: No evidence in animal studies.

12. ECOLOGICAL INFORMATION

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This herbicide is injurious to plants at extremely low concentrations. Nontarget plants may be adversely affected from drift and run-off.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

AQUATIC TOXICITY

Bluegill sunfish 96-hr LC₅₀ 0.44 mg/L

Daphnia magna 48-hr LC₅₀ 0.35 mg/L

Green Algae EC₅₀ 10.6 mg/L

TERRESTRIAL TOXICITY

White Owl or LD₅₀ 1350 mg/kg

Honeybee contact and oral LD₅₀ 30 µg/bee

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product that cannot be used according to label instructions must be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Refer to the product label for specific container handling instructions.

14. TRANSPORT INFORMATION

UN Number: 3082

Proper Shipping Name: Environmentally hazardous substance, liquid, N.O.S. Contains Triclopyr, Aromatic Hydrocarbons

Transport Hazard Class: 9

Packing Group: III

Hazard Zone: A

Marine Pollutant: Yes¹

Hazardous Substance RQ: None

Labels / Placards: S-DOT Combustible Liquid

IMDG, IATA Class Environmentally Hazardous Substance³

Emergency Guide: 171 NAERG – North American Emergency Response Guide

¹ Marine Pollutant Note: Ground-on shipments are excluded from Marine Pollutant labeling requirements as per 49 CFR 171.101 Appendix 4. For on-shipments involving oil or part of the transport vessel, the shipment must be classified as Marine Pollutant unless a limited quantity exemption applies (see note 3 below).

US-DOT Note: Containers 119 Gallons shipped on land or vessel not regulated for domestic transport. Containers ≥ 119 gallons or shipments on air must be shipped as NA103, Combustible Liquid, N.O.S. Contains Triclopyr, Aromatic Hydrocarbons, PG III. Emergency response guide 108.

³ IMDG / IATA Note: Not regulated when shipped in single or inner packaging ≤ 1.3 gallons (5 liters).

This information is not intended to convey all specific regulatory or operation requirements information relating to this product. Transportation classifications may vary by container volume and may be influenced by region or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

FIFRA –

This chemical is a pesticide product registered with the Environmental Protection Agency and is subject to certain labeling requirements under Federal Pesticide Law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels on non-pesticide chemicals. The following is the hazard information as required on the pesticide label.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Prolonged or repeated skin contact may cause allergic reactions in some individuals.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Basic or Chemical Hazards

Combustible: Do not use or store near heat or open flame. Do not cut or weld container.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under OSHA/ATSCA.

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate, Delayed, Fire

SARA Title III – Section 312 Threshold Planning Quantity

The threshold planning quantity (TPQ) for this product treated as a mixture is 10,000 lbs. This product contains no ingredients with a TPQ of less than 10,000 lbs.

SARA Title III – Section 313 Reportable Ingredients

None

CERCLA –

NA

CALIFORNIA PROP 65 STATUS –

This product does not contain chemicals known to the state of California to cause cancer or reproductive harm.

CANADA –

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

16. OTHER INFORMATION

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE HAZARDOUS PRODUCT LABELING attached to and accompanying the product container. This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities general other than product use, while the labeling provides that information specific for product use in the ordinary course. THIS INFORMATION IN THIS SDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGAR, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT SDS. JUDGMENTS AS TO THE RELIABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGAR, LLC MAKES NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR RELIABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

SDS Version 4.0

Effective Date 03/27/2023



TRICLOPYR 3

Specimen Label

Herbicide for Control of Woody Plants, Aquatic Plants and Annual and Perennial Broadleaf Weeds in Forests; Industrial Non-crop areas including industrial manufacturing and storage sites; Rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, and railroads; Fence rows; Non-irrigation ditch banks; Non-crop areas around farm buildings; on Christmas tree plantations; Chemical mowing*; on Wetland sites in production forests and industrial non-crop areas; in Aquatic sites such as ponds, lakes, reservoirs, non-irrigation canals, and ditches which have little or no continuous outflow.

*Not approved for this use in California.

ACTIVE INGREDIENT:

Triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, triethylamine salt* 44.4%

OTHER INGREDIENTS: 55.6%

TOTAL: 100.0%

*Contains 3 pounds of Triclopyr acid equivalent per gallon (31.05%)

EPA Reg. No. 81927-13

KEEP OUT OF REACH OF CHILDREN

DAÑERO / PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail).

FIRST AID	
If in eyes	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
If on skin or clothing	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice.
If swallowed	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious person.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	
NOTE TO APPLICATOR: Allergic skin reaction is not expected from exposure to spray solutions of Alligare Triclopyr 3 herbicide when used as directed.	
NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.	

Manufactured for:
Alligare, LLC
13 N. 8th Street
Opelika, AL 36801

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes irreversible eye damage. Harmful if absorbed through skin or swallowed. Do not get in eyes, on skin, or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers who handle this pesticide must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear
- Waterproof gloves

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables are given, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the

requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses, do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

For aquatic uses, under certain conditions, treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants, which may contribute to fish suffocation. This loss can cause fish suffocation. Therefore, to minimize this hazard, do not treat more than one-third to one-half of the water area in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency for fish and game before applying to public water to determine if a permit is needed.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store the product near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, or greenhouses. For applications to non-cropland areas, do not enter or allow others to enter the treated area until sprays have dried.

PRODUCT INFORMATION

Alligare Triclopyr 3 is used to control unwanted woody plants, aquatic plants, and annual and perennial broadleaf weeds:

- in Forests
- in Industrial Non-crop areas including industrial manufacturing and storage sites
- in Rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, and railroads
- in Fence rows
- in Non-irrigation ditch banks
- around Farm buildings
- on Christmas tree plantations
- for Chemical mowing (Not approved for this use in California)
- on Wetland sites in production forests and industrial non-crop areas
- in Aquatic sites such as ponds, lakes, reservoirs, non-irrigation canals, and ditches which have little or no continuous outflow

Alligare Triclopyr 3 use on these sites may include application to grazed areas as well as for the establishment and maintenance of wildlife openings.

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- USE PRECAUTIONS
- Obtain required permits: Consult with appropriate state or local water authorities before applying this product to public waters. State or local public agencies may require permits.
 - It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs) and transitional areas between upland and lowland sites.
 - When making application to banks or shorelines of moving water sites, minimize overspray to open water.

- USE RESTRICTIONS
- Do not apply this product through any type of irrigation system.
 - Do not apply to ditches or canals used to transport irrigation water. It is permissible to treat non-irrigation ditch banks.
 - Do not apply where runoff or irrigation water may flow onto agricultural land as injury to crops may result.
 - Do not apply directly to un-impounded rivers or streams.
 - Do not apply to salt water bays or estuaries.
 - Do not apply using a mistblower.
 - Do not make direct applications or allow spray mists to drift onto cotton; grapes; soybeans; tobacco; vegetable crops; flowers; ornamental shrubs or trees; or other desirable broadleaf plants.
 - For rights-of-ways, fence rows, or any area where grazing and haying is allowed, do not apply more than 2 lb a.e. of triclopyr (2/3 gallon of Alligare Triclopyr 3) per acre per year.
 - For forestry uses, do not apply more than 6 lb a.e. of triclopyr (2 gallons of Alligare Triclopyr 3) per acre per year.
 - For all terrestrial uses other than forestry sites, and grazing/haying areas, a maximum of 9 lb a.e. of triclopyr (3 gallons of Alligare Triclopyr 3) per acre per year may be applied.
 - All livestock, except lactating dairy animals, can graze at any time.
 - Lactating dairy animals cannot graze forage until the next growing season after application.
 - Do not harvest hay for 14 days after application.
 - Grazed areas of non-cropland and forestry sites may be spot treated if they comprise no more than 10% of the total grazable area.
 - Withdraw livestock from grazing treated grass or consumption of treated hay at least 3 days before slaughter.
 - Arizona:** Alligare Triclopyr 3 has not been approved for use on plants grown for commercial production, specifically forests grown for commercial timber production, or on designated grazing areas.

APPLICATION DIRECTIONS

RATES
This table assists in determining proper volumes of Alligare Triclopyr 3 in the spray tank to avoid exceeding the maximum use rates using varying spray volumes.

Spray Volume Gallons/Acre	Maximum Application Rates		
	Maximum Rate of Alligare Triclopyr 3 Gallons per 100 gallons of spray volume		
	Grazed/Hayed Non-Cropland Sites ¹	Forestry Sites ²	Other Non- Cropland Sites ³
400	Do not use	0.5	0.75
300	Do not use	0.67	1
200	Do not use	1	1.5
100	0.67	2	3
50	1.33	4	6
40	1.67	5	7.5
30	2.33	6.65	10
20	3.33	10	15
10	6.67	20	30

¹For rights-of-ways, fence rows, or any area where grazing and haying is allowed, do not apply more than 2 lb a.e. of triclopyr (2/3 gallon of Alligare Triclopyr 3) per acre per year.
²For forestry uses, do not apply more than 6 lb a.e. of triclopyr (2 gallons of Alligare Triclopyr 3) per acre per year.
³For all terrestrial uses other than forestry sites, and grazed/hayed areas, a maximum of 9 lb a.e. of triclopyr (3 gallons of Alligare Triclopyr 3) per acre per year may be applied.

SPRAY ADDITIVES
All surfactants and drift control agents must be approved for food and feed use when used on food and feed sites.

Surfactants: When using surfactants, follow the use directions and precautions listed on the surfactant manufacturer's label. Use the higher recommended concentrations of surfactant in the spray mixture when applying lower sprayer volumes per acre.

Drift Control Agents: Agriculturally approved spray thickening drift control agents or high viscosity invert systems may be used with Alligare Triclopyr 3. When using these agents, follow all use directions and precautions on the product label. Do not use a thickening agent with the Microfoil boom, Thru-Valve boom, or other systems that cannot accommodate thick sprays.

TANK MIXES
Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here. Use in accordance with the most restrictive of label limitations and precautions. No label dosage rates may be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing.

Tank Mixing Recommendations:
1. Fill spray tank 1/2 full with water.

2. Add spray thickening agent (if used).
3. Add additional herbicide (if used).
4. Add Alligare Triclopyr 3.
5. Add surfactant (if used).
6. Fill remainder of spray tank.

If combined with emulsifiable concentrate herbicides, moderate continuous adequate agitation is required.

SPRAY DRIFT MANAGEMENT

AVOID INJURIOUS DRIFT
Applications should only be made when there is little or no hazard from spray drift. Very small quantities of spray may seriously injure susceptible plants.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:
1. The distance of the outer most operating nozzles on the boom must not exceed 3/4 the length of the rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the following **AERIAL DRIFT REDUCTION ADVISORY**. [This information is advisory in nature and does not supersede mandatory label requirements.]

AERIAL DRIFT REDUCTION ADVISORY
Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

- Controlling Droplet Size:**
- Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
 - Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
 - Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
 - Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
 - Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.)

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Applications should be avoided below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adja-

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cent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

APPLICATION EQUIPMENT AND TECHNIQUES

BROADCAST APPLICATIONS

Aerial Application: When making aerial applications on rights-of-way or other areas near susceptible crops, apply through a Microfoil¹ or Thru-Valve¹ boom, or use an agriculturally approved drift control agent. Other drift reducing systems or thickened sprays prepared by using high viscosity inverting systems may be used if they are made as drift-free as are mixtures containing agriculturally approved thickening agents or applications made with the Microfoil or Thru-Valve boom. Keep spray pressures low enough to provide coarse spray droplets. Spray boom should be no longer than 3/4 of the rotor length. Spray only when the wind velocity is low (follow state regulations). Avoid application during air inversions. If a spray thickening agent is used, follow all use directions and precautions on the product label.

'Note: Reference within this label to equipment produced by or available from other parties is provided without consideration for use by the reader at its discretion and subject to the reader's independent circumstances, evaluation, and expertise. Such reference by Alligare, LLC is not intended as an endorsement of such equipment, shall not constitute a warranty (express or implied) of such equipment, and is not intended to imply that other equipment is not available and equally suitable. Any discussion of methods of use of such equipment does not imply that the reader should use the equipment other than is advised in directions available from the equipment's manufacturer. The reader is responsible for exercising their own judgment and expertise, or consulting with sources other than Alligare, LLC, in selecting and determining how to use its equipment.

Ground Application: To aid in reducing spray drift, Alligare Triclopyr 3 should be applied in thickened (high viscosity) spray mixtures using an agriculturally approved drift control additive, high viscosity invert system, or equivalent as directed by the manufacturer. Use of low pressure nozzles; and operating nozzles in the lower end of the manufacturer's recommendations is advised. To minimize drift, keep the spray boom as low as possible, apply in ≥20 gallons of spray volume per acre, spray when wind velocities are low; or use an approved drift control agent.

In Hand Gun Applications, select the minimum spray pressure that will provide adequate plant coverage (without forming a mist). Do not apply with nozzles that produce a fine droplet spray.

High Volume Leaf-Stem Treatment: To minimize spray drift, do not use pressure exceeding 50 PSI at the spray nozzle and keep sprays no higher than brush tops. An agriculturally approved thickening agent may be used to reduce spray drift.

APPROVED USES

Refer to Tables 1 and 2 for lists of woody plants and broadleaf weeds that are controlled by Alligare Triclopyr 3.

Apply Alligare Triclopyr 3 at rates of 0.25 to 3 gallons per acre for the control of broadleaf weeds and woody plants. Apply in enough water to provide uniform and complete coverage of the plants to be controlled. Use only water suitable for spraying. Use of an agriculturally approved nonionic surfactant is recommended for all foliar applications. For best results make applications when woody plants and weeds are actively growing.

Use higher rates within the range when brush averages 15 feet or more in height or when brush covers >60% of the area to be treated. Re-sprouting may occur the year following treatment if lower rates are used on hard-to-control species. When easy to control brush species dominate, rates below those specified may be effective. Consult State or Local Extension personnel for information.

For hard-to-control species such as ash, black gum, choke cherry, elm, maples, oaks, pines, or winged elm; during late summer applications when plants are mature; or during drought conditions; use higher rates of Alligare Triclopyr 3 alone or use in combination with Tordon 101 Mixture. If lower rates are used on hard-to-control species, re-sprouting may occur in the year following treatment.

When applying Alligare Triclopyr 3 in a tank mix with 2, 4-D 3.8 lb amine, like DMA 4 IVM, or low volatile ester herbicides, use higher rates of Alligare Triclopyr 3 for satisfactory brush control.

When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

FOLIAGE APPLICATIONS WITH GROUND EQUIPMENT

High Volume Foliage Applications

For control of woody plants, apply Alligare Triclopyr 3 at 1 to 3 gallons per 100 gallons of spray solution. Make applications in 100 to 400 gallons of total spray per acre depending on size and density of woody plants. Coverage should be thorough to wet all leaves, stems, and root collars.

Tank Mixing: 1 to 4 quarts of Alligare Triclopyr 3 may be tank mixed with 1 to 2 quarts of 2, 4-D 3.8 lb amine, like DMA 4 IVM, or low volatile ester or Tordon 101 Mixture diluted to make 100 gallons of spray solution. Make applications in 100 to 400 gallons of total spray per acre depending on size and density of woody plants. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Do not exceed maximum allowable use rates per acre. See Rate Table in the Rates Section of **APPLICATION DIRECTIONS**.

Low Volume Foliage Applications

For control of woody plants, mix up to 5 gallons of Alligare Triclopyr 3 in 10 to 100 gallons of spray solution. Adjust the spray concentration of Alligare Triclopyr 3 and total spray volume

per acre to match the size and density of target woody plants and kinds of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars. For best results, a surfactant should be added to all spray mixtures. See the **SPRAY ADDITIVES** section of **APPLICATION DIRECTIONS**.

Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 PSI may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

Tank Mixing: Up to 3 gallons of Alligare Triclopyr 3 may be applied in tank mix combinations with 2 to 4 quarts of Tordon K or 1 to 2 gallons of Tordon 101 Mixture as a low volume foliar spray. These applications should be made in 10 to 100 gallons of spray solution. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

BROADCAST APPLICATION WITH GROUND EQUIPMENT

Use equipment that will assure thorough and uniform coverage at spray volumes applied. To improve spray coverage, add an agriculturally approved nonionic surfactant. See the **SPRAY ADDITIVES** section of **APPLICATION DIRECTIONS**. See **Maximum Application Rates Table** in the **APPLICATION DIRECTIONS** for relationship between mixing rate, spray volume, and maximum application rate.

Woody Plant Control

Foliage Treatment: Apply 2 to 3 gallons of Alligare Triclopyr 3 in 20 to 100 gallons of spray solution per acre.

Tank Mixing: Alligare Triclopyr 3 at 2 to 4 quarts per acre may be tank mixed with 1 to 2 gallons of 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile esters or Tordon 101 Mixture in 20 to 100 gallons of spray solution per acre. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadleaf Weed Control

Apply 1.3 to 6 quarts of Alligare Triclopyr 3 in 20 to 100 gallons of spray solution per acre. Apply any time during the growing season.

Tank Mixing: Alligare Triclopyr 3 at 1.3 to 4 quarts per acre may be tank mixed with 2 to 4 quarts of Tordon K; Tordon 101 Mixture, or 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile ester to improve the spectrum of activity. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

AERIAL APPLICATION (HELICOPTER ONLY)

Aerial sprays should be applied using suitable drift control. See the **SPRAY DRIFT MANAGEMENT** section for drift control advice. Add an agriculturally approved nonionic surfactant. See the **SPRAY ADDITIVES** and the **APPLICATION EQUIPMENT AND TECHNIQUES** section. See **Maximum Application Rates Table** in the **APPLICATION DIRECTIONS** for relationship between mixing rate, spray volume, and maximum application rate.

FOLIAGE TREATMENT (RIGHTS-OF-WAY)

Apply 2/3 gallon of Alligare Triclopyr 3 per acre alone or tank mix with 1 to 2 gallons of 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile esters; or Tordon 101 Mixture. Apply in total spray volume of 1 to 30 gallons per acre.

When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

FOREST MANAGEMENT APPLICATIONS

For broadcast applications, apply the specified rate of Alligare Triclopyr 3 in 1 to 25 gallons per acre by air or in 10 to 100 gallons per acre by ground. Use sufficient spray volumes to provide thorough plant coverage. To improve spray coverage at volumes less than 50 gallons per acre, add an agriculturally approved nonionic surfactant. See the **SPRAY ADDITIVES** section of **APPLICATION DIRECTIONS**. Use application systems designed to prevent spray drift to off-target sites. Nozzles or additives used for drift minimization that produce larger droplets may require higher spray volumes to provide brush control. See **APPLICATION EQUIPMENT AND TECHNIQUES** section.

Forest Site Preparation (Not For Conifer Release)

To control susceptible woody plants and broadleaf weeds, apply up to 2 gallons per acre of Alligare Triclopyr 3 in a total spray solution of 1 to 30 gallons per acre. Alligare Triclopyr 3 may be applied at a rate of 1 to 1.5 gallons per acre in a tank mix combination with 1 to 2 gallons of Tordon 101 Mixture or 2,4-D 3.8 lb low volatile ester to broaden the spectrum of woody plants and broadleaf weeds controlled. Use of a nonionic agricultural surfactant is recommended for all foliar applications. See the **SPRAY ADDITIVES** section of **APPLICATION DIRECTIONS**.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Conifer Plant Back Interval: Conifer injury may occur if conifers are planted sooner than 1 month after Alligare Triclopyr 3 treatments at rates <1-1/3 gallon per acre; or if conifers are planted sooner than 2 months after treatment with rates of 1-1/3 to 3 gallons per acre. When herbicide tank mixtures are used for forest site preparation, use the longest plant back waiting period listed on any tank mix partner.

Directed Spray Applications for Conifer Release

To release conifers from competing hardwoods such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, hickory, alder, birch, aspen, and pin cherry, mix 1 to 2 gallons of Alligare Triclopyr 3 in enough water to make 100 gallons of spray mixture.

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To improve spray coverage, add an agriculturally approved nonionic surfactant. See the **SPRAY ADDITIVES** section of **APPLICATION DIRECTIONS**.

Direct the spray onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent. Make applications any time after the hardwoods have reached full leaf size, but before autumn coloration. The majority of treated hardwoods should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct the spray solution away from conifer foliage, particularly foliage of desirable pines.

Conifer Release Applications: Spray may cause temporary damage and growth suppression of conifers where direct contact occurs; however, injured conifers should recover and grow normally. **Over-the-top spray applications can kill pines.**

Broadcast Application for Conifer Release in the Northeastern United States
To release spruce, fir, red pine, and white pine from competing hardwoods such as red maple, sugar maple, striped maple, alder, birch (white, yellow, and grey), aspen, ash, pin cherry, and *Rubus* spp. and perennial and annual broadleaf weeds, apply Alligare Triclopyr 3 at 2 to 4 quarts per acre alone or in a tank mix with 2,4-D amine, like DMA 4 IVM, or 2,4-D low volatile ester. Apply no more than 4 pounds acid equivalent per acre from the combined products. Make applications in late summer or early fall after conifers have formed their over-wintering buds; and hardwoods are in full leaf prior to autumn coloration.

Broadcast Applications for Douglas Fir Release in the Pacific Northwest and California
To release Douglas fir from competing vegetation such as broadleaf weeds, alder, blackberry or Scotch broom, apply Alligare Triclopyr 3 at 1-1/3 to 2 quarts per acre alone or in combination with 4 lb per acre of atrazine. Add a nonionic surfactant to the spray solution. See the **SPRAY ADDITIVES** section of **APPLICATION DIRECTIONS**. Applications should be made in early spring after hardwoods begin growth **and before** Douglas fir bud break ("early foliar" hardwood stage). Applications can also be made in late summer, after Douglas fir seasonal growth has "hardened off" (winter bud set). Make applications while hardwoods are still actively growing. When treating after Douglas fir winter bud set, apply prior to onset of hardwood autumn coloration.

Note: Treatments applied during active Douglas fir shoot growth (after spring bud break and prior to winter bud set), may cause injury to Douglas fir trees.

Cut Surface Treatments
To control hardwood unwanted species such as elm, maple, oak; and conifers in rights-of-way and other noncrop areas, apply Alligare Triclopyr 3, either undiluted or diluted in a 1:1 ratio with water by one of the following methods:

Tree Injector Method: Inject 1/2 milliliter (ml) of undiluted Alligare Triclopyr 3 or 1 ml of the diluted (1:1) solution through the bark at intervals of 3-4 inches between injection wounds. The tree injections should completely surround the tree at any convenient height.

Note: Worker Protection Standard **AGRICULTURAL USE REQUIREMENTS** reentry restrictions do not apply for this application method. Refer to the **NON-AGRICULTURAL USE REQUIREMENTS** box.

Hack and Squirt Method: Use a hatchet or similar equipment to make cuts in the bark at intervals of 3-4 inches at a convenient height around the circumference of the tree trunk. Spray 1/2 milliliter (ml) of undiluted Alligare Triclopyr 3 or 1 ml of the diluted (1:1) solution into each cut.

Frill or Girdle Method: Make a single girdle through the bark completely around the tree at a convenient height. Wet the cut surface with undiluted Alligare Triclopyr 3 or the diluted (1:1) solution.

Both the **Hack and Squirt Method** and the **Frill or Girdle Method** may be successfully used during any season except during periods of heavy sap flow of certain species such as maples.

Stump Treatment: Spray or paint undiluted Alligare Triclopyr 3 on to the freshly cut surfaces of cut stumps and stubs. The cambium area next to the bark is the most vital area to wet.

Table 1 Woody Plants Controlled by Alligare Triclopyr 3			
Alder	Chinquapin	Maleleuca (seedlings)	Sweetbay Magnolia
Arrowwood	Choke Cherry	Maples	Sweet Gum
Ash	Cottonwood	Mulberry	Sycamore
Aspen	<i>Crataegus</i> (hawthorn)	Oaks	Tan Oak
Bear Clover (Bearmat)	Dogwood	Persimmon	Thimbleberry
Beech	Douglas fir	Pine	Tulip Poplar
Birch	Elderberry	Poison Ivy	Wax Myrtle
Blackberry	Elm	Poison Oak	Western Hemlock
Black gum	Gallberry	Poplar	Wild Rose
Brazilian Pepper	Hazel	Salmonberry	Willow
Cascara	Hornbeam	Salt-bush (<i>Braccharis</i> spp.)	Winged elm
Ceanothus	Kudzu ¹	Salt cedar ²	
		Sassafras	
Cherry	Locust	Scotch Broom	
Chinese Tallow	Madrone	Sumac	

¹For complete control, retreatment may be necessary.
²Use cut surface treatments for best results.

Table 2 Annual and Perennial Broadleaf Weeds Controlled by Alligare Triclopyr 3			
Bindweed	Dandelion	Plantain	Tropical Soda apple
Burdock	Elephant Ear	Purple Loosestrife	Vetch
Canada Thistle	Field Bindweed	Ragweed	Wild Lettuce
Chicory	Lambsquarter	Smartweed	
Curly Dock	Ligodium	Tansey Ragwort	

WETLAND SITES IN PRODUCTION FORESTS AND INDUSTRIAL NON-CROP AREAS
Alligare Triclopyr 3 may be used in wetlands within forests; wildlife habitat restoration, wildlife management areas, and industrial non-crop sites; as well as areas adjacent to or surrounding domestic water supply reservoirs, lakes and ponds to control target vegetation in and around standing water sites, such as flood plains, delta, marshes, wetlands, swamps, bogs, and transitional areas between upland and lowland sites, and the banks of ponds and lakes and transition areas between upland and lowland sites.

For control of woody plants and broadleaf weeds in these sites, follow use directions and application methods on this label for **FOREST MANAGEMENT APPLICATIONS**. Refer to Tables 1 and 2 (above) for lists of woody plants and broadleaf weeds that are controlled by Alligare Triclopyr 3.

- Use Restrictions and Precautions for Wetland Sites**
- Refer to the **USE PRECAUTIONS** and **USE RESTRICTIONS** section for additional restrictions and precautions.
 - Minimize overspray to open water** when treating target vegetation in and around non-flowing, quiescent or transient water. When making applications to control unwanted plants on banks or shorelines of flowing water, minimize over spray to open water.
 - Obtain Required Permits:** Before applying this product in and around public water, consult appropriate local public water control authorities. Permits may be required to treat such areas.
 - Recreational Use of Water in the Treatment Area:** There are no restrictions on water use in the treatment area for recreational purposes, including swimming and fishing.
 - Livestock Use of Water from Treatment Area:** There are no restrictions on consumption of water from treated areas by livestock.

Purple Loosestrife (*Lythrum salicaria*)
Purple loosestrife can be controlled with broadcast foliar applications of Alligare Triclopyr 3 at a minimum of 6 to 8 quarts per acre. Apply when purple loosestrife is at the bud to mid-flowering stage of growth. Follow-up applications for control of regrowth should be made the following year to achieve increased control of this weed species. For all applications, add a nonionic surfactant labeled for aquatics to the spray mixture.

Follow all directions and use precautions on the surfactant label.

Thorough wetting of the foliage and stems is necessary to achieve satisfactory control. A minimum spray volume of 50 gallons per acre is recommended for ground broadcast applications.

For backpack applications, a spray solution of 1 to 1.5% Alligare Triclopyr 3 (5 to 7.6 fl oz of Alligare Triclopyr 3 per 4 gallons of water) should be used. All purple loosestrife plants should be thoroughly wetted.

Aerial application by helicopter may be needed when treating restoration sites that are inaccessible, remote, difficult to traverse, isolated, or otherwise unsuited to ground application, or in circumstances where invasive exotic weeds dominate native plans populations over extensive areas and efforts to restore native plant diversity are being conducted. By air, apply in a minimum spray volume of 30 gallons per acre using Thru-Valve or Microfoil boom only.

Terrestrial Sites Associated with Wetland Areas
Refer to Tables 1 and 2 (above) for a list of woody plants and broadleaf weeds that are controlled by Alligare Triclopyr 3.

Apply Alligare Triclopyr 3 at rates of 0.25 to 2 gallons per acre for the control of broadleaf weeds and woody plants. Apply in enough water to provide uniform and complete coverage of the plants to be controlled. Use only water suitable for spraying. Use of an agriculturally approved nonionic surfactant is recommended for all foliar applications. Refer to **SPRAY ADDITIVES** in the **APPLICATION DIRECTIONS** section. Refer to **TANK MIXES** in the **APPLICATION DIRECTIONS** section for the order of addition of surfactants. For best results make applications when woody plants and weeds are actively growing.

Use higher rates within the range when brush averages 15 feet or more in height or when brush covers >60% of the area to be treated. Re-sprouting may occur the year following treatment if lower rates are used on hard-to-control species.

For hard-to-control species such as ash, black gum, choke cherry, maples, or oaks; during late summer applications when plants are mature; or during drought conditions; use higher rates of Alligare Triclopyr 3 alone or use in combination with a 2,4-D approved for aquatic use, such as DMA 4 IVM, generally the higher rates should be used for satisfactory brush control. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

High Volume Foliage Applications
For control of woody plants, apply Alligare Triclopyr 3 at 1 to 2 gallons per 100 gallons of spray solution. Make applications in 100 to 400 gallons of total spray per acre depending on size and density of woody plants. Coverage should be thorough to wet all leaves, stems, and root collars.

Tank Mixing: 1 to 4 quarts of Alligare Triclopyr 3 may be tank mixed with 1 to 2 quarts of 2, 4-D 3.8 lb amine, like DMA 4 IVM, diluted to make 100 gallons of spray solution. Make appli-

TRICLOPYR 3

cations in 100 to 400 gallons of total spray per acre depending on size and density of woody plants. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Low Volume Foliage Applications

For control of woody plants, mix up to 5 gallons of Alligare Triclopyr 3 in 10 to 100 gallons of spray solution. Adjust the spray concentration of Alligare Triclopyr 3 and total spray volume per acre to match the size and density of target woody plants and kinds of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars. For best results, a labeled aquatic surfactant should be added to all spray mixtures.

Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 PSI may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

Cut Surface Treatments (Woody Plants)

To control unwanted trees and other listed woody plants in Table 1 (above), apply Alligare Triclopyr 3, either undiluted or diluted in a 1:1 ratio with water by one of the following methods:

Tree Injector Method: Inject 1/2 milliliter (ml) of undiluted Alligare Triclopyr 3 or 1 ml of the diluted (1:1) solution through the bark at intervals of 3-4 inches between injection wounds. The tree injections should completely surround the tree at any convenient height.

Note: Worker Protection Standard **AGRICULTURAL USE REQUIREMENTS** reentry restrictions do not apply for this application method. Refer to the **NON-AGRICULTURAL USE REQUIREMENTS** box.

Hack and Squirt Method: Use a hatchet or similar equipment to make cuts in the bark at intervals of 3-4 inches at a convenient height around the circumference of the tree trunk. Spray 1/2 milliliter (ml) of undiluted Alligare Triclopyr 3 or 1 ml of the diluted (1:1) solution into each cut.

Frill or Girdle Method: Make a single girdle through the bark completely around the tree at a convenient height. Wet the cut surface with undiluted Alligare Triclopyr 3 or the diluted (1:1) solution.

Both the **Hack and Squirt Method** and the **Frill or Girdle Method** may be successfully used during any season except during periods of heavy sap flow of certain species such as maples.

Stump Treatment: Spray or paint undiluted Alligare Triclopyr 3 on to the freshly cut surfaces of cut stumps and stubs. The cambium area next to the bark is the most vital area to wet.

CHRISTMAS TREE PLANTATIONS

Alligare Triclopyr 3 is used to control unwanted woody plants and annual and perennial broadleaf weeds in established Christmas tree plantations. For best results, make applications when woody plants and weeds are actively growing. Alligare Triclopyr 3 only controls weeds which are emerged at the time of application.

Brush >8 feet tall is difficult to treat efficiently using hand equipment such as backpack or knapsack sprayers. Use higher rates of Alligare Triclopyr 3 or use cut surface application methods when treating large brush or trees; hard to control species such as ash, black gum, choke cherry, elm, hazel, madrone, maples, oaks or sweetgum; for applications made during drought conditions; or late summer applications when the leaves are mature. For foliar applications, apply in enough water to provide uniform and complete coverage of the plants to be controlled. Applications made under drought conditions may provide less than desirable results. Re-sprouting may occur the year following treatment if lower rates are used on hard-to-control species.

Use Restrictions and Precautions for Christmas Tree Plantations

- Do not tank mix with 2,4-D for use in Christmas tree plantations.
- Only apply Alligare Triclopyr 3 to **established** Christmas trees that have been **planted at least one full year** prior to application.
- To prevent Christmas tree injury, take care to direct spray away from Christmas tree foliage to avoid contact.
- Do not use on newly seeded grass until well established as indicated by vigorous growth and development of secondary root system and tillering.
- Mow newly seeded turf (alleysways, etc.) two or three times before treatment with Alligare Triclopyr 3.
- Do not reseed Alligare Triclopyr 3 treated Christmas tree areas within three weeks after application.
- Do not use Alligare Triclopyr 3 if legumes, such as clover, are present and injury cannot be tolerated.

Spray Solution Preparation

Refer to the **TANK MIXES** section of **APPLICATION DIRECTIONS** for order of addition to the spray tank. Continue moderate agitation while mixing and spraying. Use of a nonionic agricultural surfactant is recommended for all applications. See the **SPRAY ADDITIVES** section of **APPLICATION DIRECTIONS** for surfactant recommendations.

Application

Make applications in late summer or early autumn after terminal growth of Christmas trees has hardened off, but before leaf drop of target plants. Apply 2 to 5 pints per acre of Alligare Triclopyr 3 as a foliar spray directed toward the base of Christmas trees. Use sufficient spray volume (20 to 100 gallons per acre) to provide uniform coverage of target plants. Specified application rates of Alligare Triclopyr 3 (see Table 3, below) will only suppress some well established woody plants that are 2 to 3 years old. Broadcast sprays may also be applied in bands between the rows of planted trees. Select spray equipment that will provide uniform

Specimen Label

coverage at the desired spray volume.

Alligare Triclopyr 3 spray solution can cause Christmas tree needle and branch injury. To minimize Christmas tree injury, direct sprays to minimize Christmas tree foliage contact. White pine and Douglas fir are more susceptible to injury than blue spruce, white spruce, balsam fir and Fraser fir. Refer to the **Use Restrictions and Precautions for Christmas Tree Plantations**.

Directed Applications

For control of hardwoods such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, alder, birch, aspen, and pin cherry; mix 4 to 20 fluid ounces of Alligare Triclopyr 3 in enough water to make 3 gallons of spray solution. For directed applications, do not exceed 2 gallons of Alligare Triclopyr 3 per acre per year. To improve coverage, add a nonionic agricultural surfactant to the spray. See the **SPRAY ADDITIVES** section of **APPLICATION DIRECTIONS** for surfactant recommendations. Direct this spray mixture onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan (or equivalent) nozzles any time after hardwoods have reached full leaf size, but before autumn coloration (when plants are actively growing). The majority of treated hardwoods should be <8 feet in height to ensure adequate spray coverage.

Cut Surface Treatments

Use cut surface treatments when treating large brush and trees; hard to control species such as ash, blackgum, choke cherry, elm, hazel, madrone, maples, oaks, salt cedar or sweetgum; for applications during drought conditions; or for late summer applications when the leaves are mature. Refer to the Cut Surface Treatments in the Forest Management section for use directions.

Table 3
Christmas Tree Plantation
Application Rates and Species Controlled

Alligare Triclopyr 3		
2 pints per acre	3 to 4 pints per acre	5 pints per acre
Clover	Bindweed, Field ¹	Arrowwood ⁴
Dandelion	Blackberry ²	Aspen
Dock, Curly	Chicory ³	Beech ⁴
Lambsquarter	Fireweed	Birch ⁴
Lespedeza	Ivy, Ground	Chinquapin
Plantain, Broadleaf	Lettuce, Wild	Cottonwood ⁴
Plantain, Buckhorn	Oxalis	Elderberry
Ragweed, Common	Poison Ivy	Grape, Wild
Vetch	Smartweed ¹	Mulberry ⁴
	Thistle, Canada ¹	Poplar ²
	Violet, Wild	Sassafras ⁴
	Virginia Creeper ²	Sumac ⁴
		Sycamore ⁴

¹Top growth control, retreatment may be necessary

²Use 4 pints per acre.

³Suppression

⁴Seedlings less than 2-3 years old

CHEMICAL MOWING ON NON-CROPLAND SITES INFESTED WITH ANNUAL AND PERENNIAL BROADLEAF WEEDS OR WOODY PLANTS*

*Not approved for this use in California

Apply Alligare Triclopyr 3 to the cut surfaces of weed or brush stubble under the deck of a rotary mower such as the Lucas "64" System or other approved equipment that is designed to uniformly apply the herbicide. Use this method of application for control of annual and perennial broadleaf weeds and for suppression and stem density reduction of woody plants that occur on rights-of-way, airport grounds, petroleum tank farms or other industrial sites. Apply when growing conditions are favorable and there is active plant growth.

Broadleaf Weed Control: Apply this product at labeled rates under the section Broadcast Application with Ground Equipment, Broadleaf Weed Control. Apply in a minimum spray volume of 3 gallons per acre. Follow label directions for herbicides that may be applied in tank mix combination with this product to improve weed control or broaden the spectrum of weeds controlled.

Woody Plant Control: For suppression and stem density reduction of woody species, use 3 to 6 quarts of Alligare Triclopyr 3 in a minimum spray volume of 5 gallons per acre. Follow label directions for herbicides that may be applied in tank mix combination with this product to improve woody plant control or broaden the spectrum of woody plants controlled.

AQUATIC SITES

Alligare Triclopyr 3 can be used to control emerged, submersed, and floating aquatic plants in aquatic sites such as ponds, lakes, reservoirs, non-irrigation canals, and ditches (with little or no continuous outflow), marshes, and wetlands. Alligare Triclopyr 3 can also be used to control broadleaf and woody vegetation on banks and shores within or adjacent to these and other aquatic sites.

Aquatic Weeds Controlled by Alligare Triclopyr 3

Alligatorweed	Milfoil species	Purple loosestrife
American lotus	Nuphar (spatterdock)	Waterhyacinth
American frogbit	Parrotfeather ¹	Waterlily
Aquatic soda apple	Pickersweed	Waterprimrose
Eurasian watermilfoil	Pennywort	

¹Retreatment may be needed to achieve desired level of control.

TRICLOPYR 3

Specimen Label

Use Restrictions and Precautions for Aquatic Sites

- Refer to the **USE PRECAUTIONS** and **USE RESTRICTIONS** section of this label for additional precautions and restrictions.
- Obtain Required Permits:** Before applying this product to public waters, consult with appropriate state or local water authorities. State or local public agencies may require permits.
- Do not use treated water for irrigation for 120 days following application. As an alternative to waiting 120 days, treated water may be used for irrigation once the level of triclopyr in the intake water is determined to be non-detectable by laboratory analysis (immunoassay). There is no restriction on use of water from the treatment area to irrigate established grasses.
- Recreational Use of Water in the Treatment Area:** There are no restrictions on water use in the treatment area for recreational purposes, including swimming and fishing.
- Livestock Use of Water from Treatment Area:** There are no restrictions on consumption of water from treated areas by livestock.

Floating and Emerged Aquatic Weeds

Surface Application: Use a spray boom, handgun or other similar suitable equipment mounted on a boat or vehicle. Thorough wetting of foliage is essential for maximum effectiveness. Use 20 to 200 gallons per acre of spray mixture. Special precautions such as the use of low spray pressure, large droplet producing nozzles or addition of a labeled thickening agent may minimize spray drift in areas near sensitive crops.

Aerial Application (Helicopter only): Apply using a Microfoil, Thru-Valve boom, or a drift control additive in the spray solution. Apply in a minimum of 1 gallon of total spray solution per acre. Do not apply when weather conditions favor drift to sensitive areas. See the **SPRAY DRIFT MANAGEMENT** section for drift control advice.

Apply 0.5 to 2 gallons of Alligare Triclopyr 3 per acre as a foliar application for control of waterhyacinth, alligatorweed (see specific directions below), and other susceptible emerged and floating herbaceous weeds and woody plants. Make applications using surface or aerial equipment. User higher rates in the rate range when plants are mature, when the weed mass is dense, or for difficult to control species. Repeat treatments may be necessary to control regrowth and weeds which escaped spray, but do not apply more than 2 gallons of Alligare Triclopyr 3 per acre per annual growing season. Make applications when plants are actively growing.

Use of a nonionic surfactant in the spray solution is recommended to improve control. Follow all directions and use precautions on the aquatic surfactant label.

Floating and Emerged Weed Control – Alligare Triclopyr 3 Rates

Weed Species	Scientific Name	Gallons Per Acre	Application Timing and Remarks
Waterhyacinth	<i>Eichhornia crassipes</i>	0.5 – 2	Apply when plants are actively growing. Use the higher rate when the weed mass is dense. Thoroughly wet all foliage. Repeat treatments may be needed to control regrowth or escaped plants.
Alligatorweed	<i>Alternanthera philoxeroides</i>	0.75 – 2	Thoroughly wet all foliage. Weeds growing outside the margins of a body of water can be controlled. Alligatorweed growing in water will be only partially controlled. Top growth above water will be controlled, but plants will likely regrow from underwater tissue. Use a nonionic aquatic surfactant for best results.

Potable Water Intake Setbacks for Control of Floating and Emerged Weeds – Lakes, Reservoirs, or Ponds

Minimum setback distances from functioning potable water intakes for human consumption for the application of Alligare Triclopyr 3 must be observed when controlling floating and emerged weeds in lakes, reservoirs or ponds. These setback restrictions do not apply to terrestrial applications made adjacent to potable water intakes. Existing potable water intakes which are no longer in use are not considered to be functioning and these setback restrictions do not apply. Examples of this would be potable water intakes replaced by potable water wells or connections to a municipal water system.

The following table provides the minimum setback distances based on the Alligare Triclopyr 3 rate and the area treated for floating and emerged weed control.

Potable Water Intake Setback Distances for Application of Alligare Triclopyr 3 for Control of Floating and Emerged Weeds in Lakes, Reservoirs, or Ponds

Minimum Setback Distances (feet)				
TRICLOPYR 3 Rate (quarts/acre)				
Area Treated (acres)	2	4	6	8
<4	0	200	400	500
>4 – 8	0	200	700	900
>8 – 16	0	200	700	1000
>16	0	200	900	1300

Alligare Triclopyr 3 can be applied around functioning potable water intakes or closer than these setback distances as long as the intake is turned off until the level of triclopyr in the intake water is determined to be less than or equal to 0.4 parts per million (ppm) as determined by laboratory analysis or immunoassay.

Submerged Weeds – Control of Eurasian Watermilfoil and other Susceptible Species

Subsurface Application: Alligare Triclopyr 3 can be applied directly into the water through

boat-mounted distribution systems. Subsurface application may be desirable near areas of susceptible crops or other desirable broadleaf plants to avoid spray drift. Refer to the Rate Table below to determine the desired amount.

Surface Application: Alligare Triclopyr 3 can be applied either as a concentrate or as a spray solution diluted in water. Use a minimum spray volume of 5 gallons per acre. Do not apply when weather conditions favor drift to sensitive areas. See the **SPRAY DRIFT MANAGEMENT** section for drift control advice.

Apply 0.75 to 2.5 ppm acid equivalent (a.e.) of Alligare Triclopyr 3 for control of Eurasian watermilfoil (*Myriophyllum spicatum*) and other susceptible submerged weeds in ponds, lakes, reservoirs, and in non-irrigation canals or ditches that have little or no continuous outflow. Make applications using surface or subsurface application. Use higher rates within the rate range in areas of greater water exchange. Repeat treatments may be necessary, but do not apply more than 2.5 ppm acid equivalent of Alligare Triclopyr 3 per acre per annual growing season. Refer to following table to determine the desired amount.

Make applications in spring or early summer when Eurasian watermilfoil or other submersed weeds are actively growing.

Alligare Triclopyr 3 Rates for Control of Submerged Weeds in Ponds, Lakes, Reservoirs, and in Non-irrigation Canals or Ditches

Concentration of Triclopyr Acid Equivalent in Water (ppm a.e.)					
	Alligare Triclopyr 3 gallons per surface area at specified depth				
Water Depth (feet)	0.75 ppm	1 ppm	1.5 ppm	2 ppm	2.5 ppm
1	0.7	0.9	1.4	1.8	2.3
2	1.4	1.8	3.3	3.6	4.6
3	2.1	2.9	4.1	5.4	6.8
4	2.7	3.6	5.4	7.2	9.1
5	3.4	4.5	6.8	9.0	11.3
6	4.1	5.4	8.1	10.9	13.6
7	4.8	6.3	9.5	12.7	15.8
8	5.5	7.2	10.9	14.5	18.1
9	6.1	8.1	12.2	16.3	20.4
10	6.8	9.0	13.6	18.1	22.6
15	10.2	13.6	20.4	27.2	33.9
20	13.6	18.1	27.2	36.2	45.3

Potable Water Intake Setbacks for Control of Submerged Weeds – Lakes, Reservoirs, or Ponds

Minimum setback distances from functioning potable water intakes for human consumption for the application of Alligare Triclopyr 3 must be observed when controlling submerged weeds in lakes, reservoirs or ponds. These setback restrictions do not apply to terrestrial applications made adjacent to potable water intakes. Existing potable water intakes which are no longer in use are not considered to be functioning and these setback restrictions do not apply. Examples of this would be potable water intakes replaced by potable water wells or connections to a municipal water system.

The following table provides the minimum setback distances based on the Alligare Triclopyr 3 rate and the area treated for submerged weed control.

Potable Water Intake Setback Distances for Application of Alligare Triclopyr 3 for Control of Submerged Weeds in Lakes, Reservoirs, or Ponds

Minimum Setback Distances (feet)					
Concentration of Triclopyr Acid Equivalent in Water (ppm a.e.)					
Area Treated (acres)	0.75 ppm	1 ppm	1.5 ppm	2 ppm	2.5 ppm
<4	300	400	600	800	1000
>4 – 8	420	560	840	1120	1400
>8 – 16	600	800	1200	1600	2000
>16 – 32	780	1040	1560	2080	2600
>32 acres, calculate the minimum setback distance using formula given for chosen application rate	Setback (ft) = $\frac{[800 \times \ln(\text{acres}) - 160]}{3.33}$	Setback (ft) = $\frac{[800 \times \ln(\text{acres}) - 160]}{2.5}$	Setback (ft) = $\frac{[800 \times \ln(\text{acres}) - 160]}{1.67}$	Setback (ft) = $\frac{[800 \times \ln(\text{acres}) - 160]}{1.25}$	Setback (ft) = $\frac{[800 \times \ln(\text{acres}) - 160]}{1.0}$

Example Calculations:

To apply Alligare Triclopyr 3 at 2.5 PPM a.e. to 50 acres:

$$\begin{aligned}\text{Setback in feet} &= \frac{[800 \times \ln(50 \text{ acres})] - 160}{3.33} \\ &= \frac{[800 \times 3.912] - 160}{3.33} \\ &= 2970 \text{ feet}\end{aligned}$$

To apply Alligare Triclopyr 3 at 0.75 PPM a.e. to 50 acres:

$$\begin{aligned}\text{Setback in feet} &= \frac{[800 \times \ln(50 \text{ acres})] - 160}{3.33} \\ &= \frac{[800 \times 3.912] - 160}{3.33} \\ &= 892 \text{ feet}\end{aligned}$$

Alligare Triclopyr 3 can be applied around functioning potable water intakes or closer than these setback distances as long as the intake is turned off until the level of Triclopyr in the intake water is determined to be less than or equal to 0.4 parts per million (ppm) as determined by laboratory analysis or immunoassay.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store above 28°F or agitate before use.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING:

[NONREFILLABLE CONTAINERS]

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable container ≤ 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. (Nonrefillable > 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

[REFILLABLE CONTAINERS]

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

LIMITED WARRANTY, TERMS OF SALE, AND LIMITATION OF LIABILITY

Upon purchase or use of this product, purchaser and user agree to the following terms:

Warranty: Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. The Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. No such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

Terms of Sale: The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

Limitation of Liability: To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income, and any such claims are hereby waived. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

EPA 20150507

WHETSTONE™

HERBICIDE Specimen Label

For control of annual and perennial broadleaf weeds including invasive and noxious weeds, certain annual grasses, and certain woody plants and vines, on:

- rangeland, permanent grass pastures (including grasses grown for hay*), Conservation Reserve Program (CRP);
- non-crop areas for example, airports, barrow ditches, communication transmission lines, electric power and utility rights-of-way, fencerows, gravel pits, industrial sites, military sites, mining and drilling areas, oil and gas pads, non-irrigation ditch banks, parking lots, petroleum tank farms, pipelines, roadsides, railroads, storage areas, dry storm water retention areas, substations, unimproved rough turf grasses; and
- natural areas (open space) for example, campgrounds, parks, prairie management, trailheads and trails, recreation areas, wildlife openings, and wildlife habitat and management areas including seasonally dry flood plains, deltas, marshes, prairie potholes, or vernal pools;
- including grazed areas in and around these sites.

*Hay from grass treated with WHETSTONE HERBICIDE within the preceding 18-months can only be used on the farm or ranch where the product is applied unless allowed under specific use directions for certain states on this label.

Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.

ACTIVE INGREDIENT:

Trisopropanolammonium salt of 2-pyridine carboxylic acid,
4-amino-3,6-dichloro- 40.6%

OTHER INGREDIENTS: 59.4%

TOTAL: 100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid,
4-amino-3,6-dichloro-) - 21.1% - 2 lb/gal

EPA Reg. No. 81927-82

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	

Manufactured for:
Alligare, LLC
1565 5th Avenue
Opelika, AL 36801

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations	
Users should:	
• Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.	
• Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.	

ENVIRONMENTAL HAZARDS

Do not apply directly to water. Take care to minimize the incidental overspray along the shoreline when applying to terrestrial plants at the water's edge or to water in areas where surface water is present. Do not apply directly to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

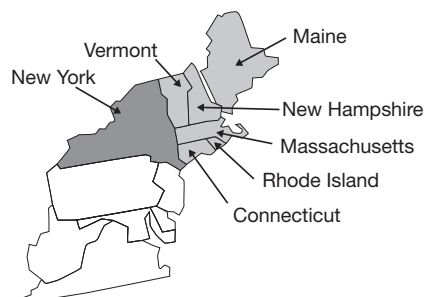
DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.

Not for use on pastures in Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. All other labeled uses are permitted in these states including grazed areas in and around these sites.



Gray = states where use in pasture is not permitted.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protective Equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material including polyethylene or polyvinyl chloride
- Shoes plus socks
- Protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS does not pertain to nonagricultural use on sites, such as, rangeland, permanent grass pastures, or non-cropland. See the Agricultural Use Requirements section below for information where the WPS applies.

Entry Restrictions for Non-WPS Uses: For applications on rangeland and permanent grass pastures (not harvested for hay) and non-cropland areas, do not enter or allow worker entry into treated areas until sprays have dried.

Weed Resistance Management

This product is a Group 4 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 4 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Avoid the consecutive use of this product or other target site of action Group 4 herbicides that might have a similar target site of action, on the same weed species.
- Use tank mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action and are both effective at the tank mix or prepack rate on the weed(s) of concern.
- Base herbicide use on a comprehensive Integrated Pest Management (IPM) program.
- Scout fields prior to application to identify the weed species present and their growth state to determine if the intended application will be effective.
- Scout fields after application to verify that the treatment was effective and to monitor weed populations for early signs of resistance development.
- Contact your local extension specialist, certified crop advisors and/or manufacturer for herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes.

Suspected herbicide-resistant weeds may be identified by these indicators:

- o Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- o A spreading patch of non-controlled plants of a particular weed species; and
- o Surviving plants mixed with controlled individuals of the same species.

Report any incidence of non-performance of this product against a particular weed species to your Alligare LLC retailer, representative or call 888-255-4427. If resistance is suspected,

WHETSTONE

treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemicals means to remove escapes, as practical, with the goal of preventing further seed production.

Development of plant populations resistant to this herbicide mode of action is usually not a problem on rangeland, permanent grass pastures, Conservation Reserve Program (CRP), or non-cropland sites since these sites receive infrequent pesticide applications.

Use Precautions

- Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials such as asphalt or concrete, or soils through which rainfall will not readily penetrate may result in runoff and movement of this product. Injury to crops may result if treated soil and/or runoff water containing this product is washed or moved onto land used to produce crops. Exposure to this product may injure or kill susceptible crops and other plants, such as grapes, soybeans, tobacco, sensitive ornamentals.
- **Grass revegetation:**
 - This product can be used to control broadleaf plants in grass revegetation programs. Consult your Alligare, LLC representative for more details about WHETSTONE™ HERBICIDE applications and grass stand establishment.
- **Application before seeding grasses**
 - This product can be applied to control broadleaf weeds prior to grass planting. Grass seed germination and seedling development can be adversely affected by many factors such as seed viability and seedling vigor, soil condition (sub-optimal soil temperatures or soil water content), weather after planting, seedbed preparation and seed placement, disease, insects, or animals. WHETSTONE HERBICIDE applications will help to reduce competition from weeds and improve the chance for successful grass stand establishment. Some grass species are more sensitive to this product; contact your Alligare, LLC representative for more details.
- **Postemergence applications on grass:** During the season of establishment, apply this product only after perennial grasses are well established (have developed a good secondary root system and show good vigor). Most perennial grasses are tolerant to this product at this stage of development. WHETSTONE HERBICIDE may suppress certain established grasses, such as smooth brome (*Bromus inermis*), especially when plants are stressed by adverse environmental conditions. Plants should recover from this transient suppression with the onset of environmental conditions favorable to grass growth and upon release from weed competition.
- **Seeding Broadleaf Plants (Forbs) and Wildflowers**

This product can be applied in the summer to control broadleaf weeds prior to forb planting. Forbs can be seeded 90 days after a summer application as a dormant fall planting or the following spring. Consult your Alligare, LLC representative for more details.
- **Field Bioassay Instructions:** In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample variability in field conditions such as soil texture, soil organic matter, soil pH, rainfall pattern or drainage. The field bioassay can be initiated one year after the last application of aminopyralid in that field. Observe the test crop for symptoms of herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), epinasty, and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the intended rotational crop; plant only to wheat, corn, forage grasses, native grasses or grasses grown for hay.

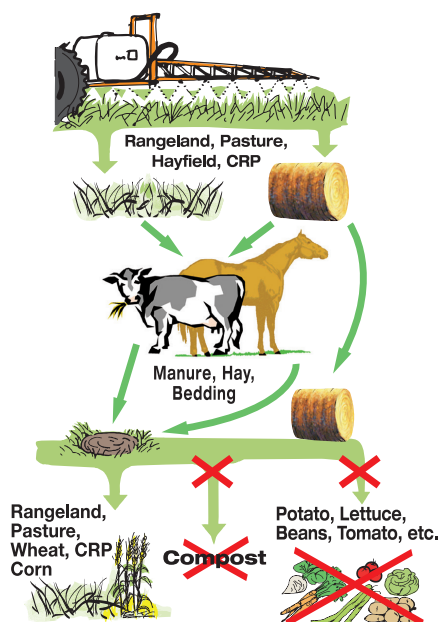
Specimen Label

Consult with an Alligare, LLC representative if you do not understand the "Use Precautions and Restrictions." Call (888) 255-4427 for more information.

IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT INJURY TO DESIRABLE PLANTS

- Carefully read the section "**Restrictions in Hay or Manure Use.**"
- It is mandatory to follow the "**Use Precautions and Restrictions**" section of this label.
- Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Hay can only be used on the farm or ranch where product is applied unless allowed under specific use directions for certain states on this label.
- Consult with an Alligare, LLC representative if you do not understand the "Use Precautions and Restrictions". Call (888) 255-4427

Forage and Manure Management



Pasture and Rangeland Restrictions

- Do not use grasses treated with this product in the preceding 18-months for hay intended for export outside the United States.
- Hay from areas treated with this product in the preceding 18-months CANNOT be distributed or made available for sale off the farm or ranch where harvested unless allowed under specific use directions for certain states on this label.
- Hay from areas treated with this product in the preceding 18-months CANNOT be used for silage, haylage, baylage and green chop unless allowed under specific use directions for certain states on this label.
- Do not move hay made from grass treated with this product within the preceding 18-months off farm unless allowed under specific use directions for certain states on this label.
- Do not use hay or straw from areas treated with this product within the preceding 18-months or manure from animals feeding on hay treated with this product in compost.
- Do not use grasses treated with this product in the preceding 18-months for seed production.

Restrictions for All Uses

Maximum Application Rate: On all labeled use sites do not broadcast apply more than 7 fl. oz. (0.11 lb. ae) per acre of WHETSTONE HERBICIDE per year. The total amount of WHETSTONE HERBICIDE applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl. oz. (0.11 lb. ae) per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 14 fl. oz. (0.22 lb. ae) of WHETSTONE HERBICIDE per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 7 fl. oz. (0.11 lb. ae) per acre of this product per year as a result of broadcast, spot or repeat applications.

Obtain Required Permits: Consult with appropriate state or local water authorities before applying this product around public waters. State or local public agencies may require permits.

- **Avoiding Injury to Non-Target Plants:** Do not aerially apply this product within 50

feet of a border downwind (in the direction of wind movement), or allow spray drift to come in contact with, any broadleaf crop or other desirable broadleaf plants, including, but not limited to, alfalfa, cotton, dry beans, flowers, grapes, lettuce, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes or other broadleaf or vegetable crop, fruit trees, ornamental plants, or soil where sensitive crops are growing or will be planted. Avoid application under conditions that may allow spray drift because very small quantities of spray may seriously injure susceptible crops. Read and consider the "Precautions for Avoiding Spray Drift and Spray Drift Advisory" to help minimize the potential for spray drift.

- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Do not contaminate water intended for irrigation or domestic purposes.** Do not treat inside banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation or domestic purposes.
- Do not apply this product to lawns, turf, ornamental plantings, urban walkways, driveways, tennis courts, golf courses, athletic fields, commercial sod operations, or other high-maintenance, fine turfgrass areas, or similar areas.
- Trees adjacent to or in a treated area can occasionally be affected by root uptake of this product. Do not apply WHETSTONE HERBICIDE within the root zone of desirable trees unless such injury can be tolerated. Use special caution near roses, and leguminous trees such as locusts, redbud, mimosa, and caragana.
- Do not treat frozen soil where runoff could damage sensitive plants.
- **Grazing and Haying Restrictions:** There are no restrictions on grazing or grass hay harvest following application of this product at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with this product to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- **Grazing Poisonous Plants:** Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.
- **Restrictions in Hay or Manure Use:**
 - o Do not use aminopyralid-treated plant residues, including grass, wood plants, trees, hay or straw from areas treated within the preceding 18-months, in compost, mulch wood chips, or mushroom spawn.
 - o Do not use manure from animals that have eaten aminopyralid-treated forage or hay within the previous 3 days in compost, mulch or mushroom spawn. Livestock must have 3 days of eating nonaminopyralid-treated materials in order to clear their system of aminopyralid. Do not use aminopyralid-treated plants in areas where commercially grown mushrooms or susceptible broadleaf plants may be grown.
 - o Do not spread manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days on land used for growing susceptible broadleaf crops.
 - o Manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days may only be used on areas used for pasture, grass grown for seed, wheat and corn.
 - o Do not plant a broadleaf crop (including soybeans, sunflower, tobacco, vegetables, field beans, peanuts, and potatoes) in fields or areas treated with aminopyralid or manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
 - o Do not plant a broadleaf crop in fields or areas treated in the previous year with manure from animals that have consumed aminopyralid-treated forage or hay until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
- o To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.
- **Crop Rotation:** Do not rotate to any crop from rangeland, permanent pasture or CRP acres within one year following treatment. Cereals and corn can be planted one year after treatment. Broadleaf crops are sensitive to aminopyralid residues in the soil and prediction of crop safety by field bioassay (see instructions below) is the BEST way to determine planting options. Broadleaf crops such as canola, flax, and alfalfa can require at least 2 to 3 years depending on the crop and environmental conditions. More sensitive crops such as soybeans, tobacco, peanuts, potatoes, and peas may require a longer plant back interval and should not be planted until a field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.

Grass Harvested for Hay Intended for Distribution or Sale off the Farm or Ranch and Grass Harvested for Silage, Haylage, Baylage, or Green Chop Intended for Use On the Farm or Ranch

(For use only in the states of AL, AR, AZ, CO, FL, GA, ID, KS, KY, LA, MO, MS, MT, ND, NE, NV, NM, OK, SD, TN, TX, UT, WY)

Restrictions

- It is mandatory to follow the **Use Precautions and Restrictions** section of this label.
- Manure and urine from animals consuming treated grass or forage may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- The Applicator must provide the land manager with a copy of the Alligare, LLC Stewardship instructions regarding uses of forage from areas treated with aminopyralid.

- Do not use grasses treated with WHETSTONE HERBICIDE in the preceding 18-months for hay intended for export outside the United States.
- Do not use hay or straw from areas treated with WHETSTONE HERBICIDE within the preceding 18-months, or manure from animals feeding on hay treated with WHETSTONE HERBICIDE, in compost.
- Do not use grasses treated within the preceding 18-months for seed production.
- Do not use on Timothy hay or other cool-season grasses grown for hay.
- Do not overseed ryegrass for 4 months after treatment.
- **WHETSTONE HERBICIDE is highly active against many broadleaf plant species.** Do not use this product on areas where loss of desirable broadleaf forage plants, including legumes, cannot be tolerated.
- **Seeding Legumes:** Do not plant forage legumes until a soil bioassay has been conducted to determine if aminopyralid or metsulfuron concentration remaining in the soil will adversely affect the legume establishment
- **Grazing and Haying Restrictions:** There are no restrictions on grazing or grass hay harvest following application of WHETSTONE HERBICIDE at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with WHETSTONE HERBICIDE to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- **Grazing Poisonous Plants:** Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.
- **Transfer of Animals Feeding on WHETSTONE HERBICIDE-Treated Forage:** Do not transfer animals grazing or feeding on hay from areas treated with WHETSTONE HERBICIDE to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- **Restrictions in Hay or Manure Use:**
 - Do not use treated plant residues, including hay or straw from areas treated within the preceding 18-months in compost, mulch or mushroom spawn.
 - Do not use manure from animals that have grazed forage or eaten hay harvested from treated areas within the previous 3 days, in compost, mulch or mushroom spawn.
 - Do not spread manure from animals that have grazed or consumed forage or hay from treated areas within the previous 3 days on land used for growing broadleaf crops.
 - Manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas within the previous 3 days may only be used on pasture grasses, grass grown for seed, and wheat.
 - Do not plant a broadleaf crop in fields treated in the previous year with manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid residues in the soil is at level that is not injurious to the crop to be planted.
 - To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be accelerated by supplemental irrigation.
- **Crop Rotation:** Do not rotate non-cropland to cropland for one year following an application of WHETSTONE HERBICIDE. Do not plant a broadleaf crop until an adequately sensitive field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.
- Trees adjacent to or in a treated area can occasionally be affected by root uptake of WHETSTONE HERBICIDE through movement into the soil. Do not apply WHETSTONE HERBICIDE within the root zone of desirable trees unless such injury can be tolerated. Use special caution near roses, and leguminous trees such as locusts, redbud, mimosa, and caragana.

Field Bioassay Instructions: In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample variability in field conditions such as soil texture, soil organic matter, soil pH, rainfall pattern or drainage. The field bioassay can be initiated one year after the last application of aminopyralid in that field. Observe the test crop for symptoms of herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the intended rotational crop; plant only to wheat, forage grasses, native grasses or grasses grown for hay.

Rangeland, Permanent Grass Pastures, CRP Acres, Non-Cropland Areas, Non-Irrigation Ditch Banks, Natural Areas, and Grazed Areas In and Around These Sites (WA only)

- Carefully read the section **Restrictions in Hay or Manure Use**.
- It is mandatory to follow the **Use Precautions and Restrictions** section of this label.
- Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Hay can only be used on the farm or ranch where product is applied unless allowed under specific use directions for certain states on this label.

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Pasture and Rangeland Restrictions

- Do not use grasses treated with WHETSTONE HERBICIDE in the preceding 18-months for hay intended for export outside the United States.
- Hay from areas treated with WHETSTONE HERBICIDE in the preceding 18-months CANNOT be distributed or made available for sale off the farm or ranch where harvested unless under specific use directions for certain states on this label.
- Hay from areas treated with WHETSTONE HERBICIDE in the preceding 18-months CANNOT be used for silage, haylage and baylage and green chop unless allowed under specific use directions for certain states on this label.
- Do not move hay made from grass treated with WHETSTONE HERBICIDE within the preceding 18-months off farm unless allowed under specific use directions for certain states on this label.
- Do not use hay or straw from areas treated with WHETSTONE HERBICIDE within the preceding 18-months or manure from animals feeding on hay treated with WHETSTONE HERBICIDE in compost.
- Do not use grasses treated with WHETSTONE HERBICIDE in the preceding 18-months for seed production.

Spray Drift Management

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

Avoid application under conditions that may allow spray drift because very small quantities of spray, which may not be visible, may injure susceptible crops. This product should be applied only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, non-target crops and other plants) is minimal (e.g., when wind is blowing away from the sensitive areas). A drift control aid may be added to the spray solution to further reduce the potential for drift. If a drift control aid is used, follow the use directions and precautions on the manufacturer's label. Do not use a thickening agent with Microfoil, Thru-Valve booms, or other spray delivery systems that cannot accommodate thickened spray solutions.

Importance of Droplet size

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Ground Equipment: With ground equipment spray drift can be lessened by keeping the spray boom as low as possible; by applying 10 gallons or more of spray per acre; by keeping the operating spray pressures at the manufacturer's specified minimum pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when the wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to thermal inversions. Direct sprays no higher than the tops of target vegetation and keep spray pressures low enough to provide coarse spray droplets to minimize drift.

Aerial Application: Avoid spray drift at the application site. The interaction of many equipment- and weather-related factors determine the potential for spray drift. Users are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The boom length must not exceed 75% of the fixed wingspan and must be located at least 8-10 inches below the trailing edge of the fixed wing; the boom length must not exceed 85% of the rotary blade.
2. Nozzles should be pointed backward parallel with the air stream or not pointed downwards more than 45 degrees.

State and local regulations must be followed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. This information is advisory in nature and does not supersede mandatory label requirements.

Aerial Drift Reduction Advisory

Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that will provide uniform coverage.
- **Nozzle Orientation** - Orient nozzles so that the spray is released parallel to the airstream to produce larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: The distance of the outer most operating nozzles on the boom must not exceed 75% of wingspan for airplanes or 85% of rotor blade diameter for helicopters.

Application Height: Applications should not be made at a height greater than 10 feet

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above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain such as valleys and ravines can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low-level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sprayer Clean-Out Instructions

It is recommended to use separate spray equipment on highly sensitive crops such as tobacco, soybeans, potatoes, peanuts and tomatoes.

Do not use spray equipment used to apply this product for other applications to land planted to, or to be planted to, broadleaf plants unless it has been determined that all residues of this herbicide have been removed by thorough cleaning of equipment.

Equipment used to apply this product should be thoroughly cleaned before reusing to apply any other chemicals as follows:

1. Rinse and flush application equipment thoroughly after use. Dispose of rinse water in non-cropland area away from water supplies.
2. Rinse a second time, adding 1 quart of household ammonia or tank cleaning agent for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Spray nozzles and screens should be removed and cleaned separately.

- Do not apply this product with mist blower systems that deliver very fine spray droplets. Use of mist blower equipment can reduce control achieved with the herbicide and increase spray drift potential.

Use Information

Apply the specified rate of this product as a coarse low-pressure spray. Do not apply this product with mist blower systems that deliver very fine spray droplets. Spray volume should be sufficient to uniformly cover foliage or intended application site. Increase spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. To enhance foliage wetting and coverage, a non-ionic agricultural surfactant or other adjuvant may be added to the spray mixture as specified by the adjuvant label.

This product may be applied by ground or aerial application equipment on any registered use site specified on this label.

Ground Broadcast Application: Higher spray volumes (greater than 10 gallons per acre) generally provide better coverage and better control, particularly in dense and/or tall foliage.

Aerial Broadcast Application: Do not apply less than 2 gallons per acre total spray volume. Five gallons per acre or greater will generally provide better coverage and better control, particularly in dense and/or tall foliage.

High-Volume Foliar Application: High volume foliar treatments may be applied at rates equivalent to a maximum of 7 fl. oz. (0.11 lb. ae) per acre per year. Use sufficient spray volume to thoroughly and uniformly wet foliage and stems.

For basal bark and cut stubble and all types of cut surface applications, see woody plant section.

Low-Volume Foliar Treatment

To control susceptible woody plants, use WHETSTONE HERBICIDE alone or in tank mixes with other herbicides in water. The spray concentration of WHETSTONE HERBICIDE tank mixes and total spray volume per acre should be adjusted according to the size and density of target woody plants and type of spray equipment used. With low volume application, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars.

For best results, an adjuvant should be added to all spray mixtures. Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 psi may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

Spot Application: Spot treatments may be applied at an equivalent broadcast rate of up to 14 fl. oz. (0.22 lb. ae) WHETSTONE HERBICIDE per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 7 fl. oz. (0.11 lb. ae) per acre of this product per year as a result of broadcast, spot or repeat applications. Spray volume should be sufficient to thoroughly and uniformly wet weed foliage, but not to the point of runoff. Repeat treatments may be made, but the total amount of this product applied must not exceed 7 fl. oz. (0.11 lb. ae) per acre per year. To prevent misapplication, spot treatments should be applied with a calibrated sprayer with a known volume per acre. Table 1 shows WHETSTONE HERBICIDE amount to mix for various sprayer outputs in gallons per acre (GPA)

Table 1: Amount of WHETSTONE HERBICIDE (in mL) to mix in 1 gallon of water

Gallons per acre	WHETSTONE HERBICIDE amount (in mL) to mix to achieve target application rates		
GPA	5 fl. oz./a	7 fl. oz./a	14 fl. oz./a
20	7.5	10.5	21.0
30	5.0	7.0	14.0
40	3.8	5.3	10.5
50	3.0	4.2	8.4
60	2.5	3.5	7.0
70	2.1	3.0	6.0
80	1.9	2.6	5.3
90	1.7	2.3	4.7
100	1.5	2.1	4.2

Note: Table 1 above shows mixes for various sprayer outputs in gallons per acre (GPA). Use a syringe to measure cc.

Conversions:

1 tsp = 5 mL 30 ml = 1 fluid ounce 1 cc = 1 mL
3 tsp = 1 Tbsp 2 Tbsp = 1 fluid ounce

Mixing Instructions

Mixing with Water: To prepare the spray, add about half the required amount of water in the spray tank. Then, with agitation, add the specified amount of this product and other herbicides, if tank mixing. Finally, with continued agitation, add the rest of the water and additives such as adjuvants, surfactants or drift control and deposition aids.

Addition of Surfactants or Adjuvants on All Labeled Use Sites: The addition of a high quality non-ionic surfactant (of at least 80% active principal) or adjuvant at 0.25 to 0.5 % volume per volume (1 to 2 quarts per 100 gallons of spray) is recommended to enhance herbicide activity under adverse environmental conditions (such as, high temperature, low relative humidity, drought conditions, dusty plant surfaces) or when weeds are heavily pubescent or more mature.

Tank Mixing with Other Herbicides: This product may be applied in tank mix combination with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the tank mix product(s), and (3) that the tank mix combination is physically compatible (see tank mix compatibility testing below). When tank mixing, use only in accordance with the restrictions, precautions and limitations on the respective product labels.

- It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- Do not exceed specified application rates. If products containing the same active ingredient are mixed, do not exceed the maximum allowable active ingredient use rates.
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a jar test to ensure the compatibility of products to be used in tank mixture.

Tank Mix Compatibility Testing: Perform a jar test prior to mixing in a spray tank to ensure compatibility of this product and other pesticides or carriers. Use a clear glass jar with lid and mix ingredients in the same order and proportions as will be used in the spray tank. The mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for 30 minutes or, if separation

occurs, should readily remix if agitated. An incompatible mixture is indicated by separation into distinct layers that do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film in the jar. Use of an appropriate compatibility aid may resolve mix incompatibility. If the mixture is incompatible do not use that tank mix partner in tank mixtures.

Invert emulsion spray mixtures

This product can be applied in an invert emulsion using oil and an appropriate inverting agent. Follow label directions of the inverting agent.

Mixing with Sprayable Liquid Fertilizer Solutions: This product is usually compatible with liquid fertilizer solutions. It is anticipated that WHETSTONE HERBICIDE will not require a compatibility agent for mixing with fertilizers; however, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water sources change, or when tank mixture ingredients or concentrations are changed. Compatibility may be determined by mixing the spray components in the desired order and proportions in a clear glass jar before large scale mixing of spray components in the spray tank.

Note: The lower the temperature of the liquid fertilizer, the greater the likelihood of mixing problems. Use of a compatibility aid may be required if this product is mixed with a 2,4-D-containing product and liquid fertilizer. **Mixing WHETSTONE HERBICIDE and 2,4-D in N-P or N-P-K liquid fertilizer solutions is more difficult than mixing with straight nitrogen fertilizer and should not be attempted without first conducting a successful compatibility jar test.** Agitation in the spray tank must be vigorous to be comparable with jar test agitation. Apply the spray mixture the same day it is prepared while maintaining continuous agitation. Rinse the spray tank thoroughly after use.

Note: Foliar-applied liquid fertilizers themselves can cause yellowing of the foliage of forage grasses and other vegetation.

Use Rates and Timing

This product may be applied as a broadcast spray by ground or aerial equipment or as a spot application to control weeds including, but not limited to, those listed on this label. When a rate range is given, use the higher rate to control weeds at advanced growth stages or when under less-than-favorable growing conditions. For optimum uptake and translocation of this product, avoid mowing, haying, shredding, burning, or soil disturbance in treated areas for at least 14 days following application.

This product provides post emergence control and preemergence control of emerging seedlings of susceptible weeds, and re-growth of certain perennial weeds following application. Preventing establishment of weeds will depend upon application rate, season of application, and environmental conditions after application.

WHETSTONE HERBICIDE can provide long-term control of susceptible weeds. The length of control is dependent upon the application rate, condition and growth stage of target weeds, environmental conditions at and following application, and the density and vigor of competing desirable vegetation. Long-term weed control is most effective where grass vegetation is allowed to recover from overgrazing, drought, etc., and compete with weeds.

WHETSTONE HERBICIDE can be an important component of integrated vegetation management programs designed to renovate or restore desired plant communities. To maximize and extend the benefits of weed control provided by this product, it is important that other vegetation management practices, including proper grazing management, biological control agents, replanting, fertilization, prescribed fire, etc., be used in appropriate sequences and combinations to further alleviate the adverse effects of weeds on desirable plant species and to promote development of desired plant communities. Agricultural and natural resources specialists with federal and state government agencies can provide guidance on best management practices and development of integrated vegetation management programs.

Plants Controlled

The following weeds and woody plants will be controlled with the rates of WHETSTONE HERBICIDE indicated below (Table 2). For best results, most weeds and woody plants should be treated when they are actively growing and under conditions favorable for growth. Use a higher rate in the rate range when growing conditions are less than favorable or when weed foliage is tall and dense, or when optimal longer term residual control is desired. This product also provides preemergence control of germinating seeds or seedlings of susceptible weeds following application.

Table 2: Weeds and Woody Plants Controlled

Note: Numbers in parentheses (-) refer to specific use directions for a particular weed species.

Common Name	Scientific Name	Rate Range fl. oz./acre (lb. ae/acre)	Life Cycle	Plant Family
amaranth, spiny	<i>Amaranthus spinosus</i>	4 to 7 (0.06 to 0.11)	annual	Amaranthaceae
bedstraw	<i>Galium</i> spp.	4 to 7 (0.06 to 0.11)	perennial	Rubiaceae
beggarticks	<i>Bidens</i> spp.	4 to 7 (0.06 to 0.11)	annual	Asteraceae
broomweed, annual	<i>Amphichyris dracunculoides</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
burdock, common	<i>Arctium minus</i>	4 to 7 (0.06 to 0.11)	biennial	Asteraceae
buttercup, hairy	<i>Ranunculus sardous</i>	4 to 7 (0.06 to 0.11)	annual	Ranunculaceae
buttercup, tall	<i>Ranunculus acris</i>	4 to 7 (0.06 to 0.11)	perennial	Ranunculaceae
buttercup spp.	<i>Ranunculus</i> spp.	4 to 7 (0.06 to 0.11)	various	Ranunculaceae
camelthorn	<i>Alhagi pseudalhagi</i>	5 to 7 (0.08-0.11)	perennial	Fabaceae
cat's ear, common	<i>Hypochaeris radicata</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
cat's ear	<i>Hypochaeris</i> spp.	5 to 7 (0.08-0.11)	perennial	Asteraceae
chamomile, scentless	<i>Matricaria inodora</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
chicory	<i>Cichorium intybus</i>	4 to 6 (0.06 to 0.09)	perennial	Asteraceae
chickweed	<i>Stellaria media</i>	7 (0.11)	annual	Caryophyllaceae
cinquefoil, sulfur (1)	<i>Potentilla recta</i>	4 to 7 (0.06 to 0.11)	perennial	Rosaceae

Common Name	Scientific Name	Rate Range fl. oz./acre (lb. ae/acre)	Life Cycle	Plant Family
cocklebur	<i>Xanthium strumarium</i>	3 to 5 (0.05 to 0.08)	annual	Asteraceae
clover	<i>Trifolium</i> spp.	5 to 7 (0.08-0.11)	perennial	Fabaceae
crazyweed	<i>Oxytropis</i>	5 to 7 (0.08-0.11)	perennial	Fabaceae
croton, tropic	<i>Croton glandulosus</i>	3 to 5 (0.05 to 0.08)	annual	Euphorbiaceae
crownvetch	<i>Securigera varia</i>	5 to 7 (0.08-0.11)	perennial	Fabaceae
cudweed, purple	<i>Gamochaeta purpurea</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
daisy, oxeye (1)	<i>Leucanthemum vulgare</i>	4 to 7 (0.06 to 0.11)	perennial	Asteraceae
dock, curly	<i>Rumex crispus</i>	4 to 7 (0.06 to 0.11)	perennial	Polygonaceae
evening primrose, cutleaf	<i>Oenothera lacinata</i>	4 to 7 (0.06 to 0.11)	annual	Onagraceae
fiddleneck	<i>Amsinckia</i> spp.	4 to 7 (0.06 to 0.11)	annual	Boraginaceae
fireweed	<i>Epilobium angustifolium</i>	5 to 7 (0.08-0.11)	perennial	Onagraceae
fleabane, flax-leaf	<i>Conyza bonariensis</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
fleabane, hairy	<i>Conyza bonariensis</i>	5 to 7 (0.08-0.11)	annual/biennial	Asteraceae
hawkweed, orange (2)	<i>Hieracium aurantiacum</i>	4 to 7 (0.06 to 0.11)	perennial	Asteraceae
hawkweed, yellow (2)	<i>Hieracium aurantiacum</i>	4 to 7 (0.06 to 0.11)	perennial	Asteraceae
henbane, black	<i>Hyoscyamus niger</i>	5 to 7 (0.08-0.11)	annual/biennial	Solanaceae
henbit	<i>Lamium amplexicaule</i>	5 to 7 (0.08-0.11)	annual/biennial	Lamiaceae
hogweed, giant	<i>Heracleum mantegazzianum</i>	7 (0.11)	perennial	Apiaceae
horsenettle, Carolina	<i>Solanum carolinense</i>	4 to 7 (0.06 to 0.11)	perennial	Solanaceae
horseweed (marestail)	<i>Conyza canadensis</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
ironweed, tall	<i>Vernonia gigantea</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
ironweed, western	<i>Vernonia baldwinii</i>	7 (0.11)	perennial	Asteraceae
knapweed, diffuse (3)	<i>Centaurea diffusa</i>	5 to 7 (0.08-0.11)	biennial/perennial	Asteraceae
knapweed, meadow	<i>Centaurea debeauxii</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
knapweed, Russian (4)	<i>Acroptilon repens</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
knapweed, spotted (3)	<i>Centaurea stoebe</i>	5 to 7 (0.08-0.11)	biennial/perennial	Asteraceae
knapweed, squarrose	<i>Centaurea virgata</i>	5 to 7 (0.08-0.11)	biennial/perennial	Asteraceae
knapweeds	<i>Centaurea</i> spp.	5 to 7 (0.08-0.11)	biennial/perennial	Asteraceae
knotweeds, Japanese, bohemian (11)	<i>Reynoutria japonica</i>	7-14 (0.11 to 0.22)	perennial	Polygonaceae
kudzu	<i>Pueraria montana</i>	7 (0.11)	perennial	Fabaceae
lady's thumb	<i>Polygonum persicaria</i>	3 to 5 (0.05 to 0.08)	annual	Polygonaceae
lambsquarters	<i>Chenopodium album</i>	5 to 7 (0.08-0.11)	annual	Chenopodiaceae
lespedeza, annual	<i>Lespedeza striata</i>	5 to 7 (0.08-0.11)	annual	Fabaceae
licorice, wild	<i>Glycyrrhiza lepidota</i>	7 (0.11)	perennial	Fabaceae
locoweed	<i>Astragalus</i> spp.	5 to 7 (0.08-0.11)	perennial	Fabaceae
locust, black	<i>Robinia pseudoacacia</i>	7 (0.11)	woody perennial	Fabaceae
locust, honey	<i>Gleditsia triacanthos</i>	7 (0.11)	woody perennial	Fabaceae
loosestrife, purple (12)	<i>Lythrum salicaria</i>	7-14 (0.11 to 0.22)	perennial	Lythraceae
mayweed, scentless	<i>Tripleurospermum perforatum</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
mayweed, stinking	<i>Anthemis cotula</i>	7 (0.11)	annual	Asteraceae
medic, black	<i>Medicago lupulina</i>	4 to 7 (0.06 to 0.11)	perennial	Fabaceae
mimosa	<i>Albizia julibrissin</i>	7 (0.11)	woody perennial	Fabaceae
mullein (5)	<i>Verbascum</i> spp.	7 (0.11)	biennial	Scrophulariaceae
mustard, tansy (preemergence)	<i>Descurainia</i> spp.	7 (0.11)	annual/biennial	Brassicaceae
mustard, black (preemergence)	<i>Brassica nigra</i>	7 (0.11)	annual	Brassicaceae
nightshade, silverleaf	<i>Solanum elaeagnifolium</i>	4 to 7 (0.06 to 0.11)	perennial	Solanaceae
oxtongue, bristly	<i>Picris echioides</i>	5 to 7 (0.08-0.11)	biennial	Asteraceae
pea, Swainson	<i>Sphaerophysa salsula</i>	5 to 7 (0.08-0.11)	perennial	Fabaceae
povertyweed	<i>Iva axillaris</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
puncturevine	<i>Tribulus terrestris</i>	7 (0.11)	annual	Zygophyllaceae
ragweed, common	<i>Ambrosia artemisiifolia</i>	3 to 5 (0.05 to 0.08)	annual	Asteraceae
ragweed, western	<i>Ambrosia psilostachya</i>	4 to 7 (0.06 to 0.11)	perennial	Asteraceae
ragweed, giant	<i>Ambrosia trifida</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
ragwort, tansy	<i>Senecio jacobaea</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
redbud	<i>Cercis canadensis</i>	7 (0.11)	woody perennial	Fabaceae
rush skeletonweed	<i>Chondrilla juncea</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
sicklepod	<i>Cassia obtusifolia</i>	7 (0.11)	perennial	Fabaceae
smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>	3 to 5 (0.05 to 0.08)	annual	Polygonaceae
sneezeweed, bitter	<i>Helenium amarum</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
soda apple, tropical (6)	<i>Solanum viarum</i>	5 to 7 (0.08-0.11)	perennial	Solanaceae
sowthistle, annual	<i>Sonchus oleraceus</i>	7 (0.11)	annual	Asteraceae
sowthistle, perennial	<i>Sonchus arvensis</i>	3 to 5 (0.05 to 0.08)	perennial	Asteraceae
spanishneedles	<i>Bidens bipinnata</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
St. Johnswort, common	<i>Hypericum perforatum</i>	5 to 7 (0.08-0.11)	perennial	Clusiaceae
stiltgrass, Japanese	<i>Microstegium vimineum</i>	5 to 7 (0.08-0.11)	annual	Poaceae
starthistle, Malta (7)	<i>Centaurea melitensis</i>	3 to 5 (0.05 to 0.08)	annual	Asteraceae
starthistle, purple (7)	<i>Centaurea calcitrapa</i>	3 to 5 (0.05 to 0.08)	biennial	Asteraceae
starthistle, yellow (7)	<i>Centaurea solstitialis</i>	3 to 5 (0.05 to 0.08)	annual	Asteraceae
sunflower, common	<i>Helianthus annuus</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
sweetclover, white	<i>Melilotus albus</i>	5 to 7 (0.08-0.11)	biennial	Fabaceae
sweetclover, yellow	<i>Melilotus officinalis</i>	5 to 7 (0.08-0.11)	biennial	Fabaceae
tarweed, hayfield	<i>Hemizonia congesta</i>	7 (0.11)	annual	Asteraceae
tarweed, narrow or yellowflower	<i>Holocarpha virgata</i>	7 (0.11)	annual	Asteraceae

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Common Name	Scientific Name	Rate Range fl. oz./acre (lb. ae/acre)	Life Cycle	Plant Family
teasel	<i>Dipsacus</i> spp.	4 to 7 (0.06 to 0.11)	biennial	Dipsacaceae
thistle, artichoke	<i>Cynara cardunculus</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
thistle, blessed milk	<i>Silybum marianum</i>	4 to 7 (0.06 to 0.11)	biennial	Asteraceae
thistle, bull (8)	<i>Cirsium vulgare</i>	3 to 5 (0.05 to 0.08)	biennial	Asteraceae
thistle, Canada (9)	<i>Cirsium arvense</i>	5 to 7 (0.08-0.11)	perennial	Asteraceae
thistle, woolly distaff	<i>Carthamus lanatus</i>	4 to 7 (0.06 to 0.11)	annual	Asteraceae
thistle, Italian	<i>Carduus pycnocephalus</i>	7 (0.11)	annual	Asteraceae
thistle, musk (8)	<i>Carduus nutans</i>	3 to 5 (0.05 to 0.08)	biennial	Asteraceae
thistle, plumeless (8)	<i>Carduus acanthoides</i>	3 to 5 (0.05 to 0.08)	biennial	Asteraceae
thistle, Scotch	<i>Onopordum acanthium</i>	5 to 7 (0.08-0.11)	biennial	Asteraceae
thistle, Russian (preemergence)	<i>Salsola</i> spp.	7 (0.11)	annual	Chenopodiaceae
tree of heaven	<i>Ailanthus altissima</i>	7 (0.11)	perennial	Simaroubaceae
trefoil, birdsfoot	<i>Lotus corniculatus</i>	5 to 7 (0.08-0.11)	perennial	Fabaceae
vetch	<i>Vicia</i> spp.	3 to 7 (0.05 to 0.11)	perennial	Fabaceae
willowweed, panicle	<i>Epilobium brachycarpum</i>	5 to 7 (0.08-0.11)	annual	Onagraceae
wisteria	<i>Wisteria brachybotris</i>	7 (0.11)	woody perennial	Fabaceae
wormwood, absinth (10)	<i>Artemisia absinthium</i>	6 to 7 (0.09 to 0.11)	perennial	Asteraceae
yarrow, common	<i>Achillea millefolium</i>	7 (0.11)	perennial	Asteraceae

- (1) **Sulfur cinquefoil or oxeeye daisy:** Apply this product at 4 to 6 fl. oz. (0.06 to 0.09 lb. ae) per acre to plants in the prebud stage of development.
- (2) **Orange or yellow hawkweeds:** Apply this product at 4 to 7 fl. oz. (0.06 to 0.11 lb. ae) per acre to plants in the bolting stage of development.
- (3) **Diffuse, spotted, and squarrose knapweeds:** Apply this product at 5 to 7 fl. oz. (0.08 to 0.11 lb. ae) per acre when plants are actively growing with the optimum time of application occurring from rosette to the bolting stages of development or in the fall. Plants will be controlled by mid-summer and fall applications even though plants may not show any changes in form or stature the year of application.
- (4) **Russian knapweed:** Apply this product at 5 to 7 fl. oz. (0.08 to 0.11 lb. ae) per acre to plants in the spring and summer at early bud to flowering stages and to dormant plants in the fall.
- (5) **Mullein:** Apply to the rosette stage
- (6) **Tropical soda apple:** Apply this product at 5 to 7 fl. oz. (0.08 to 0.11 lb. ae) per acre at any growth stage, but application by flowering will reduce seed production potential.
- (7) **Malta, purple, and yellow starthistle:** Apply this product at 3 to 5 fl. oz. (0.05 to 0.08 lb. ae) per acre to plants at the rosette through bolting growth stages.
- (8) **Bull, musk, and plumeless thistles:** Apply this product at 3 to 5 fl. oz. (0.05 to 0.08 lb. ae) per acre in the spring and early summer to rosette or bolting plants or in the fall to seedlings and rosettes. Apply at 4 to 5 fl. oz. (0.06 to 0.08 lb. ae) when plants are at the late bolt through early flowering growth stages. 2,4-D at 1 lb ae/acre should be tank-mixed with this product starting at the late bud stages
- (9) **Canada thistle:** Apply this product at 5 to 7 fl. oz. (0.08 to 0.11 lb. ae) per acre in the spring after all plants have fully emerged (some may be budding) until the oldest plants are in full flower stage. Use the higher rate when applying to the flower stage. Applications are also effective in the fall before a killing frost. Use higher rates for older/dense stands or for longer residual control.
- (10) **Absinth wormwood:** Apply this product at 6 to 7 fl. oz. (0.09 to 0.11 lb. ae) per acre before wormwood is 12 inches tall. When applying by air on CRP, coverage is important and a minimum of 3 GPA is specified. Remove old duff and litter by fire or mowing for best results.
- (11) **Invasive knotweeds:** Japanese, Bohemian, giant knotweeds: Optimum suppression of invasive knotweeds with WHETSTONE HERBICIDE is obtained when applications are made to plants that are at least 3 to 4 feet tall. Results of field trials conducted in the western U.S. indicate that high volume applications (100 gpa or greater) of this product at 7 fl. oz. (0.11 lb. ae)/A or a spot treatment rate up to 14 fl. oz. (0.22 lb. ae)/A applied in summer will provide good control of invasive knotweeds. In the upper Midwest, mowing in summer followed by fall application of this product (prior to frost) provided the best control. Infestations of invasive knotweed that are mowed should be allowed to regrow to at least 3 feet in height prior to herbicide treatment. Monitoring and follow-up herbicide treatments on regrowth will be necessary to control resprouts and achieve long-term control.
- (12) **Purple loosestrife:** For optimum control apply this product at 7 fl. oz. (0.11 lb. ae) per acre plus 1 pt to 1 qt. of Alligare 2,4-D Amine (EPA Reg. No. 81927-38) or 1 to 2 qts. of Alligare Triclopyr 3 (EPA Reg. No. 81927-13). Spot treatments may also be made by applying this product at 14 fl. oz. (0.22 lb. ae) (see Spot treatment section of the label) with or without the addition of Alligare 2,4-D Amine (EPA Reg. No. 81927-38) or Alligare Triclopyr 3 (EPA Reg. No. 81927-13).
- (13)**Fiddleneck:** For optimum control apply this product at 4 to 7 fl. oz. (0.06 to 0.11 lb. ae) per acre when the plants are young and before flowering. Use higher rates if the plants are older and larger. In California optimal application timing is November through March.

For Control or Suppression of Medusahead Rye and Other Winter Annual Grasses

WHETSTONE HERBICIDE applied broadcast at 7 to 14 fl. oz. (0.11 to 0.22 lb. ae)/A can suppress or control many winter annual grasses including medusahead rye (*Taeniatherum caput-medusae*) and downy brome (*Bromus tectorum*, also called cheatgrass). The key to optimum results is the timing of application. Applications should be made in late summer prior to rains and seed germination in order to provide the best possibility of suppression or control. In general, annual grass control or suppression will be poor if any of the winter annual grass seeds have germinated prior to application even if they have not yet emerged

through the soil surface. Tank mixes with Glyphosate 4 Plus (EPA Reg. No. 81927-9) at 12 fl oz/A, where a non-selective herbicide can be used or where desired grasses are dormant and will not be harmed and will aid in controlling any winter annual grasses that germinated prior to application. Spot treatment restrictions (see spot treatment section) apply for rates above 7 fl. oz. (0.11 lb. ae)/A for broadcast applications.

Control of Terrestrial Weeds near and up to the Water’s Edge
This product can be used to treat terrestrial weeds that extend up to the water’s edge. **Do not apply directly to water.** This product must not be used to treat vegetation standing in the water. When controlling terrestrial weed species near and up to the water’s edge, take precautions to minimize incidental overspray to the adjacent waters. Consult local public water control authorities before applying this product near public waters. Permits may be required to treat such areas. Apply the specified rate, listed in Table 2 of this product as a coarse low-pressure spray as ground broadcast or spot applications. Do not apply aerially for control of weeds growing at or near the water’s edge. Spray volume should be sufficient to uniformly cover foliage. Increase the spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. It is also permissible to treat target weeds within dry non-irrigation ditches and seasonally dry transitional areas between upland and lowland sites (such as flood plains, deltas, marshes, prairie potholes or vernal pools), but only at times when those sites are dry and are forecasted or managed by water control systems to remain dry for at least 2 weeks following application.

Use Rate Restrictions:
Do not broadcast apply more than 7 fl. oz. (0.11 lb. ae) per acre of this product per year.

The total amount of this product applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl. oz. (0.11 lb. ae) per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 14 fl. oz. of this product (0.22 lb. ae) per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 7 fl. oz. of this product (0.11 lb. ae) per acre per year as a result of broadcast, spot or repeat applications.

Woody Plant Control
This product may be applied to control woody plants by any application method listed on the label on any site listed.

WHETSTONE HERBICIDE may be applied alone or in tank-mix combinations with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the registered tank mixed products. Use as directed in the Directions of Use section of the tank-mix partner. Follow Mixing Instructions.

Add this product to tank mixes for improved brush control on species such as alder, aspen, blackberry, boxelder, cherry, coyote brush, conifers, cottonwood, elm, maple, poplar, oak, brooms (Scotch, Spanish, French, Portuguese), gorse, hackberry, Russian and Autumn olive, salt-cedar.

Low or High Volume Foliar Applications:
For broad spectrum brush control using a foliar application, this product may be added to tank mixes with Glyphosate 4 Plus (EPA Reg. No. 81927-9), Alligare Imazapyr 4 SL (EPA Reg. No. 81927-24), Alligare 2,4-D Amine (EPA Reg. No. 81927-38), Alligare Triclopyr 4 (EPA Reg. No. 81927-11), Boulder 6.3 (EPA Reg. No. 81927-54), Alligare Triclopyr 3 (EPA Reg. No. 81927-13), Alligare Triumph 22K Herbicide (EPA Reg. No. 81927-18) or other products labeled for use on the intended site.

Low Volume Basal Bark Applications:
To control susceptible woody plants with stems less than 6 inches in basal diameter, apply herbicide mix (see below for rates) with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground in a manner that thoroughly wets the lower stems but not to the point of runoff. The use of a Spraying Systems Y2 nozzle or similar nozzle is recommended, which will narrow the spray pattern to target individual stems. Herbicide concentration should vary with tree diameter, bark thickness, volume used per acre, and susceptibility of species treated. Apply anytime, including the winter months, except when snow or water prevent spraying to the ground line or when stem surfaces are saturated with water.

This product may be used as a low volume basal treatment alone, for sensitive woody species in the Fabaceae family (legumes), or in combination with other products such as Alligare Triclopyr 4 (EPA Reg. No. 81927-11) or Boulder 6.3 (EPA Reg. No. 81927-54) for

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Specimen Label

broader control of other sensitive woody species. Do not exceed the maximum use rate per acre for the site.

Mix this product at 0.5 to 5% v/v alone, or with Alligare Triclopyr 4 (EPA Reg. No. 81927-11) or Boulder 6.3 (EPA Reg. No. 81927-54) in a commercially available basal diluent (or other oils or basal diluents as recommended by the manufacturer); the basal oil should be compatible with a water soluble herbicide such as WHETSTONE HERBICIDE. See table 3 to calculate the amount of this product that can be applied per acre at the various volumes and rates. Make a stable tank mixture for basal bark application by first combining each product with a compatibility agent prior to final mixing in the desired ratio. If using a tank mix, mix the oil-based products such as Alligare Triclopyr 4 (EPA Reg. No. 81927-11) thoroughly with basal oil and add any other oil-based products before adding the water-based products. If the mixture stands for more than 30 minutes, reagitiation may be required.

Oil and water-based mixtures can separate over time. Long-term storage is not recommended without vigorous agitation prior to use or without a recommended compatibility agent.

Use caution when treating areas adjacent to susceptible and desirable species to avoid root uptake and possible injury when using this product or other soil active herbicides.

Low Volume Stem Bark Band Treatment

To control susceptible woody plants (see Table 2) with stems less than 6 inches in basal diameter, mix 0.5 to 5 gallons of this product in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6- to 10- inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results apply the band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made anytime, including winter months.

Table 3:

% of WHETSTONE HERBICIDE in Basal Mix	Fluid ounces of WHETSTONE HERBICIDE by GPA (gallons per acre)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.0	1.3	2.6	3.8	5.1	6.4	7.7	9.0
1.5	1.9	3.8	5.8	7.7	9.6	11.5	13.4
2.0	2.6	5.1	7.7	10.2	12.8		
2.5	3.2	6.4	9.6	12.8			
3.0	3.8	7.7	11.5				
3.5	4.5	9.0	13.4				
4.0	5.1	10.2					
5.0	6.4	12.8					

	within spot treatment labeled rate		in excess of spot treatment labeled rate
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NOTE: Avoid treating high density of stems adjacent to desirable trees with roots in the treatment zone. See table 4 for guidance on estimated volume per acre by treated stem density. Trees adjacent to or in a treated area can occasionally be affected by root uptake of this product. Applications of this product within the root zone of desirable trees should not be made unless injury can be tolerated. Severe injury or plant death can occur if used near roses, or leguminous trees such as locusts, redbud, mimosa, and caragana.

Table 4:

Estimated gallons of spray solution per acre for basal bark applications on various stem densities per acre		
Number of Stems/Acre	Volume Range (gal/acre)	Target Spacing (ft between brush/trees)
250	1.0 - 1.7	8.4
500	2.0 - 3.3	5.9
750	3.0 - 5.0	4.9
1000	4.0 - 6.6	4.2
1250	5.0 - 8.3	3.8
1500	5.9 - 9.9	3.4

Chemical Side Trimming

This product may be tank mixed with Alligare Triclopyr 3 (EPA Reg. No. 81927-13), Alligare Triclopyr 4 (EPA Reg. No. 81927-11), Glyphosate 4 Plus (EPA Reg. No. 81927-9), or other labeled herbicides for effective chemical limb trimming applications. These applications are designed to control only the portion of the plant which is treated and calibrated equipment is essential. Mix this product at 0.1 – 0.5%v/v plus the recommended rate of the tank mix partner(s) plus surfactant or mix this product at 7 fl. oz. (0.11 lb. ae)/A with the other tank mix partner(s) at the recommended rates. Use lower rates of this product where higher gallons per acre of spray solution are used but not to exceed the 7 fl. oz. (0.11 lb. ae)/A maximum labeled rate. Direct the spray solution to cover only the portion of the plant to be controlled. Avoid spraying the crown of the tree to allow for side trimming and not complete control of the tree. For conifers in particular, to avoid more injury than intended, it is advisable to apply on less than 1/3 of the tree canopy. Avoid treating under or around desirable tree species such as legumes like locust and mimosa, Douglas-fir, conifers or other sensitive trees unless injury or death of the tree can be tolerated. Consult your Alligare, LLC representative for guidelines on treating around trees.

Cut Stubble Applications

To prevent re-sprouting of susceptible woody species or germination of susceptible broad-leaf plants after mowing or hand cutting on any site listed on this label, use WHETSTONE HERBICIDE at 7 fl. oz. (0.11 lb. ae)/acre in a tank mix with Alligare Triumph 22K Herbicide (EPA Reg. No. 81927-18) at 1 to 2 quarts/A, Alligare Triclopyr 4 (EPA Reg. No. 81927-11) at 4 to 6 qt/acre, Alligare Triclopyr 3 (EPA Reg. No. 81927-13) at 6 to 8 quarts/acre, 8 fl. oz./A of Alligare Imazapyr 4 SL (EPA Reg. No. 81927-29), or with other herbicides labeled for the site. Best results may be obtained with good coverage of the remaining cut stems and when applications are made before or during periods of active root growth. Recommended spray volume is 10 to 50 gallons per acre. Applications should not be made when the soil is frozen or covered by snow or standing water. It is recommended that applications be made soon after cutting, before sprouting of woody species has occurred.

Cut surface

Apply this product in the cut surface applications listed below for control of susceptible tree species such as legumes like albizia, mimosa, locust, etc. Mixtures of this product and Alligare Triclopyr 3 (EPA Reg. No. 81927-13) or Alligare Triclopyr 4 (EPA Reg. No. 81927-11) may be effective on species other than legumes such as elm, maple, oak and conifers.

Cut surface applications may be used successfully at any season except during periods of heavy sap flow of certain species - for example, maples in the spring.

Cut-Stump Treatment

Apply this product as a 10% dilution v/v in water, by spraying or painting all the exposed cambium layer on the freshly cut surface. The cambium area next to the bark is the most vital area to wet.

With Tree Injector Method

Apply by injecting 1 milliliter of 10% v/v WHETSTONE HERBICIDE in water through the bark at intervals of 3 to 4 inches between centers of the injector wound. The injections should completely surround the tree at any convenient height. Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is injected directly into plants.

With Hack and Squirt Method

Make cuts around the tree trunk at a convenient height with a hatchet or similar equipment so that the cuts overlap slightly and make a continuous circle around the trunk. Spray 1 milliliter of 10% v/v WHETSTONE HERBICIDE in water into the pocket created between the bark and the inner stem/trunk by each cut.

With Frill or Girdle Method

Make a single girdle through the bark completely around the tree at a convenient height. The frill should allow for the herbicide to remain next to the inner stem and absorb into the plant. Wet the cut surface with 10% v/v WHETSTONE HERBICIDE in water.

For use in Hawaii only:

Incision Point Application (IPA) also known as Tree Injection or Hack and Squirt
For control of susceptible tree species such as albizia, and other legumes and susceptible tree species, make cuts around the tree trunk at a convenient height with a machete, hatchet or similar equipment so that the cuts are about 6 inches apart between centers. Inject ½ to 1 milliliter of undiluted WHETSTONE HERBICIDE into the pocket created between the bark and the inner stem/trunk by each cut as soon as possible after cutting. The cambium area next to the bark is the most vital area to wet.

Preemergent Weed Control

Typically this product is used as a post emergent herbicide but it has preemergent activity on susceptible weeds. Use WHETSTONE HERBICIDE as a preemergence spray prior to weed seed germination. Control will depend upon species susceptibility, application timing, and environmental conditions, such as precipitation, following application. When applied at rates lower than 7 fl. oz. (0.11 lb. ae) per acre, this product can provide short-term control of some susceptible weeds but when applied at 7 fl. oz. (0.11 lb. ae) (broadcast) or 14 fl. oz. (0.22 lb. ae) (spot treatment), weed control is extended.

Best results for use as a preemergent application for total vegetation control are obtained if this product at 7 fl. oz. (0.11 lb. ae) per acre is tank mixed with other herbicides to broaden the weed spectrum and to control grasses. If grasses and broadleaf weeds tolerant to this product are present at the time of application or will germinate on the site, then tank mixtures with other herbicides, such as Glyphosate 4 Plus (EPA Reg. No. 81927-9), Alligare SFM 75 (EPA Reg. No. 81927-26), Esplanade (EPA Reg. No. 432-1512), PROMENADE Herbicide (EPA Reg. No. 81927-67), Alligare Diuron 80DF (EPA Reg. No. 81927-12) or other herbicides labeled for total vegetation control applications.

SPOT TREATMENTS FOR AREAS SUCH AS SUBJECT POLES, SUBSTATIONS, AND OTHER SMALL AREAS

Spot treatments may be applied at an equivalent broadcast rate of up to 14 fl. oz. (0.22 lb. ae) per acre per year to small spots for clearing around utility subject poles to help prevent fire damage, on small substations and other spot areas. To prevent misapplication, spot treatments should be applied with a calibrated sprayer.

STORAGE AND DISPOSAL

Do not contaminate water, food, feed or fertilizer by storage or disposal. Open dumping is prohibited.

Pesticide Storage: If this product is exposed to subfreezing temperatures, the active ingredient may crystallize and settle out of solution. Under these conditions the product should be warmed to at least 40°F and agitated well to dissolve any crystallized active ingredient prior to use.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Handling:

[Nonrefillable Containers 5 gallons or less:] [Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.]

[Nonrefillable containers larger than 5 gallons:] [Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.]

[Refillable containers larger than 5 gallons:] [Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.]

CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

To the extent consistent with applicable law, upon purchase or use of this product, purchaser and user agree to the following terms:

Warranty: Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. To the extent consistent with applicable law, no such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

Terms of Sale: The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

Limitation of Liability: To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

WHETSTONE™ is a trademark of Alligare, LLC

EPA 20201002

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)



PRODUCT NAME: WHETSTONE™ Herbicide

DESCRIPTION: A liquid herbicide.

EPA Reg. No.: 81□□7-8□

COMPANY IDENTIFICATION:

Alligare, LLC

1565 5th Avenue

Oeli, AL 36801

This product is not hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.1200.

Health Hazard
None

Category

Physical Hazards
None

Category

Environmental Hazards
None

Category
-

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC)

None

PRECAUTIONARY STATEMENTS

None

<u>Common Name</u>	<u>Chemical Name</u>	<u>CAS #</u>	<u>Composition</u>
Aminoimid Triisopropanolamine Salt	Imidinedic Acid, 4-amino-3,6-dichloro-, comd. with 1,1,1-trinitroltrispropanol	5661-8-7	40.6%
Triisopropanolamine	Propanol, 1,1,1-trinitroltris-	100-0-3	1.5%

NOTE: Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

Have the product container or label with you when calling poison control center or doctor or going for treatment. You may also contact 1-800-44-3300 for emergency medical treatment information.

Flash Point (CC): C

Flammable Limits (LFL-UFL): Not determined

Fire and Explosion Hazards: None ☐no☐n.

Extinguishing Medium: None ☐no☐n.

Fire Fighting Equipment: Firefighters should be equipped with self-contained positive pressure breathing apparatus and will undergo training.

Fire Fighting Instructions: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Remove undamaged containers from fire area if it is safe to do so. Execute re-lease extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers.

5. FIREFIGHTING MEASURES (CONT.)

Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

NFPA Ratings: Health – 1 Flammability – 1 Reactivity – 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Spill Cleanup: Contain spilled material if possible. Absorb with materials such as clay, dirt, sand. Sweep up and collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Storage: If this product is exposed to subfreezing temperatures, the active ingredient may crystallize and settle out of solution. Under these conditions the product should be warmed to at least 40°F and agitated well to dissolve any crystallized active ingredient prior to use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Work area should be equipped with shower and eye-face wash station.

Component	Regulation	Type of listing	Value/Notation
Triisopropanolamine	DoD IHG	T/A	10 mg/m ³

Protective Clothing: Applicators and other handlers must wear long-sleeved shirt and long pants, and shoes plus socks.

General: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for respirators, use detergent and warm water to clean. Clean and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless liquid	Dynamic viscosity:	1.1 cP @ 20°C
Odor:	mild		68°F
Melting/freezing point:	-10°C to 14°C	Solubility:	soluble
Boiling point/Boiling range:	not available	Partition coefficient:	not available
Flammability:	not available	Vapor pressure:	not available
Flammability limits (upper/lower):	not available	Liquid Density:	1.1401 g/mL @ 20°C
Flash point (cc):	100°C to 110°C		68°F
Auto-ignition temperature:	none below 400°C	Relative vapor density:	not available
Decomposition temperature:	not available	Particle characteristics:	not available
pH:	7.3 (electrode)		

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: None known.

CHEMICAL STABILITY: No decomposition if stored and handled as directed. Stable under all normal use and storage conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to hydrogen chloride and nitrogen oxides.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong oxidizers

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ORAL TOXICITY (rat LD₅₀): 5,000 mg/kg

DERMAL TOXICITY (rat LD₅₀): 5,000 mg/kg

INHALATION TOXICITY (rat LC₅₀): 5.7 mg/L 4-hour

EYE IRRITATION: Irritant/nonirritating to eyes.

SKIN IRRITATION: Irritant/nonirritating to skin.

SKIN SENSITIZATION: Not a contact sensitizer. Guinea pig

CARCINOGENICITY:

EPA: Not Listed to be Carcinogenic to Humans Amino acid

ACGIH: Not listed **NTP:** Not Listed

IARC: Not Listed **OSHA:** Not Listed

REPRODUCTIVE TOXICITY / DEVELOPMENTAL TOXICITY / TERATOGENICITY: Did not cause birth defects or any other fetal effects in laboratory animals. In animal studies, did not interfere with reproduction.

MUTAGENICITY TOXICITY: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Amino acid is irritant/non-toxic to fish, birds, mammals, aquatic invertebrates and honeybee adults on acute exposure basis. Pesticide is highly toxic to aquatic plants on an acute basis.

AQUATIC TOXICITY

Rainbow Trout 6-hr LC₅₀ 360 mg/L

Shorthead Minnow 6-hr LC₅₀ 100 mg/L

Water Flea 48-hr LC₅₀ 460 mg/L

Mid Shrimp 6-hr LC₅₀ 104 mg/L

For similar materials(s)

Irritant/highly toxic to aquatic organisms on an

acute basis LC₅₀/C₅₀ 0.1 mg/L

Green Algae 7-day C₅₀ 1,000 mg/L

Microthidium sicum 14-day C₅₀/NOAC 0.363 mg/L 0.063 mg/L

12. ECOLOGICAL INFORMATION (CONT.)

AVIAN TOXICITY

White Duck Diet LC₅₀ 1,400 mg/kg

White Duck Oral LD₅₀ 10,000 ppm

BEE TOXICITY

Honeybee Oral LD₅₀ 460 µg/bee

Honeybee Contact LD₅₀ 460 µg/bee

PERSISTENCE AND DEGRADABILITY

Material is not readily biodegradable according to OECD/C guidelines.

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable and refillable containers. Refer to the product label for specific container handling instructions.

14. TRANSPORT INFORMATION

UN Number: UN308
Proper Shipping Name: Environmentally hazardous substance, liquid, N.O.S. Contains
minomorphid triisopropanolamine salt
Transport Hazard Class: 3
Packing Group: III
Hazard Zone: None
Marine Pollutant: Yes¹
Hazardous Substance RQ: None
Labels / Placards: S-DOT Class 3 Environmentally Hazardous Substance
IMDG, IATA Class 3 Environmentally Hazardous Substance³
Emergency Guide: 171 NAERG – North American Emergency Response Guide

¹ **Marine Pollutant Note:** Ground-only shipments are excluded from Marine Pollutant labeling requirements as per 49CFR171.101 Appending 4. For air shipments including all or part of the transport vessel, the shipment must be classified as a Marine Pollutant unless a limited quantity exemption applies (see note 3 below).

US-DOT Note: Not regulated for “ground only” shipments.

³ **IMDG / IATA Note:** Not regulated when shipped in single or inner packaging ≤ 1.3 g/L, 15 L.

This information is not intended to convey all specific regulatory or operational requirements information relating to this product. Transportation classifications may vary by container volume and may be influenced by region or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

FIFRA –

This chemical is a pesticide product registered with the Environmental Protection Agency and is subject to certain labeling requirements under Federal Pesticide Law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for pesticide labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation.

See inside label booklet for additional precautionary Statements and Directions for use including Storage and Disposal instructions.

ENVIRONMENTAL HAZARDS

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

15. REGULATORY INFORMATION (CONT.)

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPCRA.

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate acute

SARA Title III – Section 312 Threshold Planning Quantity

NA

SARA Title III – Section 313 Reportable Ingredients

None

CERCLA –

None

CALIFORNIA PROP 65 STATUS –

This product does not contain any chemicals known to the state of California to cause cancer or reproductive harm.

CANADA –

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

16. OTHER INFORMATION

THIS INFORMATION IN THIS SDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGAR, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. ADGMENTS AS TO THE RELIABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGAR, LLC MAKES NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR RELIABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE DATA APPROVED PRODUCT LABELING attached to and accompanying the product container. This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specific to product use in the ordinary course.

SDS version 1.0

Effective Date 10/08/2020