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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-~~2402~~ 2102

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/18/2012	N30	COMMON CARRIER	DEST	DELIVERED

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		675-85		

HERBICIDES, ADJUVANTS, AND OTHER ITEMS

OPEN END CONTRACT

THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS FOR AN OPEN END CONTRACT TO PROVIDE HERBICIDES, ADJUVANTS, SAFETY AND OTHER MISCELLANEOUS ITEMS FOR ALL TEN DISTRICTS PER THE ATTACHED SPECIFICATIONS.

TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION MUST BE SUBMITTED IN WRITING TO ALAN CUMMINGS IN THE WEST VIRGINIA STATE PURCHASING DIVISION VIA FAX AT 304-558-4115 OR VIA EMAIL AT ALAN.W.CUMMINGS@WV.GOV.

DEADLINE FOR TECHNICAL QUESTIONS IS 02/17/12 AT THE CLOSE OF BUSINESS.

ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM TO BE ISSUED BY THE PURCHASING DIVISION AFTER THE DEADLINE HAS LAPSED.

A MANDATORY PRE-BID MEETING WILL BE HELD ON 2/23/12 AT 11:00 A.M., IN THE WEST VIRGINIA STATE PURCHASING DIVISION LOCATED AT 2019 WASHINGTON STREET EAST, CHARLESTON, WV 25305. ALL INTERESTED PARTIES ARE REQUIRED TO ATTEND THIS MEETING. FAILURE TO ATTEND THE MANDATORY PRE-BID SHALL RESULT IN DISQUALIFICATION OF THE BID. NO ONE PERSON MAY REPRESENT MORE THAN ONE

RECEIVED
2012 MAR 13 AM 9:55
WV PURCHASING DIVISION

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE [signature] TELEPHONE 540-992-5766 DATE 3/7/12

TITLE President FEIN 54-128-6614 ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.

2. The State may accept or reject in part, or in whole, any bid.

3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required $125 fee.

4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.

5. Payment may only be made after the delivery and acceptance of goods or services.

6. Interest may be paid for late payment in accordance with the ***West Virginia Code.***

7. Vendor preference will be granted upon written request in accordance with the ***West Virginia Code.***

8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.

10. The laws of the State of West Virginia and the ***Legislative Rules*** of the Purchasing Division shall govern the purchasing process.

11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.

12. BANKRUPTCY: In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.

13. HIPAA BUSINESS ASSOCIATE ADDENDUM: The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at **www.state.wv.us/admin/purchase/vrc/hipaa.html** and is hereby made part of the agreement provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

14. CONFIDENTIALITY: The vendor agrees that he or she 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 http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf.

15. LICENSING: Vendors 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, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

16. ANTITRUST: In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will 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 the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.

2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.

3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.

4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130

5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).

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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	2

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-2402

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/18/2012				

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT

BIDDER.

AN ATTENDANCE SHEET WILL BE MADE AVAILABLE FOR ALL POTENTIAL BIDDERS TO COMPLETE. THIS WILL SERVE AS THE OFFICIAL DOCUMENT VERIFYING ATTENDANCE AT THE MANDATORY PRE-BID. FAILURE TO PROVIDE YOUR COMPANY AND REPRESENTATIVE NAME ON THE ATTENDANCE SHEET WILL RESULT IN DISQUALIFICATION OF THE BID. THE STATE WILL NOT ACCEPT ANY OTHER DOCUMENTATION TO VERIFY ATTENDANCE.

THE BIDDER IS RESPONSIBLE FOR ENSURING THEY HAVE COMPLETED THE INFORMATION REQUIRED ON THE ATTENDANCE SHEET. THE PURCHASING DIVISION AND THE STATE AGENCY WILL NOT ASSUME ANY RESPONSIBILITY FOR A BIDDER(S) FAILURE TO COMPLETE THE PRE-BID ATTENDANCE SHEET. IN ADDITION, WE REQUEST THAT ALL POTENTIAL INCLUDE THEIR PHONE AND FAX NUMBERS.

ALL POTENTIAL BIDDERS ARE REQUESTED TO ARRIVE PRIOR TO THE START TIME FOR THE PRE-BID. BIDDERS WHO ARRIVE LATE, BUT PRIOR TO THE DISMISSAL OF THE TECHNICAL PORTION OF THE PRE-BID WILL BE PERMITTED TO SIGN IN. BIDDERS WHO ARRIVE AFTER CONCLUSION OF THE TECHNICAL PORTION OF THE PRE-BID BUT DURING ANY SUBSEQUENT PART OF THE PRE-BID WILL NOT BE PERMITTED TO SIGN THE ATTENDANCE SHEET.

EXHIBIT 10

REQUISITION NO.: .....

ADDENDUM ACKNOWLEDGEMENT

I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	3

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-2402

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/18/2012				

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO	ITEM NUMBER	UNIT PRICE	AMOUNT

ADDENDUM NO.'S:

NO. 1 .√.....

NO. 2 .√.....

NO. 3 .....

NO. 4 .....

NO. 5 .....

I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.

VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.

J.E. Hye
SIGNATURE

CWC Chemical, Inc.
COMPANY

3/7/12
DATE

NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	4

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-2402

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/18/2012				

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT

REV. 09/21/2009

EXHIBIT 3

LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE ON AWARD AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.

UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT BY THE STATE OF WEST VIRGINIA, ITS AGENCIES, OR POLITICAL SUBDIVISIONS, THE TERMS, CONDITIONS, AND PRICING SET FORTH HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.

RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.

CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.

OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	5

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-2402

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/18/2012				

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO	ITEM NUMBER	UNIT PRICE	AMOUNT

AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)

QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. 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.

ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN STATE CONTRACT ORDER (FORM NUMBER WV-39) TO THE VENDOR FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL COPY OF THE WV-39 SHALL BE MAILED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT, A SECOND COPY MAILED TO THE PURCHASING DIVISION, AND A THIRD COPY RETAINED BY THE SPENDING UNIT.

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.

THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM.

REV. 01/17/2012

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	6

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-2402

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B	FREIGHT TERMS
01/18/2012				

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT

EXHIBIT 4

LOCAL GOVERNMENT BODIES: UNLESS THE VENDOR INDICATES IN THE BID HIS REFUSAL TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO COUNTY, SCHOOL, MUNICIPAL AND OTHER LOCAL GOVERNMENT BODIES, THE BID SHALL EXTEND TO POLITICAL SUBDIVISIONS OF THE STATE OF WEST VIRGINIA. IF THE VENDOR DOES NOT WISH TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO ALL POLITICAL SUBDIVISIONS OF THE STATE, THE VENDOR MUST CLEARLY INDICATE SUCH REFUSAL IN HIS BID. SUCH REFUSA SHALL NOT PREJUDICE THE AWARD OF THIS CONTRACT IN ANY MANNER.

REV. 3/88

PURCHASING CARD ACCEPTANCE: THE STATE OF WEST VIRGINI CURRENTLY UTILIZES A VISA PURCHASING CARD PROGRAM WHICH IS ISSUED THROUGH A BANK. THE SUCCESSFUL VENDOR MUST ACCEPT THE STATE OF WEST VIRGINIA VISA PURCHASING CARD FOR PAYMENT OF ALL ORDERS PLACED BY ANY STATE AGENCY AS A CONDITION OF AWARD.

NOTICE

A SIGNED BID MUST BE SUBMITTED TO:

DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
BUILDING 15
2019 WASHINGTON STREET, EAST
CHARLESTON, WV 25305-0130

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	7

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-2402

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/18/2012				

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT

THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:

SEALED BID

BUYER: ALAN CUMMINGS - FILE 33

RFQ. NO.: 6612C015

BID OPENING DATE: 03/14/2012

BID OPENING TIME: 1:30 P.M.

PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:

540-992-5601

CONTACT PERSON (PLEASE PRINT CLEARLY):

Larry Sharpe

ANY INDIVIDUAL SIGNING THIS BID IS CERTIFYING THAT: (1) HE OR SHE IS AUTHORIZED BY THE BIDDER TO EXECUTE THE BID OR ANY DOCUMENTS RELATED THERETO ON BEHALF OF THE BIDDER, (2) THAT HE OR SHE IS AUTHORIZED TO BIND THE BIDDER IN A CONTRACTUAL RELATIONSHIP, AND (3) THAT THE BIDDER HAS PROPERLY REGISTERED WITH ANY STATE AGENCIES THAT MAY REQUIRE REGISTRATION.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

1. SPECIFICATIONS

The following sections of the West Virginia Department of Transportation, Division of Highways Standard Specification Roads and Bridges, adopted 2010, as modified by the January 1, 2011 Supplemental Specifications shall apply to the administration of this Contract: 101, 102.4, 102.5, 105.1, 105.3, 105.4, 105.10, 105.11, 105.12, 105.13, 106.3, 106.4, 106.5, 106.6, 106.7, 106.9, 107.1, 107.2, 107.3, 107.14, 107.19, 107.20, 108.8, 109.1, 109.2, and 109.20

The terms "Contractor" and "Vendor" used in the above specifications or this contract are interchangeable. Contractor shall mean Vendor and Vendor shall mean Contractor.

West Virginia Department of Transportation, Division of Highways Standard Specifications Roads and Bridges, adopted 2010 and the January 1, 2011 Supplemental Specifications may be obtained from:

West Virginia Division of Highways
Contract Administration
Building 5, Room 722
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305
Phone: 304-558-2885

http://www.transportation.wv.gov/highways/contractadmin/specifications/2010StandSpec/Pages/default.aspx

Herbicide furnished under this contract shall conform to the physical and chemical properties set out in the EPA Registration of the product provided by the Vendor.

2. BIDDING INSTRUCTIONS

Vendors may bid on any or all of the products listed on the Bid Schedule. Vendors may quote Product Name requested or provide "an equal to" product.

The vendor shall list the trade name and EPA Registration Number on the Bid Schedule for each product bid. Failure to list this information on the Bid Schedule will result in the disqualification of the vendor's bid on that product.

The vendor shall provide the label from the item being bid as "an equal to" the product requested to eliminate any confusion in determining equivalency to product item requested with their bid. The final determination of equivalency will be made by the Division of Highways.

Equivalency, chemical name or equivalent, shall mean equal and not necessarily identical. Prior to award of low bid the Division of Highways may require product samples for evaluation to determine equivalency. Product specifications and technical information should be submitted with bid and may also be used to determine equivalency.

The successful vendor shall furnish two product labels, for each product awarded, to the Division of

Highways. The labels shall provide pertinent information regarding product storage and handling or this information shall otherwise be provided with each shipment.

3. TRAINING AND TECHNICAL ASSISTANCE

In order to bid on and be awarded items on this contract, the vendor must have a representative, holding a valid Category 7 certification in West Virginia, available to provide training and technical assistance as required or upon request by Division of Highways personnel, including but not limited to, an annual Division of Highways Vegetation Management Seminar and this person is encouraged to attend the mandatory pre-bid meeting. Each bidder shall submit the name and telephone number of their representative with bid. The company shall have a valid Category 12 certification in West Virginia. Copies of these certifications shall be submitted with the bid.

The vendor's failure to submit the above certification information with their bid, shall result in the total disqualification of the vendor's bid.

NAME OF REPRESENTATIVE	PHONE NUMBER	ADDRESS
LARRY SHARPE	540-992-5766	CWC CHEMICAL, INC. 214 SIMMONS DRIVE CLOVERDALE, VA 24077 (540) 992-5766

4. CONTRACT AWARD

It is the intent to award a contract for each product listed on the Bid Schedule. Qualified vendors who submit a valid low bid will be awarded a contract for those products for which their bid is low, provided that the vendor has listed the trade name and EPA Registration Number on the Bid Schedule for each product bid, as indicated in Section 2. Failure to list this information will result in the disqualification of the vendor's bid on that product.

The award for each product will be based on the bid price per unit of measure as requested on the Bid Schedule. Vendors are cautioned that the quantities on the Bid Schedule are estimates and only used for evaluation purposes.

The State of West Virginia reserves the right to make multiple awards on this contract when it is in the best interest of the State to do so.

5. ACCEPTANCE PLAN

With each delivery of herbicide products to the Division of Highways, the vendor shall certify that the products delivered conform to the properties described in the EPA Registration.

Material failing to comply with the quality requirement will not be accepted.

6. TESTING PROCEDURES

Upon award of contract, the successful vendor(s) shall supply the Division of Highways, Materials Control, Soil and Testing Division, 190 Dry Branch Road, Charleston, WV 25306, the proper testing procedures to determine the presence and concentration of the Herbicide in flowing water.

7. BID QUANTITIES

Vendors are cautioned that the quantities listed on the Bid Schedule are estimates only. Actual requests will be placed to the awarded vendor from the Division of Highways by an Agency Release at the time of need.

8. DELIVERY

Materials under this contract are to be shipped prepaid F.O.B. delivery to Division of Highways District Storerooms as follows:

District One	Charleston
District Two	Huntington
District Three	Parkersburg
District Four	Clarksburg
District Five	Burlington
District Six	Moundsville
District Seven	Weston
District Eight	Elkins
District Nine	Lewisburg
District Ten	Princeton

Materials should be shipped to the location and in the quantity specified in the Agency Release within 20 days after the Agency Release is issued by the Division of Highways.

9. VENDOR'S INVOICES

Vendor's invoices must be submitted in original and four copies and contain the following:

a. Division of Highways Agency Release Number and Contract Number.

b. Total quantity and unit price with the total cost of each type of item furnished.

Note: Under no circumstance will the Division of Highways accept, or pay for, quantities of material in excess of the quantity stated on the Agency Release.

10. RESTRICTED AND NON-RESTRICTED HERBICIDES

Herbicide products which have been declared RESTRICTED in their use by the Environmental Protection Agency (EPA) must be applied under the supervision of a licensed herbicide applicator. The Department reserves the right to disallow the use of RESTRICTED herbicides when non-restricted herbicides are available to achieve the same objective.

11. PURCHASING CARD ACCEPTANCE

The State of West Virginia currently utilizes a VISA Purchasing Card Program which is issued through a bank. The successful vendor(s) must accept the State of West Virginia VISA Purchasing Card for payment of all orders placed by any State agency as a condition of award.

12. MANDATORY PRE-BID

There will be a mandatory pre-bid meeting on Thursday, February 23, 2012 – this date coincides with the 2078 Vegetation/Herbicide Management Seminar.

Location: **Purchasing Division Conference Room**
2019 Washington Street, East, Building 15
Charleston, WV 25305

NOTE: Vendors should type Bid Schedules

The "Bid Schedule" is available for download on Purchasing's Web site at www.state.wv.us/admin/purchase

13 **Herbicide Bid Schedule** 6612C015

Item #	HERBICIDES Description	% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-1H	Water Soluble Emulsifiable Concentrate Containing: Ammonium Salt of Fosamine with Surfactant	4 lbs/gallon				
	Product Trade Name: Krenite S or equal _____					
	EPA Registration Number: 352-395					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		3000	gallon	62.00	186,000.00
	B) Supplied in 15 gallon returnable/refillable containers		3000	gallon	57.95	173,850.00
DOH-2H	Water Soluble Emulsifiable Concentrate Containing: Isopropylamine Salt of Glyphosate Phosphate Ester Surfactant (LES) (LES)	50.20%				
	Product Trade Name: Roundup Pro Concentrate or equal ~~524-529~~					
	EPA Registration Number: 524-529					
	A) Supplied in 30 gallon plastic returnable drums.		6000	gallon	14.95	89,700.
	B) Supplied in 2.5 gallon containers in lots of 5 gallons		6000	gallon	14.95	89,700.
	C) Supplied in 15 gallon returnable/refillable containers		6000	gallon	19.95	119,700.00
	D) Supplied in 250 gallon returnable/refillable shuttle. (265 gal Shuttle)		6000	gallon	14.95	89,700.
DOH-3H	Dispersible Granules Containing: Sulfometuron Methyl	75%				
	Product Trade Name: Oust XP or equal _____					
	EPA Registration Number: 352-601					
	A) Supplied in 3 pound containers in lots of 24 pounds		100	pound	61.95	6,195.
	B) Supplied in 3 pound jug		100	pound	61.95	6,195.
DOH-4H	Water Soluble Aqueous Suspension Containing: Oryzalin	4 lbs/gallon				
	Product Trade Name: Oryzalin 4 Pro or equal _____					
	EPA Registration Number: 73220-5					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		250	gallon	41.95	10,487.50
DOH-5H	Aqueous Solution Containing: Imazapyr	2 lbs/gallon				
	Product Trade Name: Arsenal Powerline or equal _____					
	EPA Registration Number: 241-431					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		150	gallon	106.25	15,937.50
	B) Supplied in 15 gallon drums		150	gallon	79.95	11,992.50

13 **Herbicide Bid Schedule** **6612C015**

Item #	HERBICIDES Description	% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-6H	Aqueous Carrier Containing: Pendimethalin	3.8 lbs/gallon				
	Product Trade Name: Pendulum AquaCap or equal					
	EPA Registration Number: ~~241~~ 241-416					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		600	gallon	53.95	32,370.00
DOH-7H	Water Soluble Concentrate Containing: Triciopyr	3 lbs/gallon				
	Product Trade Name: Garlon 3A or equal Element 3A					
	EPA Registration Number: 62719-37					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		500	gallon	42.95	21,475.00
	B) Supplied in 30 gallon containers		500	gallon	42.95	21,475.00
	C) Supplied in 15 gallon continuum returnable/refillable containers in pallets of 9 containers. GARLON 3A / 62719-37		500	gallon	60.95	30,475.00
DOH-8H	Water Soluble Concentrate Containing: Triciopyr	4 lbs/gallon				
	Product Trade Name: Garlon 4 Ultra or equal Element 4					
	EPA Registration Number: 62719-40					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		250	gallon	48.95	12,237.50
	B) Supplied in 30 gallon containers		250	gallon	48.95	12,237.50
	C) Supplied in 15 gallon continuum returnable/refillable containers in pallets of 9 containers. GARLON 4 ULTRA / 62719-527		250	gallon	66.95	16,737.50
DOH-9H	A Water Soluble Dispersible Granule Containing: Diuron	80.00%				
	Product Trade Name: Karmex XP or equal DIURON 80 DF					
	EPA Registration Number: 81927-12					
	A) Supplied in 5 pound bags in lots of 10 bags		2000	pound	4.95	9,900.
	B) Supplied in 25 pound bags		2000	pound	4.95	9,900.
DOH-10H	Water Soluble Liquid Containing: Dimethylamine Salt of 2, 4-D acid	3.8 lbs/gallon				
	Product Trade Name: DM A4 or equal ~~62719-3~~					
	EPA Registration Number: 62719-3					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		100	gallon	16.95	1,695.00
	B) Supplied in 30 gallon containers		100	gallon	16.95	1,695.00
	C) Supplied in 15 gallon returnable/refillable containers in pallets of 9 containers.		100	gallon	25.95	2,595.00

Item #	HERBICIDES Description	% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-11H	Water Soluble Liquid Containing: Ammonium Salt of Imazapic	23.60%				
	Product Trade Name: Plateau or equal PANORAMIC 66222-141-81927					
	EPA Registration Number:					
	A) Supplied in 1 gallon containers in lots of 2 gallons		50	gallon	109.95	5,497.50
	B) Supplied in 1.44 ounce packets in lots of 14 packets		4444	packet		
	C) Supplied in 1 quart containers in lots of 4 quarts		200	quart	59.95	11,990.00
	D) Supplied in 15 gallon containers - PLATEAU		4	containers	1575.00	6,300.00
DOH-12H	A Dispersible Liquid Containing: Hexazinone	2 lbs/gallon				
	Product Trade Name: Velpar L or equal					
	EPA Registration Number: 352-392					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		50	gallon	67.00	3,350.00
DOH-13H	Dry Flowable Containing: Metsulfuron Methyl	60%				
	Product Trade Name: Escort XP or equal					
	EPA Registration Number: 352-439					
	A) Supplied in 16 ounce containers in lots of 8 pounds (8-16 oz ctrs)		2400	ounce	7.95	19,080.00
	B) Supplied in 16 ounce jugs		2400	ounce	7.95	19,080.00
	C) Supplied in 64 ounce jug returnable/refillable		2400	ounce	7.10	17,040.00
DOH-14H	Water Soluble Granule Herbicide Containing: Ammonium Salt of Glyphosate N/A	71.40%				
	Product Trade Name: Roundup Pro Dry or equal					
	EPA Registration Number:					
	A) Supplied in 23.25 pound box		25	box		
DOH-15H	Dry Flowable Containing: Chlorsulfuron	75%				
	Product Trade Name: Telar XP or equal 352-654					
	EPA Registration Number:					
	A) Supplied in 8 x 16 ounce containter to a case		160	ounce	17.95	2,872.00

13 **Herbicide Bid Schedule** 6612C015

Item #	HERBICIDES Description	% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-16H	A Liquid Solution Containing: Isooctyl ester of 2.4 Dichlorophenoxyacetic Acid 2-ethylhrxyl ester of +R-2-(2,4-Dichlorophenoxy Propionic Acid Dicamba (3, 6-Dicholoro-o-anisic Acid)	32.48% 15.90% 5.38%				
	Product Trade Name: BK-800 or equal _____					
	EPA Registration Number: 2217-758					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		100	gallon	82.00	8,200.00
	B) Supplied in 30 gallon drums		100	gallon	82.00	8,200.00
DOH-17H	Dry Flowable Containing: Tebuthiuron	80%				
	Product Trade Name: Spike 80 DF or equal _____					
	EPA Registration Number: 62719-107					
	A) Supplied in 4 pound bags in lots of 24 pounds		50	pound	21.50	1,075.00
	B) Supplied in 25 pound bags		50	pound	21.00	1,050.00
DOH-18H	A Water Soluble Emulsfiable Concentrate Containing: Clopyralid	3 lbs/gallon				
	Product Trade Name: Transline or equal _____					
	EPA Registration Number: 62719-259					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		25	gallon	148.95	3,723.75
	B) Supplied in .5 gallon containers in lots of 2 gallons		25	gallon	148.95	3,723.75
DOH-19H	Aqueous Solution Containing: Isopropylamine Salt of Imazapyr	27.60%				
	Product Trade Name: Stalker or equal _____					
	EPA Registration Number: 241-398					
	A) Supplied in 1 quart containers in lots of 4 quarts		200	quart	72.95	14,590.00
DOH-20H	Aqueous Solution Containing: Diglycolamine Salt of 3, 6-Dichloro-0-Anisic Acid	4 lbs/gallon				
	Product Trade Name: Vanquish or equal 228-397					
	EPA Registration Number: ↓					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		300	gallon	57.95	17,385.00
	B) Supplied in 15 gallon returnable/refillable containers in pallets of 9 containers.		300	gallon	67.95	20,385.00

13 **Herbicide Bid Schedule** **6612C015**

Item #	HERBICIDES Description	% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-21H	Aqueous Solution Containing: Triciopyr	.75 lbs/gallon				
	Product Trade Name: Pathfinder II or equal _____					
	EPA Registration Number: 62719-176					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		300	gallon	37.95	11385.00
DOH-22H	A Water Soluble Emulsfiable Concentrate Containing: Isopropylamine Salt of Glyphosate	53.80%				
	Product Trade Name: Rodeo or equal _____					
	EPA Registration Number: 62719-324					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		100	gallon	15.95	1,595.00
	B) Supplied in 30 gallon plastic returnable drums		100	gallon	14.95	1,495.00
DOH-23H	A Liquid Containing: Aminopyralid	40.60%				
	Product Trade Name: Milestone VM or equal _____					
	EPA Registration Number: 62719-537					
	A) Supplied in 1 quart containers, 12 containers per lot		200	quarts	76.22	15,244.00
	B) Supplied in 2.5 gallon containers in lots of 5 gallons		50	gallon	299.73	14,986.50
DOH-24H	Water Dispersible Granular Material Containing: Prodiamine	65%				
	Product Trade Name: Endurance or equal _____					
	EPA Registration Number: 100-834					
	A) Supplied in 10 pound containers, 50 pounds per lot		100	pound	14.95	1,495.00
DOH-25H	Emulsifiable Concentrate Containing: Quizalofop P-Ethyl	.88 lbs/gallon				
	Product Trade Name: Assure II or equal 352-541					
	EPA Registration Number: _____					
	A) Supplied in 1 gallon containers in lots of 4 gallons		16	gallon	200.00	3,200.00
DOH-26H	Emulsifiable Concentrate Containing: Fluazifop-P-butyl	6.75%				
	Product Trade Name: Ornamec or equal _____					
	EPA Registration Number: 2217-728					
	A) Supplied in 1 gallon containers in lots of 4 gallons		16	gallon	175.00	2,800.00

Item #	HERBICIDES Description	% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-27H	A Dispersible Granule Containing: Imazapyr Diuron	 7.78% 62.22%				
	Product Trade Name: Sahara DG or (equal) IMAZURON					
	EPA Registration Number: (LES) ~~524-500~~ 228-654					
	A) Supplied in 10 pound bags in lots of 40 pounds		50	pound	9.95	497.50
DOH-28H	A Water Soluble Dry Granule Containing: Sulfosulfuron	75%				
	Product Trade Name: (Outrider) or equal					
	EPA Registration Number: 524-500					
	A) Supplied in 20 ounce bottles in lots of 200 ounce		400	ounce	13.44	5,376.00
DOH-29H	A Liquid Containing: Diuron	40%				
	Product Trade Name: Direx 4L or (equal) DIURON 4L - DREXEL					
	EPA Registration Number: 19713-36					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		50	gallon	24.95	1,247.50
DOH-30H	A Liquid Containing: Fluroxypyr	26.20%				
	Product Trade Name: Fluroxypyr or (equal) VISTA XRT					
	EPA Registration Number: 62719-586					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		100	gallon	172.95	17,195.00
DOH-31H	A Liquid Containing: Fluroxypyr	45.52%				
	Product Trade Name: (Vista XRT) or equal 62719-586					
	EPA Registration Number:					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		100	gallon	171.95	17,195.00
DOH-32H	Wettable Granule Formulation Containing: Sodium Salt of Diflufenzopy: 2-[1-({3.5-Difluorophenylamino} Carbony}] Hydrazono} Ethyl)-3-Pyridinecarboxylic Acid, Sodium Sodium Salt of 3.6-Dicholoro-o-anisic Acid	 21.40% 55.00%				
	Product Trade Name: (Overdrive) or equal					
	EPA Registration Number: 7969-150					
	A) Supplied in 7.5 pound jugs, 30 pounds per case		100	pound	34.95	3,495.00

13 Herbicide Bid Schedule 6612C015

Item #	HERBICIDES Description	% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-33H	Dispersible Granules Containing: Sulfometuron Methyl Chlorsulfuron	 56.25% 18.75%				
	Product Trade Name: Landmark XP or equal _____ EPA Registration Number: 352-645					
	A) Supplied in 4 pound jugs in lots of 32 pounds		100	pound	127.95	12,795.00
	B) Supplied in 64 ounce jug, returnable/refillable		1600	ounce	7.99	12,784.00
DOH-34H	Dispersible Granules Containing: Sulfometuron Methyl Metsulfuron Methyl	 56.25% 15.00%				
	Product Trade Name: Oust Extra or equal _____ EPA Registration Number: 352-622				72.00/# LES	28,800. LES
	A) Supplied in 4 pound jugs in lots of 32 pounds		400	pound	~~127.95~~	~~5,180.00~~
	B) Supplied in 64 ounce jug, returnable/refillable		6400	ounce	LES ~~7.99~~	~~51,136.00~~
	C) Supplied in 12 pound jugs		400	pound	~~127.95~~ LES	~~5,180.00~~ LES
DOH-35H	A Dry Flowable Granule Containing: Bromacil Diuron	 40% 40%			4.50/oz 72.00	28,800 28,800
	Product Trade Name: Krovar I DF or equal _____ EPA Registration Number: 352-505					
	A) Supplied in 6 pound containers in lots of 8 containers		50	pound	11.95	597.50
DOH-36H	A Liquid Containing: Imazapic N/A Glyphosate	 8.13% 21.94%				
	Product Trade Name: Journey or equal _____ EPA Registration Number: _____					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		100	gallon		

13 **Herbicide Bid Schedule** 6612C015

Item #	HERBICIDES Description	% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-37H	A Liquid Containing:					
	Dimethylamine Salt of 2,4-Dichlovophenoxyacetic Acid	24.58%				
	Dimethylamine Salt of Dicamba (3,6-Dichloro-o-Anisic Acid)	12.82%				
	Product Trade Name: Veteran 720 or equal _____					
	EPA Registration Number: _____					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		100	gallon	29.95	2,995.00
	B) Supplied in 30 gallon drums		100	gallon	29.95	2,995.00
DOH-38H	Dispersible Granules Containing:					
	Chlorsulfuron (LES)	9%				
	Sulfometuron Methyl	18%				
	Sulfentrazone	48%				
	Product Trade Name: Throttle XP or equal 352-725					
	EPA Registration Number: _____					
	A) Supplied in 3.9 pound containers, 8 containers per case		100	pound	110.00	11,000.-
DOH-39H	Water Soluble Dispersible Extruded Paste Granule Containing:					
	Aminocyclopyrachlor	39.50%				
	Chlorsulfuron	15.80%				
	Product Trade Name: Perspective™ or equal _____					
	EPA Registration Number: 352-725					
	A) Supplied in 20 ounce containers in lots of 240 ounces		240	ounces	4.60	1,104.00
	B) Supplied in 20 ounce jug		40	ounces	4.60	184.00
	C) Supplied in 5 pound containers in lots of 40 pounds		80	pounds	73.64	5,891.20
	D) Supplied in 5 pound jug		20	pounds	73.64	1,472.80
DOH-40H	Water Soluble Dispersible Extruded Paste Granule Containing:					
	Aminocyclopyrachlor	39.50%				
	Metsulfuron methyl	12.60%				
	Product Trade Name: Streamline™ or equal _____					
	EPA Registration Number: 352-848					7,910.40
	A) Supplied in 3 pound containers in lots of 24 pounds		96	pounds	82.40	~~7,910.40~~ (LES)
	B) Supplied in 3 pound jug		96	pounds	82.40	7,910.40

13 **Herbicide Bid Schedule** 6612C015

HERBICIDES		% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
Item #	Description					
DOH-41H	Water Soluble Dispersible Extruded Paste Granule Containing:					
	Imazapry	31.60%				
	Aminocyclopyrachlor	22.80%				
	Metsulfuron methyl	7.30%				
	Product Trade Name: Viewpoint™ or equal 352-847					
	EPA Registration Number:					
	A) Supplied in 5 pound containers in lots of 40 pounds		100	pounds	58.71	5,871.00
	B) Supplied in 5 pound jug		100	pounds	58.71	5,871.00

TOTAL $_____

Item #	Description	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
	ADJUVANTS				
DOH-1A	A Water Soluble Blue Liquid Spray Pattern Indicator				
	Product Trade Name: Bullseye or equal Blueprint				
	A) Supplied in 2.5 gallon containers in lots of 5 gallons.	100	gallon	42.95	4,295.00
DOH-2A	A Miscible-Dispersible Liquid Defoamer (30% Active Ingredient)				
	Product Trade Name: Defoamer				
	A) Supplied in QT containers in lots of 12.	100	gallon	35.80	3,580.00
DOH-3A	A Diluent with Emulsifiers				
	Product Trade Name: Hygrade EC or Arborchem Basal Oil or Bark Oil EC or Alenza Basal Oil or Penevator or equal				
	A) Supplied in 5 gal containers in lots of Any.	100	gallon	14.20	1,420.00
DOH-4A	Non-Ionic Surfactant (90% Active Ingredient)				
	Product Trade Name: CWC 90				
	A) Supplied in 2 1/2 containers in lots of 5.	100	gallon	12.58	1,258.00
DOH-5A	A Granular/Flake Drift Control Agent				
	Product Trade Name: Poly Dry				
	A) Supplied in 1 lb containers in lots of 24.	100	pound	40.00	4,000.00
DOH-6A	A Liquid Drift Control Agent				
	Product Trade Name: Sharpshooter				
	A) Supplied in 1 gal containers in lots of 4.	100	gallon	38.95	3,895.00
DOH-7A	Aquatic Surfactant				
	Product Trade Name: CWC 90				
	A) Supplied in 2 1/2 containers in lots of 5.	100	gallon	12.58	1,258.00
DOH-8A	A Water Soluble Liquid Spray Pattern Indicator				
	Product Trade Name: Blueprint Plus or equal				
	A) Supplied in 2.5 gallon containers in lots of 5 gallons.	100	gallon	39.00	3,900.00
DOH-9A	A Non-Ionic Sticker Spreader				
	Product Trade Name: Nu-Film-IR or equal				
	A) Supplied in 2.5 gallon containers in lots of 5 gal.	100	gallon	35.95	3595.00
DOH-10A	A Ready-to-Use Formula Containing Paraffinic Oil Emulsifiers				
	Product Trade Name: Thinvert RTU or equal				
	A) Supplied in 2.5 gallon containers in lots of 5 gallons per case.	100	gallon		
	B) Supplied in 15 gallon drum.	100	gallon		

ADJUVANTS					
Item #	Description	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-11A	A Concentrate Formula Containing Paraffinic Oil Emulsifiers and Surfactants				
	Product Trade Name: Thinvert RTU or (equal) SUNSTREAM				
	A) Supplied in 2.5 gallon containers in lots of 5 gallons per case.	100	gallon		
	B) Supplied in 15 gallon drum.	100	gallon	22.00/ga	2,200.-

SAFETY EQUIPMENT					
Item #	Description	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-1S	Emergency Spill Kit Containing:				
	15 Universal Plus Sorbent Pads				
	3 Cobra Coils				
	1 Pair Safety Goggles				
	1 Pair Latex Gloves				
	1 Large Refuse Bag				
	1 List of Environmental Compliance Telephone Numbers				
	Size: 18"x18"x4" Vacuum				
	Packed in Puncture Resistant Foil				
	Product Trade Name: SPILL RESPONSE KIT				
	A) Supplied by the kit.	1	each	195.00	195.00
DOH-2S	A Granular/Flake Spill Absorbent				
	Product Trade Name: SOAK UP				
	A) Supplied in 2.5# containers in lots of 4.	1	pound	25.00	25.00
DOH-3S	32 ounce Eye Wash Bottle				
	Product Trade Name: EYE SALINE				
	A) Supplied per each.	1	each	45.00	45.00

MISCELLANEOUS						
Item #	Description		Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-1M	Pressure Rinser					
	Product Trade Name: Easy Rinse or equal _____					
	A) Supplied per each.		1	each	200.00	200.00
DOH-2M	Hand Soap with Citrus Oil					
	Product Trade Name: Zep or equal _____					
	A) Supplied in 32 ounce containers in lots of 20 containers per case		1	container		
DOH-3M	A Biostimulant Containing					
	Soluble Potash	1.00%				
	Iron	0.36%				
	Manure Extract	79.30%				
	Humic and Fulvic Acid Extract	9.00%				
	Kelp Extract	1.20%				
	Organo-Modified Silaxane Surfactant	0.36%				
	Product Trade Name: Launch or equal _____					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		2.5	gallon	19.95/GL	49.87
DOH-4M	Nitri-Solve 100% - 15 mil 13" Nitrile Gloves - Compliance EPA 40 CFR 170					
	A) Supplied size Small.		1	pair		
	B) Supplied size Medium.		1	pair		
	C) Supplied size Large.		1	pair		
	D) Supplied size X-Large.		1	pair		
	E) Supplied size XX-Large.		1	pair		
DOH-5M	A 5-gallon Backpack Sprayer					
	Product Trade Name: Birchmeier or equal _____					
	A) Supplied per sprayer		1	each		
	B) Gasket Set for Sprayer Pump		1	set		
	C) Hose Valve and Wand Repair Kit		1	kit		
DOH-6M	2-Quart Handheld Pressure Sprayer					
	Product Trade Name: Tolco or equal _____					
	A) Supplied per sprayer		1	each		

MISCELLANEOUS						
Item #	Description	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
DOH-7M	Closed System Backpack Sprayer				
	Product Trade Name: Birchmeier BCS or equal _____				
	A) Supplied per sprayer	1	each	249.00	249.00
	B) Gasket Set for Sprayer Pump	1	set		
	C) Hose Valve and Wand Repair Kit	1	kit		

TOTAL $_____

GRAND TOTAL $_____

Rev. 09/08

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with ***West Virginia Code***, §5A-3-37. (Does not apply to construction contracts). ***West Virginia Code***, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the ***West Virginia Code***. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1. **Application is made for 2.5% resident vendor preference for the reason checked:**

____ Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or,**

____ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or,**

____ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or,**

2. **Application is made for 2.5% resident vendor preference for the reason checked:**

____ Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

3. **Application is made for 2.5% resident vendor preference for the reason checked:**

____ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

4. **Application is made for 5% resident vendor preference for the reason checked:**

____ Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or,**

5. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

____ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or,**

6. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

____ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: _____ **Signed:** _____

Date: _____ **Title:** _____

**Check any combination of preference consideration(s) indicated above, which you are entitled to receive.*

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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-2402

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
02/05/2012				

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				ADDENDUM NO.01		
				ADD ITEM # DOH-24H TO THE BID SCHEDULE.		
				BID OPENING DATE AND TIME REMAIN UNCHANGED AS: 3/14/2012 AT 1:30 P.M.		
0001	1	EA		675-85		
	HERBICIDES, ADJUVANTS, AND OTHER ITEMS					
	****** THIS IS THE END OF RFQ 6612C015 ******				TOTAL:	

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
J.E. Sh	540.982.5766	3/12/12

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	54-128-6614	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

13 **Herbicide Bid Schedule** **ADDENDUM #1 6612C015**

HERBICIDES		% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
Item #	Description					
DOH-42H	A Liquid Containing: Indaziflam	19.05%				
		(1.67 pounds per gal)				
	Product Trade Name: ESPLANADE 200SC or equal _____					
	EPA Registration Number: 432-1516					
	A) Supplied in 2.5 gallon containers in lots of 5 gallons		50	gallons	975.00	48,750.-
	B) Supplied in 1 quart containers in lots of 1 gallon		50	gallons	1,050.00	52,500

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

Request for Quotation

RFQ NUMBER	PAGE
6612C015	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS
304-558-2402

VENDOR
*709034453 540-992-5766
CWC CHEMICAL INC
214 SIMMONS DRIVE

CLOVERDALE VA 24077

SHIP TO
DIVISION OF HIGHWAYS
VARIOUS LOCALES AS INDICATED
BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
02/28/2012				

BID OPENING DATE: 03/14/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				ADDENDUM NO.02		
				ISSUED TO ADD ITEM #DOH-24(B) TO THE BID SCHEDULE AND TO ADVISE BIDDERS OF THE DIVISION OF HIGHWAYS' INTENTION WITH THE NEW CONTRACTS, 6612C015 VERSUS THE CURRENT CONTRACTS, 6611C023.		
				BID OPENING DATE AND TIME REMAIN UNCHANGED AS: 3/14/2012 AT 1:30 P.M.		
0001	1	EA		675-85		
				HERBICIDES, ADJUVANTS, AND OTHER ITEMS		
				****** THIS IS THE END OF RFQ 6612C015 ****** TOTAL:		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
J.E. [illegible]	540.992-5766	3/12/12
TITLE President	FEIN 54-128-6614	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

13 **Herbicide Bid Schedule** **ADDENDUM #2 6612C015**

HERBICIDES		% Concentration/ Pounds per Gallon of Active Ingredients	Estimated Quantity	Unit of Measure	Cost Per Unit of Measure	Extended Cost
Item #	Description					
DOH-24H	Water Dispersible Granular Material Containing: Prodiamine	65%				
	Product Trade Name: Endurance or equal _____					
	EPA Registration Number: ~~100-838~~ 1LE6 100-834					
	A) Supplied in 10 pound containers, 50 pounds per lot		100	pound	13.95	1,395.00
	B) Supplied in 5 pound containers, 50 pounds per lot		**100**	**pound**	13.95	1,395.00

In addition to adding Item DOH-24H**(b)**, this addendum is to make bidders aware of the following:

1 Upon award of the new Herbicide contracts 6612C015, there will be no new Agency Releases issued toward current Herbicide contracts 6611C023.

2 All Agency Releases toward current Herbicide contracts 6611C023, issued and outstanding prior to the new award date of Herbicide contracts 6612C015, will be honored.

3 To allow completion of outstanding Agency Releases, current Herbicide contracts 6611C023 will not be cancelled, but will expire at their original expiration date of June 30, 2012.

These guidelines should allow a clean separation of the contracts and a transition to a single contract next year. The intent is to simplify administrative processes for all parties.

Bid opening date will remain the same, March 14, 2012.

PRE-BID CONFERENCE

SIGN IN SHEET

Request for Quotation Number: **6612C015** Date: **2/23/2012 11:00**

Project Description: **Herbicides**

PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEES IN A TIMELY MANNER. FAILURE TO DO SO MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.

Firm Name:	John Deere Landscapes
Firm Address:	attn: Bid Department.
	1385 East 36th Street
	Cleveland, Ohio 44114
Represenative Attending:	Matthew Marshall
Phone Number:	614-419-6141
Fax Number:	614-863-4028
Email Address:	mmarshall@johndeerelandscapes.com

Firm Name:	NOVLO Inc.
Firm Address:	PO Box 21757
	Columbus OH 43221
Represenative Attending:	Michael Jennings
Phone Number:	614 486-8994
Fax Number:	614 486-7531
Email Address:	mikejennings@novcoinc.com

Firm Name:	WVDOH
Firm Address:	
Represenative Attending:	EUGENE TUCKWILLER
Phone Number:	304-487-5233
Fax Number:	
Email Address:	EUGENE.R.TUCKWILLER@WV.GOV

Firm Name:	CWC CHEMICAL INC.
Firm Address:	214 Simmons Dr.
	CLOVERDALE, VA 24077
Represenative Attending:	BOBBIE TURNER
Phone Number:	800.380.9903
Fax Number:	540.992.5601
Email Address:	BTURNER@CWC-CHEMICAL.COM

Firm Name:	Summit Helicopters Inc (C3m)
Firm Address:	P.O. Box 39
	Claredale Va. 24077
Represenative Attending:	Barry W. Clinevell
Phone Number:	540-992-5500
Fax Number:	540-992-5503
Email Address:	Summitsales@rb.net.com

Firm Name:	Crop Production Services, Inc
Firm Address:	1850 Touchstone Road
	Colonial Heights, VA 23834
Represenative Attending:	Charlie Smyth
Phone Number:	804 520-0789 m 804 513-7185
Fax Number:	804 520-0089
Email Address:	Charles.Smyth@cpsag4.com

PRE-BID CONFERENCE

SIGN IN SHEET

Request for Quotation Number: **6612C015** Date: **2/23/2012 11:00**

Project Description: **Herbicides**

PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEES IN A TIMELY MANNER. FAILURE TO DO SO MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.

Firm Name:	Arborchem Products
Firm Address:	943 Nixon Dr Mechanicsburg, PA 17055
Represenative Attending:	Joe Lentz
Phone Number:	215 760 9420
Fax Number:	717 766 6661
Email Address:	joelentz@arborchem.com

Firm Name:	
Firm Address:	
Represenative Attending:	
Phone Number:	
Fax Number:	
Email Address:	

Firm Name:	DOH
Firm Address:	1900 Kanawha Blvd, E Bldg 5, A350 Charleston WV 25305
Represenative Attending:	Syble Atkins
Phone Number:	304-558-9495
Fax Number:	304-558-2915
Email Address:	Syble.a.atkins@wv.gov

Firm Name:	
Firm Address:	
Represenative Attending:	
Phone Number:	
Fax Number:	
Email Address:	

Firm Name:	
Firm Address:	
Represenative Attending:	
Phone Number:	
Fax Number:	
Email Address:	

Firm Name:	
Firm Address:	
Represenative Attending:	
Phone Number:	
Fax Number:	
Email Address:	

West Virginia Dept. of Agriculture
Pesticide Regulatory Programs
1900 Kanawha Blvd., East
Charleston, WV 25305-0190

APPLY PESTICIDES CORRECTLY

** LICENSES EXPIRE DECEMBER 31ST EACH YEAR*
** IF YOU HAVE ANY QUESTIONS, CALL (304) 558-2209*

Here is your new applicator/technician card. Keep this stub for your records. Please remove the punch out license and retain this sheet for your category information.

*The category(ies) you are certified or registered in and the year it expires are listed below. * 20 credits are required each 3 year period for applicators and 4 credits every year for registered technicians.*

Check your applicator information at www.kellysolutions.com/wv

YOUR PESTICIDE LICENSE IS ATTACHED BELOW.

PUNCH OUT LICENSE CARD HERE

09651

7,12

FOR USE ONLY IN CATEGORIES ABOVE
WEST VIRGINIA CERTIFICATION
Expires: 12/31/2012 C04434
Commercial Pesticide Applicator
Larry Sharpe
CWC Chemical Inc.
214 Simmons Drive
Cloverdale VA 24077

NOT TRANSFERABLE

AUTHORIZED REPRESENTATIVE

C04434

Larry Sharpe

Continuing Education Credit Information	Credits Acquired	Credits Required	Credits Needed	
12-Pesticide Storage & Distribution	0	20	20	Due 12/31/2014
7-Right-of-Way/Industrial Weed	0	20	20	Due 12/31/2014

RFQ No. 6612C015

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:
"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: CWC Chemical, Inc.

Authorized Signature: Debbie Nail Date: 3/12/2012

State of Virginia

County of Botetourt, to-wit:

Taken, subscribed, and sworn to before me this 12th day of March, 2012.

My Commission expires 8/31/2015, 20___.

AFFIX SEAL HERE

NOTARY PUBLIC Elizabeth J Whitmore

ELIZABETH J WHITMORE
Notary Public
Commonwealth of Virginia
339463
My Commission Expires Aug 31, 2015

Please use this document for technical questions, posing in a question format

Please refer to the section your question is in reference to.

Technical questions for RFQ# _____

Vendor Name:_____

Questions:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Specimen Label

ELEMENT® 3A

Specialty Herbicide

For the control of woody plants, broadleaf weeds in forests and industrial 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; including application to grazed areas, and establishment and maintenance of wildlife openings on these sites, and in Christmas tree plantations. 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.

For use in New York State, comply with Section 24(c) Special Local Need labeling for Element 3A, SLN NY-060002.

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

EPA Reg. No. 62719-37

Keep Out of Reach of Children

DANGER 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.)

Precautionary Statements

Hazard to Humans and Domestic Animals

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 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.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies elsewhere on this label. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

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 Reuse: 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.

Refillable containers 5 gallons or larger:
Container Reuse: 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 Reuse: 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.

General Information for Production Forests and Industrial Non-Crop Areas

Use Element® 3A specialty herbicide for the control of woody plants and broadleaf weeds in forests and industrial 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, including application to grazed areas, and establishment and maintenance of wildlife openings on these sites, and in Christmas tree plantations. 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.

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-060002.

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.

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.

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.

	Element 3A Application Rate			
Area Treated	2 qt/acre	4 qt/acre	6 qt/acre	8 qt/acre
(acres)	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 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 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)	hornbean	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	(*Baccharis* spp.)	

[1]For complete control, re-treatment may be necessary.
[2]Use cut surface treatments for best results.

Annual and Perennial Broadleaf Weeds

bindweed	Mexican petunia	tropical soda apple
burdock	plantain	vetch
Canada thistle	purple loosestrife	wedelia
chicory	ragweed	wild lettuce
curly dock	smartweed	
dandelion	Spanish needles/	
field bindweed	common beggarthicks	
lambsquarter	tansy ragwort	

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.

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		
	Rangeland 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

[1] Do not exceed the maximum use rate of 2 lb ae of triclopyr (2/3 gal of Element 3A)/acre/year.
[2] Do not exceed the maximum use rate of 6 lb ae of triclopyr (2 gal of Element 3A)/acre/year.
[3] Do 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.

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.

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.

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 (alleyways, 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.

Application

Apply in late summer or early autumn after terminal growth of Christmas trees has hardened of, 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 Frasier 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	bindweed, field (TG)	arrowwood (SDL)
dandelion	blackberry[1]	aspen
dock, curly	chicory (S)	beech (SDL)
lambsquarters	fireweed	birch (SDL)
lespedeza	ivy, ground	chinquapin
plantain, broadleaf	lettuce, wild	cottonwood (SDL)
plantain, buckhorn	oxalis	elderberry
ragweed, common	poison ivy	grape, wild
vetch	smartweed (TG)	mulberry (SDL)
	thistle, Canada (TG)	poplar (SDL)
	violet, wild	sassafras (SDL)
	Virginia creeper[†]	sumac (SDL)
		sycamore (SDL)

(TG) Top growth control, retreatment may be necessary
(S) Suppression
(SDL) Seedlings less than 2 to 3 years old
[1]Use 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 Production Forests and Industrial Non-Crop Areas

Element 3A may be used within production forests and industrial 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.

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: D02-338-002
Replaces Label: D02-338-001
LOES Number: 010-02148

EPA accepted 01/03/06

MATERIAL SAFETY DATA SHEET

Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

Dow AgroSciences

ELEMENT* 3A HERBICIDE

Effective Date: 9-Jul-07
Product Code: 107206
MSDS: 004422

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Element* 3A Herbicide

COMPANY IDENTIFICATION:
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Light purple-pink liquid, ammonia-like odor. May cause eye irritation with corneal injury. May cause skin irritation. Toxic to aquatic organisms.

EMERGENCY PHONE NUMBER: 800-992-5994

3. COMPOSITION/INFORMATION ON INGREDIENTS:

COMPONENT	CAS NUMBER	W/W%
Triclopyr TEA Salt	057213-69-1	44.4
Triethylamine	000121-44-8	3.0
Ethanol	000064-17-5	2.1
Balance		50.5

4. FIRST AID:

EYES: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

SKIN: Wash skin with plenty of water.

INGESTION: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth to an unconscious person.

INHALATION: No emergency medical treatment necessary.

NOTE TO PHYSICIAN: Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach & lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. Exposure to amine vapors may cause minor transient edema of the corneal epithelium (glaucopsia) with blurred vision, blue haze & halos around bright objects. Effects disappear in a few hours and temporarily reduce ability to drive vehicles. 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:

FLASH POINT: 110°F (43C)
METHOD USED: TCC
FLAMMABLE LIMITS
LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Alcohol foam and CO_2.

FIRE & EXPLOSION HAZARDS: Toxic, irritating vapors may be formed or given off if product is involved in fire. Although product is water-based, it has a flash point due to the presence of small amounts of ethanol and triethylamine.

FIRE-FIGHTING EQUIPMENT: Use positive-pressure, self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Contain small spills and absorb with an inert material such as clay or dry sand. Report large spills to Dow AgroSciences at 800-992-5994.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: HANDLING: Keep out of reach of children. Causes irreversible eye damage. Harmful if inhaled or absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic skin reaction in some individuals. Avoid contact with eyes, skin, clothing, breathing vapor, or spray mist. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

STORAGE: Store above 28°F or agitate before use. Store in original container. See product label for handling/storage precautions relative to the end use of this product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINE(S):
Ethanol (ethyl alcohol): ACGIH TLV and OSHA PEL are 1000 ppm. ACGIH classification is A4.
Triclopyr TEA Salt: Dow AgroSciences Industrial Hygiene Guideline is 2 mg/M^3 as acid equivalent; D-SEN.
Triethylamine: ACGIH TLV is 1 ppm TWA, 3 ppm STEL, Skin. OSHA PEL is 10 ppm TWA, 15 ppm STEL.

A D-SEN notation following the exposure guideline refers to the potential to produce dermal sensitization, as confirmed by human or animal data.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE PROTECTION: Use chemical goggles. Eye wash fountain should be located in immediate work area. If exposure causes eye discomfort, use a full-face respirator.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use chemically protective clothing resistant to this material. Selection of specific items such as face shield, gloves, boots, and apron or full-body suit will depend on operation.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use a NIOSH approved air-purifying respirator.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES:

BOILING POINT: Not determined
VAPOR PRESSURE: Not determined
VAPOR DENSITY: Not applicable
SOLUBILITY IN WATER: Miscible
SPECIFIC GRAVITY: 1.135 (68/68°F)
APPEARANCE: Light purple/pink liquid
ODOR: Ammonia-like odor

10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) Avoid sources of ignition if temperature is near or above flash point.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Any oxidizing agent. Consult manufacturer for specific cases.

HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides and hydrogen chloride may be formed under fire conditions.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE: May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur. Vapor of amines may cause swelling of the cornea resulting in visual disturbances such as blurred or hazy vision. Bright lights may appear to be surrounded by halos. Effects may be delayed and typically disappear spontaneously.

SKIN: Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals. With the dilute mix, no allergic skin reaction is expected. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD_{50} for skin absorption in rabbits is >5,000 mg/kg.

INGESTION: 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. Swallowing may result in gastrointestinal irritation or ulceration. The oral LD_{50} for rats is 2,574 mg/kg (male) and 1,847 mg/kg (female).

INHALATION: Brief exposure (minutes) is not likely to cause adverse effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Effects have been reported on the following organs: liver and kidney.

CANCER INFORMATION: Triclopyr did not cause cancer in laboratory animal studies.

TERATOLOGY (BIRTH DEFECTS): Triclopyr did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother. Ethanol has been shown to cause birth defects and toxicity to the fetus in laboratory animal tests. It has also been shown to cause human fetotoxicity and/or birth defects when ingested during pregnancy.

REPRODUCTIVE EFFECTS: For triclopyr, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

MUTAGENICITY: For triclopyr and ethanol: in-vitro genetic toxicity studies were negative. For triclopyr: animal genetic toxicity studies were negative. For ethanol: animal genetic toxicity studies were negative in some cases and positive in other cases.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:
Based largely or completely on information for triclopyr. Bioconcentration potential is low (BCF <100 or Log Pow <3).

DEGRADATION & PERSISTENCE:
Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD >40%).
The 20-Day biochemical oxygen demand (BOD20) is 0.30 p/p.
Theoretical oxygen demand (ThOD) is calculated to be 0.75 p/p.

ECOTOXICOLOGY:
Material is slightly toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} is between 10 and 100 mg/L in most sensitive species).

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: 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 and regulations.

MATERIAL SAFETY DATA SHEET

Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

Dow AgroSciences

ELEMENT* 3A HERBICIDE

Effective Date: 9-Jul-07
Product Code: 107206
MSDS: 004422

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

For non-bulk shipments by land:
This material is not regulated for transport.

For bulk shipments by land:
COMBUSTIBLE LIQUID, N.O.S. (TRIETHYLAMINE, ETHANOL)/COMBUSTIBLE LIQUID/NA1993/PGIII

For shipments by air or vessel:
FLAMMABLE LIQUIDS, N.O.S. (TRIETHYLAMINE, ETHANOL)/3/UN1993/PGIII

15. REGULATORY INFORMATION:

NOTICE: The information herein is presented 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 from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
Triethylamine	000121-44-8	3.0%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard
A fire hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Ethanol	000064-17-5	NJ1 NJ3 PA1
Triethylamine	000121-44-8	NJ1 NJ3 PA1 PA3

NJ1=New Jersey Special Health Hazard Substance (present at > or = to 0.1%).
NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).
PA1=Pennsylvania Hazardous Substance (present at > or = to 1.0%).
PA3=Pennsylvania Environmental Hazardous Substance (present at > or = to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

CATEGORY	RATING
Health	3
Flammability	2
Reactivity	0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA which may require reporting of releases:

Chemical Name	CAS Number	RQ	% in Product
Triethylamine	000121-44-8	5000	3.0%

Dow AgroSciences

Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

ELEMENT* 3A HERBICIDE

Effective Date: 9-Jul-07
Product Code: 107206
MSDS: 004422

RCRA Categorization Hazardous Code:
Triethylamine = U404

16. OTHER INFORMATION:

MSDS STATUS: Revised Section: 8
Reference: DR-0121-6064
Replaces MSDS dated: 17-Nov-06
Document Code: D03-338-002
Replaces Document Code: D03-338-001

The Information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult Dow AgroSciences for Further Information.

Specimen Label

ELEMENT™ 4

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

EPA Reg. No. 62719-40

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.)

Precautionary Statements

Hazards to Humans and Domestic Animals

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, or using tobacco.

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.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies elsewhere on this label. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

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.

Storage and Disposal (Cont.)

Nonrefillable containers 5 gallons or less:
Container Reuse: 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.

Refillable containers 5 gallons or larger:
Container Reuse: 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 Reuse: 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.

General 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.

General 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-crop 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 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 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 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 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, reagitation 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 recommended 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 recommendations for grass pastures as given on this label. Apply at rates recommended by supplier or Extension Service Specialist. **Note:** Element 4 is not recommended for use 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
arrowwood
ash
aspen
bear clover (bearmat)
beech
birch
blackberry
blackbrush
blackgum
boxelder[1]
Brazilian pepper
buckthorn
cascara
ceanothus
cherry[3]
chinquapin
choke cherry
cottonwood
crataegus (hawthorn)
dogwood
Douglas-fir
elderberry
elm (except winged elm)
gallberry
gorse
granjeno
guajillo
guava[3]
hazel
hickory
hornbeam
huisache (suppression)
kudzu[2]
locust
madrone
maple (except bigleaf, vine[3])
milkweed vine[3]
mulberry
oaks
osage orange
pepper vine[3]
persimmon, eastern
pine
poison ivy
poison oak
poplar
salmonberry
saltbush (*Braccharis* spp.)[3]
salt cedar[1]
sassafras
scotch broom
sumac
sweetbay magnolia
sweetgum
sycamore
tanoak
thimbleberry
tree-of-heaven (*Ailanthus*)[1]
trumpet creeper[3]
tulip poplar
twisted acacia
Virginia creeper[3]
wax myrtle (top growth)
wild rose
willow
willow primrose
winged elm

[1]For best control, use either a basal bark or cut stump treatment.
[2]For complete control, re-treatment may be necessary.
[3]Basal or dormant stem applications only.

Annual, Biennial and Perennial Broadleaf Weeds

Note: Numbers in parentheses refer to footnotes below table.

black medic
bull thistle
burdock
Canada thistle
chicory
cinquefoil
clover
creeping beggarweed
curly dock
dandelion (top growth)
dogfennel
field bindweed
goldenrod
ground ivy
lambsquarters
lespedeza
matchweed
mustard
Oxalis
plantain
purple loosestrife
ragweed
sericea lespedeza (1)
smartweed
sulfur cinquefoil (2)
sweet clover
tropical soda apple (3)
vetch
wild carrot (Queen Anne's lace)
wild lettuce
wild violet
yarrow

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

[1] Do not exceed the maximum use rate of 6 qt of Element 4 (6 lb ae of triclopyr) per acre per year.

[2] Do 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

[1] Reclaim is registered for use only in Arizona, Texas, Oklahoma and New Mexico.

[2] See 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 recommendations 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 recommendations. 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 recommendations. 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 recommendations. 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 soild 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 recommended 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 are 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. 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. 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

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.

Produced for Dow AgroSciences LLC • Indianapolis, IN 46268 USA

Label Code: D02-339-002
Replaces Label: D02-339-001
LOES Number: 010-02140

EPA accepted 04/18/07

Material Safety Data Sheet
Dow AgroSciences LLC

Product Name: ELEMENT* 4 Herbicide

Issue Date: 03/09/2009
Print Date: 12 Mar 2009

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. Product and Company Identification

Product Name
ELEMENT* 4 Herbicide

COMPANY IDENTIFICATION
Dow AgroSciences LLC
A Subsidiary of The Dow Chemical Company
9330 Zionsville Road
Indianapolis, IN 46268-1189
USA

Customer Information Number: 800-992-5994

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 800-992-5994

2. Hazards Identification

Emergency Overview
Color: Yellow
Physical State: Liquid.
Odor: Gasoline-like
Hazards of product:

WARNING! May cause skin irritation. May cause allergic skin reaction. May cause eye irritation.

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects
Eye Contact: May cause eye irritation. Corneal injury is unlikely. May cause pain disproportionate to the level of irritation to eye tissues.

Skin Contact: Brief contact may cause moderate skin irritation with local redness. Prolonged contact may cause moderate skin irritation with local redness. Repeated contact may cause moderate skin irritation with local redness. May cause drying and flaking of the skin.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Skin Sensitization: Has caused allergic skin reactions when tested in guinea pigs. With the dilute mix, no allergic skin reaction is expected.
Inhalation: Prolonged excessive exposure to mist may cause adverse effects. Mist may cause irritation of upper respiratory tract (nose and throat).
Ingestion: 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.
Aspiration hazard: Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.
Effects of Repeated Exposure: In animals, effects have been reported on the following organs: Skin. Repeated excessive exposure may cause adverse effects.
Cancer Information: In a lifetime animal dermal carcinogenicity study, an increased incidence of skin tumors was observed when kerosene 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 kerosene were applied at equivalent doses, indicating that kerosene is unlikely to cause skin cancer in the absence of long-term continued skin irritation. In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mice but not rats. The effects are not believed to be relevant to humans. If the material is handled in accordance with proper industrial handling procedures, exposures should not pose a carcinogenic risk to man.
Birth Defects/Developmental Effects: For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For the minor component(s): Has caused birth defects in lab animals only at doses producing severe toxicity in the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.
Reproductive Effects: For similar active ingredient(s). Triclopyr. For the minor component(s) In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

3. Composition Information

Component	CAS #	Amount
Triclopyr-2-butoxyethyl ester	64700-56-7	61.6 %
Kerosene (petroleum)	8008-20-6	>= 18.6 - <= 31.0 %
Ethylene glycol monobutyl ether	111-76-2	0.5 %
Solvent naphtha (petroleum), light aromatic	64742-95-6	0.2 %
Balance		>= 6.7 - <= 19.1 %

4. First-aid measures

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.
Skin Contact: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.
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.
Ingestion: 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.

Notes to Physician: The decision of whether to induce vomiting or not should be made by a physician. If lavage 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. 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.
Medical Conditions Aggravated by Exposure: Skin contact may aggravate preexisting dermatitis.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. 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 (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.
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.
Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Phosgene. Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. 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.
Personal Precautions: 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.

7. Handling and Storage

Handling

General Handling: 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. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.

Storage

Store in a dry place. Store in original container. Keep container tightly closed. Do not store near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Kerosene (petroleum)	Dow IHG	TWA as total hydrocarbon vapor	10 mg/m3 SKIN
	ACGIH	TWA Non-aerosol. as total hydrocarbon vapor	200 mg/m3 P: Application restricted to conditions in which there are negligible aerosol exposures.
Triclopyr-2-butoxyethyl ester	Dow IHG	TWA	2 mg/m3 D-SEN

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.
A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.
It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Personal Protection

Eye/Face Protection: Use safety glasses.
Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. 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.

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. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.
Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Physical State	Liquid.
Color	Yellow
Odor	Gasoline-like
Flash Point - Closed Cup	64 °C (147 °F) *Closed Cup*
Flammable Limits In Air	**Lower:** No test data available **Upper:** No test data available
Autoignition Temperature	No test data available
Vapor Pressure	0.1 mmHg @ 37.8 °C *Literature* (kerosene)
Boiling Point (760 mmHg)	>= 150 °C (>= 302 °F) *Literature* (initial).
Vapor Density (air = 1)	1 *Literature*
Specific Gravity (H2O = 1)	1.08 *Literature* *Pyknometer*
Liquid Density	1.09 g/cm3 *Calculated*
Freezing Point	No test data available
Melting Point	Not applicable
Solubility in water (by weight)	emulsifiable
pH	6.4 *pH Electrode*
Decomposition Temperature	No test data available

10. Stability and Reactivity

Stability/Instability

Thermally stable at typical use temperatures.
Conditions to Avoid: Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Acids. Bases. Oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

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. Hydrogen chloride. Nitrogen oxides. Phosgene. Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion
LD50, Rat, male 1,581 mg/kg
LD50, Rat, female 1,338 mg/kg
Skin Absorption
LD50, Rabbit, male and female > 2,000 mg/kg
Inhalation

LC50, 4 h, Aerosol, Rat, male and female > 5.2 mg/l

Sensitization

Skin

Has caused allergic skin reactions when tested in guinea pigs. With the dilute mix, no allergic skin reaction is expected.

Repeated Dose Toxicity

In animals, effects have been reported on the following organs: Skin. Repeated excessive exposure may cause adverse effects.

Chronic Toxicity and Carcinogenicity

Active ingredient did not cause cancer in laboratory animals. In a lifetime animal dermal carcinogenicity study, an increased incidence of skin tumors was observed when kerosene 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 kerosene were applied at equivalent doses, indicating that kerosene is unlikely to cause skin cancer in the absence of long-term continued skin irritation. In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mice but not rats. The effects are not believed to be relevant to humans. If the material is handled in accordance with proper industrial handling procedures, exposures should not pose a carcinogenic risk to man.

Carcinogenicity Classifications:

Component	List	Classification
Kerosene (petroleum)	ACGIH	Confirmed animal carcinogen with unknown relevance to humans.; Group A3
Ethylene glycol monobutyl ether	ACGIH	Confirmed animal carcinogen with unknown relevance to humans.; Group A3

Developmental Toxicity

For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Active ingredient did not cause birth defects in laboratory animals. For the minor component(s): Has caused birth defects in lab animals only at doses producing severe toxicity in the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For kerosene: Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity

For similar active ingredient(s). Triclopyr. For the minor component(s) In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. For kerosene: Limited data in laboratory animals suggest that the material does not affect reproduction.

Genetic Toxicology

For the active ingredient(s): For kerosene: In vitro genetic toxicity studies were negative. For the active ingredient(s): For the component(s) tested: Animal genetic toxicity studies were negative.

12. Ecological Information

ENVIRONMENTAL FATE

Data for Component: **Triclopyr-2-butoxyethyl ester**

Movement & Partitioning

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Based largely or completely on information for similar material(s). Potential for mobility in soil is medium (Koc between 150 and 500).

Partition coefficient, n-octanol/water (log Pow): 4.09 - 4.49 Measured

Persistence and Degradability

Chemical degradation (hydrolysis) is expected in the environment. Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Stability in Water (1/2-life):

12 h; 25 °C; pH 6.7

6.6 d; pH 5

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
18 %	28 d	OECD 301B Test

Theoretical Oxygen Demand: 1.39 mg/mg

Data for Component: **Kerosene (petroleum)**

Movement & Partitioning

Based largely or completely on component information. Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient, n-octanol/water (log Pow): 3.3 - 6 Estimated
Bioconcentration Factor (BCF): 61 - 159; fish

Persistence and Degradability

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

Data for Component: **Ethylene glycol monobutyl ether**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is high (Koc between 50 and 150).
Henry's Law Constant (H): 1.60E-06 atm*m3/mole Measured
Partition coefficient, n-octanol/water (log Pow): 0.83 Measured
Partition coefficient, soil organic carbon/water (Koc): 67 Estimated

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
95 %	28 d	OECD 301E Test
100 %	28 d	OECD 302B Test

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
5.2 %	57 %	72.2 %	

Chemical Oxygen Demand: 2.21 mg/g
Theoretical Oxygen Demand: 2.30 mg/mg

Data for Component: **Solvent naphtha (petroleum), light aromatic**

Movement & Partitioning

For the major component(s): Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is low (Koc between 500 and 2000). For the minor component(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): No test data available:

Persistence and Degradability

For the major component(s): Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). For some component(s): Biodegradation under aerobic static laboratory conditions is low (BOD20 or BOD28/ThOD between 2.5 and 10%).

ECOTOXICITY

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). Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (Pimephales promelas), static, 96 h: 2.2 - 6.3 mg/l
LC50, rainbow trout (Oncorhynchus mykiss), flow-through, 96 h: 0.8 - 0.98 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea Daphnia magna, static, 48 h, survival: 1.7 - 18.8 mg/l

LC50, water flea Daphnia magna, flow-through, 48 h, survival: 0.43 mg/l

Aquatic Plant Toxicity

EC50, green alga Pseudokirchneriella subcapitata (formerly known as Selenastrum capricornutum), biomass growth inhibition, 5 d: 13.3 mg/l

Toxicity to Non-mammalian Terrestrial Species

oral LD50, bobwhite (Colinus virginianus): 1,350 mg/kg
oral LD50, Honey bee (Apis mellifera): > 100 micrograms/bee
contact LD50, Honey bee (Apis mellifera): > 100 micrograms/bee

Toxicity to Soil Dwelling Organisms

LC50, Earthworm Eisenia foetida, adult, 7 d: 910 mg/kg

13. Disposal Considerations

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 Non-Bulk
NOT REGULATED

DOT Bulk
Proper Shipping Name: COMBUSTIBLE LIQUID, N.O.S.
Technical Name: CONTAINS KEROSENE
Hazard Class: COMBUSTIBLE LIQUID **ID Number:** NA1993 **Packing Group:** PG III

IMDG
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S
Technical Name: Contains Triclopyr-2-butoxyethyl Ester, KEROSENE
Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III
EMS Number: f-a,s-f
Marine pollutant.: Yes

ICAO/IATA
NOT REGULATED

Additional Information

MARINE POLLUTANT (Contains Triclopyr and Kerosene

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. 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

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Kerosene (petroleum)	8008-20-6	>= 18.6 - <= 31.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

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.

Toxic Substances Control Act (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

16. Other Information

Hazard Rating System

NFPA	Health	Fire	Reactivity
	2	2	1

Revision

Identification Number: 50683 / 1016 / Issue Date 03/09/2009 / Version: 8.0
DAS Code: XRM-4714
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available

W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

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.

Diuron 80DF

DRY FLOWABLE HERBICIDE

FOR CONTROL OF MANY ANNUAL AND PERENNIAL GRASSES AND HERBACEOUS WEEDS

ACTIVE INGREDIENT:	% BY WT.
Diuron: 3-(3,4-dichlorophenyl)-1,1-dimethylurea	80.0%
INERT INGREDIENTS:	20.0%
TOTAL	100.0%

EPA Reg. No. 66222-51

KEEP OUT OF REACH OF CHILDREN

CAUTION

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 for treatment advice.
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:	• 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.	

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing.

Makhteshim Agan
of North America, Inc.
4515 Falls Of Neuse Road
Suite 300
Raleigh, NC 27609

M A N A

EPA111705
CA062106

Specimen Label

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Loaders, applicators, and other handlers must wear:
Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category *A* on an EPA chemical-resistance category selection chart.

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinylchloride
- Dust/mist respirator
- Shoes plus socks

Mixers and loaders must also wear:

- Apron

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.

ENGINEERING CONTROLS

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 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

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 wastes. Do not apply when weather conditions favor drift from areas treated. Cover or incorporate spills.

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 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 intervals. 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 such as polyethylene or polyvinylchloride
- 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.

Non-crop weed control is not within the scope of the Worker Protection Standard. Keep unprotected persons out of treated areas until sprays have dried.

IMPORTANT: Read the entire DIRECTIONS FOR USE and the WARRANTY STATEMENT before using this product. If terms are not acceptable, return the unopened product container to the place of purchase at once. Diuron 80DF herbicide should be used only in accordance with recommendations on this label or in separate published recommendations. Makhteshim Agan of North America, Inc. will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by Makhteshim Agan of North America, Inc. User assumes all risk associated with non-recommended use.

GENERAL INFORMATION

Diuron 80DF is a dispersible granule to be mixed with water and applied as a spray for selective control of weeds in certain crops and for non-selective weed control on non-cropland areas. It is non-corrosive to equipment, non-flammable, and non-volatile.

Diuron 80DF may be applied to soil prior to emergence of weeds to control susceptible weed seedlings for an extended period of time. The degree of control and duration of effect will vary with the amount of chemical applied, soil texture, rainfall, and other conditions. Soils high in clay or organic matter require higher dosages than soils low in clay or organic matter for equivalent herbicide performance. Moisture is required to activate the herbicide. Best results occur if rainfall (or sprinkler irrigation) occurs within 2 weeks of application.

Diuron 80DF applied before emergence of crop and weeds is an effective procedure because susceptible weeds are controlled in an early, vulnerable seedling stage before they compete with the crop. With favorable moisture conditions, Diuron 80DF continues to control weeds for some time as the crop becomes better able to compete. Should weed seedlings begin to break through the preemergence treatment in significant numbers, secondary weed control procedures should be implemented; these include cultivation and postemergence herbicide application.

Diuron 80DF may also be used to control emerged weeds. Results vary with rate applied and environmental conditions. Best results are obtained on succulent weeds growing under conditions of high humidity and temperature of 70°F or higher. Addition of a surfactant to the spray (where recommended) increases contact effects of Diuron 80DF.

Diuron 80DF may be used as a directed postemergence application. Contact of crop foliage and/or fruit with spray or mist must be avoided on the following crops: artichoke, corn (field), cotton, sorghum (grain), sugarcane, and established plantings of apples, bananas, plantains, blueberries, caneberries, gooseberries, citrus, grapes, macadamia nuts, olives, papayas, peaches, pears, pecans, walnuts, and certain tree plantings as injury may occur.

Under specified conditions (see RECOMMENDED USES), Diuron 80DF without surfactant may be applied over the top of alfalfa (established, dormant, or semi-dormant), asparagus (established), birdsfoot trefoil (established, dormant), grass seed crops (established), oats, red clover (established, dormant), sugarcane, wheat, and pineapple.

Weed species vary in susceptibility to Diuron 80DF and they may be more difficult to control when under stress. Combinations of Diuron 80DF with other herbicides (as registered) increase the number of weed species controlled. Consult labels of the companion product for this and other information. Observe all precautions and limitations on labeling of all products used in mixtures.

Since the effect of Diuron 80DF varies with soils, uniformity of application, and environmental conditions, it is suggested that growers limit their first use to small areas.

IMPORTANT USE PRECAUTIONS:

Injury to or loss of desirable trees or other plants may result from failure to observe the following: Draining or flushing equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots may injure these plants. Do not use on home plantings of trees, shrubs, or herbaceous plants or lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of dry powder or spray to desirable plants. Do not contaminate any body of water. Do not mix/load or use near wells including abandoned wells, drainage wells, and sink holes. Avoid storage of pesticides near well sites. Calibrate sprayers only with clean water, away from well sites.

Thoroughly clean all traces of Diuron 80DF from application equipment immediately after use. Flush tank, pumps, hoses, and boom with several changes of water after removing nozzle tips and screens (clean parts separately).

CHEMIGATION STATEMENT: Do not apply through any type of irrigation system.

RESISTANCE MANAGEMENT

Biotypes of certain weeds listed on this label are resistant to Diuron 80DF and other herbicides with the same mode of action, even at exaggerated application rates. Biotypes are naturally occurring individuals of a species that are identical in appearance but have slightly different genetic compositions; the mode of action of an herbicide is the chemical interaction that interrupts a biological process necessary for plant growth and development.

If weed control is unsatisfactory, it may be necessary to retreat problem areas using a product with a different mode of action.

If resistant weed biotypes are suspected or known to be present, use a combination of tillage, retreatment, tank-mix partners, and/or sequential herbicide applications with Diuron 80DF to help control these biotypes, or use a planned herbicide rotation program where other herbicides having different modes of action are used.

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 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 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 should be observed.

The applicator should 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).

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 backwards parallel to the airstream will produce larger droplets than other orientations. Significant deflection from the 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 larger droplets than other nozzle types.
- 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 – 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 cross-wind, 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 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 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).

SELECTIVE USE IN CROPS

PREEMERGENCE USE (Germinating Weeds): Diuron 80DF at recommended rates controls annual weeds and grasses such as:

0.75 to 1 lb./Acre	1.5 to 2 lbs./Acre		2 to 6 lbs./Acre	
Barnyardgrass (Watergrass)	Bluegrass, Annual	Rattail Fescue	Ageratum	Peppergrass
Crabgrass	Chickweed	Red Sprangletop	Corn Speedwell	Pineappleweed
Lambsquarters	Corn Spurry	Shepherdspurse	Dayflower	Pokeweed
Pigweed	Dogfennel	Tansymustard	Flora's Paintbrush	Rabbit Tobacco
Purslane	Fiddleneck (Amsinckia)	Velvetgrass	Hawksbeard	Ricegrass
Ragweed	Foxtail	Vernalgrass, Sweet, Annual	Horseweed	Ryegrass, Annual
	Gromwell	Wild Buckwheat	Johnsongrass (Seedling)	Sandbur
	Groundcherry, Annual	Wild Lettuce	Kochia	Smartweed, Annual
	Knawel	Wild Mustard	Kyllinger (Kyllinga)	Sowthistle, Annual
	Morningglory, Annual		Lovegrass, Annual	Spanish Needles
	Pennycress		Marigold	Velvetleaf (Buttonweed)
			Mexican Clover	Wild Radish
			Orchardgrass	

Partial Control:

1 lb./Acre	4 lbs./Acre	8 to 10 lbs./Acre
Cocklebur	Horsenettle	Guineagrass
Morningglory, Annual	Quackgrass	Maidencane
Prickly Sida (Teaweed)		Pangolagrass
Sesbania		
Sicklepod		

APPLICATION DIRECTIONS

AERIAL APPLICATION: For alfalfa, barley (winter), cotton (preplant or preemergence only), grass seed crops (PNW only), sugarcane, wheat (winter), and rights-of-way, application may be made by aircraft at 5 to 10 gallons of water per acre unless otherwise noted. Avoid overlapping of spray swath and avoid application under conditions where excessive drift may occur. Where land is bedded, make application parallel to rows.

GROUND APPLICATION: Use a boom power sprayer properly calibrated to a constant speed and rate of delivery. Openings in screens should be 50 mesh or larger. Continuous agitation in the spray tank is required to keep the material in suspension.

Agitate by mechanical or hydraulic means. If by-pass or return line is used, it should terminate at bottom of tank to minimize foaming. Avoid overlapping and shut off spray booms while starting, turning, slowing, or stopping or injury to crop may result.

PREEMERGENCE: For preemergence application, use sufficient spray volume and pressure to uniformly distribute the spray solution over treated soil. Preemergence weed control will be reduced on high organic matter soils such as peat or muck.

POSTEMERGENCE: For postemergence application, use sufficient spray volume and pressure for thorough coverage of weed foliage. For selective applications and applications near sensitive crops, use low spray pressure to keep spray drift to a minimum. Diuron 80DF at recommended rates controls seedling annual weeds such as annual morningglory, barnyardgrass (watergrass), crabgrass, crowfoot, goosegrass, pigweed, and purslane. Addition of a surfactant to the spray (where recommended) increases contact effects of Diuron 80DF. Best results are obtained on succulent weeds growing under conditions of high humidity and temperatures over 70°F or higher.

SPRAY PREPARATION: Mix proper amount of Diuron 80DF into necessary volume of water. Where use of surfactant is recommended, dilute with ten parts of water and add as last ingredient to nearly full spray tank.

TANK MIXTURES: Diuron 80DF may be tank mixed with other herbicides and/or adjuvants registered for crop or noncrop use in this label. Refer to the label of the tank mix product(s) for any additional use instructions or restrictions.

REPLANTING: Unless otherwise directed, do not replant treated areas to any crop within 2 years after last application as injury to subsequent crops may result. **Note:** for crops grown in the arid west, reductions in normal irrigation practices for the crop in production or a summer fallow period without supplemental irrigation may require the crop rotation intervals to be extended.

When such conditions occur, a field bioassay should be completed prior to planting any desired crop. A successful bioassay means growing to maturity a test strip of the crops intended for production. The test crops strip should cross the entire field including knolls, low areas, and areas where any berms were located. The results of this bioassay may require the rotation intervals to be extended.

RATES: All rates of Diuron 80DF are expressed as broadcast rates. Where band applications are specified, use proportionately less. For example, use 1/3 of the broadcast rate when treating a 14-inch band where row spacing is 42 inches. Where a range of dosages is given, use the lower rate on coarse-textured soils low in clay or organic matter and the higher rate on the fine-textured soils high in clay or organic matter. For postemergence application, use the lower rate on smaller weeds and the higher rate on the larger weeds.

SOIL LIMITATIONS: Crop injury may result from failure to observe the following: Unless otherwise directed, do not use on sand, loamy sand, gravelly soils, or exposed sub-soils; nor on pecans where organic matter is less than 0.5%; nor on alfalfa, apples, artichoke, barley (winter), citrus, cotton, grapes, oats, olives, papayas, peaches, pears, sorghum, sugarcane, walnuts, and winter wheat where organic matter is less than 1%, nor on blueberries, birdsfoot trefoil, caneberries, gooseberries, macadamia nuts, and peppermint where organic matter is less than 2%.

FIELD CROPS: (See SOIL LIMITATIONS) A good seedbed must be prepared before preemergence use of Diuron 80DF as crop injury may result if application is made to ground which is cloddy or compacted resulting in improperly planted seed. Plant seed to depth specified. Unless otherwise directed, the surface of the soil should not be cultivated or disturbed after application of Diuron 80DF and before emergence of the crop as weed control may be reduced and crop injury may result. However, if moisture is insufficient to activate the herbicide, a shallow cultivation (rotary hoe preferred) should be made after emergence of crops while weeds are small enough to be controlled by mechanical means.

FRUIT AND NUT CROPS: (see SOIL LIMITATIONS) Unless otherwise directed, make single application per year as a directed spray avoiding contact of foliage and fruit with spray or drift. Do not graze livestock in treated orchards or groves.

RECOMMENDED USES

ALFALFA

Treat only stands established for 1 year or more. Do not apply to seedling alfalfa nor to alfalfa/grass mixtures. Do not apply to alfalfa under stress from disease, insect damage, shallow root penetration (such as on shallow hard pans), alkali spots, nor to flooded fields as crop injury may result. Do not spray on snow-covered or frozen ground. Apply only once per year. Do not exceed 3 lbs. per acre per year.

Arizona, Nevada: Use 1.5 to 3 lbs./Acre. Apply in fall after alfalfa becomes dormant but no later than January.

California (Dormant and Semi-Dormant Varieties): Use 1.5 to 3 lbs./Acre. Apply in fall or winter after alfalfa becomes dormant or semi-dormant but before growth begins in the spring. Crop injury may result if application is made to actively growing alfalfa. For best results, apply before weeds have emerged or become established (2 inches in height or diameter). Control of established weeds is improved by applying Diuron 80DF with a suitable contact herbicide registered for such use. Sufficient rainfall for soil activation of Diuron 80DF is unlikely in California after February 1. Treated areas may be replanted to any crop after 1 year from last application if rate does not exceed 2 lbs./Acre.

Eastern Colorado, Kansas: For control of tansymustard, apply 1 lb./Acre shortly after emergence of mustard in the fall or winter. Use 2 lbs./Acre if weeds are 2 to 4 inches in height. Alternatively, if other annual weeds are present, apply 2 to 3 lbs./Acre in February or March.

Idaho, Oregon, Washington: For control of annual weeds, use 1.5 to 3 lbs./Acre. Apply in fall after alfalfa becomes dormant but no later than mid-December.

Other Areas Where Alfalfa Becomes Winter Dormant: Use 1.5 to 3 lbs./Acre (1.5 to 2 lbs./Acre East of Appalachian Mountains). Apply in March or early April, but before spring growth begins.

APPLE

Use Diuron 80DF alone or apply as a tank mixture with Sinbar® Herbicide.

Do not apply more than 4 lbs. per acre per year. When using Diuron 80DF in a sequential treatment program, allow a minimum of 90 days between applications. Do not make more than two applications of Diuron 80DF per year.

Diuron 80DF Alone: Use only under trees established in the orchard for at least 1 year. Do not treat varieties grafted on full-dwarf root stocks. Apply 4 lbs./Acre in the spring from March through May. In the Far West, apply 4 lbs./Acre to small weeds less than 2 inches in height or diameter under dormant trees. Alternatively, treatments to small weeds may be applied at 2 lbs./Acre postharvest followed by 2 lbs./Acre prior to bud break.

Georgia: Apply 2 to 3 lbs./Acre in the spring. Repeat application in the fall but do not use more than 4 lbs./Acre per year. Add a surfactant to improve control of small, emerged weeds.

Diuron 80DF plus Sinbar: Use only under trees established in the orchard for at least 2 years. Apply either in the spring or after harvest in the fall before weeds emerge or during early seedling stage of weed growth.

	RATE PER ACRE					
	1 to 2% Organic Matter			More Than 2% Organic Matter		
Soil Texture	Diuron 80DF Lbs./Acre		Sinbar Lbs./Acre	Diuron 80DF Lbs./Acre		Sinbar Lbs./Acre
Sandy Loam	1.0	+	1.0	1.5	+	1.5
Loam, Silt Loam, Silt	1.5	+	1.5	2.0	+	2.0
Clay Loam, Clay	2.0	+	2.0	2.0	+	2.0

Where crop is grown under furrow irrigation or under raised-berm flood irrigation (trees 4 to 6 inches above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows, nor trees grown under flat flood or basin irrigation as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season.

ARTICHOKE

California: Apply 2 to 4 lbs./Acre in late fall or early winter after the last cultivation. Apply before weeds germinate or to emerging seedlings. Direct spray to cover the area between the rows and at the base of artichoke plants keeping contact with crop plants at a minimum.

ASPARAGUS

Apply as a band or broadcast treatment. Do not apply to young plants during the first growing season (except as noted below), nor to newly seeded asparagus, nor on plants with exposed roots as severe injury may result. Preemergence weed control will be reduced on soils with greater than 5% organic matter.

Established Plantings: On light soils and other soils low in clay or organic matter, apply 1 to 2 lbs./Acre. On soils high in clay or organic matter, use 2 to 4 lbs./Acre. Two applications may be used. The first application should be made before weeds become established but no earlier than 4 weeks before spear emergence and no later than the early cutting period. If weeds are controlled into the cutting period by cultural practices, application may be delayed until immediately after the last cultivation. A second application may be made immediately following completion of harvest provided rainfall is expected. When two applications are used in one season, do not exceed 3 lbs./Acre per application. In Washington (irrigated crop), apply a single treatment of 4 lbs./Acre. If treatment is delayed until late winter or early spring, incorporation of the chemical in the top 1 to 2 inches of soil may substitute for lack of rain to activate the herbicide.

Newly Planted Crowns (San Joaquin Delta, California): Make a single treatment of 2 to 4 lbs./Acre on soils high in clay or organic matter. Use the lower rate on clay loams and the higher rate on peat soils. Do not use on soils containing less than 2% organic matter. Soil must be settled by rainfall or irrigation prior to treatment. Do not treat crowns planted to a depth of less than 2 inches.

BANANA AND PLANTAIN

New Plantings: To control annual weeds, apply 1.5 to 3 lbs./Acre after planting but before weed or crop emergence. Do not apply to loose soil directly over the planting material.

Established Plantings: For control of annual weeds and for top-kill of perennials such as bermudagrass, birdseed grass, and guineagrass, apply 3 to 6 lbs./Acre plus surfactant. Avoid contact of banana and plantain plants with spray or drift as injury may result. When tall, dense weed growth is present, remove weed growth before application. If application is made to soil free of weeds, omit surfactant from the spray mixture. Repeat treatment as necessary. Apply at 6-week intervals or longer for a maximum of 12 lbs./Acre of Diuron 80DF per acre (broadcast basis) in 12 months.

Note: Do not replant treated area to any crop within 2 years after last application as injury to subsequent crops may result. Exception; sugarcane or pineapple may be planted after 1 year.

BARLEY (WINTER)
(Drill Planted)

Western Oregon and Western Washington: Make a single application of 1.5 to 2 lbs./Acre as soon as possible after planting but before emergence of barley.

Do not replant treated areas to any crop within 1 year after last application as injury to the subsequent crop may result.

BIRDSFOOT TREFOIL (Lotus)

Western Oregon: Treat only stands established for at least 1 year. Do not apply to seedling trefoil as injury may result. Make a single application of 2 lbs./Acre when trefoil is dormant (October 15 to December 15). Do not replant treated areas to any crop within 1 year after last application as injury to subsequent crops may result.

BLUEBERRY, CANEBERRY, GOOSEBERRY

Use only in fields which have been established for at least 1 year. Do not apply to berries interplanted with fruit trees. Do not apply to plants where roots are exposed as injury may result. Apply as a band treatment at base of canes or bushes. For spring application, apply before germination and growth of annual weeds.

Arkansas, Florida, Georgia, Mississippi, Missouri, New Hampshire, North Carolina, South Carolina – Blueberry: Apply 1.5 to 2 lbs./Acre in the spring and repeat treatment after harvest in the fall. Add a surfactant to improve control of small, emerged weeds.

California – Blackberry, Boysenberry, Dewberry, Loganberry, Raspberry: For control of winter annual weeds, apply 2 lbs./Acre in October or November. Repeat at the same rate in late spring to control summer annuals. A single application of 3 lbs./Acre in January or February will control annual weeds in some areas, but the separate fall and spring schedule is preferred.

Indiana, Michigan, Ohio – Blueberry: Apply 2 to 4 lbs./Acre in late spring. Alternatively, apply 2 lbs./Acre in the fall and repeat at the same rate in the spring.

Indiana, Michigan, Ohio – Raspberry: Apply 3 lbs./Acre in late spring.

Maine, Massachusetts – Blueberry: Apply 2 lbs./Acre in late spring.

Maryland, New Jersey – Blueberry: For control of winter annual weeds, apply 2 lbs./Acre from October to December, or make a single application of 2.5 lbs./Acre in early to mid-spring.

Western Washington, Western Oregon – Blueberry, Caneberry, and Gooseberry: For control of winter annual weeds, apply 2 lbs./Acre in October or November. Repeat at the same rate in late spring to control summer annual weeds. A single application of 3 lbs./Acre in January or February will control both winter and summer annual weeds in some areas, but the separate fall and spring schedule is preferred.

CITRUS

Time application as indicated for specific areas, however, application may be made any time of the year where sprinkler or flood irrigation can be timed to activate the herbicide. Established perennial weeds require other special control procedures.

Diuron 80DF may be applied in citrus and in combination with registered paraquat and glyphosate formulations. Read and follow specific label instructions, precautions, and restrictions on the label of the tank mix partner when applying Diuron 80DF with other products.

Note: For citrus trees four or less years of age, make a maximum of two applications per year. Where Diuron 80DF is used in a sequential treatment program, allow a minimum of 60 days between applications. For citrus trees four or more years of age, make a maximum of two applications per year. When Diuron 80DF is used in a sequential treatment program, allow a minimum of 80 days between applications.

Arizona (except Yuma area) and California (except Imperial and Coachella Valleys): Apply 3 to 4 lbs./Acre shortly after grove has been laid up in final form (non-tillage program) in late fall or early winter. Alternatively, apply 2 lbs./Acre in October or November and repeat at the same rate in March or April. Subsequent annual applications of 2 to 3 lbs./Acre will usually give adequate weed control.

Florida: Use only as a band application. Do not use "Trunk to Trunk".

East Coast/Flatwoods Areas – (low permeable soils)
Apply from 2 lbs./Acre to a maximum of 8 lbs./Acre for control of annual broadleaf weeds and annual grasses. Addition of an approved surfactant will improve control of emerged weeds.

Do not use more than 8 lbs. per treated acre in any one application.

Do not apply more than 8 lbs. per treated acre per year. This amount corresponds to 6.4 pounds of diuron, the active ingredient in Diuron 80DF.

The maximum allowable use rate for diuron is 6.4 pounds active ingredient per treated acre per year inclusive of all diuron formulations used within 1 year.

Ridge Areas – except Highland Co. (highly permeable soils)
Apply from 2 lbs./Acre to a maximum of 4 lbs./Acre for control of annual broadleaf weeds and annual grasses. Addition of an approved surfactant will improve control of emerged weeds. Do not use more than 4 lbs. per treated acre in any one application.

Do not apply more than 8 lbs. per treated acre per year. This amount corresponds to 6.4 pounds of diuron, the active ingredient in this product.

The maximum allowable use rate for diuron is 6.4 pounds active ingredient per treated acre per year inclusive of all diuron formulations used within 1 year.

Ridge Areas – Highland Co. (highly permeable soils)
Apply from 2 lbs./Acre to a maximum of 4 lbs./Acre for control of broadleaf weeds and annual grasses. Addition of an approved surfactant will improve control of emerged weeds. Do not use more than 4 lbs. per treated acre in any one application.

Do not apply more than 6 lbs. per treated acre per year. This amount corresponds to 4.8 pounds of diuron, the active ingredient in Diuron 80DF.

The maximum allowable use rate for diuron is 4.8 pounds active ingredient per treated acre per year inclusive of all diuron formulations used within 1 year.

Do not use at less than 60-day intervals.

Puerto Rico: Make a single application of 4 to 8 lbs./Acre or apply 3 to 4 lbs./Acre followed by the same rate 4 to 6 months later. On bearing citrus, apply anytime when seasonal rains are expected. On non-bearing trees, apply when winter banks are pulled down.

Texas: Apply 2 to 4 lbs./Acre for annual weeds. Use 4 to 6 lbs./Acre for control of seedling johnsongrass. Spring treatments give best results. Well-established weeds should be eliminated by cultivation prior to treatment.

CORN (Field)

Postemergence: Make a single application of 0.75 lb./Acre in combination with non-pressure nitrogen solution. If nitrogen solution is not used, apply 1 lb./Acre with surfactant. Apply as directed spray when corn is at least 20 inches high and weeds are no taller than 3 inches.

DO NOT APPLY OVER TOP OF CORN.

Do not replant to any crop within 1 year after last application as injury to subsequent crops may result. Exception: cotton, corn, and grain sorghum may be planted the spring following treatment.

Preemergence – Arkansas, Louisiana, Mississippi, and Tennessee: Make a single application of 0.67 to 1 lb./Acre as a broadcast or band treatment after planting but before corn emerges. Plant corn at least 1.5 inches deep. Do not replant treated areas to crops other than corn or cotton within 4 months following band treatment and 6 months following broadcast treatment as injury to subsequent crops may result.

COTTON

USE PRECAUTIONS:
During a single crop season, do not exceed the following amount of Diuron 80DF per acre as injury to subsequent crops may result; 1 lb. on sandy loam, 1.8 lbs. on clay loam, and 2.75 lbs. on clay.

Do not make more than 3 applications of Diuron 80DF per year.

DO NOT SPRAY OVER THE TOP OF COTTON PLANTS.

Do not apply to sand or loamy sand soils.

Do not use on soils with less than 1% organic matter as crop injury may result.

Seedling disease may weaken plants and increase the possibility of injury from the use of trifluralin products followed by Diuron 80DF. These treatments should be used only in conjunction with a standard fungicide seed treatment plus a good supplemental soil fungicide program such as captan-PCNB mixture.

Do not use Diuron 80DF in preplant or preemergence applications where soil-applied organophosphate insecticides are used due to potential for severe cotton injury and possible stand loss.

Do not allow livestock to graze treated cotton.

Note: When using Diuron 80DF in a sequential treatment program, allow a minimum of 21 days between applications.

PREPLANT
Arizona and California: Use Diuron 80DF alone or apply as a separate operation following preplant broadcast treatment with trifluralin products (incorporated according to directions on the trifluralin product label). Apply Diuron 80DF as a broadcast spray after beds are formed, pre-irrigated and final seedbeds prepared. Prior to planting, drag-off the tops of the beds and plant in moist soil not treated with Diuron 80DF. Treated soil is returned to the bed after planting when irrigation furrows are reformed after cotton has emerged. If more than two furrowing-out operations are performed prior to lay-by, or deep furrows are made early, weed control may be reduced in the furrow bottoms.

Diuron 80DF Alone: Apply at 1 to 2 lbs./Acre

Diuron 80DF following trifluralin products:

	RATE/ACRE	
Soil Texture	**Trifluralin products**	**Diuron 80DF**
Sandy Loam, Loam, Silt Loam, Silt	1 pt.	0.67 – 1 lb.
Sandy Clay Loam, Clay Loam, Silty Clay Loam, Sandy Clay, Clay	1.5 pts.	1 – 1.25 lbs.

PREPLANT

Except Arizona and California: Diuron 80DF may be used for burndown of existing annual weeds and residual control of weeds prior to planting cotton. Complete any planned tillage prior to application. Apply herbicide treatments before weeds germinate or before weed seedlings are more than 2 inches tall. If weeds are emerged prior to application, the addition of a non-ionic surfactant is recommended. Tillage following application should be avoided to prevent incorporation of the herbicide into the cotton seed germination zone which may result in crop injury. Dragging treated soil from beds will concentrate the herbicide in middles and reduce residual weed control on the beds.

Apply Diuron 80DF at 1 to 2 lbs./Acre from 15 to 45 days prior to anticipated planting. Refer to the table below for use rates in preplant applications. Do not exceed suggested use rates for individual soil textures shown in the table below. If less than the maximum rate of application for a given soil is applied preplant, subsequent preemergence applications of Diuron 80DF may be made. However, the total combined application rate for Diuron 80DF applied preplant and preemergence may not exceed the maximum suggested use rate for either application method.

Diuron 80DF Alone:

Soil Texture	**Rate/Acre**
Sandy Loam, Loam, Silt Loam, Silt	1 lb.
Sandy Clay Loam, Clay Loam, Silty Clay Loam, Sandy Clay	1.25 lbs.
Silty Clay, Clay	2 lbs.

Preemergence application of herbicides with a similar mode of action to that of diuron following preplant application of Diuron 80DF may result in cotton injury. When preplant applications of Diuron 80DF are followed by preemergence applications of herbicides with a similar mode of action, for example of Meturon®, Cotoron®, or other products containing fluometuron, product containing fluometuron should be used at the minimum rate of application for the soil under consideration in order to reduce potential for crop injury. This is most critical where applications of Diuron 80DF are made less than 30 days preplant, on coarse-textured soils, and on soils low in organic matter. The risk of injury from preplant applications of Diuron 80DF is reduced where substantial rainfall (greater than 0.5 inches) occurs between application and planting. Read and follow any additional precautions on the Diuron 80DF label when using this product for preplant weed control in cotton.

PREPLANT TANK MIXES: When emerged weeds taller than 2 inches or weeds not listed on the Diuron 80DF label are present, Diuron 80DF may be tank mixed with other products registered for preplant applications in cotton. The addition of dry spray grade ammonium sulfate at the rate of 2.0% w/w (17 lbs. per 100 gallons finished spray solution) is suggested to enhance performance of Diuron 80DF plus glyphosate tank mixes.

REPLANTING: Only cotton and corn may be planted within 6 months of preplant applications of Diuron 80DF. To avoid crop injury following replanting, avoid disturbing the original bed.

PREEMERGENCE

Except Arizona and California: Use Diuron 80DF alone or apply as a separate operation following preplant treatment with trifluralin products. Apply Diuron 80DF after planting but before cotton emerges.

Do not treat cotton in deep furrows as crop injury may result.

Use only where cotton is planted on flat or raised seedbeds. Shallow incorporation (no deeper than 0.25 inch) with a rotary hoe or similar equipment following planting usually improves results, especially during dry weather. A wide press wheel should be used on the planter to provide a level seedbed for subsequent early season postemergence treatments. If moisture is insufficient to activate Diuron 80DF or if soil becomes crusted before crop emerges, a shallow rotary hoeing (no deeper than 0.25 inch) should be made before weeds become established. Diuron 80DF should not be applied preemergence following application of the maximum rate for a given soil applied preplant. If less than the maximum rate is used preplant, additional Diuron 80DF may be applied preemergence. However, the total amount of Diuron 80DF applied preplant and preemergence must not exceed the maximum suggested use rate for either preplant or preemergence applications.

Diuron 80DF Alone: Make a single application as a broadcast or band spray, using the following broadcast rates. Use proportionately less for band treatment.

SOIL TEXTURE	**RATE/ACRE**
Sandy Loam, Loam, Silt Loam, Silt	1 lb.
Sandy Clay Loam, Clay Loam, Silty Clay Loam, Sandy Clay	1.25 lbs.
Silty Clay, Clay	2 lbs.

PREEMERGENCE APPLICATIONS OF DIURON 80DF FOLLOWING TRIFLURALIN PRODUCTS: Apply trifluralin products prior to planting as a broadcast or band treatment. Incorporate according to the directions on trifluralin labels. As a separate operation apply Diuron 80DF after planting but before cotton emerges. Use the following broadcast rates; for band treatment use proportionately less.

	RATE/ACRE	
Soil Texture	**Trifluralin products**	**Diuron 80DF**
Sandy Loam, Loam, Silt Loam, Silt	1 pt.	1 lb.
Sandy Clay Loam, Clay Loam, Silty Clay Loam, Sandy Clay, Clay, Silty Clay	1.5 pts.	1.25 – 2 lbs.

POSTEMERGENCE: Apply Diuron 80DF only as a directed spray to cover weed foliage. Adjust nozzles to minimize contact of cotton leaves with spray or drift or crop injury may result. Applications may also be made in hooded/shielded sprayers.

EARLY SEASON: Apply when cotton is at least 6 inches tall and when weeds are actively growing and do not exceed 2 inches in height. Apply as a band or broadcast treatment at the following rate. Two applications may be made if needed.

Annual Weed Problem (up to 2 inches tall)	**Rate Per Acre**
Cotton 6 – 8"	0.5 lb.
Cotton 8 – 12"	0.75 lb.

For control of seedling perennial grass such as johnsongrass in directed sprays and partial control of nutsedge or when weed growth is under drought stress or over 2 inches in height, add 2 to 3.5 lbs. active DSMA or 1.65 to 2 lbs. active MSMA to above spray mixture. If DSMA or MSMA are used, do not apply after first bloom.

For enhanced weed control in hooded/shielded sprayer applications, add MSMA or DSMA as suggested above; or add registered glyphosate or paraquat formulations according to label recommendations. Consult product labels for specific recommendations and precautions for hooded/sprayer applications.

LATE SEASON (LAY-BY): Apply 1 to 1.5 lbs./Acre (1 to 2 lbs. in Arizona and California) per acre when cotton is at least 12 inches high (at least 20 inches for Pima S-2). For control of germinating weed seedlings, apply to soil beneath cotton plants and between rows immediately after last cultivation. In irrigated cotton, best weed control is obtained if the field is irrigated within 3 to 4 days after application, to thoroughly wet the surface of the ground over the row to carry the herbicide into the root zone of germinating weeds. Alternatively, for control of emerged annual weeds (4 inches or less in height) at lay-by time, make a single application in combination with surfactant, or use 0.5 to 0.75 lbs./Acre plus surfactant and repeat later if needed.

REPLANTING: If initial seeding fails to produce a stand, cotton may be replanted in soil treated preemergence with Diuron 80DF alone or following preplant application of trifluralin products. Wherever possible, avoid disturbing original bed. If necessary to rework soil before replanting, use shallow cultivation such as discing. Do not relist nor move soil into the original drill area. Plant seed at least 1 inch deep. Do not retreat field with a second preplant or preemergence application of herbicide during the same crop year as injury to crop may result.

SUBSEQUENT CROPS

Diuron 80DF Herbicide Type of Application	That May Follow Treated Cotton
Band pre or postemergence	Any crop 4 months after last application
Band pre plus postemergence or Broadcast preemergence (and preplant) or Broadcast preemergence plus band postemergence	Cotton, soybeans, corn, or grain sorghums (not sorgos or forage sorghums nor grass sorghums) the next spring. Do not replant treated areas to any other crop within 1 year after last application as injury to subsequent crops may result.
Broadcast postemergence (lay-by)	Cotton, corn, grain sorghums (not sorgos or forage sorghums nor grass sorghums) the next spring. Do not replant treated areas to any other crop within 1 year after last application as injury may result.
For subsequent crops in fields where trifluralin products are used, follow instructions on the trifluralin product label.	

FILBERTS

Diuron 80DF is recommended for control of certain weeds in filbert orchards established for at least 1 year.

Do not apply more than 4 lbs. per acre per year. When using Diuron 80DF in a sequential treatment program, allow a minimum of 150 days between applications.

Apply Diuron 80DF as a directed spray, avoiding contact on the foliage and fruit with spray or drift. Make an initial treatment of 2.75 lbs./Acre in the late fall or early winter after harvest. Repeat annually with 2.75 lbs./Acre, or apply 2 lbs./Acre in October or November after harvest and repeat at the same rate in March or April.

Do not apply when nuts are on the ground.

Do not graze livestock in treated orchards.

Do not use on light sandy soils.

If trees are planted on hillsides, the elimination of weeds and ground cover may cause excessive soil erosion. Under these conditions, strip applications of Diuron 80DF (at proportionately lower rates) may be made near the trees or to the tree rows perpendicular to the slope.

GRAPE

Apply only as a band treatment to established vineyards at least 3 years old. On soils low in clay or organic matter (1 to 2%), severe plant injury may result if heavy rainfall or more than 1 inch of irrigation occurs soon after treatment. This risk must be assumed by the user.

Do not apply more than 5 lbs./Acre as a single maximum use rate. Do not apply more than 10 lbs./Acre per year. When using Diuron 80DF in a sequential treatment program, allow a minimum of 90 days between applications. Avoid direct or indirect spray contact to foliage and green bark (non-barked vines with the exception of undesirable suckers). Apply a maximum of two applications per year.

New York and Pennsylvania – Perennial Grasses: Use only in established vineyards (at least 4 years old) for spot control of perennial grasses such as orchardgrass, quackgrass, and ryegrass. Apply in the spring as a band treatment to ridged soil (2 to 4 inches high) under trellis at the rate of 8 to 10 lbs./Acre. Band width should not exceed 30 inches. Do not apply more than once every 4 years. Use only on heavy soil types such as loams, silt loams, clay loams. Do not use in areas where grape roots are shallow or exposed, because of high bedrock, poor drainage, or erosion as injury to grapevines may result.

East of the Rocky Mountains: On soils low in clay or organic matter (1 to 2%), apply 2 to 3 lbs./Acre. On soils high in clay or organic matter, apply 3 to 6 lbs./Acre. Apply in the spring just prior to germination of annual weeds.

West of the Rocky Mountains: For best results, apply during the winter months when weeds are less than 2 inches in height or diameter. Rainfall or overhead sprinkler irrigation sufficient to wet the soil to a depth of 2 inches is necessary to activate the herbicide. Abnormally heavy rainfall following application just before spring growth may move the herbicide into the root zone of grapes which could result in injury. For initial treatment, apply 3 to 4 lbs./Acre. Subsequent annual applications of 2 lbs./Acre will usually give adequate weed control. Do not apply to vines with trunks less than 1.5 inches in diameter as injury may result.

GRASS SEED CROPS

(Perennial except where specifically indicated)

Except as noted, apply only to established plantings at least 1 year old.

Note: Apply a single application per year at up to 3 lbs./Acre. May be applied by aerial application in the Pacific Northwest only.

Colorado, Kansas, Missouri, New Mexico, and Oklahoma: On sand bluestem, side oats grama, and switchgrass, apply 2 to 3 lbs./Acre during the dormant period shortly before weed seedlings emerge. Do not apply after crop begins growth in the spring as crop injury may result. In fields where ash residues have accumulated from burning straw use 3 lbs./Acre. Spread unburned chaff or straw with a harrow or chopper before application.

Eastern Oregon, Eastern Washington: On perennial bluegrass and fescue apply 1 to 3 lbs./Acre as broadcast in enough diluent to get even distribution. Apply in spring before rapid growth of the crop begins and when the windgrass is still small (1 – 4 leaf). DO NOT use on coarse (sand) textured soils.

Western Oregon, Western Washington: On alta fescue, Astoria bentgrass, Highland bentgrass, Kentucky bluegrass (Merion bluegrass), and orchardgrass apply 2 to 3 lbs./Acre between October 1 and November 15. In fields where ash residues have accumulated from burning straw, use 3 lbs./Acre. Spread unburned chaff or straw with a harrow or chopper before application. For best results apply as soon as possible after fall rains start. Established weeds beyond two to four leaf stage should be removed prior to treatment.

Well established vigorous stands of spring planted alta fescue, Kentucky bluegrass, and orchardgrass may be treated the following fall provided the crop is planted before April 1 and treatment is not applied before October 15; apply 2 lbs./Acre.

Oregon and Washington: Apply in the fall to perennial ryegrass at the rate of 1 to 2 lbs./Acre and to tall fescue at the rate of 2 to 3 lbs./Acre. Use a sufficient volume of water, and minimum of 25 gallons per acre, for thorough coverage of weed foliage. For best results, make applications at the onset of the fall rains and before weeds have become established (typically October 1 through November 15). Established weeds beyond the 2 – 4 leaf stage should be removed prior to treatment.

Apply only to well established, vigorous stands. Do not apply to perennial ryegrass stands less than one year old. Use mechanical agitation and avoid overlap of spray patterns. Weed control efficacy may be reduced in fields where ash residues have accumulated from burning straw.

Annual Ryegrass for the Creation of Rows: Apply 1 to 2 lbs./Acre as a directed or shielded spray so the intended crop row area is not treated. These applications should be made where excessive populations of annual ryegrass are anticipated to volunteer from previous crops. Applications can be made as a directed/shielded spray during seeding or after emergence of annual ryegrass. These applications generally will occur between October 1 and January 15. Diuron 80DF is most effective when applied before annual ryegrass volunteer plants have more than 2 leaves. If larger plants are to be treated, addition of a labeled postemergence herbicide will provide more effective control.

Adjust nozzle heights and spacing to allow the establishment of the desired row width (generally about 3 inches) and spacing (generally 9 to 12 inches). Use of low-pressure nozzles, shielded nozzles, or drop nozzles to reduce spray movement in the intended crop row area is recommended.

Fine Fescue Grass Seed Crops (including chewings, creeping red, and hard fescue types): For the suppression of rattail fescue, apply at 1 to 2 lbs./Acre on soils having at least 1% organic matter. Do not use on sand, loamy sand, gravelly soils, or exposed sub-soils.

Crop Stage and Application Timing: Diuron 80DF is recommended for use on healthy vigorous stands of fine fescue. Diuron 80DF can be applied to stands established at least 1 year or to new plantings that have been established for at least 6 months and have a minimum of eight tillers at time of application.

Apply in fall before grass weeds are beyond the one to two leaf stage and before broadleaf weeds are larger than 1 to 2 inches tall or across. Use the high end of the rate range for large weeds or where weed populations are high.

Approximately 1/2 to 1 inch of rainfall or sprinkler irrigation is needed to move Diuron 80DF into the weed zone before weeds develop an established root system. Weeds larger than the size indicated or those having a well established root system before Diuron 80DF is properly activated by rainfall/irrigation may not be adequately controlled.

Weed control may be reduced by heavy straw residues or ash from field burning.

Tank Mixes: Diuron 80DF can be applied either alone or in a program involving tank mixes with other herbicides and adjuvants. When using a tank mix with other herbicides, use 1 to 1.5 lbs./Acre unless prior experience indicates it is safe to use higher rates. Tank mixes with other herbicides can increase the risk of crop injury. When using a certain tank mix for the first time, limit use to a small area to determine safety before treating large areas.

Use Precautions:
Do not replant treated areas to any crop within 2 years of last application as injury to subsequent crops may result.

Do not apply to snow covered or frozen ground as injury to the crop or poor weed control may result.

Do not treat stands lacking in vigor due to poor fertility, environmental stress, insect or disease, or damage from other herbicides.

New Plantings – Oregon, Washington: For use in newly planted bentgrass, chewing fescue, Kentucky bluegrass, perennial ryegrass, orchardgrass, and tall fescue. During planting operation, spray a suitable brand of activated charcoal as a 1-inch band on soil surface at 15 pounds per acre of crop where row spacing is 20 inches (300 pounds per acre broadcast basis). Mount nozzles to apply directly over seed rows to prevent crop injury. Follow with Diuron 80DF as a single broadcast spray at the rate of 2.5 to 3 lbs./Acre. Apply as soon as possible after planting but before crops or weeds emerge and before rains or sprinkler irrigation. Fall or spring plantings may be treated. Best results usually occur with early fall plantings. Treatment will not control downy brome or wild oats.

PERENNIAL RYEGRASS, TALL FESCUE, KENTUCKY BLUEGRASS, AND FINE FESCUE (Grown for Seed)
For control of certain broadleaf weeds and annual grasses apply this product only to well-established vigorous stands of grasses as directed below. Use sufficient water (a minimum of 25 gallons per acre) for thorough coverage of weed foliage. For best results, make application at the onset of fall rains and before weeds become established (typically October 1 through November 15). Weeds beyond the 2- to 4-leaf stage will usually not be controlled. Use higher rates within the range listed when treating larger weeds and heavier weed infestation. Weed control may be reduced where straw or ash residues have accumulated on the soil surface. Lack of moisture to activate the herbicide may reduce weed control. Tank mixtures or sequential treatments with other herbicides may reduce crop tolerance and increase risk of crop injury. When using Diuron 80DF in a tank mix or in a sequential treatment with other herbicides, do not use the maximum rates listed below unless compatibility and the potential for phytotoxicity have been evaluated. Crop tolerance may be reduced and the likelihood of crop injury may increase when crop is under stress caused by weather, diseases, and insects.

Perennial Ryegrass (Established) (Oregon Only): Apply 1 to 2 pounds per acre per season (October 1 through mid-January) to control seedling grasses and broadleaf weeds such as annual bluegrass and others named on this label.

Tall Fescue (Established) (Oregon Only): Apply 2 to 3 pounds per acre per season (October 1 through mid-January) to control seedling grasses and broadleaf weeds such as rattail fescue and others named on this label.

Kentucky Bluegrass (Established stands east of the Cascade Mountains) (Oregon, Washington Only): Apply 1.5 to 3 pounds per acre per season (October 1 through mid-January) for suppression of rattail fescue and certain other seedling grasses and broadleaf weeds named on this label. Downy brome is not controlled. Do not use on *Poa trivialis* grass seed varieties.

Fine Fescue (Illahee, Ranier, Chewings, and related varieties including Hard Fescue) (Established stands west of the Cascade Mountains) (Oregon Only): Apply 1 to 2 pounds per acre for suppression of rattail fescue and certain other seedling grasses and broadleaf weeds named on this label. Make only 1 application per year. Do not use this product more than two years in succession in the same field.

MACADAMIA NUT

Hawaii: Use only under trees established in the orchard for at least 1 year. Apply 2 to 6 lbs./Acre immediately after harvest, preferably before weeds emerge. If weeds have emerged, add surfactant. Retreat as needed but do not exceed 10 lbs./Acre per year.

OATS

Do not replant treated areas to any crop within 1 year after last application as injury to subsequent crops may result.

DRILL PLANTED SPRING OATS – Idaho, Eastern Oregon, Eastern Washington: Use in areas where average annual rainfall exceeds 16 inches. Make a single application of 1 to 1.5 lbs./Acre after planting, either before or after oats emerge but within 6 weeks of planting. Best results are usually obtained when application is made 3 to 4 weeks after planting. Apply before weeds are 3 to 4 inches in height.

DRILL PLANTED WINTER OATS AND MIXTURE WITH PEAS OR VETCH – Western Oregon and Western Washington: Make a single application of 1.5 to 2 lbs./Acre as soon as possible after planting but before crop emergence.

OLIVE (California)

California: Use only under trees established in the grove for at least 1 year. Apply 2 lbs./Acre after the grove has been laid-up in final form in late October or November. Repeat at same rate in March or April. Remove weed growth prior to treatment.

PAPAYA

Use only under trees established in the orchard for at least 1 year. Apply 2.5 to 5 lbs./Acre, preferably before weeds emerge. If weeds have emerged, add surfactant.

PEAS
(Austrian Field)

Western Oregon: Diuron 80DF is recommended for selective control of certain weeds in Austrian field peas.

Apply 1.5 to 2 lbs. Diuron 80DF per acre as a broadcast spray with air or ground equipment as soon as possible after planting but before crop emerges for control of weeds such as chickweed, shepherdspurse, wild mustard, fiddleneck, lambsquarters, pigweed, and annual bluegrass. Use lower rate on coarse-textured soils and higher rate on fine-textured soils.

Do not use Diuron 80DF on sand, sandy loam, gravelly soils, or exposed sub-soils, or on soils having less than 1% organic matter as crop injury may result. Do not replant treated area to another crop within 1 year of application. Crop injury may result if severe winter stress, disease, or insect damage to the crop follows application.

PEACH

Diuron 80DF may be applied alone or as a tank mix with Sinbar.

Where crop is grown under furrow irrigation or under raised-berm flood irrigation (trees 4 to 6 inches above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows, nor trees grown under flat flood or basin irrigation, as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season.

Diuron 80DF Alone: Use only under trees established in the orchard for at least 3 years. Apply 2 to 2.75 lbs./Acre in the early spring before weeds emerge or during the early seedling stage of weed growth. In California, apply 2 – 3.75 lbs./Acre. Do not apply within 3 months of harvest. In the Far West, do not apply within 8 months of harvest.

Georgia: On trees established for at least 2 years, apply 2 to 2.75 lbs./Acre in the spring. Repeat application in the fall but do not exceed 5 lbs./Acre per year. Add surfactant to improve control of small, emerged weeds.

Diuron 80DF plus Sinbar: Use only under trees established in the orchard for at least 2 years. Apply either in the spring or after harvest in the fall before weeds emerge or during early seedling stage of weed growth.

Soil Texture	RATE PER ACRE					
	1 to 2% Organic Matter			More Than 2% Organic Matter		
	Diuron 80DF Lbs./Acre		Sinbar Lbs./Acre	Diuron 80DF Lbs./Acre		Sinbar Lbs./Acre
Sandy Loam	1.0	+	1.0	1.5	+	1.5
Loam, Silt Loam, Silt	1.5	+	1.5	2.0	+	2.0
Clay Loam, Clay	2.0	+	2.0	2.0	+	2.0

PEAR

Use only under trees established in the orchard for at least 1 year. Do not treat varieties grafted on full-dwarf root stocks. Apply 4 lbs./Acre in the spring from March through May. In the Far West, apply 4 lbs./Acre to weeds less than 2 inches in height or diameter under dormant trees. Alternatively, apply to small weeds at 2 lbs./Acre postharvest followed by 2 lbs./Acre prior to budbreak.

PECAN

Use Diuron 80DF alone or as a tank mix with Sinbar. Make a single band or broadcast application as a directed spray using a minimum of 30 gallons of water per acre. Apply in the spring before weeds emerge or during the early seedling stage of growth.

Soil Texture	RATE/ACRE				
	Diuron 80DF Alone*		Tank Mix** Diuron 80DF		Sinbar
Sandy loam	2 lbs.	OR	1.5 lbs.	+	1.5 lbs.
Loam, Silt loam, Silt	3 lbs.		1.75 lbs.		1.75 lbs.
Clay loam, Clay	4 lbs.		2 lbs.		2 lbs.

*Use only under trees established in the grove for at least 3 years, and on soils with at least 0.5% organic matter.
** Use only under trees established in the grove for at least 1 year, and on soils with at least 1% organic matter.

Note: Do not use on eroded areas where sub-soil or roots are exposed, nor on trees that are diseased or lacking in vigor, or on trees planted in irrigation furrows as injury may occur.

PEPPERMINT

Washington, Oregon, Idaho: Apply Diuron 80DF at 0.75 to 1 lb./Acre on soils having 1 to 2% organic matter. Apply Diuron 80DF at 1 to 2 lbs./Acre on soils having 2.1 to 3.0% organic matter. Apply Diuron 80DF at 2 to 3 lbs./Acre on soils having more than 3.0% organic matter.

Use Precautions: Do not apply to stands of mint suffering from stress due to low fertility, drought, winter injury, insects, disease, or damage from other herbicides or other causes.

Do not apply to snow covered or frozen ground as injury to the crop or poor weed control may result.

Do not apply to sand, loamy soil, gravelly soils, or exposed sub-soils. Do not apply to soils that have a high salt content and/or high water table or poor drainage that retards mint root development resulting in a shallow root system. Do not apply to soils having less than 1% organic matter.

Application Timing: Apply Diuron 80DF to established (at least one year) stands of mint during the late winter dormant period or after flaming in the spring prior to the emergence of new growth. Do not cultivate after application.

If weeds are present at time of application, the use of a surfactant at 0.25% v/v or crop oil concentrate at 1.0% v/v may be used to increase the performance of Diuron 80DF postemergence to weeds.

Tank Mixes and Sequential Treatments: Diuron 80DF can be applied either alone or in a program involving tank mixes and/or sequential treatments with other herbicides and adjuvants providing Diuron 80DF is not applied to actively growing mint plant.

When using a tank mix with other herbicides, use the lower end of the Diuron 80DF use rate range unless prior experience indicates it is safe to use higher rates. Tank mixes and sequential treatments with other herbicides can increase the risk of crop injury. When using a certain tank mix or sequential treatment for the first time, limit use to a small area to determine safety before treating large areas.

PINEAPPLE

Hawaii: Apply 2 to 6 lbs./Acre as a broadcast spray just before or immediately after planting but prior to weed emergence. Use 2 to 4 lbs./Acre after harvesting the plant crop or ratoon crop (for the first ratoon crop as well as subsequent ratoon crops) but before differentiation. For plant crop only, additional broadcast or interspace applications may be made prior to differentiation at the rate of 2 lbs./Acre at intervals of not less than 2 months. Additional applications to plant crop may be made as needed to interspace only using 2 lbs./Acre. Do not apply more than 12 lbs./Acre as broadcast sprays nor more than 16 lbs. total per acre per plant crop. Treated areas may be planted to pineapple or sugarcane 1 year after last application.

Florida: Apply 4 to 8 lbs./Acre as a broadcast spray just before or immediately after planting but prior to weed emergence. For ratoon crop use 4 lbs./Acre after harvesting plant crop. For plant crop only, a second and third broadcast or interspace application may be made prior to differentiation at the rate of 2 lbs./Acre at intervals of not less than 2 months. Additional applications to plant crop may be made as needed to interspace only using 2 lbs./Acre. Do not apply more than three broadcast sprays (maximum 12 lbs./Acre) prior to differentiation nor more than 16 lbs. total per acre per plant crop. Treated areas may be planted to pineapple or sugarcane 1 year after last application.

Puerto Rico: Apply 3.75 to 6.25 lbs./Acre as a broadcast spray before or immediately after planting but prior to weed emergence. Preemergence application controls weeds such as pigweed, crotalaria, morningglory, purslane, crabgrass, foxtail, goosegrass, fall panicum, and sourgrass.

RED CLOVER

Western Oregon: Make a single application of 2 lbs./Acre on established red clover stands at least 9 months old. Apply when red clover is dormant between October 15 to December 15. Do not apply to seedling red clover. Do not replant treated area to any crop within 1 year after last application as injury to subsequent crops may result. Treatment will control annual weeds such as bluegrass, chickweed, hawksbeard, rattail fescue, ryegrass, and velvetgrass.

SORGHUM
(Grain)

DO NOT SPRAY OVER TOP OF SORGHUM.

Southwestern States: Apply 0.25 to 0.5 lb./Acre plus surfactant. Apply as a directed postemergence spray after sorghum is 15 inches tall to control weeds 2 to 4 inches in height. Use lower rate on broadleaf weeds up to 2 inches tall. Use the higher rate on grasses up to 2 inches and broadleaf weeds up to 4 inches tall. When the lower rate is used, a second application may be made if needed. Do not exceed 0.5 lb./Acre. Treatment of weeds under drought stress is usually ineffective.

Do not replant treated areas to crops other than cotton or corn within 4 months following band treatment and 6 months following broadcast treatment as injury to subsequent crops may result.

SUGARCANE

To prevent possible crop injury on new cane varieties, test tolerance to Diuron 80DF prior to adoption as a field practice. Do not treat sugarcane growing on thinly covered sub-soils or rocky areas as crop injury may result. Temporary chlorosis and stunting of the crop may result from application over emerged cane. Application over emerged cane should be made only as directed below, without the addition of a surfactant or crop oil concentrate. To minimize chlorosis and stunting, use directed postemergence sprays.

Diuron 80DF may be applied as a directed spray (including hooded and shielded spray) in combination with formulations of paraquat. Consult the label of the tank mix partner for rates and timings of application, restrictions, and precautions.

PREEMERGENCE – Florida: For high organic soils, apply 2 to 4 lbs./Acre as a broadcast or band spray prior to weed emergence after planting or after harvesting plant crop (for ratoon crop).

POSTEMERGENCE – Florida: Make one or two applications of 2 lbs./Acre as needed by directed spray inter-row. Alternatively, for panicum control, make up to three applications of 0.5 to 1 lb. per acre plus surfactant as a directed spray after cane has emerged but before panicum exceeds 2 inches in height. Adjust nozzles to spray beneath cane plants and between rows to cover weed foliage and to minimize contact of cane leaves with spray or drift. Do not apply more than 6 lbs. total per acre between planting (or ratooning) and harvest.

Hawaii: Apply 2 to 6 lbs./Acre as a broadcast spray prior to weed emergence after planting or after harvesting plant crop or ratoon crop. Sequential applications of 2 to 4 lbs./Acre may be made as a broadcast spray over emerged cane or by directed spray inter-row.

If weeds are emerged, add a surfactant and apply as a directed spray. Do not apply more than three treatments nor more than 12 lbs./Acre in Hawaii between planting (or ratooning) and harvest. Treated areas may be replanted to sugarcane or pineapple 1 year after last application.

Puerto Rico: Apply 4 to 8 lbs./Acre as a broadcast spray prior to weed emergence after planting or after harvesting plant crop or ratoon crop. A second and third application of 2 to 4 lbs./Acre may be made as a broadcast spray over emerged cane or by directed spray inter-row.

If weeds are emerged, add a surfactant and apply as a directed spray.

Do not apply more than 3 treatments nor more than 10 lbs./Acre in Puerto Rico between planting (or ratooning) and harvest. Treated areas may be replanted to sugarcane or pineapple 1 year after last application.

Louisiana, Texas: Apply at 3 to 3.75 lbs./Acre. Diuron 80DF may be applied as a broadcast spray after planting and following the harvesting of sugarcane. Diuron 80DF may also be applied broadcast in late winter. Application is best when made prior to weed emergence. Diuron 80DF may be applied as a post-directed spray immediately after the last cultivation. Direct the spray application to the base (no more than 1/3 the plant height) of the sugarcane plants. When small weeds (3 inches or less) are present at application, add a surfactant at 0.25% v/v or crop oil concentrate at 1.0% v/v to the spray mix.

Use Precautions: Temporary leaf yellowing may occur following application. Do not apply more than 7.5 lbs./Acre broadcast per year. Use proportionately less for band applications.

TREE PLANTINGS

Colorado, Montana, Nebraska, North Dakota, South Dakota, Wyoming: Use only under established plantings 1 year or older of American elm, caragana, cottonwood, Douglas fir, green ash, honeysuckle, Ponderosa pine, red cedar, Russian olive and Siberian elm. Use 2.5 to 5 lbs./Acre. Apply as a band 4 feet wide in the tree row (2 feet on each side of row). For example, 1 ounce Diuron 80DF treats 135 feet of tree row (2 feet on each side of row) at the rate of 5 lbs./Acre. Apply as a directed spray in early spring before weeds emerge and before trees leaf out. Do not apply to foliage of trees nor under trees growing in low areas as injury may result.

Idaho, Oregon, Washington: Diuron 80DF is recommended for control of weeds to aid in the establishment of hybrid poplar plantings. Apply at 1 to 3 lbs./Acre depending upon soil texture and organic matter content. Use 1 to 2 lbs./Acre on coarse-textured soils and 2 to 3 lbs./Acre on medium- to fine-textured soils. Do not use on gravelly soils or on any soil having less than 0.5% organic matter as injury to trees may result. **Injury may result from applications to poplar plantings grown on sandy soil with low organic matter with sprinkler irrigation.** When applied in a band, the application rate will be in proportion to the area banded on a per acre basis.

Apply in late winter or early spring as a uniform broadcast spray before or after planting but prior to bud swell, or as a directed spray after bud swell. Apply before weeds emerge or after emergence while weeds are small. Some rainfall or water is necessary to move Diuron 80DF into the weed root zone before weeds become well established. If weeds are present at time of treatment, add a surfactant at 1 to 2 quarts per 100 gallons of spray solution.

PRE-PLANT: Take precautions to prevent treated soil (usually top 1 inch) from coming into contact with roots of trees during the planting process as injury may result.

POST-PLANT (BROADCAST): It is best to wait until rain or irrigation has settled the soil around the newly planted trees before applying Diuron 80DF. If trees are dormant, a broadcast application can be made.

POST-PLANT (DIRECTED): If buds have started to swell, use a directed spray pattern that prevents Diuron 80DF from contact with trees as injury may result. During the growing season (from bud swell to leaf drop) Diuron 80DF may be applied (alone or with tank mix) between tree rows in shielded and directed sprays.

Diuron 80DF can be tank mixed with a glyphosate herbicide pre-plant and as a directed spray to broaden the spectrum of weeds controlled and improve post-emergence activity. Use 1 to 3 lbs. Diuron 80DF plus glyphosate herbicide (according to label recommendations) depending upon soil type and weeds to be controlled. **Note:** There are several formulations of glyphosate herbicide. Check the glyphosate herbicide label to verify that the intended use as a pre-plant or post-directed spray on hybrid poplar plantations is allowed. Avoid contact of glyphosate herbicide with foliage, green stems, trees or other desirable vegetation because severe damage or destruction may result.

WALNUT (ENGLISH)

California, Oregon, Washington: Use only under trees established in the orchard for at least 1 year. As an initial treatment, apply 2.75 lbs./Acre after the orchard has been laid-up in final form (non-tillage program) in late fall or early winter. Retreat annually with 2 to 2.75 lbs./Acre. In California, apply 2 to 3.75 lbs./Acre. Alternatively, apply 2 lbs./Acre in October or November and repeat at the same rate in March or April.

Do not use on sand, loamy sand, gravelly soils, or exposed sub-soils, nor where organic matter is less than 1%.

Do not graze livestock in treated orchards and groves.

Do not make more than two applications per year. Do not apply more than 4 lbs./Acre per year. In California, do not apply more than 3.75 lbs./Acre per year. When using Diuron 80DF in a sequential treatment program, allow a minimum of 150 days between applications.

WHEAT (WINTER)

Use Precautions: Crop injury may result where severe winter stress, disease or insect damage follows application. Winter-sensitive varieties may be less tolerant of Diuron 80DF than winter-hardy varieties. Crop injury may result from failure to observe the following: Do not use on sand or loamy sand soils, nor on gravelly or sandy loams with less than 1% organic matter. Do not use on thinly covered or exposed sub-soil area (clay knolls). Do not treat wheat planted less than 1 inch deep. Do not treat wheat where winter climatic conditions have caused "heaving" of plants. Do not treat wheat plants lacking in vigor due to poor emergence, insect damage, disease, high alkalinity or other causes. Do not apply after wheat has reached the "boot" stage of maturity. Unless specified otherwise, do not use with surfactants or nitrogen solution. Do not replant treated areas to any other crop within 1 year after last treatment (except as noted) as injury to subsequent crops may result.

Idaho, Oregon and Washington – East of Cascade Range: Where average annual rainfall exceeds 16 inches, make a single application of 1 to 1.5 lbs./Acre.

FALL TREATMENT: For early fall planted wheat (seeded before September 10), apply 3 to 6 weeks after planting but before weeds are 3 to 4 inches tall. Treatment after October 1 has generally given best results. Application should not be made after soil freezes in the fall. Wheat planted in late October should not be treated until the following spring.

SPRING TREATMENT: Apply as soon as wheat starts to grow. Treatment made prior to April 10 will usually give good results provided weed growth is less than 4 inches tall. Application later than May 1 may give poor results.

Alternatively, make a single application of 0.5 to 1 lb. Diuron 80DF plus 0.25 lb. bromoxynil per acre as a tank mixture in either the fall after wheat has emerged but before soil freezes or in the spring as soon as soil thaws. Apply before weeds are more than 2 inches tall or across.

Where average annual rainfall is 10 to 16 inches following fall planting, make a single application of 1 to 1.5 lbs./Acre when sufficient moisture is available to germinate wheat seed. Apply before soil freezes and weeds are 2 inches tall. Application later than March 1 may give poor results.

If fall-planted wheat fails to grow due to winter kill or adverse growing conditions after fall treatment, only fields treated before November 1 may be replanted to spring wheat. Spring wheat should not be planted before April 1 and only after deep discing and plowing to a depth of 4 to 6 inches prior to planting. Do not make a second application during the same crop year or injury to the crop may result.

Oregon, Washington – West of Cascade Range: Make a single application of 1.5 to 2 lbs./Acre as soon as possible after planting. If wheat and weeds have emerged, apply before weeds are 3 to 4 inches tall. Alternatively, apply a tank mixture of Diuron 80DF plus bromoxynil as detailed for "East of Cascade Range".

Other Areas of Oregon and Washington: Make a single application in the spring as soon as wheat (fall-planted) starts to grow and before weeds are 2 inches tall. Application later than May 1 may give poor results.

Kansas, Oklahoma, and Texas: Do not use on sand or sandy loam soils. Use 1 lb./Acre on silt and silt loam soils and 1.5 to 2 lbs./Acre on clay, clay loam, and silty clay loam soils.

Central Plains, Midwest: Use 1 to 2 lbs./Acre.

Northeast: Use 1 to 1.5 lbs./Acre.

NON-CROP WEED CONTROL

Diuron 80DF is an effective herbicide for the control of listed weeds. The degree of control and duration of effect will vary with amount of chemical applied, soil texture, rainfall, and other conditions.

Diuron 80DF may be used as a preemergence treatment at any time of the year except when ground is frozen provided adequate moisture is supplied by rainfall or artificial means to activate the herbicide. Best results are obtained if applied shortly before weed growth begins. If dense growth is present, remove tops and spray the ground. Increased contact activity on established weeds may be obtained by the addition of a non-ionic surfactant. Apply as a drenching spray to actively growing weeds during warm weather when daily temperature will exceed 70°F.

Use a fixed-boom power sprayer properly calibrated to insure a constant rate of application. Mix proper amount of Diuron 80DF into volume of water necessary to obtain uniform coverage. If a non-ionic surfactant is used, dilute with 10 parts of water and add as last ingredient to nearly full tank. Diuron 80DF must be kept in suspension at all times. Agitate by mechanical or hydraulic means in the spray tank. If bypass or return line is used, it should terminate at bottom of tank to minimize foaming. Openings in screens should be equal to or larger than 50 mesh.

Note: Diuron 80DF may be applied by either ground application equipment or by air application equipment (helicopter only) for the control of various weeds and grasses on railroad rights-of-way (including storage yards, switch yards, etc.) and military installations. When making aerial applications, apply in sufficient water volume to ensure thorough coverage of the site to be treated; generally 5 to 15 gallons of water per acre are sufficient.

Do not exceed an application rate of 10 lbs./Acre except in areas of high rainfall (more than 40 inches per year) or dense vegetation (more than 90% weed ground cover). In areas with high rainfall or dense vegetation, a maximum application of 15 lbs. per acre is allowed. Do not exceed 15 lbs./Acre per year. Do not make more than two applications per year. If Diuron 80DF is used in a sequential application program, allow a minimum of 90 days between applications.

General Weed Control: To control most annual weeds for an extended period of time on railroad rights of way (including storage yards, switch yards, etc.) and military installations, apply 5 to 15 lbs./Acre to control most annual weeds.

Broadleaves		
5 to 15 lbs./Acre		
Ageratum	Knawel	Ragweed
Chickweed	Kochia	Sesbania
Cocklebur	Lambsquarter	Shepherdspurse
Corn Speedwell	Marigold	Sicklepod
Corn Spurry	Mexican Clover	Smartweed, Annual
Dayflower	Morningglory, Annual	Sowthistle, Annual
Dogfennel	Pennycress	Spanishneedles
Fiddleneck (Amsinckia)	Pigweed	Tansymustard
Flora's Paintbrush	Pineappleweed	Velvetleaf (Buttonweed)
Gromwell	Pokeweed	Wild Buckwheat
Groundcherry, Annual	Prickly Lettuce	Wild Lettuce
Hawksbeard	Prickly Sida (Teaweed)	Wild Mustard
Horsenettle	Purslane	Wild Radish
Horseweed	Rabbit Tobacco	
Grasses		
5 to 8 lbs./Acre		
Barnyardgrass (Watergrass)	Orchardgrass	Ryegrass, Annual
Bluegrass, Annual	Peppergrass	Sandbur
Crabgrass	Quackgrass	Seedling, Johnsongrass
Foxtail	Rattail Fescue	Velvetgrass
Kyllinger (Kyllinga)	Red Sprangletop	Vernalgrass, Sweet, Annual
Lovegrass, Annual	Ricegrass	
8 to 15 lbs./Acre		
Guineagrass	Maidencane	Pangolagrass

Irrigation and drainage ditches: Apply 5 to 15 lbs./Acre to control most annual weeds as shown above. Apply only when water is not in the ditch. For irrigation ditches, apply during the non-crop season, and when ditch is not in use. To avoid crop injury, it is essential to minimize movement of Diuron 80DF in irrigation water. The herbicide must be fixed in the soil by moisture. Apply before expected seasonal rainfall, if possible when soil in the ditch is still moist. Following treatment, if rainfall has not totaled at least 4 inches, fill ditch with water and allow to stand for 72 hours. Drain off any waste water remaining before using ditch. Do not treat any ditch area into which roots of trees or other desirable plants may extend as injury may result.

Dry Application: Diuron 80DF may be applied dry for control of the listed weeds on non-crop sites. Apply Diuron 80DF granules using dry application (ground) equipment to distribute the granules uniformly to the target area.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Store product in original container only, away from other pesticides, fertilizer, food, or feed.

PRODUCT DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill, or incineration; if allowed by State and local authorities, by burning. If burned, stay out of smoke.

In the event of a major spill, fire, or other emergency, call INFOTRAC at 1-800-535-5053, day or night.

DO NOT REUSE EMPTY CONTAINER

WARRANTY STATEMENT

MAKHTESHIM-AGAN OF NORTH AMERICA warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. 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, or the manner of use or application, all of which are beyond the control of MAKHTESHIM-AGAN OF NORTH AMERICA. To the extent allowed by law, MAKHTESHIM-AGAN OF NORTH AMERICA shall not be liable for consequential, special, or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. In addition to the foregoing, no purchaser of this product (other than an end user) shall be entitled to any reimbursement for any loss suffered as a result of any suspension or cancellation of the registration for this product by the U.S. Environmental Protection Agency. Except as expressly provided herein, MAKHTESHIM-AGAN OF NORTH AMERICA makes no warranties, guarantees, or representations of any kind, either expressed 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. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall be damages not exceeding the purchase price paid for this product or, at MAKHTESHIM-AGAN OF NORTH AMERICA's election, the replacement of this product.

Diuron 80DF (66222-51)(EPA app 11-17-05)(CA app 06-21-06)

1. IDENTIFICATION

Product name:	**Diuron 80 DF**
Chemical name of active ingredient(s):	Diuron: (3-(3,4-dichlorophenyl)-1,1-dimethylurea)
Manufacturer/Registrant:	Makhteshim Agan of North America, Inc. 4515 Falls of Neuse Road, Suite 300 Raleigh, NC 27609 Phone: 919-256-9300
For fire, spill, and/or leak emergencies, contact Infotrac:	Phone: 1-800-535-5053
For medical emergencies and health and safety inquiries, contact Prosar:	Phone: 1-877-250-9291

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACIGH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Diuron	330-54-1	80	NA	10 mg/m^3	NA	NA
Talc	14807-96-6	11.3	NA	2.0 mg/m^3	NA	IARC – 3*

*IARC - Rating 3: The agent is unclassifiable as to carcinogenicity in humans.

3. HAZARDS IDENTIFICATIONS

PHYSICAL PROPERTIES
Appearance: Beige pellets
Odor: None

EMERGENCY OVERVIEW: CAUTION. Hazards to humans and domestic animals. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing.

PRIMARY ROUTES OF ENTRY: Ingestion, skin/eye contact

SYMPTOMS OF ACUTE EXPOSURE:

Ingestion: Drowsiness, hyperreflexia, irritability, diarrhea, hyperthermia and weight loss
Skin Absorption: None known.
Inhalation: Drowsiness, irritability, diarrhea, respiratory tract irritation.
Eyes: May cause eye irritation.

EFFECTS OF CHRONIC OVEREXPOSURE: Prolonged or repeated overexposure may cause skin and/or eye irritation. Extreme overexposure may cause glycosuria, proteinuria, and aciduria. Long-term exposure may also cause enlarging of the liver and/or spleen

EXISTING MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE: Skin contact may aggravate preexisting skin conditions. Inhalation of mists may aggravate preexisting respiratory conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of nitrogen and carbon, hydrogen chlorides.

4. 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 for treatment advice.

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:
- 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 1-877-250-9291 for emergency medical treatment information.

5. FIRE FIGHTING MEASURES

FLASHPOINT: Non-combustible
FLAMMABLE LIMITS (% in air): Not determined
AUTOIGNITION TEMPERATURE: Not determined
FLAMMABILITY: Not Applicable
UNUSUAL FIRE, EXPLOSION AND REACTIVITY HAZARDS: Noxious fumes may be emitted under fire conditions.

EXTINGUISHING MEDIA: Use carbon dioxide or dry chemical for small fires and water fog or foam (alcohol, polymer or ordinary) for large fires. Water stream may spread flames.

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should use self-contained breathing apparatus and full turnout gear. Prevent runoff of firewater. Avoid exposure to smoke.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILLS OR LEAKS: Dike the area using absorbent materials such as sand or clay. Recover and contain as much product as possible using absorbent. Clean spill area using a solution of water and detergent. Collect and contain wash water and all contaminated absorbent for disposal. If spilled on the ground, the affected area should be excavated to a depth of 1-2 inches. Prevent the spilled product or washing from reaching public sewers or waterways. Wear appropriate protective equipment during the cleanup. Ensure that tools and equipment are adequately decontaminated.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Avoid contact with skin and eyes. Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling. Do not contaminate water, food or feed by storage, disposal or by cleaning equipment.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in original container only, away from other pesticides, fertilizer, food, or feed.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperatures. Avoid excessive heat.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

EYE PROTECTION: Protective eyewear (e.g., goggles or full-face shield).

SKIN PROTECTION: Long-sleeved shirt and long pants, shoes plus socks. Use apron and coveralls when necessary.

HAND PROTECTION: Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.

RESPIRATOR REQUIREMENTS: Use a dust/mist respirator.

ADDITIONAL PROTECTIVE MEASURES: Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. 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:
- 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.

EXPOSURE GUIDELINES: Refer to Section 2.
ENGINEERING CONTROLS: Refer to product label.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES
Appearance: Off-white granules
Odor: Slightly sweet
FLASH POINT: Not applicable
pH: 8.56
BULK DENSITY: 0.619 g/mL
FORMULA: $C_9H_{10}Cl_2N_2O$
MOLECULAR WEIGHT (DIURON): 233.10
MELTING POINT (DIURON): 158-159°C
BOILING POINT: Not determined
SPECIFIC GRAVITY/DENSITY (BULK): 0.62 g/mL (5.17 lb/gal)
SOLUBILITY IN H2O (DIURON): 42 ppm AT 25°C
VAPOR PRESSURE (DIURON): 0.01 mPa at 25°C

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Excessive heat.
MATERIALS TO AVOID: None known.
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of nitrogen and carbon, hydrogen chlorides.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES

Acute Oral LD50 (Rat):	1,879 mg/kg
Acute Dermal LD50 (Rabbit):	>5,000 mg/kg
Acute Inhalation LC50 (Rat):	>2.03 mg/L
Eye Irritation (Rabbit):	Mildly irritating.
Dermal Irritation (Rabbit):	Non-irritating.
Dermal Sensitization:	Not a skin sensitizer

No other toxicological data available.

12. ECOLOGICAL 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 by cleaning of equipment or disposal of wastes. Do not apply when weather conditions favor drift from areas treated. Cover or incorporate spills.

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Dispose of in accordance with federal, state and local regulations.

CONTAINER DISPOSAL: Do not reuse empty container. 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. Dispose of in an approved manner according to federal, state and local regulations

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Package size <125 lbs.: Not regulated

B/L Freight Classification: Item No. 102120 [Insecticides, Fungicides, Insect or Animal Repellants], Class 60

Package size ≥125 lbs.: RQ, Environmentally hazardous substances, solid, N.O.S. (Diuron 80%), 9, UN 3077, PG III

B/L Freight Classification: Item No. 45617 [Fungicides, Herbicides, Insecticides, or Rodenticides], Class 92.5

INTERNATIONAL TRANSPORTATION:
IMO (vessel):
Package size <125 lbs.: Not regulated
Package size ≥125 lbs.: RQ, Environmentally hazardous substances, solid, N.O.S. (Diuron 80%), 9, UN 3077, PG III

IATA (air):
Package size <125 lbs.: Not regulated
Package size ≥125 lbs.: RQ, Environmentally hazardous substances, solid, N.O.S. (Diuron 80%), 9, UN 3077, PG III

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:
Section 302: Not applicable.
Section 311/312: Acute health hazard (immediate)
Chronic health hazard (delayed)
Section 313: Diuron (80%) CAS#: 330-54-1

CA PROPOSITION 65: This product contains a material (diuron) known to the State of California to cause cancer.
CERCLA RQ: Diuron 100 lbs. (125 lbs. of product)
RCRA CLASSIFICATION: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.
TSCA STATUS: Not applicable

16. OTHER INFORMATION

NFPA HAZARD RATINGS	NFPA	
HEALTH:	2	0 LEAST
FLAMMABILITY:	0	1 SLIGHT
REACTIVITY:	0	2 MODERATE
		3 HIGH
		4 SEVERE

MSDS Date: 3-8-2007; Supercedes versions dated 3-20-06, 6-21-02 and 3-04-02; Changes made to Sections 14 and 16.

The information herein is given in good faith, but no warrant, express or implied, is made. Consult Makhteshim Agan of North America, Inc. for further information.

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-pyridinecarboxylicacid*	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-pyridinecarboxylicacid

1 gallon contains 2.0 pounds of active ingredient as the free acid

EPA Reg. No. 66222-141-81927

(ALB) EPA Est. No. 42750-MO-001
(ISR) EPA Est. No. 11603-ISR-001
(NTM) EPA Est. No. 83996-SC-001
(BT) EPA Est. No. 37429-GA-001
(CSI) EPA Est. No. 53883-TX-002

KEEP OUT OF REACH OF CHILDREN

CAUTION

See inside label booklet for Directions for Use and Storage and Disposal Instructions.

Distributed By: Alligare, LLC • 13 N. 8th Street • Opelika, AL 3680

FIRST AID	
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 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 a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	• 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:	• 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. For medical emergencies, you may also call Prosar 24 hours a day at 1-877-250-9291.	

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, 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 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, may 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 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, 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 may 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 should 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 airsteam 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 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 may 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 should be avoided below 3 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 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 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, 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 Herbicide.

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, aerial 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.

GENERAL INFORMATION

NONCROP AND CONSERVATION RESERVE PROGRAM (CRP) USES

For weed control and/or turf height suppression, mix Alligare Panoramic 2SL Herbicide 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.

Panoramic 2SL Herbicide may 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 Herbicide may be used for weed control in order to release certain legumes, wildflowers, crown vetch, native prairiegrass, wheatgrass, "wildtype" common Kentucky bluegrass, smooth bromegrass, bahiagrass, bermudagrass and other grasses.

For weed control during the establishment of native prairiegrass and other grasses, use Alligare Panoramic 2SL Herbicide as described in the "Revegetation with Prairiegrasses and other Forage Grasses" part of the label.

Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide or other herbicides with the same inhibiting mode of action. If resistant weed biotypes are present in the field then Alligare Panoramic 2SL Herbicide and other herbicides with the same mode of action should be tank-mixed or applied sequentially with a registered herbicide with a different mode of action.

Soil moisture is critical for optimum Alligare Panoramic 2SL Herbicide weed control. With adequate soil moisture, Alligare Panoramic 2SL Herbicide 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 Herbicide is rainfast within one hour after application.

Alligare Panoramic 2SL Herbicide 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 Herbicide to the foliage of certain brush species and ornamentals could lead to injury. The best weed control is achieved when Alligare Panoramic 2SL Herbicide is applied as a postemergence application, especially on perennial species. Since Alligare Panoramic 2SL Herbicide must be taken up by the plant and translocated to the meristematic tissue before it becomes effective, weeds should be actively growing at the time of postemergence applications. All spray solutions should include an adjuvant (see "Spray Adjuvants for Postemergence Applications" section of this label). Applications may be made as broadcast treatments with ground spray equipment or as spot treatments with backpack sprayers. Even though Alligare Panoramic 2SL Herbicide may be applied in the dormant or growing season, the weeds need to be actively growing for maximum control.

Alligare Panoramic 2SL Herbicide 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 Herbicide made during the growing season. This is dependent upon weather conditions and is usually short lived (2 to 4 weeks). Newly seeded or sprigged grass stands should not be treated with Alligare Panoramic 2SL Herbicide 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 Herbicide to residential lawns.
2. Desirable trees and ornamental plants can be injured if rinseate from spray equipment used to apply Alligare Panoramic 2SL Herbicide is allowed to wash or move into contact with plant roots.
3. Do not apply Alligare Panoramic 2SL Herbicide to the inside of irrigation ditches.
4. Alligare Panoramic 2SL Herbicide may 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 Herbicide for weed control, native grass establishment, and turf growth, suppression on pastures, rangeland, and noncrop areas:
- Do not use Alligare Panoramic 2SL Herbicide 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 Herbicide unless severe injury or loss of stand can be tolerated.
- Do not exceed 12 ounces of Alligare Panoramic 2SL Herbicide 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 sulfonyl-urea, imidazolinone, triazine, substituted urea, dinitroanaline, and other herbicides applied the previous year may result in compounded injury or death of desirable vegetation when treated with Alligare Panoramic 2SL Herbicide.
- When making applications around desirable trees or ornamental plants, small areas should be tested to determine the tolerance of a particular species to soil and/or foliar applications of Alligare Panoramic 2SL Herbicide. See section entitled "Tolerance of Trees and Brush to Alligare Panoramic 2SL Herbicide."
- DO NOT apply Panoramic 2SL Herbicide through any type of irrigation system.

APPLICATION INSTRUCTIONS

Ground Application: Make a broadcast application of Alligare Panoramic 2SL Herbicide in a minimum of 2 gallons of spray per acre using ground application equipment. Calibrate the sprayer to deliver the recommended 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 preemergence 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, special application equipment designed to make low volume applications should be used. A spray pressure of 20 to 40 psi is recommended.

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 may be used to apply Alligare Panoramic 2SL Herbicide. 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 Herbicide plus an adjuvant (see "Spray Adjuvants for Postemergence Applications" section of this label). A methylated seed

oil at 1% v/v is the recommended spray adjuvant except when treating seedling prairiegrasses and wildflowers. When making spot applications, spray coverage should 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 Herbicide breaks down when mixed with water and exposed to sunlight. Mixtures of Alligare Panoramic 2SL Herbicide should 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 is threatening. Rainfall within 1 hour of an Alligare Panoramic 2SL Herbicide 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 may be added at the recommended 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 Herbicide" 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 may 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 Herbicide 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 Herbicide may 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 Herbicide 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 Herbicide 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 Herbicide 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 Herbicide next, and spray adjuvants next.

SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS

To achieve control of weeds when Alligare Panoramic 2SL Herbicide 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. Low phytotoxic adjuvants are recommended. Adjuvants containing high amounts of alcohols, paraffin based petroleum oils and other compounds which can increase phytotoxicity should be avoided.

Methylated Seed Oils or Vegetable Oil Concentrate: The preferred spray adjuvant for use with Alligare Panoramic 2SL Herbicide is a methylated vegetable-based seed oil concentrate containing 5 to 20% surfactant and the remainder methylated seed oil (MSO). The rate of MSO should be 1 1/2 to 2 pints per acre. Best results are achieved when MSOs are applied with Alligare Panoramic 2SL Herbicide 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, the MSO should be mixed with Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide 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, a NIS containing 60% surfactant in the formulated product and having a hydrophilic to lipophilic balance ratio (HLB) between 12 and 17 should be used. 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 Herbicide.

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 recommended rate of a NIS or MSO has been shown to improve the uptake of Alligare Panoramic 2SL Herbicide 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 recommended rates of NIS or MSO will aid in the burndown control with Alligare Panoramic 2SL Herbicide. 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 Herbicide. Weed control will likely be poor if Alligare Panoramic 2SL Herbicide 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 Herbicide.

TANK MIXES

For added control of late season annual grasses and certain broadleaf weeds in noncrop areas, tank-mix Alligare Panoramic 2SL Herbicide with Pendulum® herbicide. Alligare Panoramic 2SL Herbicide 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. The compatibility of any other herbicides not listed with Alligare Panoramic 2SL Herbicide should be tested in a jar test. Mixing Alligare Panoramic 2SL Herbicide 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 Herbicide with organophosphate insecticides or use in the same year when using Alligare Panoramic 2SL Herbicide on newly planted areas. Tank mix instructions for Alligare Panoramic 2SL Herbicide 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 Herbicide with a tank-mix partner.

FOR WEED CONTROL IN PASTURE AND RANGELAND

To control weeds in pasture and rangeland, a broadcast treatment of Alligare Panoramic 2SL Herbicide at 2 to 12 ounces per acre should be applied. For spot treatments, use Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide 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 Herbicide to rangeland until specific weeds appear. A single application of Alligare Panoramic 2SL Herbicide may 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 Herbicide preemergence or early postemergence prior to planting. For best results for cheatgrass control, make a late summer or fall application of Alligare Panoramic 2SL Herbicide before cheatgrass emerges and prior to planting desirable species. Alligare Panoramic 2SL Herbicide may be used in this same manner as a site preparation before planting sagebrush seedlings. If making an application of Alligare Panoramic 2SL Herbicide 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 sideoats, blue grama or buffalograss. Perennial weeds like leafy spurge, Dalmation toadflax, and Russian knapweed can be controlled in most cases with a single broadcast application of Alligare Panoramic 2SL Herbicide. Spot treatments with Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide at 4 to 12 ounces per acre. Specific rate and timing instructions are provided below. Use of Alligare Panoramic 2SL Herbicide 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 Herbicide than other bermudagrass types. If these growth responses are not acceptable, do not use Alligare Panoramic 2SL Herbicide 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 recommended 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 Herbicide is applied before the bermudagrass has reached 100% green-up. If Alligare Panoramic 2SL Herbicide 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 Herbicide to a field that appears green, but where some to many stolons have not begun to grow, will still cause significant reductions in bermudgrass growth and development. It is important to delay application of Alligare Panoramic 2SL Herbicide until 100% green-up has been achieved.

General rate Instructions: Make a postemergent application of Alligare Panoramic 2SL Herbicide 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 Herbicide according to the rates and growth stages in the table below. Bermudagrass green-up and subsequent growth will be delayed if Alligare Panoramic 2SL Herbicide is applied too early during the transition between dormancy and full green-up. Some bermudagrass yellowing and stolon internode shortening may occur with specified rates of Alligare Panoramic 2SL Herbicide. Bermudagrass recovery will be shortened if Alligare Panoramic 2SL Herbicide 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 Herbicide 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. A surfactant should always be used with Alligare Panoramic 2SL Herbicide except when the spray carrier is liquid fertilizer. Some preemergence control of some annual grasses will be obtained when Alligare Panoramic 2SL Herbicide is applied postemergence to target weeds.

Summer perennial grasses are controlled when Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide. A surfactant should always be used with Alligare Panoramic 2SL Herbicide except when the spray carrier is liquid fertilizer.

Panoramic 2SL Herbicide Rates for Postemergent Summer Annual Grass Control[1]

Common Name	Species	Weed Height (inches)[2]	Rate per Acre (fluid ounces)
Large crabgrass	*Digitaria sanguinalis*	4 >4	4 6
Southern crabgrass	*Digitaria ciliaris*	4 >4	4 6
Smooth crabgrass	*Digitaria ischaemum*	4 >4	4 6
Giant foxtail	*Setaria faberi*		6
Green foxtail	*Setaria viridis*	4 >4	4 6
Yellow foxtail	*Setaria glauca*	4 >4	4 6
Texas panicum	*Panicum texanum*		6
Fall panicum	*Panicum dichotomiflorum*		6
Broadleaf signalgrass	*Bracharia platyphylla*	4 >4	4 6
Annual jewgrass	*Microstegium vimineum*	4 >4	4 6
Barnyardgrass	*Echinochloa crus-galli*	4 >4	4 6
Sandbur	*Cenchrus* spp.	4 >4	4 6

[1] Be sure bermudagrass has completely greened up as an application of Alligare Panoramic 2SL Herbicide 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 Herbicide.
[2] Use the higher rate when the summer annual grasses are older, larger or have been subjected to multiple cuttings.

Panoramic 2SL Herbicide Rates for Postemergent Summer Perennial Grass Control[1]

Common Name	Species	Weed Height (inches)[2]	Rate per Acre (fluid ounces)
Johnsongrass	*Sorghum halepense*	18-24 >24	8 12
Vaseygrass	*Paspalum urvillei*	4-8	6-8
Nutsedge	*Cyperus* spp.	4 >4	4 6
Bahlagrass	*Paspalum notatum*	4-8	6-8
Dallisgrass[3]	*Paspalum dilatatum*	4-8	8-12
Smutgrass[3]	*Sporobolus indicus*	4-8	8-12

[1] Be sure bermudagrass has completely greened up as an application of Alligare Panoramic 2SL Herbicide 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 Herbicide.
[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 Herbicide 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 Herbicide 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 Herbicide 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 Herbicide is applied with 16 to 24 ounces per acre of Roundup Ultra™ or glyphosate equivalent. A surfactant should always be used with Alligare Panoramic 2SL Herbicide except when the spray carrier is liquid fertilizer.

Panoramic 2SL Herbicide 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]	*Lolium multiflorum*	6 >6	6 10
Tall Fescue	*Festuca arundinacea*		12
Wild Oats	*Avena fatua*	6 >6	6 10
Little Barley	*Hordeum pusillium*	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 Herbicide 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 Herbicide. Do not add additional spray adjuvant when liquid fertilizer is used as the spray carrier. For additional spray adjuvant recommendations, 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 Herbicide.

Tank Mixtures: Alligare Panoramic 2SL Herbicide may be tank-mixed with a number of broadleaf herbicides for broadleaf weed control. Alligare Panoramic 2SL Herbicide may 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 may reduce efficacy on target grass weed species.

FOR USE ON FEDERAL CONSERVATION RESERVE PROGRAM (CRP) LAND

Use Alligare Panoramic 2SL Herbicide 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 Herbicide used. See the minimum plant-back intervals provided below.

Rotational Crop Restrictions: The following rotational crops may be planted after applying Alligare Panoramic 2SL Herbicide. 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 Herbicide 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 Cotton[1] Grain sorghum Oats	Field corn[2] All crops not otherwise listed or included for use on this label[2]	Canola[2] Potatoes[2] Red table beets[2] Sugar beets[2]

[1] For Arizona, New Mexico, Oklahoma, and Texas only: In these states, cotton may be planted 18 to 24 months after Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide 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 Herbicide, 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 Herbicide, then a field bioassay with the desired crop is recommended 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 Herbicide at 2 to 6 ounces per acre to suppress growth and seedhead development in bahiagrass. For best results, apply Alligare Panoramic 2SL Herbicide 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 Herbicide used as well as other factors such as surfactant type and environmental conditions. Severe injury may occur if Alligare Panoramic 2SL Herbicide 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 Herbicide.

ALLIGARE Panoramic 2SL Herbicide	PHYTOTOXICITY	LENGTH OF SUPPRESSION
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 Herbicide 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 Herbicide at 3 to 4 ounces per acre may be made in the spring after bahiagrass green-up for the suppression of seedheads and foliage.

Cool Season Grasses: KY31 Tall Fescue and "Wildtype" Common Kentucky Bluegrass: For foliar and seedhead suppression of these cool season grasses, apply Alligare Panoramic 2SL Herbicide at 2 to 4 ounces per acre. Do not use a methylated seed oil adjuvant with Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide to turf types of tall fescue and Kentucky bluegrass could result in severe injury or stand loss.

Wheatgrass: Alligare Panoramic 2SL Herbicide may 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 Panoramic 2SL Herbicide to a limited area. Use of 2,4-D or products containing 2,4-D in a tank-mix with Alligare Panoramic 2SL Herbicide may decrease the desired effectiveness. The potential of turf injury may be reduced when Alligare Panoramic 2SL Herbicide is tank-mixed with Garlon (Triclopyr 3SL or Triclopyr 4EC), Tordon (Picloram 22K), Transline™, and Vanquish. Severe injury may occur if Alligare Panoramic 2SL Herbicide is applied to turf under stress.

FOR THE CONTROL OF UNDESIRABLE WEEDS IN BERMUDAGRASS NOT BEING GROWN FOR FORAGE OR HAY

Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide at 4 to 12 ounces per acre. A delay in bermudagrass green-up may occur if Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 may achieved by tank-mixing Alligare Panoramic 2SL Herbicide with Accord or Roundup Pro.

Bahiagrass Control: Make a postemergence application of Alligare Panoramic 2SL Herbicide 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 may be achieved by tank-mixing Alligare Panoramic 2SL Herbicide with Accord or Roundup Pro at 12 to 16 ounces per acre.

ALLIGARE PANORAMIC 2SL HERBICIDE RATES AND TIMINGS FOR SPECIFIC BERMUDAGRASS TYPES WITH REGARD TO WEED CONTROL AND TURF TOLERANCE.

Common Bermudagrass: Common bermudagrass is very tolerant to Alligare Panoramic 2SL Herbicide. The weed control spectrum may be improved with tank-mixes of Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide on coastal bermudagrass will control labeled weeds and provide foliar and seedhead suppression. Do not use Alligare Panoramic 2SL Herbicide on World Feeder varieties of bermudagrass. Activity of Alligare Panoramic 2SL Herbicide increases as the rate increases. Beware that applying a tank-mix combination of Alligare Panoramic 2SL Herbicide and Roundup Pro, Accord, or glyphosate on coastal bermudagrass may result in death or excessive injury.

Turf Type Bermudagrass: Tolerance to Alligare Panoramic 2SL Herbicide varies in turf type bermudagrass varieties. At rates of 2 to 6 ounces per acre, Alligare Panoramic 2SL Herbicide will provide some annual weed control and foliar and seedhead suppression. Application of Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 Panoramic 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 may be applied in the spring, however excessive growth suppression may result. A fall application of Alligare Panoramic 2SL Herbicide at 8 to 12 ounces per acre may be made to control perennial weeds (see "Special Weed Control" section of this label below). Treatment of smooth bromegrass with Alligare Panoramic 2SL Herbicide may result in foliar height and seedhead suppression.

Wheatgrass: For control of labeled grass and broadleaf weeds apply Alligare Panoramic 2SL Herbicide at 4 to 12 ounces per acre. Foliar height and seedheads may be suppressed when wheatgrass is treated with Alligare Panoramic 2SL Herbicide.

FOR CONTROL OF UNDESIRABLE WEEDS IN CROWN VETCH

Newly Seeded Crown Vetch: To aid in stand establishment and reduce weed competition, apply Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide.

To avoid potential injury, apply Alligare Panoramic 2SL Herbicide during winter dormancy or in the early spring. If applied after May, Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide may cause severe injury or stand loss.

FOR USE IN REVEGETATION WITH PRAIRIEGRASSES AND OTHER FORAGE GRASSES

Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide. 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 Panoramic 2SL Herbicide on a small area first. Alligare Panoramic 2SL Herbicide reduces weed competition and allows grass seedlings to become established. Perennial noxious weeds in established grass stands may also be controlled with Alligare Panoramic 2SL Herbicide if the application is made postemergence as a foliar treatment.

Important Considerations:

1. Always add an adjuvant with Alligare Panoramic 2SL Herbicide.
2. Use of a methylated seed oil is only recommended on established grass stands.
3. A nonionic surfactant should be used on newly emerged seedling grasses.
4. Use of a liquid fertilizer as a carrier will reduce grass tolerance and should not be used on newly emerged seedling grasses.

Stand Establishment: Since newly emerged grasses can be sensitive to Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide should be delayed until the grasses have reached the five-leaf stage. Use only a nonionic surfactant or silicone-based surfactant with Alligare Panoramic 2SL Herbicide on seedling grasses. Do not use a methylated seed oil at this timing as some injury could result. Annual weeds are controlled by Alligare Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide as low as 2 ounces per acre when soil pH is greater than 7, there is a low CEC, or in a course texture soil with low clay or organic matter content. Higher rates should be used 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide are used. This is especially likely when there is few weeds, little rainfall, light soils and short growing seasons. Lower rates should be reserved 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 Panoramic 2SL Herbicide 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 Panoramic 2SL Herbicide is applied to new growth and small seedlings. It is best to wait to apply Alligare Panoramic 2SL Herbicide 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, Alligare Panoramic 2SL Herbicide should be applied at 2 to 8 ounces per acre. The higher rates may result in some turf discoloration and stunting. An application of Alligare Panoramic 2SL Herbicide to dormant buffalograss will control winter annual weeds. Note that some buffalograss types may show different tolerance to Alligare Panoramic 2SL Herbicide. Turf type buffalograss, for instance, may show a different tolerance to Alligare Panoramic 2SL Herbicide than the wild type buffalograss. Some turf types may tolerate low rates of Alligare Panoramic 2SL Herbicide applied at seeding. The seed dealer will provide details.

Sideoats and Blue Grama: Do not apply Alligare Panoramic 2SL Herbicide 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 Herbicide at 2 to 4 ounces per acre plus an adjuvant will aid in stand establishment. Stand thinning may occur if Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide 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, Alligare Panoramic 2SL Herbicide should be applied at 4 to 10 ounces per acre. Alligare Panoramic 2SL Herbicide may 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*): Alligare Panoramic 2SL Herbicide is not recommended for the establishment of pure switchgrass stands as severe injury or death may result. It may, 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 Herbicide at rates of 10 to 12 ounces per acre. Beware, however, that severe stunting and injury will occur. Do not apply Alligare Panoramic 2SL Herbicide to switchgrass if severe injury cannot be tolerated.

Eastern Gamagrass: Apply Alligare Panoramic 2SL Herbicide 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, Alligare Panoramic 2SL Herbicide should be applied 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 Herbicide is increased. If applied during or after green-up, Alligare Panoramic 2SL Herbicide 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 seedings and dormant or actively growing perennial stands), Alligare Panoramic 2SL Herbicide may be applied at the rate of 2 to 12 ounces per acre. See "Weeds Controlled" section of this label for the desired rate. Lower rates should be used in Wisconsin, Michigan, Minnesota, South Dakota, North Dakota, Kansas, Oklahoma, Texas, and Nebraska and higher rates should be used 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 Herbicide 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 Herbicide 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 Herbicide 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 Herbicide 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 Herbicide plus a tank-mix with a glyphosate product. If Alligare Panoramic 2SL Herbicide is used at 8 ounces per acre with a glyphosate product in the fall, only 4 ounces per acre of Alligare Panoramic 2SL Herbicide should be applied 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 should 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 Herbicide or glyphosate products. Both require adequate foliage present for uptake and maximum control.

TOLERANT GRASS SPECIES[1]

Prairiegrass		Alligare Panoramic 2SL Herbicide Rate (ounce/acre)[3]	
Common Name	**Species**	**New Seeding**	**Established**
Big Bluestem	*Andropogon gerardii*	2-12	2-12
Little Bluestem	*Schizachyrium scoparium*	2-12	2-12
Indiangrass	*Sorghastrum nutans*	2-12	2-12
Bushy Bluestem	*Andropogon glomeratus*	—*	2-12
King Ranch Bluestem	*Bothriochloa ischaemum*	—	2-12
Silver Beard Bluestem	*Bothriochloa saccharoides*	—	2-12
Broomsedge	*Andropogon virginicus*	—	2-12
Fingergrass, Rhodes grass	*Chloris* spp.	—	2-12
Needlegrass	*Stipa* spp.	—	2-12
Needleandthread	*Stipa comata*	—	2-12
Kearny (Plains)Threeawn	*Aristida longespica*	—	2-12
Prairie Threeawn	*Aristida oligantha*	—	2-12
Prairie Sandreed	*Calamovilfa longifolia*	—	2-12
Smooth Bromegrass	*Bromus inermis*	—	2-12
Kentucky Bluegrass	*Poa pratensis*	—	2-12[4]
Sandberg's Bluegrass	*Poa sandbergii*	—	2-12
Wheatgrasses	*Agropyron* spp.	—	2-12
Bottlebrush Squirreltail	*Sitanion hystrix*	—	2-12
Russian Wild Ryegrass	*Elymus junceus*	2-6[2]	2-12
Sideoats Grama	*Bouteloua curtipendula*	2-8[3]	2-8
Blue Grama	*Bouteloua gracilis*	2-8[3]	2-8
Buffalograss	*Buchloe dactyloides*	2-4	2-8
Eastern Gamagrass	*Tripsacum dactyloides*	2-6[3]	2-8

[1] See individual grass sections for application timing.
[2] High rates may result in stunting and growth suppression.
[3] Alligare Panoramic 2SL Herbicide preemergence applications to newly seeded sideoats, blue grama and Eastern gamagrass may result in thinning or loss of stand.
[4] Some bluegrass varieties are sensitive to Alligare Panoramic 2SL Herbicide. 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 Herbicide 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			

Grass Species[1]	Tolerant	Suppressed[2]	Not Tolerant	Tolerance Unknown
Medusahead			X	
Needleand-thread	X			
Needlegrass, green	X			
Orchardgrass		X		
Prairie cordgrass		X		
Prairie dropseed				X
Prairie sandreed	X			
Prairie threeawn	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 Herbicide 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 Herbicide 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 Herbicide will result from the low rate of 2 ounces per acre. Because the use of Alligare Panoramic 2SL Herbicide applied postemergence can result in injury or death of some wildflower genotypes, it should only be used as a last resort when the wildflower stand is threatened by weed competition. Certain spray adjuvants used with Alligare Panoramic 2SL Herbicide may also increase injury and stand loss in wildflowers. Most legumes listed in the tolerance table are tolerant to Alligare Panoramic 2SL Herbicide at 4 ounces per acre, however some stand thinning can occur. The recommendations given in the tables below are for mixed grass/wildflower stands. Use on a monoculture stand could result in poor control and plant injury. A small area of the monoculture stand should be tested for injury before applying Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide can reduce or eliminate wildflower injury. To minimize injury to tolerant species, apply Alligare Panoramic 2SL Herbicide 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 Herbicide. If a postemergence application of Alligare Panoramic 2SL Herbicide is to be made to established prairiegrass/wildflower mixtures, the lowest rates allowed to achieve the weed control desired should be used (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 may result from an application of Alligare Panoramic 2SL Herbicide in conjunction with an organophosphate insecticide.

Seedling Wildflower and Legume Tolerance to Alligare Panoramic 2SL Herbicide (4 ounce per acre)[1] in Mixed Grass/Forb Stands.

Common Name	Genus Species	PRE	POST
Alfalfa	*Medicago sativa*	No	Yes
Aster, New England	*Aster novae angliae*	No	Yes
Aster, Prairie	*Aster tanacetifolia*	No	Yes
Baby Blue Eyes	*Nemophila menziestii*	No	Yes
Beggar ticks	*Bidens frondosa*	No	Yes
Bird's eyes	*Gila tricolor*	No	Yes
Bishop's Flower	*Ananl majus*	No	Yes
Blackeyed Susan	*Rudbeckia hirta*	Yes	Yes
Blanketflower	*Gaillardia aristata*	No	Yes
Bundleflower, Illinois	*Desmanthus illinoensis*	Yes	Yes
Catchfly	*Silene armeria*	No	Yes
Chicory	*Cichorium intybus*	Yes	Yes
Clover, Crimson	*Trifolium incarnatum*	Yes	Yes
Clover, White	*Trifolium repens*	No	Yes
Coneflower, Purple	*Echinacea purpurea*	Yes	Yes
Coneflower,Upright Prairie	*Ratibida columnifera*	Yes	Yes
Coreopsis,Dwarf Red Plains	*Coreopsis tinctoria var. Gay Feather*	Yes	Yes
Coreopsis, Lance Leaved	*Coreopsis lanceolata*	Yes	Yes
Coreopsis, Plains	*Coreopsis, tinctoria*	Yes	Yes
Cornflower	*Centaurea cyanus*	No	Yes
Cosmos, Garden	*Cosmos bipinnatus*	Yes	Yes
Cosmos, Yellow	*Cosmos sulphureus*	Yes	Yes
Daisy, Ox-eye	*Chrysanthemum leucanthemum*	Yes	Yes
Daisy, Shasta	*Chrysanthemum maximum*	Yes	Yes
Five Spot	*Nemophila maculata*	No	Yes
Flax, Blue	*Linum perenne*	No	Yes
Hat, Mexican	*Ratibida columnifera*	Yes	Yes
Indian Blanket	*Gaillardia pulchella*	No	Yes
Indigo, Blue False	*Baptisia ausralis*	Yes	No
Johnny Jump-ups	*Viola cornuta*	Yes	Yes
Lemon Mint	*Monarda citriodora*	No	Yes
Lespedeza, Bicolor	*Lespedeza* spp.	Yes	Yes
Lespedeza, Korean	*Lespedeza stipulacea*	No	Yes
Lespedeza, Sericea	*Lespedeza cuneata*	No	Yes
Lupine, Perennial	*Lupinu perennis*	Yes	Yes
Partridgepea	*Cassia fasciculata*	Yes	Yes
Pea, Calico	*Pisum viganasinensis*	Yes	Yes
Pea, Flat	*Lathyrus sylvestris*	Yes	Yes
Pea, Perennial	*Lathyrus latifolius*	Yes	Yes
Phlox, Drummond	*Phlox drummondii*	Yes	No
Poppy, California	*Eschscholtzia californica*	Yes	No
Poppy, Corn	*Papaver rhoeas*	Yes	Yes
Poppy, Red Corn	*Papaver* spp.	Yes	Yes
Prairieclover, Purple	*Dalea purpurea*	Yes	Yes
Prairieclover, White	*Dalea candidum*	Yes	Yes
Tick-trefoil, Showy	*Desmodium canadense*	No	Yes
Trefoil, Birdsfoot	*Lotus corniculatus*	No	Yes
Vetch, Crown	*Coronilla varia*	Yes	—
Vetch, Hairy	*Vicia villosa*	Yes	—
Yarrow, Gold	*Achillea filipendulina*	No	Yes

[1] For legumes, at least three true leaves should be present a postemergence application.

Established Wildflower and Legume Tolerance to Alligare Panoramic 2SL Herbicide (maximum rate[1], ounce per acre) in Mixed Grass/Forb Stands

Common Name	Genus Species	PRE	POST[2]
Flax, Blue	*Linum perenne*	0	6
Indian Blanket	*Gaillardua pulchella*	0	6
Blanketflower	*Gaillardia aristata*	0	8
Chicory	*Cichorium intybus*	4	6
Daisy, Shasta	*Chrysanthemum maximum*	4	8
Prairieclover, Purple	*Dalea, purpurea*	4	12
Coneflower, Upright Prairie	*Ratibida columnifera*	6	6
Hat, Mexican	*Ratibida columnifera*	6	6
Poorjoe	*Diodia teres*	8	—
Lupine, Perennial[4]	*Lupina perennis*	8	12
Coneflower, Purple	*Echinacea purpurea*	8	8
Daisy, Ox-eye[3]	*Chrysanthemum leucanthermum*	8	8
Leadplant	*Amorpha canescens*	8	8
Lespedeza, Bicolor	*Lespedeza*	8	8
Milkweed, Common	*Asclepias syriaca*	8	—
Pea, Prairie Scurf	*Psoralea esculenta*	8	8
Yarrow, Gold[3]	*Achillea filipendulina*	8	8
Blackeyed Susan	*Rudbeckia hirta*	8	10
Johnny Jump-ups	*Viola cornuta*	8	12
Sweetclover	*Melilotus sp.*	12	8
Alfalfa	*Medicago sativa*	12	12
Bundleflower, Illinois	*Desmanthus illinoensis*	12	12
Lespedeza, Sericea	*Lespedeza cuneata*	12	12
Partridgepea	*Cassia fasciculata*	12	12
Sensitive vine	*Mimosa strigillosa*	12	12
Vetch, Crown	*Coronilla varia*	12	12
Violet, Wild	*Viola* spp.	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] Postemergence application should be made early post 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 Herbicide at 12 ounces per acre postemergence.

Wildflower Establishment with Alligare Panoramic 2SL Herbicide 4 ounce per acre + PENDULUM Herbicide 2 pounds active ingredient per acre[1]

Common Name	Genus Species	PRE[2]	POST[3]
Blackeyed Susan	*Rudbeckia hirta*	Yes	Yes
Blanketflower	*Gaillardia aristata*	No	Yes
Bundleflower, Illinois	*Desmanthus illinoensis*	>50% thinning	Yes
Clover, Crimson	*Trifolium incarnatum*	>50% thinning	Yes
Coneflower, Clasping	Dracopsis amplexicaulis	Yes	Yes
Coneflower, Upright Prairie	*Ratibida columnifera*	No	OK
Coneflower, Purple	*Echinacea purpurea*	Yes	Yes
Coreopsis, Dwarf Red Plains	*Coreopsis tinctoria var. Gay Feather*	OK stunting	OK stunting
Coreopsis, Plains	*Coreopsis tinctoria*	OK stunting	Yes
Coreopsis, Lance Leaved	*Coreopsis lanceolata*	25% thinning	Yes

(continued)

Wildflower Establishment with Alligare Panoramic 2SL Herbicide 4 ounce per acre + PENDULUM Herbicide 2 pounds active ingredient per acre[1] (cont.)

Common Name	Genus Species	PRE[2]	POST[3]
Cornflower	*Centaurea cyanus*	No	OK 20% thinning
Cosmos, Garden	*Cosmos bipinnatus*	OK 10% thinning	OK stunting
Cosmos, Yellow	*Cosmos sulphureus*	Yes	Yes
Daisy, Ox-eye	*Chrysanthemum leucanthemum*	25% thinning	Yes
Daisy, Shasta	*Chrysanthemum maximum*	Marginal -OK-20% thinning	Yes
Lupine, Perennial	*Lupinus perennis*	Yes	50% thinning
Partridgepea	*Cassia fasciculata*	25% thinning	Yes
Poppy, California	*Eschscholtzia californica*	Yes	25% injury, stunting, thinning
Yarrow, Gold	*Achillea filipendulina*	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 Herbicide could vary greatly because of the many species and varieities that exist. It is recommended that small areas be tested first to determine tolerance and whether potential injury is acceptable before treating larger areas.

If Alligare Panoramic 2SL Herbicide is to be used on a wildflower species that is not listed in the table below, a small area should be tested 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 Herbicide may 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 Herbicide (see "Spray Adjuvants For Postemergence Applications" section of this label). Best control of perennial weeds is achieved when Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide may be improved with the addition of Accord or Roundup Pro at the rate of 8 to 16 ounces per acre. The higher herbicide rates should be used as grass density increases. Sometimes, control of Johnsongrass and itchgrass at stages taller than described above are possible.

Dallisgrass, Bahlagrass, Vaseygrass, *Paspalum* spp., Smutgrass: Make a postemergence application of Alligare Panoramic 2SL Herbicide 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 may 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 Herbicide 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. Higher herbicide rates should be used as weed growth and density increases. A preemergence application of Alligare Panoramic 2SL Herbicide plus Pendulum herbicide will provide increased control of these grasses germinating from seed.

Leafy Spurge: Maximum control of leafy spurge may be obtained when Alligare Panoramic 2SL Herbicide 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 Herbicide 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 may increase the control of leafy spurge, however it may also cause injury to grasses and forbs. Use of Alligare Panoramic 2SL Herbicide with a nonionic or silicone-based surfactant will not provide control of leafy spurge. The target timing for fall applications of Alligare Panoramic 2SL Herbicide 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. This application should be made 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 Herbicide may still be applied.

Tall Fescue Control: Apply Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide 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 Herbicide 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 Herbicide plus a tank-mix with a glyphosate product. If Alligare Panoramic 2SL Herbicide is used at 8 ounces per acre with a glyphosate product in the fall, only 4 ounces per acre of Alligare Panoramic 2SL Herbicide should be applied 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 should 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 regrowth is necessary following the last mowing before applying either the Alligare Panoramic 2SL Herbicide or glyphosate products. Both require adequate foliage present for uptake and maximum control.

Russian Knapweed: To control Russian knapweed, a fall application of Alligare Panoramic 2SL Herbicide at 12 ounces per acre plus 1 quart per acre of methylated seed oil should be made 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 may still be obtained with Alligare Panoramic 2SL Herbicide if the application is made after full senescence.

Dalmation Toadflax: To control Dalmation Toadflax, a fall application of Alligare Panoramic 2SL Herbicide at 12 ounces per acre plus 1 quart per acre of methylated seed oil should be made when the 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 Herbicide, 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 Herbicide, 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 Herbicide 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 Herbicide 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 Herbicide may be applied to small areas. In each gallon of water, mix Alligare Panoramic 2SL Herbicide 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 Herbicide in sufficient water to obtain uniform wetting of the soil surface and shoulder area. The soil should not be moved after the application. Using clean water and constant agitation, mix Alligare Panoramic 2SL Herbicide 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 Herbicide. 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 Herbicide. Treated soil should not be allowed to wash or move from the treated area.

TOLERANCE OF TREES AND BRUSH TO ALLIGARE Panoramic 2SL Herbicide

When Alligare Panoramic 2SL Herbicide is applied in and around desirable tree and brush species, follow these general instructions:

1. Alligare Panoramic 2SL Herbicide 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 Herbicide to a limited area to determine tolerance in the area.
3. Apply Alligare Panoramic 2SL Herbicide 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 Herbicide 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 Herbicide when it is applied under the canopy and/or to the foliage are presented below.

If making a fall application of Alligare Panoramic 2SL Herbicide, 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 Herbicide. Be sure to apply Alligare Panoramic 2SL Herbicide in and around tree and brush species at the recommended timing for the target weeds.

Brush and Tree Species Tolerant to Alligare Panoramic 2SL Herbicide at 12 ounces per acre[1]

Common Name	Species	Tolerance by Application Method[2]	
		Directed Below Foliage	To Foliage
Apple	*Malus sylvestris*	Yes	NR
Ash, Blue	*Fraxinus quadrangulata*	Yes	NR
Ash, Green	*Fraxinus pennsylvanica*	No	No
Azalea	*Rhododendron* spp.	No	No
Basswood	*Tilia hetrophylla*	No	No
Boxelder	*Acer negundo*	Yes	Injury[5]
Buckeye, Ohio	*Aesculus glabra*	Yes	NR
Cedar-juniper, Western	*Thuja plicata*	Yes	Yes
Cherry, Black[3]	*Prunus serotina*	No	No
Cherry, Choke	*Prunus virginiana*	No	No
Cherry, Sweet[3]	*Prunus avium*	No	NR
Cottonwood	*Populus deltoides*	Yes	Injury[5]
Cottonwood, Narrow Leaf	*Populus* spp.	Yes	Injury[5]
Currant species	*Ribes* spp.	Injury[5]	No
Dogwood, Flowering	*Cornus* spp.	Yes	Yes
Dogwood, Grey	*Cornus racemosa*	Yes	Injury[5]
Dogwood, Red Twig	*Cornus* spp.	Yes	Yes
Douglas Fir	*Pseudotsuga menziesii*	Yes	Yes[4]
Elm, American	*Ulmus Americana*	Yes	Yes
Elm, Siberian	*Ulmus pumila*	Yes	No
Elm, Slippery	*Ulmus rubra*	Yes	Yes
Gooseberry	*Ribes* spp.	Injury[5]	Injury[5]
Hackberry	*Celtis occidentalis*	Yes	Yes
Hawthorn	*Crataegus* spp.	Yes	Injury[5]
Juniper, Chinese	*Juniperus chinensis*	Yes	Yes
Juniper, Western	*Juniperus osteosperma*	Yes	Yes
Lilac	*Syringa* spp.	No	No
Linden, American	*Tilia americana*	No	No
Locust, Black	*Robinia pseudoacacia*	Yes	Yes
Locust, Honey	*Gleditsia triacanthos*	Yes	Yes
Maple, Red	*Acer rubrum*	Yes	Yes
Maple, Sugar	*Acer saccharum*	Yes	Yes
Mulberry, Red	*Morus rubra*	Yes	NR
Mulberry, White	*Morus alba*	Yes	NR
Oak, Black	*Quercus velutina*	Yes	NR
Oak, Live	*Quercus virginiana*	Yes	Yes
Oak, Southern Red	*Quercus falcate*	Yes	NR
Oak, White	*Quercus alba*	Yes	NR
Olive, Russian	*Elaeagnus angustifolia*	Yes	No
Osage Orange	*Maclura pomifera*	Yes	NR
Peach (var. Elberta)[3]	*Prunus persica*	Yes	NR
Photinia, Red Tip	*Photinia fraseri*	Yes	Yes
Pine, Lodgepole	*Pinus Contorta*	Yes	Injury[4]
Pine, White[4]	*Pinus strobes*	Yes	Yes
Pittosporum, Japanese	*Pittosporum tobira*	Yes	Yes
Plum species	*Prunus* spp.	Yes	No
Poplar, Yellow (Tulip)	*Liriodendron tulipfera*	Yes	NR
Privet, Common	*Ligustrum vulgare*	Yes	Yes
Rabbitbrush species	*Chrysothamnus* spp.	Yes	Yes
Redbud	*Cercis canadenis*	Yes	Yes
Redcedar, Eastern	*Juniperus virginiana*	Yes	Yes
Rose, Multiflora	*Rosa multiflora*	Yes[5]	No
Sage, Big	*Artemisia tridentate*	Yes	Yes
Sage, Fringe	*Artemisis frigida*	Yes	Yes
Sage, Silver	*Artemisia cana*	Yes	Yes
Sagebrush, Big	*Artemisia tridentate*	Yes	Yes
Sagebrush, Fringed	*Artemisia frigida*	Yes	Yes
Saltcedar	*Tamarix* spp.	Yes	No
Serviceberry	*Amelanchier alnifolia*	Yes	NR
Snowberry, Western	*Symphoricarpos occidentalis*	Yes	Injury[5]
Spruce species	*Picea* app.	Yes[4]	Yes[4]
Sugarberry	*Celtis laevigata*	Yes	Yes
Sycamore	*Plantanus occidentalis*	Yes	No
Tree of Heaven	*Ailanthus altissima*	Yes	Yes
Walnut, American Black	*Juglans nigra*	Yes	No
Willow	*Salix* spp.	Yes	Injury[5]

[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.

WEEDS CONTROLLED
(With 4 to 6 ounces per acre Alligare Panoramic 2SL Herbicide)

Common Name	Species	PRE[1]	POST[2]	ANNUAL/ BIENNIAL/ PERENNIAL[3]
BROADLEAVES				
Bedstraw, Catchweed	*Galium aparine*	C	4	WA
Beggarweed, Florida	*Desmodium tortuosum*	C	2	SA
Buffalobur	*Solanum rostratum*	—	C	SA
Buttercup, Bur	*Ranunculus testiculatus*	C	C	WA
Cocklebur, Common	*Xanthium strumarium*	S	6	SA
Lambsquarters, Common	*Chenopodium album*	C	2	SA
Halogeton	*Halogeton glomeratus*	C	C	SA
Morningglory,				
Entireleaf	*Ipomoea hederacea*	S	3	SA
Ivyleaf	*Ipomoea hederacea*	S	3	SA
Tall	*Ipomoea purpurea*	S	3	SA
Mustard, Wild	*Brassica kaber*	C	C	WA
Pigweed	*Amaranthus* spp.	C	6	SA
Queen Anne's Lace	*Daucus carota*	—	4	B
Radish, Wild	*Raphanus raphanistrum*	S	4	WA
Yellow Rocket	*Barbarea vulgaris*	C	4	WA
Sicklepod	*Senna obtusifolia*	C	4	SA
Sida, Prickly	*Sida spinosa*	C	2	SA
Smartweed,				
Ladysthumb	*Polygonum persicaria*	C	C	SA
Pennsylvania	*Polygonum pensylvanicum*	C	C	SA
Swamp	*Polygonum coccineum*	C	C	SA
Starbur, Bristly	*Acanthospermum hispidum*	C	2	SA
Velvetleaf	*Abutilon theophrasti*	C	6	SA

(continued)

WEEDS CONTROLLED (cont.)
(With 4 to 6 ounces per acre Alligare Panoramic 2SL Herbicide)

Common Name	Species	PRE[1]	POST[2]	ANNUAL/ BIENNIAL/ PERENNIAL[3]
GRASS WEEDS				
Brome, Downy	*Bromus tectorum*	C	2	WA
Cheat	*Bromus secalinus*	C	2	WA
Crabgrass,				
Large (Hairy)	*Digitaria sanguinalis*	C	4	SA
Smooth	*Digitaria ischaemum*	C	4	SA
Foxtail,				
Giant	*Setaria faberi*	C	6	SA
Green	*Setaria viridis*	C	4	SA
Yellow	*Setaria glauca*	C	4	SA
Goatgrass, Jointed	*Aegilops cylindrica*	C	C	WA
Goosegrass	*Elusine indica*	S	2	SA
Johnsongrass (seedling)	*Sorghum halepense*	C	12	SA
Medusahead	*Taeniatherum caput-medusae*	C	2	WA
Panicum, Fall	*Panicum dichotomiflorum*	S	6	SA
Sandbur	*Cenchrus* spp.	S	C	A/P
Shattercane	*Sorghum bicolor*	C	12	SA
Signalgrass, Broadleaf	*Brachiaria platyphylla*	C	C	SA
Stiltgrass, Japanese	*Microstegium vimineum*	C	4	A
Vaseygrass	*Paspalum urvillei*	—	8	P
SEDGES				
Nutsedge,				
Yellow	*Cyperus esculentus*	S	4S	P
Purple	*Cyperus rotundus*	S	4S	P
Sedge	*Juncus* 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

WEEDS CONTROLLED
(With 8 to 12 ounces per acre Alligare Panoramic 2SL Herbicide)

Common Name	Species	PRE[1]	POST[2]	ANNUAL/ BIENNIAL/ PERENNIAL[3]
Anoda, Spurred	*Anoda cristata*	C	6	SA
Baby's Breath[4]	*Gysophila paniculata*	—	C	P
Bedstraw, Catchweed	*Galium aparine*	C	C	WA
Bedstraw, Marsh	*Galium* spp.	C	C	WA
Beggarweed, Florida	*Desmodium tortuosum*	C	6	SA
Bindweed, Field	*Convolvulus arvensis*	—	C	P
Buffalobur	*Solanum rostratum*	—	C	SA
Burclover	*Medicago* spp.	—	4	SA
Chickweed, Common	*Stellaria media*	C	6	SA
Cocklebur, Common	*Xanthium strumarium*	C	6	SA
Cornsalad, Common	*Valerianella locusta*	—	C	WA
Crownbeard, Golden	*Verbisina encelioides*	C	2	SA
Dandelion	*Taraxacum officinale*	—	C	P
Dock, Curly	*Rumex crispus*	C	6	B
Fiddleneck	*Amsinckia* spp.	—	C	SA
Flax, Spurge	*Thymelaea passerina*	C	C	A
Fleabane, Annual	*Erigeron annuus*	—	C	A
Geranium, Carolina	*Geranium carolinianum*	—	C	WA/B
Geranium, Cranesbill	*Geranium maculatum*	C	C	WA/B
Ground Cherry	*Physalis heterophylla*	—	C	P
Hemlock, Poison	*Conium maculatum*	C	6	B
Henbit	*Lamium amplexicaule*	C	3	WA/B
Hoary Cress	*Cardaria* spp.	—	C	P
Houndstongue, Bristly	*Cynoglossum officinale*	C	C	B
Indigo, Hairy	*Indigofera hirsute*	C	2	P
Jimsonweed	*Datura stramonium*	C	6	SA
Knapweed, Russian[5]	*Centaurea repens*	—	C*	P
Knotweed, Prostrate	*Polygonum aviculare*	C	C	SA
Kochia*	*Kochia scoparia*	C	3	SA
Lambsquarters, Common	*Chenopodium album*	C	3	SA
Lambsquarters, Common	*Chenopodium album*	C	3	SA
Morningglory,				
Cypressvine	*Ipomoea quamoclit*	C	6	SA
Entireleaf	*Ipomoea hederacea*	C	6	SA
Ivyleaf	*Ipomoea hederacea*	C	6	SA
Pitted	*Ipomoea lacunose*	C	6	SA
Smallflower	*Jacquemontia tamnifolia*	C	6	SA
Tall	*Ipomoea purpurea*	C	6	SA
Mustard, Wild	*Brassica kaber*	C	C	WA
Onion, Wild	*Allium canadense*	C	C	P
Pepperweed, Perennial	*Lepidum latifolium*	—	C	P
Pigweed[4]	*Amaranthus* spp.	C	6	SA
Plantain, Narrowleaf	*Plantago lanceolata*	C	C	B
Poinsettia, Wild	*Euphorbia heterophylla*	C	6	SA
Puncture Vine	*Tribulus terrestris*	—	C	SA
Purslane, Common	*Portulaca oleracea*	C	4	SA
Pusley, Florida	*Richardia scabra*	C	4	SA
Queen Anne's Lace	*Daucus carota*	C	C	B
Ragweed,				
Common	*Ambrosia artemisiifolia*	C	3	SA
Giant	*Ambrosia trifida*	S	6	SA
Western	*Ambrosia psilostachya*	—	C	A/P
Rocket, Yellow	*Barbarea vulgaris*	C	C	WA
Senna, Coffee	*Cassia occidentalis*	C	4	SA
Sicklepod	*Senna obtusifolia*	C	6	SA
Sida, Prickly	*Sida spinosa*	C	6	SA
Smartweed,				
Ladysthumb	*Polygonum persicaria*	C	C	SA
Pennsylvania	*Polygonum pensylvanicum*	C	C	SA
Swamp	*Polygonum coccineum*	C	C	SA
Spurge,				
Leafy	*Euphorbia esula*	—	Fall*	P
Spotted	*Euphorbia maculata*	C	4	SA
Toothed	*Euphorbia dentate*	C	4	SA
Starbur, Bristly	*Acanthospermum hispidum*	—	6	SA
Sunflower	*Helianthus annuus*	—	18	SA
Tansymustard	*Descurainia pinnata*	C	C	WA
Teasel, Common	*Dipsacus fullonum*	—	C	B
Thistle,				
Bull	*Cirsium vulgare*	S	C	WA/B
Musk	*Carduus nutans*	—	S	B
Platt	*Cirsium canescens*	S	C	P
Russian*	*Solsola iberica*	C	3	A
Toadflax, Dalmatian	*Linaria dalmatica*	—	C*	P
Velvetleaf	*Abutilon theophrasti*	C	C	A
Vervain, Blue	*Verbena hastata*	—	S	WA
Vervain, Prostrate	*Verbena bracteata*	—	C	P
Whitetop	*Cardaria* spp.	—	C	P
Willowherb	*Epilobium* spp.	—	C	P
Woodsorrel, Yellow	*Oxalis stricta*	C	C	P
GRASS				
Bahiagrass	*Paspalum notatum*	S	C*	P
Barley, Little	*Hordeum pusillum*	C	4	WA
Barley, Squirrel Tail	*Hordeum jubatum*	—	C	P
Barnyardgrass	*Echinochloa crus-galli*	C	6	SA
Cheat	*Bromus secalinus*	C	C	WA
Crabgrass	*Digitaria* spp.	C	6	SA
Crowfootgrass	*Dactyloctenum aegyptium*	C	C	SA
Dallisgrass	*Paspalum dilatatum*	S	C*	P
Downy Brome	*Bromus tectorum*	C	C	WA
Dropseed, Tall	*Sporobolus cryptandrus*	S	C	A/P
Fescue, Tall	*Festuca arundinacea*	C	C*	P
Foxtail,				
Giant	*Setaria faberi*	C	C	SA
Green	*Setaria viridis*	C	C	SA
Knotroot	*Setaria geniculata*	S	6	SA
Purple Robust	*Setaria viridis*	S	S	SA
Yellow	*Setaria glauca*	C	4	SA
Garlic, Wild	*Allium vineale*	C	C	P

(continued)

WEEDS CONTROLLED (cont.)
(With 8 to 12 ounces per acre Alligare Panoramic 2SL Herbicide)

Common Name	Species	PRE[1]	POST[2]	ANNUAL/ BIENNIAL/ PERENNIAL[3]
Goosegrass	*Elusine indica*	C	3S	SA
Itchgrass	*Rottboellia cochinchinensis*	—	C*	SA
Johnsongrass,				
Seedling	*Sorghum halepense*	C	C	SA
Rhizome	*Sorghum halepense*	—	C*	P
Medusahead	*Taeniatherum captu-medusae*	C	C	WA
Panicum,				
Fall	*Panicum dichotomyiflorum*	C	C	SA
Texas	*Panicum texanum*	C	C	SA
Ryegrass, Annual (Italian)	*Lolium multiflorum*	C	C	WA
Ryegrass, Perennial	*Lolium perenne*	—	C	P
Sandbur	*Cenchrus* spp.	S	C	A/P
Shattercane	*Sorghum bicolor*	C	C	SA
Signalgrass, Broadleaf	*Brachiaria platyphylla*	C	C	SA
Smutgrass	*Sporobolus indicus*	—	C	P
Stiltgrass, Japanese	*Microstegium vimineum*	C	C	A
Stinkgrass, Annual	*Eragrostis cilianensis*	C	2	SA
Torpedograss	*Panicum repens*	—	C	P
Vaseygrass	*Paspalum urvillei*		C	P
Wild Oats	*Avena fatua*	—	C	WA
SEDGES/RUSHES				
Nutsedge,				
Yellow	*Cyperus esculentus*	C	C	P
Purple	*Cyperus rotundus*	C	C	P
Rush	*Juncus* 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
* 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. For spills, fire, or leak, contact INFOTRAC: 1-800-535-5053.
PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
CONTAINER DISPOSAL: Triple rinse (or equivalent). 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.

WARRANTY STATEMENT

Alligare, LLC warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. 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, or the manner of use or application, all of which are beyond the control of Alligare, LLC. To the extent allowed by law, Alligare, LLC shall not be liable for consequential, special, or indirect damages resulting from the use or handling of this product. To the fullest extent allowed by State law, all such risks shall be assumed by the Buyer. In addition to the foregoing, to the extent allowable by applicable law, no purchaser of this product (other than an end user) shall be entitled to any reimbursement for any loss suffered as a result of any suspension or cancellation of the registration for this product by the U.S. Environmental Protection Agency. Except as expressly provided herein, Alligare, LLC makes no warranties, guarantees, or representations of any kind, either expressed 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. To the extent allowable by applicable law, the exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall be damages not exceeding the purchase price paid for this product or, at Alligare, LLC's election, the replacement of this product.

EPA 050807

MATERIAL SAFETY DATA SHEET

PANORAMIC™ 2SL

Alligare, LLC
Emergency Phone: Chemtrec 800-424-9300
Effective Date: June 29, 2009

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: PANORAMIC™ 2SL
DESCRIPTION: A liquid herbicide.
EPA Reg. No.: 66222-141-81927

COMPANY IDENTIFICATION:
Alligare, LLC
13 North 8th Street
Opelika, AL 36801

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Chemical Name	Formula	CAS #
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	$C_{14}H_{17}N_3O_3$	104098-49-9
Ammonia Water	Ammonium Hydroxide	NH_4OH in H_2O	1336-21-6

3. HAZARD IDENTIFICATION

Health Hazards: Avoid breathing spray mist. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling.

Primary Routes of Exposure: Eye and skin contact, inhalation and ingestion.

Physical Hazards: May release irritating or toxic fumes if burned.

Environmental Hazards: 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.

4. FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies, you may also call Prosar 24 hours a day at 1-877-250-9291.

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 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 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 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 doctor. Do not give anything by mouth to an unconscious person.

5. FIRE-FIGHTING 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, CO_2, 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.

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 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

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: Does not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY
LD_{50} (rat): > 5,000 mg/kg)

ACUTE DERMAL TOXICITY
LD_{50} (rat): > 5,000 mg/kg

ACUTE INHALATION TOXICITY
LC_{50} (rat): > 2.38 mg/L

EYE IRRITATION: Non-Irritating

SKIN IRRITATION: Non-irritating

SKIN SENSITIZATION: Not a contact sensitizer

CARCINOGENICITY:

ACGIH:	Not Listed
IARC:	Not Listed
NTP:	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

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. Do not contaminate water used for irrigation or domestic purposes.

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 (LD_{50}): > 2,150 mg/kg
Rainbow Trout and Bluegill (LC_{50}): > 100 mg/l
Daphnia (LC_{50}): > 100 mg/l
Bees (LD_{50}): > 100 µg/bee

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by disposal.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. 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: Do not reuse container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME: **Not Regulated by DOT**
DOT HAZARD CLASS OR DIVISION: N/A
DOT UN/NA NUMBER: N/A
DOT PACKING GROUP: N/A
REPORTABLE QUANTITY: N/A
DOT EMERGENCY RESPONSE GUIDE: N/A
MARINE POLLUTANT: No

15. REGULATORY INFORMATION

FIFRA –
All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

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 (5.4%) CAS#: 1136-21-6

CERCLA –
Not Listed

California Prop 65 Status –
This product does not contain any substances known to the state of California to cause cancer or developmental toxicity.

16. OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

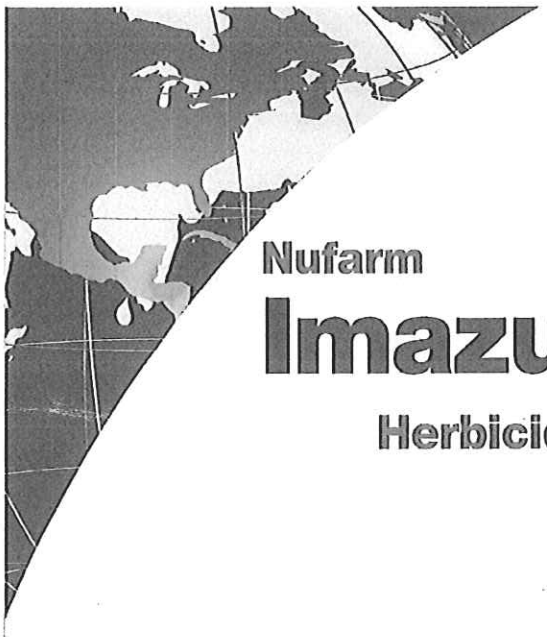
DISCLAIMER:

THE INFORMATION IN THIS MSDS 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 Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS 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.

SPECIMEN LABEL

This information is for promotional purposes only. Space considerations may require information to be omitted. Always refer to the actual package for complete label verbiage. This product may not yet be available or approved for sale or use in your area.



Nufarm

Imazuron

Herbicide

ACTIVE INGREDIENTS:

Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)	7.78%
Diuron (3-[3,4-dichlorophenyl]-1,1-dimethylurea)	62.22%
OTHER INGREDIENTS:	30.00%
TOTAL:	100.00%

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. 228-654

Manufactured for
Nufarm Americas Inc.
150 Harvester Drive
Burr Ridge, IL 60527

Nufarm

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are: barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, or viton ≥ 14 mils. If you want more options, follow the instructions for Category A on an EPA chemical resistance category selection chart.

All applicators and other handlers must wear:

- Long sleeved shirt and long pants,
- Shoes plus socks, and
- Chemical-resistant gloves made of any waterproof material such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, or viton ≥ 14 mils
- NIOSH approved particulate filtering respirator equipped with N or R, P or HE class filter media. The respirator should have a NIOSH approval number prefix "TC-84A". Groundboom applicators do not need to wear a respirator.
- A chemical resistant apron when mixing, loading, or cleaning equipment.

See Engineering Controls for additional requirements.

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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

ENGINEERING CONTROLS

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

Flaggers supporting aerial applications must use an enclosed cab that meets the definition in the Worker Protection Standard for Agricultural Pesticides [40 CFR 170.240(d)(5)] for dermal protection. In addition, flaggers must wear long-sleeved shirt, long pants, shoes, and socks.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands 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.

FIRST AID	
IF SWALLOWED	• Call a poison control center or doctor immediately for treatment advise. • 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 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 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 a 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 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 1-800-424-9300 for emergency medical treatment information.	

ENVIRONMENTAL HAZARDS

This product is toxic to plants. Drift and run-off may be hazardous to plants in water adjacent to treated areas. For terrestrial uses. 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. Apply this product only as specified on this label.

PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product should be mixed, stored and applied only in stainless steel, fiberglass, plastic, and plastic-lined steel containers. DO NOT mix, store or apply this product or spray solutions of this product in unlined steel (except stainless steel) containers or spray tanks.

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.

USE PRECAUTIONS

- Do NOT enter or allow others to enter treated areas until sprays have dried.
- Aerial application is prohibited ***except*** for application to rights-of-way.
- DO NOT USE IN CALIFORNIA.
- Do NOT apply more than a total of 12 lbs. a.i. of diuron (19 pounds per acre of this product) or more than two applications of diuron in a 12-month period.
- Do not apply more than 12 lbs. ai/A of diuron per application in areas of high rainfall or dense vegetation. Do not apply more than 8 lbs. ai/A of diuron per application in all other areas.
- Do not reapply this product or any other product containing diuron within 90 days of treatment with any product containing diuron.
- DO NOT mix, store or apply this product or spray solutions of this product in unlined steel (except stainless steel) containers or spray tanks.
- DO NOT use on food or feed crops.
- DO NOT treat irrigation ditches, or water used for crop irrigation or for domestic purposes.
- 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.
- DO NOT drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- DO NOT use on turfgrass at residential sites (including homes, apartment complexes, condominium grounds, daycare facilities, schools, playgrounds, parks, recreational areas, and sports fields).
- DO NOT side trim desirable vegetation with this product.
- DO NOT allow this product to come in contact with other fertilizers, insecticides, fungicides and seeds.
- Take all measures possible to prevent drift of spray to desirable plants.
- Be sure to clean application equipment after using this product by thoroughly flushing with water.
- Application with a spoon, a pump-feed backpack spreader or a gravity feed backpack spreader is PROHIBITED.
- 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/espp/wtc/.

GENERAL INFORMATION

This product is a dispersible granule that is mixed with water and a spray adjuvant and applied as a spray solution to the following noncropland areas where bare ground is desired: industrial non-crop areas including utility plant sites, petroleum tank farms, pumping installations, storage areas, railroads, utility, and pipeline rights-of-way; highway rights-of-way; non-irrigation ditchbanks; fence rows; farmyards; and non-crop areas around farm buildings. This product may also be used to control weeds under paved surfaces.

This product controls most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species. This product also provides residual control of weeds that germinate in treated areas.

For annual weed control, either preemergence or postemergence applications may be used; however, a late preemergence to early postemergence application provides the best results in most situations.

For perennial weed control, this product is only effective when applied postemergence and will not control perennial weeds that have not emerged at the time of application. For best results, applications should be made when the weeds are growing vigorously and the spray solution should include a spray adjuvant. For specific instructions, see the "Adjuvants" section of this label.

The duration of residual weed control depends upon the types of weeds present, the application rate, and weather conditions. Longer residual control occurs in areas with sensitive weed species, higher product use rates, lower precipitation and cooler soil temperatures. Higher than average rainfall or warmer than normal temperatures can significantly affect the residual control this product provides and shorten the overall length of control.

Precautions for Avoiding Injury to Non-Target Plants

Untreated trees may be affected by root uptake of this product through movement into the topsoil and injury or loss of desirable trees or other plants may result if this product is applied on or near desirable trees or other pants, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. Treatment of powdery dry soil or light sandy soil when there is little likelihood of rainfall soon after treatment may result in off target movement and possible damage to desirable plants when soil particles are moved by water and/or wind. Exposure to this product may injure or kill most crops and injury to crops may result if treated soil is washed, blown or moved onto land used to produce crops.

SPRAY DRIFT

Use best practices to avoid drift to all other crops and non-target areas. Do not apply when conditions favor drift from target areas. The interaction of many equipment-and weather-related factors determine the potential for spray drift. Avoiding spray drift at the application site is the responsibility of the applicator. The applicator must follow the most restrictive precautions to avoid drift, including those found in this labeling as well as applicable state and local regulations and ordinances. A drift control agent may reduce drift, however, it may also decrease weed control.

Aerial Applications:

(1) Applicators are required to use a Coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater for release heights below 10 feet; Applicators are required to use a Very Coarse or coarser droplet size or, if specifically using a spinning atomizer nozzle, applicators are required to use a VMD of 475 microns or greater for release heights above 10 feet; Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.

(2) Applicators are required to use upwind swath displacement.

(3) The spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The boom length must not exceed 60% of the wingspan or 90% of the rotor blade diameter to reduce spray drift.

(4) Applications with wind speeds less than 3 mph and with wind speeds greater than 10 mph are prohibited.

(5) Applications into temperature inversions are prohibited.

(6) Do not apply by air if sensitive non-target crops are within 100 feet of the application site.

Ground Boom Applications:

Apply with nozzle height no more than 4 feet above the ground or plant canopy and Coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater.

Use the lowest nozzle height consistent with safety and efficacy.

Direct spray into target vegetation.

Apply only when wind speed is less than or equal to 10 miles per hour.

Do not apply into temperature inversions.

APPLICATION INSTRUCTIONS

For rights-of-way and non-crop areas:

- The maximum rate per application is 19 lbs./acre of this product (equivalent to 12 lbs. diuron active ingredient per acre) in areas of high rainfall or dense vegetation.
- For all other areas, the maximum rate per application is 13 lbs./acre of this product (equivalent to 8 lbs. diuron active ingredient per acre).
- Make a maximum of two applications per year.
- The minimum retreatment interval is 90 days.

Mix this product in water and apply the specified gallons per acre of spray volume using properly calibrated equipment to deliver a uniformly distributed spray pattern. Apply this product at 7-19 pounds of product per acre, although rates as low as 5 pounds per acre may be used *only* if tank mixed with another herbicide (see the TANK MIXES section below). For retreatment purposes within the same growing season, apply this product at a rate of less than 7 pounds per acre.

Rainfall may significantly affect length of residual weed control achieved with this product and in cases of increasing rainfall amounts, higher rates may need to be applied to achieve the desired residual control. Refer to the following table for product rates for different annual rainfall amounts. Actual use rates will depend upon the length of residual control desired as well as weed pressure and environmental conditions.

Average Annual Rainfall	Product Rate
Less than 15 inches	7-10 pounds†
Between 15 and 35 inches	8-13 pounds
Greater than 35 inches	13-19 pounds

† Initial applications of this product may be made at rates as low as 5-6 pounds per acre, but must be tank mixed with another herbicide (see the TANK MIXES section below).

When both mixing and spraying, be sure to maintain sufficient agitation to keep product suspended in spray mixture.

Postemergence Applications: When making postemergence applications, always use a spray adjuvant (see "Adjuvants" section of this label). For best results on tough to control perennial weeds, applications should be made in combination with one quart per acre of methylated seed oil and at a total volume of 100 gallons per acre or less. For faster burndown or brown-out of target weeds, tank mix this product with products such as Roundup®, or Finale® (refer to the TANK MIXES section for specific instructions).

Tank Mixes

Tank Mix this product with Roundup®, Karmex® (Diuron), Oust®, Garlon®, Finale®, MSMA, Banvel®, Vanquish®, Pendulum®, Plateau®, or Arsenal®. Do not use a tank mix product if the tank mix product label prohibits such mixing. Consult the manufacturer's labels for specific rates and weeds controlled, and always follow the more restrictive label instructions and restrictions on all labels used when making a tank-mix application.

NOTE: Tank-mixes with 2,4-D or products that contain 2,4-D have resulted in reduced perennial weed control performance.

For Control of Undesirable Weeds under Paved Surfaces

Apply this product only to areas that have been prepared according to good construction practices. All rhizomes, stolons, tubers, or other vegetative plant parts present in the site should be removed by scalping with a grader blade to a depth sufficient to ensure their complete removal.

Apply this product under asphalt, pond liners and other paved areas *only* in industrial sites or where the pavement has a barrier along the perimeter that will prevent encroachment of roots of desirable plants. Sites should be paved as soon as possible after application.

NOTE: Do not use this product where landscape plantings could be anticipated, or under paved areas such as driveways or parking lots on residential properties. Do not use in recreational areas such as under bike or jogging paths, golf cart paths, or tennis courts. Injury or death of desirable plants may result if this product is applied where roots are present or where they may extend into the treated area.

Application Directions for Paved Surfaces:

When final grade is established, apply this product in sufficient water (at least 100 gallons per acre) to ensure thorough and uniform wetting of the soil surface, including the shoulder areas. Do not move soil following application. In the spray tank, mix clean water with 19 pounds of product per acre during the filling operation and be sure to agitate before spraying.

Incorporation of this product is required to activate the herbicide if the soil is not moist prior to treatment. Use a rototiller or disc to incorporate product into the soil to a depth of 4 to 6 inches. One inch of rainfall or irrigation will also provide uniform incorporation. If using water to incorporate, do not allow treated soil to wash or move into untreated areas.

Adjuvants

Nonionic Surfactants: A nonionic surfactant at a rate 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons) may be used with this product. For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 - 17 and that has at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Methylated Seed Oils or Vegetable Oil Concentrates: Methylated seed oils are the adjuvant of choice and research indicates that these oils may aid in the deposition and uptake of this product by plants under moisture or temperature stress and will increase control of perennial weeds. Use a methylated seed oil or vegetable-based seed oil concentrate at the rate of 1.5 - 2 pints per acre in place of a surfactant. When using spray volumes greater than 30 gallons per acre, methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume, or a nonionic surfactant as described above may be used instead.

Silicone-Based Surfactants: Silicone-based surfactants may allow greater spreading on the leaf surface as compared to conventional nonionic surfactants by reducing the surface tension of the spray droplets. However, some silicone-based surfactants may limit herbicide uptake by drying too rapidly. Refer to the manufacturer's label for specific rate instructions.

Fertilizer/Surfactant Blends: Use 2 - 3 pints of nitrogen-based liquid fertilizers (such as 28%N, 32%N, 10-34-0, or ammonium sulfate) per acre in combination with the specified rate of nonionic surfactant, methylated seed oil or vegetable/seed oil concentrate. Do not use fertilizers in a tank mix without a nonionic surfactant, methylated seed oil or vegetable/seed oil concentrate.

Weeds Controlled

When used at the rates listed in the APPLICATION INSTRUCTIONS section, this product provides preemergence or postemergence control with residual control (control of newly germinating seedlings) of the following target vegetation species. In general, preemergence and postemergence applications of this product control annual weeds while postemergence applications control established biennials and perennials. Use this product only in accordance with the instructions on this label.

Note Regarding Resistant Biotypes: Naturally occurring biotypes of some of the weeds listed on this label (pigweed, kochia and Russian thistle for example) may not be effectively controlled by this and/or other herbicides with the ALS/AHAS enzyme inhibiting mode of action (such as OUST). To ensure control if naturally occurring ALS/AHAS resistant biotypes are present in an area, tank mix or apply this product sequentially with an appropriate registered herbicide having a different mode of action.

WEEDS CONTROLLED[1]

GRASSES Name (Species)	Growth Habit[2]	Name (Species)	Growth Habit[2]
Annual bluegrass (*Poa annua*)	A	Kyllinga (*Cyperus brevifolius*)	A
Annual ryegrass (*Lolium multiflorum*)	A	Lovegrass (*Eragrostis* spp.)	A/P
Annual sweet vernalgrass (*Anthoxanthum odoratum*)	A	Maidencane (*Arundinaria amabilis*)	P
Bahiagrass[7] (*Paspalum notatum*)	P	Orchardgrass (*Dactylis glomerata*)	P
Barnyardgrass (*Echinochloa crusgalli*)	A	Paragrass (*Brachiaria mutica*)	P
Beardgrass (*Andropogon* spp.)	P	Peppergrass (*Lepidium virginicum*)	A
Bermudagrass [7,8,9] (*Cynodon dactylon*)	P	Phragmites (*Phragmites australis*)	P
Big bluestem[7] (*Andropogon gerardii*)	P	Prairie cordgrass (*Spartina pectinata*)	P
Broadleaf signalgrass (*Brachiaria platyphylla*)	A	Prairie threeawn (*Aristida oligantha*)	P
Canada bluegrass (*Poa Compressa*)	P	Quackgrass (*Agropyron repens*)	P
Cattail (*Typha* spp.)	P	Rattail fescue (*Vulpia myuros*)	A
Cheat (*Bromus secalinus*)	A	Reed canarygrass (*Phalaris arundinacea*)	P
Cogongrass (*Imperata cylindrical*)	P.	Ricegrass (*Oryzopsis hymenoides*)	A
Crabgrass (*Digitaria* spp.)	A	Saltgrass [7,8,9] (*Distichlis stricta*)	P
Dallisgrass [7] (*Paspalum dilatatum*)	P	Sand dropseed [7] (*Sporobolus cryptandrus*)	P
Downy brome (*Bromus tectorum*)	A	Sandbur (*Cenchrus* spp.)	A
Fall panicum (*Panicum dichotomiflorum*)	A	Smooth brome (*Bromus inermis*)	P
Feathertop (*Pennisetum villosum*)	P	Sprangletop [6,7] (*Leptochloa* spp.)	A
Fescue (*Festuca* spp.)	A/P	Timothy (*Phleum pretense*)	P
Foxtail (*Setaria* spp.)	A	Torpedograss (*Panicum repens*)	P
Goosegrass (*Eleusine indica*)	A	Vaseygrass (*Paspalum urvillei*)	P
Guineagrass (*Panicum maximum*)	P	Velvetgrass (*Holcus lanatus*)	A
Italian ryegrass (*Lolium multiflorum*)	A	Wild barley (*Hordeum* spp.)	A
Johnsongrass (*Sorghum halepense*)	P	Wild oats (*Avena fatua*)	A
Kentucky bluegrass (*Poa pratensis*)	P	Wirestem muhly (*Muhlenbergia frondosa*)	P
		Witchgrass (*Panicum capillare*)	A

BROADLEAF WEEDS Name (Species)	Growth Habit[2]	Name (Species)	Growth Habit[2]
Arrowwood (*Pluchea sericea*)	A	Nettleleaf goosefoot (*Chenopodium murale*)	A
Ageratum (*Asteraceae houstonianum*)	P	Oxeye daisy (*Chrysanthemum leucanthemum*)	P
Broom snakeweed [3] (*Gutierrezia sarothrae*)	P	Pennycress (*Thlaspi* spp.)	A
Bull thistle (*Cirsium vulgare*)	B	Pepperweed (*Lepidium* spp.)	A
Burdock (*Arctium* spp.)	B	Pigweed [6] (*Amaranthus* spp.)	A
Canada thistle [7] (*Cirsium arvense*)	P	Pineapple weed (*Matricaria matricarioides*)	P
Carolina geranium (*Geranium carolinianum*)	A	Plantain (*Plantago* spp.)	P
Carpetweed (*Mollugo verticillata*)	A	Pokeweed (*Phytolacca Americana*)	P
Clover (*Trifolium* spp.)	A/P	Prickly sida (*Sida spinosa*)	A
Cocklebur (*Xanthium strumarium*)	A	Primrose (*Oenothera kunthiana*)	P
Common chickweed (*Stellaria media*)	A	Puncturevine (*Tribulus terrestris*)	A
Common ragweed (*Ambrosia artemisiifolia*)	A	Purple loosestrife [3] (*Lythrum salicaria*)	P
Corn spurry (*Spergula arvensis*)	P	Purslane (*Portulaca* spp.)	A
Dandelion (*Taraxacum officinale*)	P	Ragweed (*Ambrosia* spp.)	A
Dayflower (*Commelina spp.*)	A/P	Rush skeletonweed [3] (*Chondrilla juncea*)	B
Desert Camelthorn (*Alhagi pseudalhagi*)	P	Russian knapweed (*Centaurea repens*)	P
Diffuse knapweed (*Centaurea diffusa*)	A	Russian thistle [3] (*Salsola kali*)	A
Dock (*Rumex* spp.)	P	Saltbush (*Atriplex* spp.)	A
Dogfennel (*Eupatorium capillifolium*)	A	Sesbania (*Sesbania* spp.)	A
Filaree (*Erodium* spp.)	A	Sicklepod (*Cassia obtusifolia*)	A
Fleabane (*Erigeron* spp.)	A	Silverleaf nightshade (*Solanum elaeagnifolium*)	P
Giant ragweed [7] (*Ambrosia trifida*)	A	Sheperd's-purse (*Capsella bursa-pastoris*)	A
Goldenrod (*Solidago* spp.)	P	Smartweed (*Polygonum* spp.)	A/P
Grey rabbitbrush (*Chrysothamnus nauseosus*)	P	Sorrell (*Rumex* spp.)	P
Gromwell (*Lithospermum* spp.)	A	Sowthistle (*Sonchus* spp.)	A

BROADLEAF WEEDS Name (Species)	Growth Habit[2]	Name (Species)	Growth Habit[2]
Groundcherry (*Physalis* spp.)	A/P	Speedwell (*Veronica* spp.)	A
Hawksbeard (*Crepis* spp.)	A	Stinging nettle [3] (*Urtica dioica*)	P
Hoary vervain (*Verbena stricta*)	P	Sunflower (*Helianthus* spp.)	A
Horsenettle (*Solanum Canadensis*)	P	Sweet clover (*Melilotus* spp.)	A/B
Horseweed (*Conyza Canadensis*)	A	Tansymustard (*Descurainia pinnata*)	A
Indian mustard (*Brassica juncea*)	A	Texas thistle (*Cirsium texanum*)	P
Japanese bamboo (*Polygonum cuspisatum*)	P	Velvetleaf (*Abutilon theophrasti*)	A
Knawel (*Scleranthus annuus*)	A	Western ragweed (*Ambrosia psilostachya*)	P
Kochia [3] (*Kochia scoparia*)	A	Wild buckwheat (*Polyonum convolvulus*)	A
Lambsquarters (*Chenopodium album*)	A	Wild carrot (*Daucus carota*)	B
Lespedeza (*Lespedeza* spp.)	P	Wild lettuce (*Lactuca spp.*)	A/B
Little mallow (*Malva parviflora*)	B	Wild parsnip (*Pastinaca sativa*)	B
Marigold (*Tagetes* spp.)	P	Wild radish (*Raphanus raphanistrum*)	B
Milkweed (*Asclepias* spp.)	P	Wild turnip (*Brassica campestris*)	B
Miners lettuce (*Montia perfoliata*)	A	Woolly leaf bursage (*Franseria tomentosa*)	P
Morningglory (*Ipomoea* spp.)	A/P	Yellow starthistle (*Centaurea solstitialis*)	A
Mullein (*Verbascum* spp.)	B	Yellow woodsorrel (*Oxalis stricta*)	P

VINES AND BRAMBLES Name (Species)	Growth Habit[2]	Name (Species)	Growth Habit[2]
Blackberry [4] (*Rubus* spp.)	P	Morningglory (*Ipomoea* spp.)	A/P
Dewberry [4] (*Rubus* spp.)	P	Poison Ivy (*Rhus radicans*)	P
Field bindweed (*Convolvulus arvensis*)	P	Redvine (*Brunnichia cirrhosa*)	P
Greenbriar (*Smilax* spp.)	P	Trumpetcreeper [7] (*Campsis radicans*)	P
Hedge bindweed (*Calystegia sequium*)	A	Virginia creeper [7] (*Parthenocissus quinquefolia*)	P
Honeysuckle (*Lonicera spp.*)	P	Wild buckwheat (*Polygonum convolvulus*)	P
Kudzu [5] (*Pueraria lobata*)	P	Wild grape (*Vitis* spp.)	P
		Wild rose (*Rosa* spp.)	P

BRUSH
This product controls over 30 species of brush.

1 Where heavy or well-established infestations occur, use the higher specified rates.

2 Growth Habit: A= Annual, B= Biennial, P= Perennial

3 Early postemergence applications are required for best results.

4 The degree of control is species dependent; some *Rubus* species may not be completely controlled.

5 Use a minimum of 75 GPA; repeat applications may be required to control established stands.

6 Control is species dependent; for preemergence control a tank-mix with Pendulum herbicide and/or a postemergence application of a labeled herbicide may be required.

7 A minimum of 13 pounds of this product per acre is required.

8 Tank-mix with OUST for best results.

9 Repeat applications may be required to control established stands.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a cool, dry area in original container.

PESTICIDE DISPOSAL: 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. Completely empty bag into application equipment, then offer for recycling if available, or 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.

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 RISING 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.

(RV060110)

Nufarm Imazuron Herbicide is not manufactured or distributed by BASF, seller of Sahara®.

Arsenal®, Banvel®, Pendulum®, Plateau® and Sahara® are trademarks of BASF Corporation.
Finale® is a trademark of Bayer.
Garlon® is a trademark of Dow AgroSciences Company.
Karmex® and Oust® are trademarks of E.I Du Pont de Nemours and Company.
Roundup® is a trademark of Monsanto Company.
Vanquish® is a trademark of a Syngenta Group Company.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Nufarm Imazuron Herbicide**
EPA Reg. No.: 228-654
Synonyms: Mixture of Imazapyr and Diuron
Product Type: Herbicide

Company Name: Nufarm Americas Inc.
150 Harvester Drive, Suite 200
Burr Ridge, IL 60527

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

Date of Issue: August 23, 2010 **Supersedes:** New
Sections Revised: New

2. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance and Odor: Beige to brown granules with no odor
Warning Statements: CAUTION. Keep out of reach of children. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist.

Potential Health Effects:
Likely Routes of Exposure: Inhalation, eye and skin contact.
Eye Contact: Moderately irritating based on toxicity studies.
Skin Contact: Slightly toxic and slightly irritating based on toxicity studies.
Ingestion:. Slightly toxic if ingested based on toxicity studies.
Inhalation: Low inhalation toxicity based on toxicity studies.
Medical Conditions Aggravated by Exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

See Section 11: TOXICOLOGICAL INFORMATION for more information.

Potential Environmental Effects:
This product is toxic to plants. Drift and run-off may be hazardous to plants in water adjacent to treated areas.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Imazapyr	81334-34-1	7.78
Diuron	330-54-1	62.22
Other Ingredients		30.00

Nufarm

4. FIRST AID MEASURES

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 for treatment advice.
If on Skin: 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 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.
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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flash Point: Not Applicable
Autoignition Temperature: Not Applicable **Flammability Limits:** Not determined

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/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.
Hazardous Decomposition Materials (Under Fire Conditions): Organochloric compounds, carbon monoxide, carbon dioxide, and nitrogen oxides

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

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 impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.
Methods for Cleanup and Disposal: Avoid creation of dusty conditions. If dry, sweep or scoop up material and place into container for disposal. If wet, pump any free liquid into an appropriate closed container. 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 (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Handling:
Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water. 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.

Storage:
Store in a cool, dry area in original container. 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.

Spray solutions of this product should be mixed, stored, and applied **ONLY** in stainless steel, fiberglass, plastic, and plastic-lined steel containers. **DO NOT** mix, store or apply this product or spray solutions of this product in unlined steel (except stainless steel) containers or spray tanks.

Personal Protective Equipment:
Eye/Face Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.
Skin Protection: To avoid contact with skin wear long sleeved shirt and long pants, shoes plus socks, chemical resistant gloves made of any waterproof material such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, or viton ≥ 14 mils. When mixing, loading, or cleaning equipment a chemical resistant apron must be worn. An emergency shower or water supply should be readily accessible to the work area.
Respiratory Protection: NIOSH approved particulate filtering respirator with N or R, P or HE class filter media. The respirator should have a NIOSH approval number prefix "TC-84A". Groundboom applications do not need to wear a respirator.
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: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

	OSHA		ACGIH		
Component	TWA	STEL	TWA	STEL	Unit
Diuron	NE	NE	10	NE	mg/m^3
Imazapyr	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Beige to brown granules with no odor

Boiling Point:	Not applicable	**Solubility in Water:**	Soluble
Density:	5.32 pounds / gallon	**Specific Gravity:**	0.639 g/ml (tapped)
Evaporation Rate:	Not applicable	**Vapor Density:**	Not determined
Freezing Point:	Not applicable	**Vapor Pressure:**	Not determined
pH:	2.5 – 3.0 (1% w/w solution)	**Viscosity:**	Not applicable

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

10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal handling and storage conditions.
Conditions to Avoid: Excessive heat. Do not store near heat or flame. Spray solutions of this product should be mixed, stored, and applied **ONLY** in stainless steel, fiberglass, plastic, and plastic-lined steel containers. **DO NOT** mix, store or apply this product or spray solutions of this product in unlined steel (except stainless steel) containers or spray tanks.
Incompatible Materials: Strong oxidizing agents: bases and acids.
Hazardous Decomposition Products: Under fire conditions may produce organochloric compounds, carbon monoxide, carbon dioxide, and nitrogen oxides.
Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:
Data from laboratory studies conducted on a similar, but not identical, formulation:
Oral: Rat LD_{50}: >5,000 mg/kg
Dermal: Rat LD_{50}: >2,000 mg/kg
Inhalation: Rat 4-hr LC_{50}: 3.7 mg/l
Eye Irritation: Rabbit: Moderately irritating
Skin Irritation: Rabbit: Slightly irritating
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to diuron may cause reduced body weight gain, enlarged spleen, increased liver and kidney weights, and effects in blood, bladder and kidney. For imazapyr, no adverse effects at approximately 1,700 mg/kg/day (highest dose tested).
Carcinogenicity / Chronic Health Effects: Chronic effects from diuron in blood, bladder and kidney. In animal studies with diuron, an increase in urinary bladder tumors in rats and an increase of mammary tumors in mice were observed at very high doses in excess of 600 mg/kg/day. Imazapyr did not cause cancer in laboratory animals. EPA has classified imazapyr as a Group E (evidence of non-carcinogenicity for humans) carcinogen.
Reproductive Toxicity: Diuron did not demonstrate reproductive effects in animal studies. Similarly, the results of the animal studies with imazapyr gave no indication of a fertility impairing effect.
Developmental Toxicity: Diuron did not cause developmental effects in rabbits. In rat studies, effects were observed only at maternally toxic dose levels. No indications of a developmental toxic / teratogenic effect were seen in animal studies with imazapyr.
Genotoxicity: Studies indicate that diuron and imazapyr did not produce genetic damage in in vitro bacterial cell cultures or in vivo mammalian animal studies.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Diuron:

96-hour LC_{50} Bluegill:	2.8 mg/l	Bobwhite Quail 8-day Dietary LC_{50}:	1,730 mg/l
96-hour LC_{50} Rainbow Trout:	1.95 mg/l	Mallard Duck Oral LD_{50}:	>2,000 mg/kg
96-hour LC_{50} Fathead Minnow:	14.2 mg/l	Mallard Duck 8-day Dietary LC_{50}:	>5,000 mg/l
48-hour EC_{50} Daphnia:	1.4 mg/l		

Data on Imazapyr:

96-hour LC_{50} Bluegill:	>100 mg/l	Bobwhite Quail 8-day Dietary LC_{50}:	>5,000 mg/l
96-hour LC_{50} Rainbow Trout:	>100 mg/l	Bobwhite Quail Oral LD_{50}:	>2,150 mg/kg
48-hour EC_{50} Daphnia:	>100 mg/l	Mallard Duck 8-day Dietary LC_{50}:	>5,000 mg/l
14-day EC_{50} Duckweed:	0.024 mg/l	Mallard Duck Oral LD_{50}:	>2,150 mg/kg
7-day EC_{50} Green Algae:	71 mg/l	Honey Bee LD_{50}:	>100 mg/bee

Environmental Fate:

Diuron is mobile and very persistent in soils. Binding or absorption of diuron to soil is highly correlated with soil organic matter. The average half-life in soils ranges from months to a year. The major route of dissipation for diuron in the environment is microbial degradation. Diuron also degrades through photolysis in both water and soil, but at a slower rate.

Imazapyr is degraded by microbial metabolism and can be relatively persistent in soils. It has an average half-life in soils that ranges from 2 weeks to 5 months. Half-lives tend to be shorter in forest litter and soils. Imazapyr is water-soluble and variably binds to organic materials in soils. Although the potential to leach is high, leaching is limited under typical field conditions. In water, imazapyr can be rapidly degraded by photolysis with a half-life averaging 2 days. Due to its rapid photodegradation by sunlight, water contamination by imazapyr is generally not of concern.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Handling and Disposal:

Nonrefillable container. Do not reuse or refill this container. 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 away from smoke.

14. TRANSPORTATION INFORMATION

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

DOT

≤ 160 pounds per completed package
Non Regulated

> 160 pounds per completed package
UN 3077, Environmentally hazardous substances, solid, n.o.s., (Diuron), 9, III, RQ (Diuron)

> 882 pounds per completed package
UN 3077, Environmentally hazardous substances, solid, n.o.s., (Diuron), 9, III, RQ (Diuron), Marine pollutant

IMDG
UN 3077, Environmentally hazardous substances, solid, n.o.s., (Diuron), 9, III, RQ (Diuron), Marine pollutant

IATA
Non regulated

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

15. REGULATORY INFORMATION

U.S. Federal Regulations:

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

SARA Hazard Notification/Reporting:
Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):
Acute; Chronic

Section 313 Toxic Chemical(s):
Diuron (CAS No. 330-54-1) - <63.00% by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:
Diuron (CAS No. 330-54-1) – 100 pounds

RCRA Waste Code:
None

State Information:
Other state regulations may apply. Check individual state requirements.

California Proposition 65: WARNING. This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS 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.

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 any 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 any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES,

EITHER EXPRESS OR IMPLIED, OF 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.

Drexel

Diuron 4L

Herbicide

For controlling many Herbaceous weeds and Annual and Perennial grasses.

ACTIVE INGREDIENT:

Diuron	40.0%
OTHER INGREDIENTS:	60.0%
TOTAL:	100.0%

This product contains 4 pounds of Diuron per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

See FIRST AID Below
SHAKE WELL BEFORE USING

ATTENTION: This product contains a chemical known to the State of California to cause cancer.

EPA Reg. No. 19713-36
EPA Est. No. 19713-MS-001 **Net Content:** _____

FIRST AID

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 doctor.
- Do not give anything by mouth to an unconscious or convulsing 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.

IF ON SKIN OR CLOTHING:
- 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. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information on this pesticide product (including health concerns, medical emergencies or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are made out of any waterproof material. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

All pilots and flaggers must wear: Long-sleeved shirt and long pants, shoes plus socks.

In addition to the PPE above, groundboom applicators must also wear chemical-resistant gloves.

All mixers, loaders, other applicators, and other handlers must wear: Long-sleeved shirt and long pants, shoes plus socks, chemical-resistant gloves and chemical-resistant apron when mixing, loading, or cleaning equipment or spills, and a NIOSH-approved particulate filtering respirator equipped with any N, R, or P class filter media. The respirator should have a NIOSH approval number prefix TC-84A. It is recommended that you require the respirator wearer to be tested and trained in the use, maintenance, and limitations of the respirator.

(Continued)

PRECAUTIONARY STATEMENTS *(Cont.)*

See engineering controls for additional requirements.

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

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for Agricultural Pesticides [40 CFR 170.240(d)(6)].

Flaggers supporting aerial applications must use an enclosed cab that meets the definition in the WPS for Agricultural Pesticides [40 CFR 170.240(d)(5)] for dermal protection. In addition, flaggers must wear long-sleeved shirt, long pants, shoes, and socks.

USER SAFETY RECOMMENDATIONS

Users should: 1) Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. 2) Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 3) 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 when cleaning equipment or disposing of equipment washwaters or rinseate. Cover or incorporate spills. Apply this product only as specified on this label.

GENERAL INFORMATION

Use of diuron 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 vs EPA, C01-132C (W.D. WA.). For information, please refer to www.epa.gov/espp/wtc/.

This product is to be mixed with water and applied as a spray for selective control of weeds in certain crops and for non-selective weed control on non-cropland areas. It is non-corrosive to equipment, non-flammable and non-volatile.

This product may be applied to soil prior to emergence of weeds to control susceptible weed seedlings for an extended period of time; the degree of control and duration of effect will vary with the amount of chemical applied, soil texture, rainfall and other conditions. Soils high in clay or organic matter require higher dosages than soils low in clay or organic matter to obtain equivalent herbicide performance. Moisture is required to activate the chemical; best results occur if rainfall (or sprinkler irrigation) occurs within 2 weeks of application.

This product, applied pre-emergence, before emergence of crop and weeds, is an effective procedure because susceptible weeds are controlled in an early, vulnerable seedling state before they compete with the crop. With favorable moisture conditions, this product continues to control weeds for some time as the crop becomes better able to compete. Should weed seedlings begin to break through the pre-emergence treatment in significant numbers, secondary weed control procedures should be implemented. These include cultivation and post-emergence herbicide application.

This product may also be used to control emerged weeds.

Results vary with rate applied and environmental conditions; best results are obtained on succulent weeds growing under conditions of high humidity and temperatures of 70°F or higher. Addition of a non-ionic surfactant to the spray (where recommended) increases contact effects of this product.

Manufactured By:
Drexel Chemical Company
P.O. BOX 13327, MEMPHIS, TN 38113-0327
SINCE 1972

This product may be used as a directed post-emergence application. Avoid contact of crop foliage and/or fruit with spray or mist to avoid injury on the following crops: Artichokes, Corn (field), Cotton, Sorghum (grain), Sugarcane and established plantings of Apples, Bananas, Blueberries, Caneberries, Citrus, Gooseberries, Filberts, Grapes, Macadamia nuts, Olives, Papayas, Peaches, Pears, Pecans, Plantains, Walnuts and certain Tree plantings.

Under specified conditions (see *"DIRECTIONS FOR USE"*), this product without surfactant may be applied over the top of Alfalfa (established, dormant or semi-dormant), Asparagus (established), Birdsfoot trefoil (established, dormant), Grass seed crops (established), Oats, Pineapples, Plumosus fern (established, mowed), Red clover (established, dormant), Sugarcane and Wheat.

Weed species vary in susceptibility to this product and they may be more difficult to control when under stress. Combinations of this product with other herbicides (as registered) increase the number of species controlled; consult labels of the companion products for this and other information.

Since the effect of this product varies with soils, uniformity of application and environmental conditions, it is suggested that growers limit their first use to small areas. Observe all use precautions and limitations on labeling of all products used in mixtures. Follow the most restrictive label.

IMPORTANT: Injury to or loss of desirable trees or other plants may result from failure to observe the following: Do not apply (except as recommended for crop use) or drain or flush equipment on or near desirable trees or other plants or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on home plantings of trees, shrubs or herbaceous plants, nor on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of spray to desirable plants. Do not contaminate any body of water. Do not mix/load or use near wells including abandoned wells, drainage wells and sinkholes. Avoid storage of pesticides near well sites. Keep from contact with fertilizers, insecticides, fungicides and seeds. Thoroughly clean all traces of this product from application equipment immediately after use. Calibrate sprayers only with clean water away from well sites. Flush tank, pump, hoses and boom with several changes of water after removing nozzle tips and screens (clean these parts separately).

RESISTANCE

When herbicides affecting the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. It may be necessary to retreat the problem area using a product affecting a different site of action, if weed control is unsatisfactory.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

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.

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 (WPS), 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, 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 WPS.

Do not enter or allow worker entry into treated areas during the REI of 12 hours.

PPE required for early entry to treated areas that is permitted under the WPS 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 and 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 (WPS) 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 others to enter treated areas until sprays have dried.

Non-crop weed control is not within the scope of the WPS.

SPRAY DRIFT MANAGEMENT FOR GROUND AND AERIAL APPLICATIONS

Use best practices to avoid drift to all other crops and non-target areas. Do not apply when conditions favor drift from target areas. The interaction of many equipment- and weather-related factors determine the potential for spray drift. Avoiding spray drift at the application site is the responsibility of the applicator. The applicator must follow the most restrictive precautions to avoid drift, including those found in this labeling as well as applicable state and local regulations and ordinances. A drift control agent may reduce drift, however, it may also decrease weed control.

Make aerial or ground applications only when the wind speed is less than or equal to 10 miles per hour.

Do not make aerial or ground applications into temperature inversions.

Apply with medium or coarser spray (according to ASAE standard 572) for standard nozzles.

Additional requirements for ground applications:

When applying to crops, apply with nozzle height no more than 2 feet above the ground or crop canopy. When applying to non-crop areas, use lowest nozzle height consistent with safety and efficacy. Direct spray into target vegetation.

Additional requirements for aerial applications:

The spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The boom length must not exceed 75% of the wingspan or 90% of rotor blade diameter.

Use upwind swath displacement.

When applying to crops, do not release spray at a height greater than 6 to 10 feet above the ground or crop canopy. When applying to non-crop areas, apply at a minimum safe altitude above the area being treated.

Do not apply by air if sensitive non-target crops are within 100 feet of the application site.

SELECTIVE USE IN CROPS

This product when used before weed emergence (Pre-emergence use) will provide the following control of annual weeds:

CONTROL		
0.6 to 0.8 qt. per Acre	**1.2 to 1.6 qts. per Acre**	
Barnyardgrass	Amsinckia (Fiddleneck)	Knawel
(Watergrass)	Annual bluegrass	Pennycress
Crabgrass	Annual sweet	Rattail fescue
Lambsquarters	vernalgrass	Red sprangletop
Pigweed	Annual groundcherry	Shepherdspurse
Purslane	Annual morningglory	Tansymustard
Ragweed	Chickweed	Velvetgrass
	Corn spurry	Wild buckwheat
	Dogfennel	Wild lettuce
	Foxtail	Wild mustard
	Gromwell	
1.6 to 4.8 qts. per Acre		
Ageratum	Johnsongrass	Pokeweed
Annual lovegrass	(Seedling)	Rabbit tobacco
Annual ryegrass	Kyllinger (Kyllinga)	Ricegrass
Annual smartweed	Marigold	Sandbur
Annual sowthistle	Mexican clover	Spanishneedles
Corn speedwell	Orchardgrass	Velvetleaf
Dayflower	Peppergrass	(Buttonweed)
Flora's paintbrush	Pineappleweed	Wild radish
Hawksbeard		

PARTIAL CONTROL		
0.8 qt. per Acre	**3.2 qts. per Acre**	**6.4 to 8.0 qts. per Acre**
Annual morningglory	Horsenettle	Guineagrass
Cocklebur	Quackgrass	Maidencane
Prickly sida (Teaweed)		Pangolagrass
Sesbania		
Sicklepod		

APPLICATION DIRECTIONS

AERIAL APPLICATION: Aerial application is prohibited EXCEPT for Alfalfa, Barley (Winter), Cotton (pre-plant or pre-emergence only), Grass seed crops (grown in Pacific Northwest only), rights-of-way, Sugarcane and Wheat (Winter). Application may be made by aircraft at a minimum of 3 gallons of water per acre. Avoid overlapping of spray swath and avoid application under conditions where excessive drift may occur. Where land is bedded, make application parallel to rows.

GROUND APPLICATION: Use a boom power sprayer properly calibrated to a constant speed and rate of delivery. Openings in screen should be 50-mesh or larger. Continuous agitation in the spray tank is required to keep the material in

suspension. Agitate by mechanical or hydraulic means. If bypass or return line is used, it should terminate at the bottom of tank to minimize foaming. Avoid overlapping and shut off spray booms while starting, turning, slowing or stopping or injury to crop may result.

PRE-EMERGENCE: Use sufficient spray volume and pressure to uniformly distribute the spray solution over treated soil. Pre-emergence weed control will be reduced on high organic matter soils such as peat or muck.

POST-EMERGENCE: Use sufficient volume and pressure for thorough coverage of weed foliage. For selective applications and applications near sensitive crops, use low spray pressure to keep spray drift to a minimum. This product, at recommended rates, controls seedling annual weeds such as Annual morningglory, Barnyardgrass (Watergrass), Crabgrass, Crowfoot, Goosegrass, Pigweed and Purslane. Addition of a surfactant to the spray (where recommended) increases contact effects of this product. Best results are obtained on succulent weeds growing under conditions of high humidity and temperatures of 70°F or higher.

SPRAY PREPARATION: Mix proper amount of this product into necessary volume of water. Where use of a surfactant is recommended, dilute with 10 parts of water and add as last ingredient to a nearly full tank.

TANK MIXTURES: This product may be tank mixed with other herbicides and/or adjuvants registered for crop or non-crop use in this label. Refer to the label of the tank mixture partner(s) for any additional use instructions or restrictions. Always follow the most restrictive label.

REPLANTING: Unless otherwise directed, do not replant treated areas to any crop within 2 years after last application as injury to subsequent crops may result.

NOTE: For crops grown in the arid west, reductions in normal irrigation practices for the crop in production or a Summer fallow period without supplemental irrigation may require the crop rotation intervals to be extended.

When such conditions occur a field bioassay should be completed prior to planting of any desired crop. A successful bioassay means growing up to maturity a test strip of the crop(s) intended for production. The test crop(s) strip should cross the entire field including knolls, low areas and areas where any berms were located. The results of this bioassay may require the rotation intervals to be extended.

RATES: All rates of this product are expressed as broadcast rates; for band treatment, use proportionately less. For example, use one-third of the broadcast rate when treating a 14-inch band where row spacing is 42 inches. Where a range of dosages is given, use the lower rate on Coarse textured soils low in clay or organic matter and the higher rate on Fine textured soils high in clay or organic matter. For post-emergence application, use the lower rate on smaller weeds and the higher rate on larger weeds.

SOIL LIMITATIONS: Crop injury may result from failure to observe the following:

Unless otherwise directed, do not use on Sand, Loamy sand or Gravelly soils or exposed subsoils, nor on Pecans where organic matter is less than 0.5%, nor on Alfalfa, Apples, Artichokes, Barley (Winter), Citrus, Cotton, Grapes, Oats, Olives, Papayas, Peaches, Pears, Sorghum, Sugarcane, Walnuts and Winter wheat where organic matter is less than 1%, nor on Blueberries, Birdsfoot trefoil, Caneberries, Gooseberries, Macadamia nuts and Peppermint where organic matter is less than 2%.

CHEMIGATION

Apply this product only through sprinklers, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, hand move or microsprinklers irrigation system(s). Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact your State Extension Service Specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

System must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Continuous agitation of the pesticide supply tank for the duration of the application period is recommended.

The pesticide is to be applied continuously for the duration of the water application.

RECOMMENDED USES

FIELD CROPS (See Soil Limitations)

A good seedbed must be prepared before pre-emergence use of this product as crop injury may result if application is made to ground which is cloddy or compacted, resulting in improperly planted seed. Plant seed to depth specified. Unless otherwise directed, surface of the soil should not be cultivated or disturbed after application of this product and before emergence of the crop as weed control may be reduced and crop injury may result. However, if moisture is insufficient to activate the herbicide, a shallow cultivation (rotary hoe preferred) should be made after the emergence of crops while weeds are small enough to be controlled by mechanical means.

Alfalfa

Treat only stands established for 1 year or more. Do not apply to seedling Alfalfa nor to Alfalfa / Grass mixtures; do not apply to Alfalfa under stress from disease, insect damage, shallow root penetration (such as on shallow hard pans), or alkali spots, nor to flooded fields as crop injury may result. Do not spray on snow-covered or frozen ground.

Maximum application rate per crop cycle is 2.4 pounds active ingredient (2.4 quarts of this product) per acre. Apply a maximum of one application per year.

ID, OR, WA: Use 1.2 to 2.4 quarts per acre for control of annual weeds in Fall after Alfalfa becomes dormant but no later than mid-December.

CA (Dormant and Semi-Dormant Varieties): Use 1.2 to 2.4 quarts per acre in Fall or Winter after Alfalfa becomes dormant or semi-dormant, but before growth begins in the Spring. Crop injury may result if application is made to actively growing Alfalfa. For best results, apply before weeds have emerged or become established (2 inches in height or diameter). Control of established weeds is improved by applying this product with a suitable contact herbicide registered for such use. Sufficient rainfall for soil activation of this product is unlikely in CA after February 1. Treated areas may be replanted to any crop after one year from last application if rate does not exceed 1.6 quarts per acre.

AZ, NV: Use 1.2 to 2.4 quarts per acre in Fall after Alfalfa becomes dormant but no later than January.

Eastern CO, KS: For control of Tansymustard, apply 0.8 quart per acre shortly after emergence of Mustard in the Fall or Winter; use 1.6 quarts per acre if weeds are 2 inches to 4 inches tall. Alternatively, if other annual weeds are present, apply 1.6 to 2.4 quarts per acre in February or March.

Other Areas Where Alfalfa Becomes Winter Dormant: Use 1.2 to 2.4 quarts per acre (1.2 to 1.6 quarts per acre East of Appalachian Mountains) in March or early April, but before Spring growth begins.

Artichokes

CA: Apply 1.6 to 3.2 quarts per acre in late Fall or early Winter after the last cultivation before weeds germinate or to emerging seedlings. Direct spray to cover the area between the rows and at the base of Artichoke plants, keeping contact with plants at a minimum.

AERIAL APPLICATION IS PROHIBITED.

Asparagus

Apply as a band or broadcast treatment. Do not apply to young plants during the first growing season (except as noted below), nor to newly seeded Asparagus, nor on plants with exposed roots as severe injury may result. Pre-emergence weed control will be reduced on soils with greater than 5% organic matter.

AERIAL APPLICATION IS PROHIBITED.

Established Plantings: On Light soils and other soils low in clay or organic matter, apply 0.8 to 1.6 quarts per acre. On soils high in clay or organic matter, apply 1.6 to 3.2 quarts per acre. Two applications may be used; the first application should be made before weeds become established but no earlier than 4 weeks before spear emergence and no later than the early cutting period (if weeds are controlled into the cutting period by cultural practices, application may be delayed until immediately after the last cultivation); a second application may be made immediately following completion of harvest provided rainfall is expected. When two applications are used in one season, do not exceed 2.4 quarts per acre per application. In WA (irrigated crop), apply a single treatment of 3.2 quarts per acre. If treatment is delayed until late Winter or early Spring, incorporation of the chemical in the top 1 inch to 2 inches of soil may substitute for lack of rain to activate the herbicide.

Newly Planted Crowns—CA (San Joaquin Delta): Make a single application of 1.6 to 3.2 quarts per acre on soils high in clay or organic matter; use the lower rate on Clay loams and the higher rate on Peat soils. Do not use on soils containing less than 2% organic matter. Soils must be settled by rainfall or irrigation prior to treatment. Do not treat crowns planted to a depth of less than 2 inches.

Barley (Winter)

Western OR and Western WA: For drill-planted Barley, make a single application of 1.2 to 1.6 quarts per acre as soon as possible after planting but before emergence of Barley. Do not replant treated areas to any crop within 1 year after the last application as injury to subsequent crops may result.

Bermudagrass Pastures (Newly-Sprigged)

Apply 0.8 to 2.4 quarts after planting and before emergence of Bermudagrass or weeds. Alternatively, for control of emerged annual weeds up to 4 inches in height, apply 0.4 to 0.8 quart per acre; add a surfactant per 25 gallons of spray. If Bermudagrass has emerged at time of treatment, temporary burn of exposed plant parts may occur.

Plant sprigs (stolons) 2 inches deep in a well-prepared seedbed; do not treat areas where sprigs are planted less than 2 inches deep as crop injury may result. Do not graze or feed foliage from treated areas to livestock within 70 days after application.

AERIAL APPLICATION IS PROHIBITED.

Birdsfoot trefoil (Lotus)

Western OR: Treat only stands established for at least 1 year; do not apply to seedling Trefoil as injury may result. Make a single application of 1.6 quarts per acre when Trefoil is dormant (October 15 to December 15). Do not replant treated areas to any crop within 1 year after last application as injury to subsequent crops may result.

AERIAL APPLICATION IS PROHIBITED.

Corn (Field)

AERIAL APPLICATION IS PROHIBITED.

Post-emergence: Make a single application of 0.6 quart per acre in combination with non-pressure nitrogen solution. If nitrogen solution is not used, apply 0.8 quart per acre. Add a surfactant for each 25 gallons of spray. Apply as a directed spray when Corn is at least 20 inches high and weeds are no taller than 3 inches. DO NOT APPLY OVER TOP OF CORN. Do not replant to any crop within 1 year except Corn, Cotton and Grain sorghum may be planted the Spring following treatment.

Pre-emergence—AR, LA, MS and TN: Make a single application of 0.5 to 0.8 quart per acre as a broadcast or band treatment after planting, but before Corn emerges. Plant Corn at least 1.5 inches deep. Do not replant treated areas to crops other than Corn or Cotton within 4 months following band treatment and 6 months following broadcast treatment as crop injury may result.

Cotton

Seedling disease may weaken plants and increase the possibility of injury from the use of trifluralin products followed by this product. These treatments should be used only in conjunction with a standard fungicide seed treatment plus a good supplemental soil fungicide program such as Captan - PCNB mixture.

DO NOT SPRAY OVER THE TOP OF COTTON PLANTS. Do not apply to sand or loamy sand soils. Do not use on soils with less than 1% organic matter as crop injury may result.

Do not use this product in pre-plant or pre-emergence applications where soil-applied organophosphate insecticides are used due to potential for severe cotton injury and possible stand loss. Do not allow livestock to graze treated Cotton.

The maximum application rate per crop cycle is as follows:

Type of Soil	Pounds of Diuron a.i. per Acre	Amount of This Product (qts./A)
Coarse	0.8	0.8
Medium	1.5	1.5
Fine	2.2	2.2

Do not make more than 3 applications per year.

Note: When using this product in a sequential treatment program, allow a minimum of 21 days between applications.

Preplant—AZ and CA: Use this product alone or apply as a separate operation following pre-plant broadcast treatment with trifluralin products (incorporated according to directions on product label). Apply this product as a broadcast spray after beds are formed, pre-irrigated and final seedbeds prepared. Prior to planting, drag-off the tops of the beds and plant in moist soil not treated with this product. Treated soil is returned to the bed after planting when irrigation furrows are reformed after Cotton has emerged. If more than two furrowing-out operations are made prior to lay-by or deep furrows are made early, weed control may be reduced in furrow bottoms. Use at the following rates:

This Product Alone (Pre-plant): 0.8 to 1.6 quarts per acre.

This Product Following Trifluralin EC:

Soil Texture	Rate Per Acre	
	Trifluralin EC	This Product
Sandy loam, Loam, Silt loam, Silt	1 pt.	0.5 to 0.8 qt.
Sandy clay loam, Clay loam, Silty clay loam, Sandy clay, Clay	1.5 pts.	0.8 to 1 qt.

Pre-Plant— Except AZ, CA: This product may be used for burndown of existing annual weeds and residual control of weeds prior to planting Cotton. Complete any planned tillage prior to application. Apply herbicide treatments before weeds germinate or before weed seedlings are more than 2 inches tall. If weeds are emerged prior to application, the addition of a non-ionic surfactant is recommended. Tillage following application should be avoided to prevent incorporation of the herbicide into the Cotton seed germination zone which may result in crop injury. Dragging treated soil from beds will concentrate the herbicide in middles and reduce residual weed control on the beds.

Apply this product at 0.8 to 1.6 quarts per acre from 15 to 45 days prior to anticipated planting. Refer to the table below for use rates in pre-plant applications. Do not exceed suggested use rates for individual soil textures shown in the table below. If less than the maximum rate of application for a given soil is applied pre-plant, subsequent pre-emergence applications of this product may be made. However, the total combined application rate for this product applied pre-plant and pre-emergence may not exceed the maximum suggested use rate for either application method.

Soil Texture	Rate Per Acre
	This Product Alone
Sandy loam, Loam, Silt loam, Silt	0.8 qt.
Sandy clay loam, Clay loam, Silty clay loam, Sandy clay	1 qt.
Silty clay, Clay	1.6 qts.

Pre-emergence application of herbicides with a similar mode of action to that of diuron following pre-plant application of this product may result in Cotton injury. When pre-plant applications of this product are followed by pre-emergence applications of herbicides with a similar mode of action, e.g., Meturon®, Cotoran® or other products containing fluometuron, the product containing fluometuron should be used at the minimum rate of application for the soil under consideration in order to reduce potential for crop injury. This is most critical where applications of this product are made less than 30 days pre-plant, on coarse textured soils and on soils low in organic matter. The risk of injury from pre-plant applications of this product is reduced where substantial rainfall (more than 0.5 inches) occurs between application and planting. Read and follow any additional use precautions on this product label when using this product for pre-plant weed control in Cotton.

Pre-plant Tank Mixes: When emerged weeds taller than 2 inches or weeds not listed on this label are present, this product may be tank-mixed with other products labeled for pre-plant applications in Cotton, including Boa™, Glyphosate Original, Gramoxone® Extra, Roundup® Ultra, and Touchdown. The addition of dry spray grade ammonium sulfate at the rate of 2.0% w/w (17 pounds per 100 gallons finished spray solution) is suggested to enhance performance of this product plus glyphosate tank mixes.

Replanting: Only Cotton and Corn may be planted within 6 months of pre-plant applications of this product. To avoid crop injury following replanting, avoid disturbing the original bed.

Pre-emergence—Except AZ, CA: Use this product alone or apply as a separate operation following pre-plant treatment with Trifluralin EC. Apply this product after planting but before Cotton emerges. Do not treat Cotton in deep furrows as crop injury may result. Use only where Cotton is planted on flat or raised seedbeds. Shallow incorporation (no deeper than 0.25 inch) with a rotary hoe or similar equipment following planting usually improves results especially during dry weather. A wide press wheel should be used on the planter to provide a level seedbed for subsequent early season post-emergence treatments. If moisture is insufficient to activate this product or if soil becomes crusted before crop emerges, a shallow rotary hoeing (no deeper than 0.25 inch) should be made before weeds become established.

This product should not be applied pre-emergence following application of the maximum rate for a given soil applied pre-plant. If less than the maximum rate is used pre-plant, additional application of this product may be made at pre-emergence. However, the total amount of this product applied pre-plant and pre-emergence must not exceed the maximum suggested use rate for either pre-plant or pre-emergence applications.

This Product Alone: Make a single application as a broadcast or band spray using the following broadcast rates; for band treatment, use proportionately less.

Soil Texture	Rate Per Acre
Sandy loam, Loam, Silt loam, Silt	0.8 qt.
Sandy clay loam, Clay loam, Silty clay loam, Sandy clay	1 qt.
Silty clay, Clay	1.6 qts.

This Product Following Trifluralin EC Pre-plant: Apply Trifluralin EC prior to planting as a broadcast or band treatment; incorporate according to directions on Trifluralin EC label. As a separate operation, apply this product as a band treatment 14 to 20 inches wide after planting but before Cotton emerges. Use the following broadcast rates. For band treatment, use proportionately less.

Soil Texture	Rate Per Acre	
	Pre-plant Trifluralin EC	Pre-emergence This Product
Sandy loam, Loam, Silt loam, Silt	1 pt.	0.8 qt.

(Continued)

Soil Texture	Rate Per Acre	
	Pre-plant Trifluralin EC	Pre-emergence This Product
Sandy clay loam, Clay loam, Silty clay loam, Sandy clay, Silty clay, Clay	1.5 pts.	1.0 to 1.6 qts.

Post-emergence: Apply only as a directed spray to cover weed foliage; adjust nozzles to minimize contact of Cotton leaves with spray or drift or crop injury may result. Applications may also be made in hooded/shielded sprayers.

Early Season: Apply when Cotton is at least 6 inches tall and when weeds are actively growing and do not exceed 2 inches in height. Apply as a band treatment at the following rates: for each 25 gallons of spray, add a surfactant. Two applications may be made if needed.

Annual Weed Problem (Up to 2 inches tall)	Rate per Acre
Cotton 6 to 8 inches	0.4 qt.
Cotton 8 to 12 inches	0.6 qt.

For control of seedling perennial grasses such as Johnsongrass and partial control of Nutsedge or when weed growth is under drought stress or over 2 inches high, add 2 to 3.5 pounds of active DSMA or 1.65 to 2 pounds active MSMA to above spray mixture. If DSMA or MSMA is used, do not apply after first bloom.

For enhanced weed control in hooded/shielded sprayer applications add MSMA or DSMA as suggested above; or Boa, Gramoxone Extra, Glyphosate Original, Roundup Ultra, or Touchdown according to label recommendations. Consult product labels for specific recommendations and precautions for hooded sprayer applications.

Late Season (Lay-By): Apply 0.8 to 1.2 quarts per acre (0.8 to 1.6 quarts per acre in AZ and CA) when Cotton is at least 12 inches tall (at least 20 inches tall for Pima S-2). For control of germinating weed seedlings, apply to soil beneath Cotton plants and between rows immediately after last cultivation. In irrigated Cotton, best weed control is obtained if the field is irrigated within 3 to 4 days after application; thoroughly wet the surface of the ground over the row to carry the herbicide into the root zone of germinating weeds. Alternatively, for control of emerged annual weeds (up to 4 inches in height) at lay-by time, make a single application in combination with a surfactant or use 0.4 to 0.6 quart of this product (plus surfactant) per acre and repeat later if needed.

Replanting: If initial seeding fails to produce a stand, Cotton may be replanted in soil treated pre-emergence with this product alone or following pre-plant application of Trifluralin EC. Wherever possible, avoid disturbing original bed. If necessary to rework soil before replanting, use shallow cultivation such as discing; do not relist nor move soil into the original drill area. Plant seed at least 1 inch deep. Do not retreat field with a second pre-plant or pre-emergence application during the same crop year as injury to the crop may result.

Subsequent crops:

This Product -- Type of Application	Crops That May Follow Treated Cotton
Band pre-emergence -OR- post-emergence	Any crop 4 months after last application
Band pre-emergence plus post-emergence -OR- Broadcast pre-emergence (and pre-plant) -OR- Broadcast pre-emergence plus band post-emergence	Corn, Cotton, Grain sorghums (not Sorgos or Forage sorghums nor Grass sorghums) or Soybeans the next Spring. Do not replant treated areas to any other crop within 1 year after last application as injury to subsequent crops may result.
Broadcast post-emergence (lay-by)	Corn, Cotton, Grain sorghums (not Sorgos or Forage sorghums nor Grass sorghums) the next Spring. Do not replant treated areas to any other crop within 1 year after last application as injury to subsequent crops may result.

For subsequent crops in fields where Trifluralin EC is used, follow instructions on Trifluralin EC product label(s).

Grass Seed Crops (Perennial except where specifically indicated)

Maximum single application rate is 2.4 lbs. a.i./A (2.4 quarts of this product per acre). Make only 1 application per year. Aerial application is limited only to the Pacific Northwest. Apply only to established plantings at least 1 year old, except as noted.

Do not replant treated areas to any crop within 2 years of last application as injury to next crop may occur.

Do not apply to snow covered or frozen ground as injury to the crop or poor weed control may result.

Do not treat stands lacking in vigor due to poor fertility, environmental stress, insects, disease or damage from other herbicides.

CO, KS, NM and OK: On Sand bluestem, Side-oats grama and Switchgrass, apply 1.6 to 2.4 quarts per acre during the dormant period shortly before weed seedlings emerge. Do not apply after crop begins growth in the Spring as crop injury may result. In fields where ash residues have accumulated from burning straw, use 2.4 quarts per acre; spread unburned chaff or straw with a harrow or chopper before application.

Eastern OR, Eastern WA: On perennial Bluegrass and Fescue, apply 0.8 to 2.4 quarts per acre as broadcast in enough diluent to get even distribution. Apply in Spring before rapid growth of the crop begins and when the Windgrass is still small (1 to 4 leaf). DO NOT use on coarse (sand) textured soils.

Western OR, Western WA: On Alta fescue, Astoria bentgrass, Highland bentgrass, Kentucky bluegrass (Merion bluegrass) and Orchardgrass, apply 1.6 to 2.4 quarts per acre between October 1 and November 15. In fields where ash residues have accumulated from burning straw, use 2.4 quarts per acre; spread unburned chaff or straw with a harrow or chopper before application. For best results, apply as soon as possible after Fall rains start. Established weeds (beyond 2- to 4-leaf stage) should be removed prior to treatment.

Well-established vigorous stands of Spring-planted Alta fescue, Kentucky bluegrass and Orchardgrass may be treated the following Fall provided the crop is planted before April 1 and treatment is not applied before October 15; use 1.6 quarts per acre.

OR, WA: Apply in the Fall to perennial Ryegrass at the rate of 0.8 to 1.6 quarts per acre and to Tall fescue at the rate of 1.6 to 2.4 quarts per acre. Use a sufficient volume of water, a minimum of 25 gallons per acre, for thorough coverage of weed foliage. For best results, make applications at the onset of the Fall rains and before weeds have become established (typically October 1st through November 15th). Established weeds beyond the 2- to 4-leaf stage should be removed prior to treatment.

Apply only to well established, vigorous stands. Do not apply to perennial Ryegrass stands less than 1 year old. Use mechanical agitation and avoid overlap of spray patterns. Weed control efficacy may be reduced in fields where ash residues have accumulated from burning straw.

Annual Ryegrass for the Creation of Rows: Apply 0.8 to 1.6 quarts per acre as a directed or shielded spray so the intended crop row area is not treated. These applications should be made where excessive populations of annual Ryegrass are anticipated to volunteer from previous crops. Applications can be made as a directed/shielded spray during seeding or after emergence of annual Ryegrass. These applications generally will occur between October 1 and January 15. This product is most effective when applied before annual Ryegrass volunteer plants have more than 2 leaves. If larger plants are to be treated, addition of a labeled post-emergence herbicide will provide more effective control.

Adjust nozzle heights and spacing to allow the establishment of the desired row width (generally about 3 inches) and spacing (generally 9 to 12 inches). Use of low pressure nozzles, shielded nozzles or drop nozzles to reduce spray movement into the intended crop row area is recommended.

Fine Fescue Grass Seed Crops (including Chewings, Creeping red and Hard fescue types) for the suppression of Rattail fescue: Apply at 0.8 to 1.6 quarts per acre on soils having at least 1% organic matter. Do not use on Sand, Loamy sand, Gravelly soils or exposed subsoils.

Crop Stage and Application Timing: This product is recommended for use on healthy, vigorous stands of Fine fescue. This product can be applied to stands established at least 1 year or to new plantings that have been established for at least 6 months and have a minimum of eight tillers at time of application.

Apply in Fall before Grass weeds are beyond the 1- to 2-leaf stage and before broadleaf weeds are larger than 1 to 2 inches tall or across. Use the high end of the rate range for large weeds or where weed populations are high.

Approximately 0.5 to 1 inch of rainfall or sprinkler irrigation is needed to move this product in the weed zone before weeds develop an established root system. Weeds larger than the size indicated or those having a well-established root system before this product is properly activated by rainfall/irrigation may not be adequately controlled.

Weed control may be reduced by heavy straw residues or ash from field burning.

Tank Mixes and Sequential Treatments: This product can be applied either alone or in a program involving tank mixes and/or sequential treatments with other herbicides and adjuvants. When using as tank mix with other herbicides, use 0.8 to 1.2 quarts per acre unless prior experience indicates it is safe to use higher rates. Tank mixes with other herbicides can increase the risk of crop injury. When using certain tank mixes for the first time, limit use to a small area to determine safety before treating large areas.

ID, OR, WA: Use in newly planted Bentgrass, Chewing fescue, Kentucky bluegrass, perennial Ryegrass, Orchardgrass and Tall fescue. During planting operation, spray a suitable brand of activated charcoal as a 1-inch band on soil surface at a rate of 300 pounds per acre (broadcast basis; equivalent to 15 pounds per acre of crop when row spacing is 20 inches). Mount nozzles to apply directly over seed rows to prevent crop injury. Follow with this product as a single broadcast spray at a rate of 2 to 2.4 quarts per acre. Apply as soon as possible after planting, but before crops or weeds emerge and before rains or sprinkler irrigation. Fall or Spring plantings may be treated. Best results usually occur with early Fall plantings. Treatment will not control Downy brome or Wild oats.

Perennial Ryegrass, Tall Fescue, Kentucky Bluegrass and Fine Fescue (Grown for Seed) (OR Only)

For control of certain Broadleaf weeds and annual grasses apply this product only to well-established vigorous stands of grasses as directed below. Use sufficient water, a minimum of 25 gallons per acre, for thorough coverage of weed foliage. For best results, make application at the onset of Fall rains and before weeds become established (typically October 1 through November 15). Weeds beyond the 2- to 4-leaf stage will usually not be controlled. Use higher rates within the range listed when treating larger weeds and heavier weed infestation. Weed

control may be reduced where straw or ash residues have accumulated on the soil surface. Lack of moisture to activate the herbicide may reduce weed control. Tank mixtures or sequential treatments with other herbicides may reduce crop tolerance and increase risk of crop injury. When using this product in a tank mix or in a sequential treatment with other herbicides, do not use the maximum rates listed below unless compatibility and the potential for phytotoxicity have been evaluated. Crop tolerance may be reduced and the likelihood of crop injury may increase when crop is under stress caused by weather, diseases and insects. Do not apply this product through any type of irrigation system.

Perennial Ryegrass (Established): Apply 0.8 to 1.6 quarts per acre per season (October 1 through mid-January) to control Seedling grasses and Broadleaf weeds such as Annual bluegrass and others named on the product label.

Tall Fescue (Established): Apply 1.6 to 2.4 quarts per acre per season (October 1 through mid-January) to control Seedling grasses and Broadleaf weeds such as Rattail fescue and others named on the product label. Do not apply more than 1 application per year. Aerial applications are limited to the Pacific Northwest.

Kentucky Bluegrass (Established stands East of the Cascade Mountains): Apply 1.2 to 2.4 quarts per acre per season (October 1 through mid-January) for suppression of Rattail fescue and certain other Seedling grasses and Broadleaf weeds named on the product label. Downy brome is not controlled. Do not use on *Poa trivialis* grass seed varieties.

Fine Fescue (Illahee, Rainier, Chewings and related varieties including Hard fescue) (Established stands West of the Cascade Mountains): Apply 0.8 to 1.6 quarts per acre for suppression of Rattail fescue and certain other Seedling grasses and Broadleaf weeds named on the product label. Make only 1 application per year. Do not use this product more than two years in succession in the same field.

Established Perennial Bluegrass (Grown for Seed) (ID and WA Only)

Broadcast 0.4 to 1 quart of this product per acre in enough diluent to get even distribution. Apply in Spring before rapid growth of Bluegrass begins and when Windgrass is still small (1- to 4-leaf). Do not use on Coarse (Sandy) textured soils. Do not apply this product through any type of irrigation system.

Oats

Do not replant treated areas to any crop within one year after last application as injury to subsequent crops may result. AERIAL APPLICATION IS PROHIBITED.

Drill-Planted Spring Oats—ID, Eastern OR, eastern WA: Use in areas where average annual rainfall exceeds 16 inches. Make a single application of 0.8 to 1.2 quarts per acre after planting, either before or after Oats emerge but within 6 weeks of planting. Best results are usually obtained when application is made 3 to 4 weeks after planting. Apply before weeds are 3 to 4 inches tall.

Drill-Planted Winter Oats and Mixtures with Peas or Vetch—Western OR and Western WA: Make a single application of 1.2 to 1.6 quarts per acre as soon as possible after planting but before emergence of the crop.

Peas, Austrian Field (Western OR)

This product is recommended for selective control of certain weeds in Austrian field peas. AERIAL APPLICATION IS PROHIBITED.

Apply 1.2 to 1.6 quarts of this product per acre as a broadcast spray with air or ground equipment as soon as possible after planting but before crop emerges for control of weeds such as Annual bluegrass, Chickweed, Fiddleneck, Lambsquarter, Pigweed, Shepherdspurse and Wild mustard. Use lower rate on coarse-textured soils and higher rate on fine-textured soils.

Do not use this product on Sand, Sandy loam, Gravelly soils or exposed subsoils or on soils having less than 1% organic matter as crop injury may result. Do not replant treated area to another crop within one year of application. Crop injury may result if severe winter stress, disease or insect damage to the crop follows application.

Peppermint (Pacific Northwest)

Do not apply to stands of mint suffering from stress due to low fertility, drought, winter injury, insects, disease or damage from other herbicides or other causes. Do not apply to snow covered or frozen ground as injury to the crop or poor weed control may result. Do not apply to Sand, Loamy sand, Gravelly soils or exposed subsoils. Do not apply to soils that have a high salt content and/or high water table or poor drainage that retards Mint root development resulting in a shallow root system. Do not apply to soils having less than 1% organic matter. AERIAL APPLICATION IS PROHIBITED.

Use Rates:

Rate of This Product Per Acre		
1 to 2% Organic Matter	2.1 to 3% Organic Matter	More Than 3% Organic Matter
0.6 to 0.8 qt.	0.8 to 1.6 qts.	1.6 to 2.4 qts.

Application Timing: Apply this product to established stands of Mint at least one year during the late Winter dormant period or after flaming in the Spring prior to the emergence of new growth. Do not cultivate after application.

If weeds are present at the time of application, the use of a surfactant at 0.25% v/v or crop oil concentrate at 1.0% v/v may be used to increase the performance of this product post-emergence to weeds.

Tank Mixes and Sequential Treatments: This product can be applied either alone or in a program involving tank mixes and/or sequential treatments with other herbicides and adjuvants providing this product is not applied to actively growing Mint plants.

When using a tank mix with other herbicides, use the lower end of the rate range of this product unless prior experience indicates it is safe to use higher rates. Tank mixes and sequential treatments with other herbicides can increase the risk of crop injury. When using a certain tank mix or sequential treatment for the first time, limit use to a small area to determine safety before treating large areas.

Red Clover (Western OR)

Make a single application of 1.6 quarts per acre on established Red clover stands (at least 9 months). Apply this product when Red clover is dormant (October 15 to December 15). Do not apply to seedling Red clover and do not replant treated area to any crop within one year after last application, as injury to subsequent crops may result. Treatment will control annual weeds such as Bluegrass, Chickweed, Hawksbeard, Rattail fescue, Ryegrass and Velvetgrass. AERIAL APPLICATION IS PROHIBITED.

Sorghum-Grain (Southwestern States)

Apply 0.2 to 0.4 quart per acre. Add a surfactant. Apply as a directed post-emergence broadcast or band spray after Sorghum is 15 inches tall to control weeds 2 to 4 inches in height. DO NOT SPRAY OVER TOP OF SORGHUM. Use the lower rate on Broadleaf weeds up to 2 inches tall; use the higher rate on grasses up to 2 inches and Broadleaf weeds up to 4 inches tall. When the lower rate is used, a second application may be made, if needed, provided the amount applied in one crop year does not exceed 0.4 quart per acre. Treatment of weeds under drought stress is usually ineffective.

Do not replant treated areas to crops other than Corn or Cotton within 4 months following band treatment and 6 months following broadcast treatment as crop injury may result. AERIAL APPLICATION IS PROHIBITED.

Sugarcane

To prevent possible crop injury on new cane varieties, tolerance to this product should be determined prior to adoption as field practice. Do not treat Sugarcane growing on thinly covered subsoils or rocky areas as crop injury may result. Temporary chlorosis of the crop may result from application over emerged cane. Application over emerged cane should be made only as directed below, without the addition of a surfactant or crop oil concentrate. To minimize chlorosis and stunting, use directed post-emergence sprays.

FL (Pre-emergence): Apply 1.6 to 3.2 quarts per acre as a broadcast or band spray prior to weed emergence after planting or after harvesting plant crop (for ratoon crop) for high organic soils.

FL (Post-emergence): Make 1 or 2 applications of 1.6 quarts per acre as needed by directed spray inter-row. Alternatively, for Panicum control, make up to 3 applications of 0.4 to 0.8 quart per acre plus surfactant as a directed spray after cane has emerged but before Panicum exceeds 2 inches in height. Adjust nozzles to spray beneath cane plants and between rows to cover weed foliage and to minimize contact of cane leaves with spray or drift. Do not apply more than 4.8 quarts total per acre between planting (or ratooning) and harvest.

HI: Apply 1.6 to 4.8 quarts per acre as a broadcast spray prior to weed emergence after planting or after harvesting plant crop or ratoon crop. Sequential applications of 1.6 to 3 quarts per acre may be made as a broadcast spray over emerged cane or by directed spray inter-row. If weeds are emerged, add a surfactant to spray mixture at the rate of 1 to 2 quarts per 100 gallons and apply as a directed spray.

Do not apply more than 3 treatments nor more than 9.6 quarts per acre in Hawaii between planting (or ratooning) and harvest. Treated areas may be replanted to Sugarcane or Pineapple 1 year after last application.

Puerto Rico: Apply 3.2 to 5 quarts per acre as a broadcast spray prior to weed emergence after planting or after harvesting plant crop (for ratoon crop). A second and third application of 1.6 to 3.2 quarts per acre may be made as a broadcast spray over emerged cane or by directed spray inter-row.

If weeds are emerged, add a surfactant to the spray per 100 gallons and apply as a directed spray.

Do not apply more than 3 treatments, nor more than 8 quarts per acre between planting (or ratooning) and harvest. Treated areas may be replanted to Pineapple or Sugarcane one year after last application.

LA, TX: Apply 2.4 to 3 quarts per acre. This product may be applied as a broadcast spray after planting and following the harvesting of Sugarcane. This product may also be applied broadcast in late Winter. Application is best when made prior to weed emergence.

Apply this product as a post-directed spray immediately after the last cultivation. Direct the spray application to the base (no more than one-third of the plant height) of the Sugarcane plants. When small weeds (3 inches or less) are present at application, add a surfactant at 0.25% v/v or crop oil concentrate at 1% v/v to the spray mix.

USE PRECAUTIONS: Temporary leaf yellowing may occur following application. Do not apply more than 6 quarts per acre broadcast per year. For band application, reduce the above broadcast rates proportionately to the width of the band using the following formula:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast Rate} = \text{Banded Rate Per Acre}$$

Wheat (Winter)

Crop injury may result where severe Winter stress, disease or insect damage follows application. Winter-sensitive varieties may be less tolerant of this product than Winter-hardy varieties. Crop injury may also result from failure to observe the following: Do not use on Sand or Loamy sand soils nor on Gravelly or Sand loams low in organic matter (less than 1%), nor on thinly covered or exposed subsoil

areas (clay knolls); do not treat Wheat planted less than 1 inch deep; do not treat Wheat where Winter climatic conditions have caused "heaving" of plants; do not treat Wheat plants lacking in vigor due to poor emergence, insect damage, disease, high alkalinity or other causes; do not apply after Wheat has reached the "boot" stage of maturity. Unless otherwise specified, do not use with surfactants or nitrogen solutions. Do not replant treated areas to any other crop within 1 year after last treatment (except as noted) as injury to subsequent crops may result.

ID, OR and WA (East of Cascade Range): In areas where average annual rainfall exceeds 16 inches, make a single application of 0.8 to 1.2 quarts per acre. **Fall Treatment:** For early Fall-planted Wheat (seeded before September 10), apply 3 to 6 weeks after planting but before weeds are 3 to 4 inches tall. Treatment after October 1 has generally given best results. Application should not be made after soil freezes in the Fall. Wheat planted in late October should not be treated until the following Spring. **Spring Treatment:** Apply as soon as Wheat starts to grow in the Spring. Treatment made prior to April 10 will usually give good results provided weed growth is less than 4 inches tall. Application later than May 1 may give poor results.

Alternatively, make a single application of 0.4 to 0.8 quart of this product plus 0.25 pound bromoxynil per acre as a tank mixture, either in the Fall after Wheat has emerged but before soil freezes or in the Spring as soon as soil thaws; apply before weeds are 2 inches tall or across.

In areas where average annual rainfall is 10 to 16 inches, following Fall planting, make a single application of 0.8 to 1.2 quarts per acre when sufficient moisture is available to germinate Wheat seed. Apply before soil freezes and before weeds are 2 inches tall. Application later than March 1 may give poor results.

NOTE: If Fall-planted Wheat fails to grow due to Winter kill or adverse growing conditions after Fall treatment, only fields treated before November 1 may be replanted to Spring Wheat. Spring Wheat should not be planted before April 1 and only after deep discing and plowing to a depth of 4 to 6 inches prior to planting. Do not retreat field with a second application during the same crop year as injury to the crop may result.

OR and WA—West of Cascade Range: Make a single application of 1.2 to 1.6 quarts per acre as soon as possible after planting; if Wheat and weeds have emerged, apply before weeds are 3 to 4 inches tall. Alternatively, apply a tank mixture of this product plus bromoxynil as detailed above for *"East of Cascade Range"*.

Other Areas of OR and WA: Make a single application in the Spring as soon as Wheat (Fall-planted) starts to grow and before weeds are 2 inches tall. Application later than May 1 may give poor results.

Central Plains and Midwest: Use 0.8 to 1.6 quarts per acre.

KS, OK and TX: Do not use on Sand or Sandy loam soils. Use 0.8 quart per acre on Silt and Silt loam soils and 1.2 to 1.6 quarts per acre on Clay, Clay loam and Silty clay loam soils.

Northeast: Use 0.8 to 1.2 quarts per acre.

FRUIT AND NUT CROPS (See Soil Limitations)

AERIAL APPLICATION IS PROHIBITED.

Unless otherwise directed, make a single application per year as directed spray, avoiding contact of foliage and fruit with spray or drift. Do not graze livestock in treated orchards or groves.

Apples

Maximum rate per application is 3.2 pounds active ingredient (3.2 quarts of this product) per acre. Maximum application rate per crop cycle is 3.2 pounds active ingredient (3.2 quarts of this product) per acre. Do not apply more than two applications per year. Minimum retreatment interval is 90 days.

Use this product alone or apply as a tank mix with Sinbar®.

This Product Applied Alone: Use only under trees established in the orchard for at least 1 year; do not treat varieties grafted on full-dwarf root stocks. Apply 3.2 quarts per acre in the Spring (March through May). In the Far West, apply 3.2 quarts per acre to small weeds less than 2 inches in height or diameter under dormant trees or apply 1.6 quarts per acre as a post-harvest treatment followed by 1.6 quarts per acre prior to bud break.

GA: Apply 1.6 to 2.4 quarts per acre in the Spring. Repeat application in the Fall but do not use more than 3.2 quarts per acre per year. Add a surfactant to improve control of small, emerged weeds.

This Product plus Sinbar: Use only under trees established in the orchard for at least 2 years. Apply either in the Spring or after harvest in the Fall before weeds emerge or during early seedling stage of weed growth.

Soil Texture	Rate per Acre	
	1 to 2% Organic Matter This Product plus Sinbar	More than 2% Organic Matter This Product plus Sinbar
Sandy loam	0.8 qt. + 1 lb.	1.2 qts. + 1.5 lbs.
Loam, Silt loam, Silt	1.2 qts. + 1.5 lbs.	1.6 qts. + 2 lbs.
Clay loam, Clay	1.6 qts. + 2 lbs.	1.6 qts. + 2 lbs.

Where crop is grown under furrow irrigation or under raised-berm flood irrigation (trees 4 to 6 inches above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows, nor trees grown under flat flood or basin irrigation, as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season.

Bananas and Plantains

New Plantings: To control annual weeds, apply 1.2 to 2.4 quarts per acre after planting but before weeds or crop emerge. Do not apply to loose soil directly over the planting material.

Established Plantings: For control of annuals and for top-kill of Perennials such as Bermudagrass, Birdseed grass and Guineagrass, apply 2.4 to 4.8 quarts per acre plus a surfactant. Avoid contact of plants with spray or drift as injury may result. When tall, dense weed growth is present, remove weed growth before application. If application is made to soil free of weeds, omit the surfactant from the spray. Repeat treatment as needed. Apply at 6-week intervals or longer but no more than a total of 9.6 quarts per acre (broadcast basis) in a 12-month period. Do not replant treated area to any crop within 2 years after last application as injury to subsequent crops may result. Exception: Sugarcane or Pineapple may be planted after 1 year.

Blueberries, Caneberries and Gooseberries

Use only in fields which have been established for at least 1 year. Do not apply to Berries interplanted with fruit trees. Do not apply to plants whose roots are exposed as injury may result. Apply as a band treatment at base of canes or bushes. For Spring application, apply before germination and growth of annual weeds.

AR, FL, GA, MS, MO, NC, NH, SC—Blueberries: Apply 1.2 to 1.6 quarts per acre in the Spring and repeat treatment after harvest in the Fall. Add surfactant to the spray mixture to improve control of small, emerged weeds.

IN, MI and OH—Blueberries: Apply 1.6 to 3.2 quarts per acre in late Spring. Alternatively, apply 1.6 quarts per acre in the Fall and repeat at same rate in the Spring.

IN, MI, OH—Raspberries: Apply 2.4 quarts per acre in the late Spring.

MA, ME—Blueberries: Apply 1.6 quarts per acre in late Spring.

MD, NJ—Blueberries: For control of Winter annuals, apply 1.6 quarts per acre in October to December or a single application of 2 quarts per acre may be applied in early to mid-Spring.

CA—Raspberries, Blackberries, Boysenberries, Dewberries and Loganberries: For control of Winter annuals, apply 1.6 quarts per acre in October or November. Repeat at same rate in late Spring to control Summer annuals. A single application of 2.4 quarts per acre in January or February will control both Winter and Summer annuals in some areas, but the separate Fall and Spring schedule is preferred.

Western OR and Western WA—Blueberries, Caneberries and Gooseberries: For control of Winter annual weeds, apply 1.6 quarts per acre in October or November. Repeat at the same rate in late Spring to control Summer annuals. A single application of 2.4 quarts per acre in January or February will control both Winter and Summer annuals in some areas, but the separate Fall and Spring schedule is preferred.

Citrus

Time application as indicated for specific areas. However, application may be made any time of the year where sprinkler or flood irrigation can be timed to activate the herbicide. Established Perennial weeds require other special control procedures.

This product may be applied in Citrus in combination with Boa, and other labeled paraquat formulations, and in combination with Glyphosate Original and other labeled glyphosate formulations. Read and follow specific label instructions, precautions and restrictions on the label of the tank mix partner when applying this product in combination with other products. Always follow the most restrictive label.

NOTE: For trees 4 years of age or less, do not make more than 2 applications per year. Allow a minimum of 60 days between applications when this product is used in a sequential program. For trees 4 years of age or more do not make more than 2 applications per year. Allow a minimum of 80 days between applications when this product is used in a sequential treatment program.

AZ (except Yuma area) and CA (except Imperial and Coachella Valleys): Apply 2.4 to 3.2 quarts per acre shortly after grove has been laid-up in final form (no-tillage program) in late Fall or early Winter. Alternatively, apply 1.6 quarts per acre in October or November and repeat at the same rate in March or April. Subsequent annual applications of 1.6 to 2.4 quarts per acre will usually give adequate weed control.

FL: Use only as a band application. Do not use "Trunk to Trunk".

East Coast/Flatwoods Areas (Low permeable soils): Apply from 1.6 quarts per acre to a maximum of 6.4 quarts per acre for control of Annual broadleaf weeds and Annual grasses. Addition of an approved surfactant will improve control of emerged weeds. Do not apply more than 6.4 pounds of active ingredient (6.4 quarts of this product) per treated acre in any one application. Do not apply more than 6.4 pounds of active ingredient (6.4 quarts of this product) per treated acre per year inclusive of all diuron formulations used within 1 year.

Ridge Areas, except Highland Co. (Highly permeable soils): Apply from 1.6 quarts per acre to a maximum of 3.2 quarts per acre for control of Annual broadleaved weeds and Annual grasses. Addition of an approved surfactant will improve control of emerged weeds. Do not apply more than 3.2 pounds of active ingredient (3.2 quarts of this product) per treated acre in any one application. Do not apply more than 6.4 pounds of active ingredient (6.4 quarts of this product) per treated acre per year inclusive of all diuron formulations used within 1 year.

Ridge Areas, Highland Co. (Highly permeable soils): Apply from 1.6 quarts per acre to a maximum of 3.2 quarts per acre for control of Annual broadleaved weeds and Annual grasses. Addition of an approved surfactant will improve control of emerged weeds. Do not apply more than 3.2 pounds of active ingredient

(3.2 quarts of this product) per treated acre in any one application. Do not apply more than 6.4 pounds of active ingredient (6.4 quarts of this product) per treated acre per year inclusive of all diuron formulations used within 1 year.

Puerto Rico: Make a single application of 3.2 quarts per acre per application or apply 2.4 to 3.2 quarts per acre followed by the same rate 4 to 6 months later. On bearing Citrus, apply any time when seasonal rains are expected. On non-bearing trees, apply when Winter banks are pulled down. For control of Guineagrass, Loosestrife, Maidencane, Paragrass, Primrose willow and Seamyrtle in ditches adjacent to Citrus groves, use 2.3 fl. ozs. per 1,000 square feet (3.2 lbs. a.i. per acre) in sufficient water (minimum 4 gallons per 1,000 square feet) to provide thorough and uniform coverage. Apply in the Spring before weed growth starts or after removal of vegetation. Repeat treatment on a spot basis to control hard-to-kill species such as Guineagrass. In bedded groves, do not treat water furrows between the beds as injury to the trees may result. Do not apply more than 3.2 lbs. a.i. (3.2 qts. of this product) per acre in a single application. Do not apply more than 6.4 lbs. a.i (6.4 qts. of this product) per acre per year.

TX: Apply 1.6 to 3.2 quarts per acre for annual weeds. Use 3.2 quarts per acre for control of Johnsongrass seedlings. Best results accompany application in the Spring. Well-established weeds should be eliminated by cultivation prior to treatment. Do not apply more than 3.2 lbs. a.i. (3.2 qts. of this product) per acre in a single application. Do not apply more than 6.4 lbs. a.i (6.4 qts. of this product) per acre per year.

Filberts (Except CA)

Use this product to control certain weeds in Filbert orchards established for at least one year.

Apply this product as a directed spray. Avoid contact of foliage and fruit with spray or drift. Make an initial treatment of 2.2 quarts per acre in the late Fall or early Winter after harvest. Repeat annually with 2.2 quarts per acre, or apply 1.6 quarts per acre in October or November after harvest and repeat at the same rate in March or April.

Do not apply when nuts are on the ground. Do not graze livestock in treated orchards. Do not use on Light sandy soils.

If trees are planted on hillsides, the elimination of weeds and ground cover may cause excessive soil erosion. Under these conditions strip applications of this product (at proportionately lower rates) may be made near the trees or to the tree rows perpendicular to the slope.

Maximum rate per application is 2.2 pounds active ingredient (2.2 quarts of this product) per acre. Maximum application rate per crop cycle is 3.2 pounds active ingredient (3.2 quarts of this product) per acre. Do not make more than two applications per year. Minimum retreatment interval is 150 days when using this product in a sequential treatment program.

Grapes

Apply only to established vineyards (at least 3 years old) as a band treatment to Grape rows. On soils low in clay or organic matter (1 to 2%), severe plant injury may result if heavy rainfall or more than one inch of irrigation occurs soon after treatment. This risk must be assumed by the user.

Do not apply more than 4 quarts per acre as a single maximum use rate. Do not apply more than 8 quarts per acre per year. Apply a maximum of 2 applications per year. When using this product in a sequential treatment program, allow a minimum of 90 days between applications.

Avoid contact of foliage and green bark (non-barked vines except for undesirable suckers) with spray drift.

East of the Rocky Mountains: On soils low in clay or organic matter (1 to 2%), apply 1.6 to 2.4 quarts per acre per application. On soils high in clay or organic matter, apply 2.4 to 4 quarts per acre per application. Apply in the Spring just prior to germination of Annual weeds.

West of the Rocky Mountains: For best results, apply during the Winter months when weeds are less than 2 inches in height or diameter. Rainfall or overhead sprinkler irrigation sufficient to wet the soil to a depth of 2 inches is necessary to activate the herbicide. Abnormally heavy rainfall following application just before Spring growth may move the herbicide into the root zone of Grapes which could result in injury.

For initial treatment, apply 2.4 to 3.2 quarts per acre; subsequent annual applications of 1.6 quarts per acre will usually give adequate weed control. Do not apply to vines with trunks less than 1.5 inches in diameter as injury may result.

NY and PA—Grasses: Use only in established vineyards (at least 4 years old) for spot control of Perennial grasses such as Orchardgrass, Quackgrass and Ryegrass. Apply in the Spring as a band treatment to ridged soil (2- to 4-inches high) under the trellis at the rate of 4 quarts per acre per application. Band width should not exceed 30 inches. Do not apply more than once every 4 years. Use only on heavy soils, such as Loams, Silt loams and Clay loams. Do not use in areas where Grape roots are shallow or exposed because of high bedrock; poor drainage or erosion as injury to Grapes may result.

Macadamia Nuts

HI: Use only under trees established in the orchard for at least 1 year. Apply 1.6 to 4.8 quarts per acre immediately after harvest, preferably before weeds emerge. If weeds have emerged, add surfactant. Retreat as needed but do not exceed 8 quarts per acre per year.

Olives

CA: Use only under trees established in the grove for at least 1 year. Apply 1.6 quarts per acre after grove has been laid-up in final form in late October or November; repeat at same rate in March or April. Remove weed growth prior to treatment.

Papayas

Use only under trees established in the orchard for at least 1 year. Apply 2 to 4 quarts per acre, preferably before weeds emerge. If weeds have emerged, add surfactant.

Peaches

Use this product alone or apply as a tank mixture with Sinbar.

Where crop is grown under furrow-irrigation or under raised-berm flood irrigation (trees 4 to 6 inches above waterline), apply only as a band treatment. Do not treat trees planted in the bottom of irrigation furrows nor trees grown under flat flood or basin irrigation, as injury to trees may result. Where complete weed control to harvest is desired, additional weed control measures may be required during the growing season. Do not apply within 3 months of harvest. **In all areas except California:** Do not apply more than 2.2 quarts of this product per acre per application. **California ONLY:** Do not apply more than 3 quarts of this product per acre per application.

This Product Alone: Use only under trees established in the orchard for at least 3 years. Apply 1.6 to 2.2 quarts per acre in the early Spring before weeds emerge or during the early seedling stage of weed growth. In California, apply 1.6 to 3 quarts per acre.

GA: On trees established for at least 2 years, apply 1.6 to 2.2 quarts per acre in the Spring. Repeat application in the Fall but do not exceed 4 quarts per acre per year. Add surfactant to improve control of small, emerged weeds.

This Product plus Sinbar: Use only under trees established in the orchard for at least 2 years. Apply either in the Spring or after harvest in the Fall before weeds emerge or during early seedling stage of weed growth.

Soil Texture	Rate per Acre	
	1 to 2% Organic Matter This Product plus Sinbar	More than 2% Organic Matter This Product plus Sinbar
Sandy loam	0.8 qt. + 1 lb.	1.2 qts. + 1.5 lbs.
Loam, Silt loam, Silt	1.2 qts. + 1.5 lbs.	1.6 qts. + 2 lbs.
Clay loam, Clay	1.6 qts. + 2 lbs.	1.6 qts. + 2 lbs.

Pears

Use only under trees established in the orchard for at least 1 year. Do not treat varieties grafted on full-dwarf root stocks. Apply 3.2 quarts per acre in the Spring (March through May). In the Far West, apply 3.2 quarts per acre to weeds less than 2 inches in height or diameter under dormant trees. Alternatively, apply to small weeds at 1.6 quarts per acre post-harvest followed by 1.6 quarts per acre prior to budbreak.

Pecans

Use this product alone or apply as a tank mixture with Sinbar. Make a single band or broadcast application as a directed spray using a minimum of 30 gallons of water per acre. Apply in the Spring before weeds emerge or during the early seedling stage of growth.

Soil Texture	Rate per Acre		
	This Product Alone*	-OR-	Tank Mixture This Product plus Sinbar**
Sandy loam	1.6 qts.		1.2 qts. + 1.5 lbs.
Loam, Silt loam, Silt	2.4 qts.		1.4 qts. + 1.75 lbs.
Clay loam, Clay	3.2 qts.		1.6 qts. + 2 lbs.

*Use only on trees established in the grove for at least 3 years and on soil with at least 0.5% organic matter.

**Use on trees established in the grove for at least 1 year and on soil with at least 1% organic matter.

Do not use on eroded areas where subsoil or roots are exposed, nor on trees that are diseased or lacking in vigor or on trees planted in irrigation furrows as injury to the trees may result.

Pineapples

HI: Apply 1.6 to 4.8 quarts per acre as a broadcast spray just before or immediately after planting but prior to weed emergence. Use 1.6 to 3.2 quarts per acre after harvesting the plant crop or ratoon crop (for first ratoon crop as well as subsequent ratoon crops) but before differentiation. For plant crop only, additional broadcast or interspace applications may be made prior to differentiation at the rate of 1.6 quarts per acre at intervals of not less than 2 months. Additional applications to plant crop may be made as needed to interspace only using 1.6 quarts per acre. Do not apply more than 9.6 quarts per acre nor more than 12.8 quarts total per acre per plant crop. Treated areas may be planted to Pineapple or Sugarcane 1 year after last application.

FL: Apply 3.2 to 5 quarts per acre as a broadcast spray just before or immediately after planting but prior to weed emergence. Use 3.2 quarts per acre after harvesting plant crop (for ratoon crop). For plant crop only, a second and third broadcast or interspace application may be made prior to differentiation at the rate of 1.6 quarts per acre at intervals of not less than 2 months. Additional applications to plant crop may be made as needed to interspace only using 1.6 quarts per acre. Do not apply more than 3 broadcast sprays (maximum 9.6 quarts per acre) prior to differentiation nor more than 12.8 quarts total per acre per plant crop. Treated areas may be planted to Pineapple or Sugarcane 1 year after last application.

Puerto Rico: Apply 3 to 5 quarts per acre as a broadcast spray just before or im-

mediately after planting but prior to weed emergence. Pre-emergence application controls weeds such as Crabgrass, Crotolaria, Fall panicum, Foxtail, Goosegrass, Morningglory, Pigweed, Purslane and Sourgrass. Treated areas may be planted to Pineapple or Sugarcane 1 year after last application.

Walnuts (English)

CA, OR, WA: Use only under trees established in the orchard for at least 1 year. As an initial treatment, apply 2.2 quarts per acre after the orchard has been laid-up in final form (no-tillage program) in late Fall or early Winter; retreat annually with 1.6 to 2.2 quarts per acre. In California apply 1.6 to 3 quarts per acre. Alternatively, apply 1.6 quarts per acre in October or November and repeat at same rate in March or April.

Do not apply more than two applications per year. Minimum retreatment interval is 150 days. Do not use on Sand, Loamy sand, Gravelly soils or exposed subsoils, nor where organic matter is less than 1%. Do not graze livestock in treated orchards and groves.

All areas except California: Maximum rate per application is 2.2 pounds active ingredient (2.2 quarts of this product) per acre. Maximum application rate per crop cycle is 3.2 pounds active ingredient (3.2 quarts of this product) per acre.

California only: Maximum rate per application is 3 pounds active ingredient (3 quarts of this product) per acre. Maximum application rate per crop cycle is 3 pounds active ingredient (3 quarts of this product) per acre.

ORNAMENTAL CROPS (See Soil Limitations)

AERIAL APPLICATION IS PROHIBITED.

Ornamental Bulb Crops (Bulbous Iris, Narcissus)

Western WA: Make a single application of 3.2 quarts per acre. Apply after planting, but no later than 4 weeks prior to bulb emergence (usually late September or October). Do not replant treated areas to any crop within 1 year after last application as injury to subsequent crops may result.

Plumosus Fern

FL: Hand weed and mow fern, then make a single application of 2.4 quarts per acre within 3 to 5 days. Do not cultivate or disturb soil after application as crop injury may result. Treat only established stands at least 1 year old.

Tree Plantings

CO, MT, ND, NE, SD, WY: Use only under established plantings (1 year or older) of American elm, Caragana, Cottonwood, Douglas fir, Green ash, Honeysuckle, Ponderosa pine, Red cedar, Russian olive and Siberian elm. Use 2 to 4 quarts per acre; apply as a band 4 feet wide in the tree row (2 feet on each side of row). For example, 1.6 ounces of this product treats 135 feet of tree row (2 feet on each side of row) at the rate of 4 quarts per acre. Apply as a directed spray in early Spring before weeds emerge and before trees leaf out. Do not apply to foliage of trees, nor under trees growing in low areas as injury to the trees may result.

Hybrid Poplar (ID, OR, WA Only): For control of weeds to aid in the establishment of Hybrid poplar plantings, apply 0.8 to 2.4 quarts per acre depending upon silt texture and organic matter content. Use 0.8 to 1.6 quarts per acre on Coarse textured soils and 1.6 to 2.4 quarts per acre on Medium to Fine textured soils. Do not use on Gravelly soils or on any soil having less than 0.5% organic matter as injury to trees may result. Injury may result from applications to Poplar plantings grown on Sandy soil with low organic matter with sprinkler irrigation.

When applied in a band, the application rate will be in proportion to the area banded on a per acre basis.

Apply in late Winter or early Spring as a uniform broadcast spray before or after planting but prior to bud swell, or as a directed spray after bud swell. Apply before weeds emerge or after emergence while weeds are small. Some rainfall or water is necessary to move this product into the weed root zone before weeds become well established. If weeds are present at time of treatment, add a surfactant at 1 to 2 quarts per 100 gallons of spray solution.

Pre-plant: If application is made prior to planting, take precautions to prevent treated soil (usually top 1 inch) from coming into contact with roots of trees during the planting process as injury may result.

Post-plant (Broadcast): If application is made after planting, it is best to wait until rain or irrigation has settled the soil around the newly planted trees before applying this product. If trees are dormant, a broadcast application can be made.

Post-plant (Directed): If buds have started to swell, use a directed spray pattern that prevents this product from contact with trees as injury may result. During the growing season from bud swell to leaf drop, this product may be applied alone or with tank mix between tree rows with shielded and directed spray.

This product can be tank-mixed with a glyphosate herbicide (Roundup Pro Herbicide, Roundup Original Herbicide or Glyphosate Original Herbicide) pre-plant and as a directed spray to broaden the spectrum of weeds controlled and improve post-emergence activity. Use 0.8 to 2.4 quarts of this product plus glyphosate herbicide (according to label recommendations) depending upon soil type and weeds to be controlled. Note: There are several formulations of glyphosate herbicide. Check the glyphosate herbicide label to verify that the intended use as a pre-plant or post-directed spray on hybrid poplar plantations is allowed. Avoid contact of glyphosate herbicide with foliage, green stems, trees or other desirable vegetation because severe damage or destruction may result.

NON-CROP WEED CONTROL

This product is an effective herbicide for the control of many weeds. The degree of control and duration of effect will vary with the amount of chemical applied, soil texture, rainfall and other conditions. This product may be used as a pre-emergence treatment at any time of year, except when ground is frozen, provided adequate moisture is supplied by rainfall or artificial means to activate the herbicide. Best results are obtained if applications made to the soil are applied shortly before weed growth begins. If dense growth is present, remove tops and spray the ground. Increased contact activity on established weeds may be obtained using a surfactant. Apply as a drenching spray to actively growing weeds during warm weather when daily temperature will exceed 70°F.

Use a fixed-boom power sprayer, properly calibrated, to ensure a constant rate of application. Mix proper amount of this product into volume of water necessary to obtain uniform coverage. If surfactant is used, dilute with ten parts of water and add as last ingredient to a nearly full tank. This product must be kept in suspension at all times. Agitate by mechanical or hydraulic means in the spray tank. If bypass or return line is used, it should terminate at bottom of tank to minimize foaming. Use 50-mesh screen or larger.

Aerial application is prohibited EXCEPT for weed control in rights-of way where this product may be applied by air or ground equipment.

USE RESTRICTIONS AND PRECAUTIONS FOR NON-CROP AREAS

Maximum rate per application is 12 pounds active ingredient (12 quarts of this product) per acre in areas of high rainfall or dense vegetation. Maximum rate per application is 8 pounds active ingredient (8 quarts of this product) per acre in all other areas. Apply a maximum of two applications per year at a maximum of 12 pounds active ingredient (12 quarts of this product) per acre per year inclusive of all diuron formulations within one year. Minimum retreatment interval is 90 days.

General Weed Control: For general weed control in uncultivated non-cropland such as airports, utility, rights-of-way, fence rows, barrier strips, highway, pipeline and railroad right-of-ways, sewage disposal areas, petroleum tank farms, lumberyards, farm yards, fuel storage areas, industrial plant sites, around farm buildings, farm yards, and uncultivated agricultural areas, apply 4 to 12 quarts per acre to control annual weeds including:

Broadleaved Weeds – 4 to 12 qts. per Acre		
Ageratum	Knawel	Ragweed
Chickweed	Kochia	Sesbania
Cocklebur	Lambsquarter	Shepherdspurse
Corn speedwell	Marigold	Sicklepod
Corn spurry	Mexican clover	Smartweed, Annual
Dayflower	Morningglory, Annual	Sowthistle, Annual
Dogfennel	Pennycress	Spanishneedles
Fiddleneck (Amsinckia)	Pigweed	Tansymustard
Flora's paintbrush	Pineappleweed	Velvetleaf (Buttonweed)
Gromwell	Pokeweed	Wild buckwheat
Groundcherry, Annual	Prickly lettuce	Wild lettuce
Hawksbeard	Prickly sida (Teaweed)	Wild mustard
Horsenettle	Purslane	Wild radish
Horseweed	Rabbit tobacco	
Grasses – 4 to 6.4 qts. per Acre		
Barnyardgrass (Watergrass)	Orchardgrass	Sandbur
Bluegrass, Annual	Peppergrass	Seedling Johnsongrass
Crabgrass	Quackgrass	Velvetgrass
Foxtail	Rattail fescue	Vernalgrass
Kyllinga	Red sprangletop	Sweet, Annual
Lovegrass, Annual	Ricegrass	
	Ryegrass, Annual	
6.4 to 12 qts. per Acre		
Guineagrass	Maidengrass	Pangolagrass

Irrigation and Drainage Ditches: Apply 4 to 12 quarts per acre to control most annual weeds shown in the preceding table. Apply only when water is not in the ditch. For irrigation ditches, apply during the non-crop season and when ditch is not in use. Minimize movement of this product with irrigation water to avoid crop injury. The herbicide must be fixed in the soil by moisture. Apply before expected seasonal rainfall, if possible, when soil in the ditch is still moist. Following treatment, if rainfall has not totaled at least 4 inches, fill ditch with water and allow to stand for 72 hours; drain off any waste water remaining before using ditch. Do not treat any ditch area into which roots of trees or other desirable plants may extend as injury may result.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Storage should be under lock and key and secure from access by unauthorized persons and children.

Storage should be in a cool, dry area away from any heat or ignition source. Avoid storage at high temperatures. Do not stack over 2 pallets high. Do not move containers from one area to another unless they are securely sealed. Keep container tightly sealed when not in use. Keep away from any puncture source. Avoid storage near water supplies, food, feed and fertilizer to avoid contamination. Store in original container only. If the contents are leaking or material is spilled, follow these steps:

1. Collect and place in suitable containers for disposal.
2. Wash area with soap and water to remove remaining pesticide.
3. Follow washing with clean water rinse.
4. Do not allow runoff to enter sewer or contaminate water supplies.
5. Dispose of waste as indicated below:

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

WARRANTY—CONDITIONS OF SALE

OUR RECOMMENDATIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the Seller. To the extent consistent with applicable law, Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith.

To the extent consistent with applicable law, in no case shall the Manufacturer or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. To the extent consistent with applicable laws, the foregoing is a condition of sale by the Manufacturer and is accepted as such by the Buyer.

MATERIAL SAFETY DATA SHEET

Drexel Chemical Co.
1700 Channel Avenue
Memphis, TN 38113
(901) 774-4370

Emergency Telephone No.

1-800-424-9300 (ChemTrec)

SECTION I – GENERAL INFORMATION

TRADE NAME	**DIURON 4L**
CHEMICAL NAME	3-(3,4-Dichlorophenyl)-1, 1-Dimethylurea (Diuron)
CHEMICAL FAMILY	Substituted Urea
EPA REG. NO.	19713-36
SIGNAL WORD	CAUTION

SECTION II – INGREDIENTS
(Class = H (Hazardous), NH (Non-Hazardous))

NAME	CAS NO.	% (by wt.)	TLV	CLASS
Diuron	330-54-1	40.0	10 mg/m3	H
Inerts	N/A	60.0	N/A	NH

SECTION III – PHYSICAL DATA

Boiling Point	>212°F	Specific Gravity	1.20 gms/cc
Vapor Pressure	Negligible	% Volatiles	N/A
Vapor Density	N/A	Solubility in Water	Dispersible
pH	6-8	Appearance/Odor	Light tan liquid, odorless

SECTION IV – FIRE & EXPLOSION DATA

Flash Point	Non-Combustible
Extinguishing Media	Dry chemical, Carbon Dioxide, foam or water spray
Fire Fighting Procedures	Fight fire from upwind. Assure self-contained breathing apparatus is worn. Prevent runoff if possible.

SECTION V – REACTIVITY DATA

Stability	Stable
Conditions to Avoid	Extreme temperatures
Incompatibility	None known
Hazardous Decomposition Products	Toxic oxides of nitrogen and carbon
Hazardous Polymerization	None known

SECTION VI – HEALTH HAZARD DATA

Carcinogenicity	N/A
Toxicity Data	Oral LD50 (Rat) = 1,017 mg/kg Dermal LD50 (Rabbit) = >2,000 mg/kg
TLV	10 mg/m3
N.F.P.A.	Health: 2, Fire: 1, Reactivity: 0
(Rating: 4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Insignificant)	
Effects of Overexposure	May irritate eyes, nose, throat and skin.

SECTION VII – EMERGENCY PROCEDURES

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 doctor. Do not give anything by mouth to an unconscious or convulsing 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.

If on Skin or Clothing: 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. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information on this pesticide product (including health concerns, medical emergencies or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

SECTION VIII- SPILL OR LEAK PROCEDURES

Steps to be taken in case of material leak or spill

Clean up promptly. Do not flush with water, pick up with absorbent or other effective means. Assure protective equipment is worn.

Waste Disposal Method

Dispose of in accordance with Local, State, and Federal Regulations.

SECTION IX – SPECIAL PROTECTION INFORMATION

Respiratory Protection	Normally none required
Ventilation	Generally recommended in confined areas.
Protective Gloves	Chemical-resistant
Eye Protection	Chemgoggles
Other	Long-sleeved shirt and long pants.

SECTION X – SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling & Storage

KEEP OUT OF REACH OF CHILDREN. FOLLOW LABEL DIRECTIONS CAREFULLY.

Do not store near open flame. Keep away from foodstuffs.

D.O.T. Description	30 gallon, 55 gallon and Bulk – Environmentally Hazardous substance, Liquid, n.o.s., (Diuron), 9, UN-3082, PG III, RQ 100 lbs.
NOTE:	**Non-Bulk - Non-Regulated**
Freight Description	Agricultural Herbicide, Liquid, N.O.S.
Reportable Quantity	100 Lbs
E.R.G. Guide Sheet	171

CALIFORNIA PROP 65 STATUS: Listed

Date Prepared: 05/25/07

Specimen Label

Dow AgroSciences

Vista® XRT

Specialty Herbicide

®Trademark of Dow AgroSciences LLC

For selective postemergence control of annual and perennial broadleaf weeds and woody brush in:

- **Non-cropland areas including industrial sites, non-irrigation ditch banks, and rights-of-way such as electrical power lines, communication lines, pipelines, roadsides and railroads including grazed areas within these sites**
- **Pine plantations**

Not for Sale, Distribution, or Use in Nassau and Suffolk Counties, New York.

Active Ingredient(s):

fluroxypyr 1-methylheptyl ester: ((4-amino-3,5- dichloro-6- fluoro-2-pyridinyl)oxy)acetic acid, 1-methylheptyl ester	45.52%
Other Ingredient(s)	54.48%
Total	100.00%

Acid Equivalent: fluroxypyr: ((4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy)acetic acid – 31.59% - 2.8 lb/gal

EPA Reg. No. 62719-586

Keep Out of Reach of Children

WARNING AVISO

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.)

Precautionary Statements

Hazards to Humans and Domestic Animals

Causes Substantial But Temporary Eye Injury. Wear protective eyewear • Prolonged or Frequently Repeated Skin Contact May Cause Allergic Reactions In Some Individuals

Do not get in eyes or on clothing. Avoid contact with skin.

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 A on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as natural rubber ≥14 mils
- Shoes plus socks
- Protective eyewear

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, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls Statements

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protections 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/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.

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. 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. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

This product is toxic to fish. Drift or runoff from treated areas may be hazardous to aquatic organisms and non-target plants. 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.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies elsewhere on this label. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

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 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
- Chemical-resistant gloves such as natural rubber ≥14 mil
- 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, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter into treated areas until sprays have dried.

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.
Pesticide Storage: Store above 10°F or warm and agitate before use to ensure any crystallization that may have occurred redissolves.
Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by 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.

Nonrefillable containers 5 gallons or less:
Container Reuse: 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 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:
Container Reuse: 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 larger than 5 gallons:
Container Reuse: 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.

General Information

Vista® XRT herbicide is a selective postemergence product for control of annual and perennial broadleaf weeds and woody brush in:

- Non-crop areas including industrial sites, non-irrigation ditch banks, and rights-of-way such as electrical power lines, communication lines, pipelines, roadsides and railroads including grazed areas within these sites
- Pine plantations

Use Precautions and Restrictions

- Do not contaminate irrigation ditches or water used for domestic purposes.
- **Maximum Application Rate:** Do not apply more than 22 oz per acre of Vista XRT per year.
- **Grazing restrictions:** There are no grazing restrictions for livestock, including lactating or non-lactating dairy animals.
- **Harvest restrictions:** Do not harvest grass for hay or silage from treated areas within 7 days of application.
- **Slaughter restrictions:** Meat animals must be withdrawn from treated forage at least 2 days before slaughter.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **In Arizona:** The state of Arizona has not approved this product for use on plants grown for agricultural/commercial production; such as on designated grazing areas.
- **Management of Kochia Biotypes:** Research has suggested that many biotypes of kochia can occur within a single population. While kochia biotypes can vary in their susceptibility to Vista XRT, all will be suppressed or controlled at 12 oz per acre provided application timing and growing conditions are optimal. Application of Vista XRT at rates of less than 6 fl oz per acre per acre can result in a shift to more tolerant biotypes within a population.
- Avoid applications where proximity of susceptible plants or other desirable plants is likely to result in exposure to spray or spray drift.

Avoiding Drift and Run-off to Surface Water or Adjacent Land

This product should be used strictly in accordance with the run-off and drift precautions on this label in order to minimize off-site exposure and potential effects on aquatic organisms and non-target plants.

Avoiding Runoff: Under certain conditions, this product may have a potential to run-off to surface water or adjacent land. Vegetation filter strips or treatment setbacks should be used along rivers, creeks, streams, wetlands, etc or on the downhill side of treated areas where run-off could occur to minimize water runoff.

Avoiding Injury to Non-Target Plants

Spray drift produced during application is the responsibility of the applicator and care should be taken to minimize off-target movement of spray during application. A drift control agent suitable for agricultural use may be used with this product to aid in reducing spray drift but the first choice should be a coarser spray category nozzle set-up. If used, follow applicable use directions and precautions on the manufacturer's label.

Do not apply where drift may be a problem due to proximity to susceptible crops or other non-target broadleaf plants. Do not apply or otherwise permit this product or sprays containing this product to contact crops or other desirable broadleaf plants, including but not limited to alfalfa, beans, cotton, grapes, melons, peas, potatoes, safflower, soybeans, sugar beets, sunflower, tobacco, tomatoes, and other vegetable crops, flowers, fruit trees, ornamentals, shade trees or other susceptible broadleaf plants. Do not permit spray mist or drift containing this product to contact susceptible plants because even very small quantities of the spray, that may not be visible, can cause severe injury during either active or dormant periods. Do not use in or around greenhouses.

Ground Application: To minimize spray drift, apply Vista XRT in a total spray volume of 5 or more gallons per acre using spray equipment designed to produce coarse or larger droplets per ASAE S-572 standard. Refer to the spray equipment manufacturer's recommendations for detailed information on nozzle types, arrangement, spacing and operating height and pressure. Operate equipment at spray pressures no greater than is necessary to produce a uniform spray pattern. Operate the spray boom no higher than is necessary to produce a uniformly overlapping pattern between spray nozzles. Do not apply with hollow cone-type insecticide nozzles or other nozzles that produce a fine-droplet spray.

Aerial Application
Non-Cropland Areas, Including Rights-of-Way (Helicopter Only): In non-cropland, **do not** apply this product with fixed-wing aircraft.

Pine Plantations: Both fixed wing and helicopter equipment may be used to apply this product on pine plantations, but fixed wing aircraft require additional drift mitigation measures.

To minimize spray drift, apply Vista XRT in a total spray volume of 3 or more gallons per acre using spray. 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 potential for temperature inversion. Spray drift from aerial application can be minimized by applying a coarse spray as per USDA-ARS/PAASS or nozzle manufacturer's guidelines or by using straight-stream nozzles directed straight back. Do not operate using a spray boom longer than 75% of wing span or 85% of rotor width. For fixed wing aircraft, maximum speed during application is limited to 140 mph and application height above the vegetation canopy should not exceed 10 ft.

Do not store or handle other agricultural chemicals with the same containers used for this product. Do not apply other agricultural chemicals or pesticides with equipment used to apply this product unless equipment has been thoroughly cleaned (see Sprayer Cleanup under Mixing Instructions).

Spray Drift Management (Aerial Application)

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 to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The boom length must not exceed 75% of the fixed wing span 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 must always point backward parallel with the air stream and must be coarse or coarser per ASAE S-572 standard; see USDA-ARS/PAASS or nozzle manufacturer's guidelines.

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 Advisory Information section.

Aerial Spray Drift 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 Inversion 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 backwards, parallel to the airstream will produce larger droplets than other orientations. Significant deflection from the 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 larger droplets than other nozzle types.
- **Boom Length**-For some use patterns, reducing the effective boom length to less than 75 or 85% of the wingspan or rotor length, respectively, may further reduce drift without significantly reducing swath width.
- **Application**-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 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 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 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).

Mixing Instructions

Vista XRT Alone

Fill spray tank with water equal to 1/2 to 3/4 of the required spray volume. Add the required amount of Vista XRT, then finish filling the tank. Provide sufficient agitation during mixing and application to maintain a uniform emulsion.

Tank Mixing

This product may be applied in tank mix combination with labeled rates of other products 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.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed specified application rates. Do not tank mix with another pesticide product that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.
- For other products packaged in water soluble packaging, do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been adequately cleaned. (See instructions for Sprayer Clean-Out.)
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

- Undiluted Vista XRT and 2,4-D amine concentrates are not compatible and cannot be mixed together in the same supply tank when using injection equipment. Combinations of Vista XRT and 2,4-D ester are compatible for this purpose.

Tank Mix Compatibility Testing: A jar test should be done prior to tank mixing to ensure compatibility of Vista XRT and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in 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.

Tank Mixing Instructions
Fill spray tank with water to 1/4 to 1/3 of the required spray volume. Start agitation. Add different formulation types in the order indicated, allowing time for complete mixing and dispersion after addition of each.

1. Add dry flowables; wettable powders; aqueous suspensions, flowables or liquids.
2. Maintain agitation and fill spray tank to 3/4 of total spray volume and then add Vista XRT and other emulsifiable concentrates and any solutions.

Finish filling the spray tank. Maintain continuous agitation during mixing, final filling and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose. Settled material may be more difficult to resuspend than when originally mixed.

Sprayer Cleanup
To avoid injury to or exposure of nontarget crops, thoroughly clean and drain spray equipment used to apply this product after use. Cleaning should occur as soon as possible after application. Spray equipment should be cleaned by the following procedure:

1. Drain any remaining spray mixture from the spray tank and dispose of according to label disposal instructions.
2. Hose down the interior surfaces of the tank. Flush tank, hoses, boom, and nozzles with clean water for 10 minutes. Fill the tank with water and recirculate for 15 minutes. Spray part of the mixture through the hoses, boom, and nozzles and drain the tank. All rinse water must be disposed of in compliance with local, state, and federal guidelines.
3. Remove the nozzles and screens and clean separately.
4. If the spray equipment will be used on crops other than those labeled for this product, repeat steps 1 and 2 and thoroughly wash the outside of spray tank and the boom.

Application Instructions

Application Timing
Apply to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at and following time of application may reduce weed control and increase the risk of non-target plant injury. **Only weeds that are emerged at the time of application will be affected.** Foliage that is wet at the time of application may decrease control. Applications of Vista XRT are rain-fast within 1 hour after application.

Effect of Temperature on Herbicidal Activity
Herbicidal activity of Vista XRT is influenced by weather conditions. Optimum activity requires active plant growth. The temperature range for optimum herbicidal activity is 55°F to 85°F. Reduced activity will occur when temperature is below 45°F. Frost before application (3 days) or shortly after (3 days) may reduce weed control.

Application Rate Ranges
Generally, application rates at the lower end of the specified rate range will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species, perennials, and under conditions where control is more difficult (plant stress conditions such as drought or extreme temperatures, dense weed stands and/or larger weeds) the higher rates within the rate range will be needed. Weeds growing in the absence of competition from other vegetation generally require higher rates to obtain satisfactory control or suppression.

Spray Coverage
Apply in a spray volume of 3 or more gallons per acre by air or 5 or more gallons per acre by air or ground equipment. Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. Inadequate spray volume and coverage may result in decreased weed control. As canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Use larger nozzle tips or decrease spraying speed to increase spray volume rather than increasing boom pressure. Refer to manufacturer's recommendations for information on relationships between spray volume, and nozzle size and arrangement.

Spot Treatments
Spot treatments may be applied with a calibrated boom or with hand sprayers according to directions provided below.

Hand-Held Sprayers: Hand-held or backpack sprayers may be used for spot applications of Vista XRT if care is taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based an area of 1,000 sq ft. The amount of Vista XRT (fl oz or ml) in the table should be mixed with 1 gallon or more of water and applied to an area of 1,000 sq ft. To calculate the amount of product required for larger areas, multiply the table value (fl oz or ml) by the area to be treated in "thousands" of square feet, e.g., if the area to be treated is 3,500 sq ft, multiply the table value by 3.5 (Calculation: 3,500 ÷ 1,000 = 3.5). An area of 1000 sq ft is approximately 10.5 X 10.5 yards in size.

Amount of Vista XRT to Equal Specified Broadcast Rate (Mix with 1 Gallon or More of Water and Apply to 1,000 sq ft)				
6 fl oz/ acre	**9 fl oz/ acre**	**12 fl oz/ acre**	**17 fl oz/ acre**	**22 fl oz/ acre**
0.14 fl oz (4.1 ml)	0.21 fl oz (6.2 ml)	0.28 fl oz (8.3 ml)	0.4 fl oz (11.7 ml)	0.56 fl oz (16.5 ml)

1 fl oz = 29.6 (30) ml

Weeds Controlled or Suppressed

(Numbers in parentheses (-) refer to footnotes):

Weeds Controlled			Weeds Suppressed (3)
6 – 12 fl oz/acre	12 fl oz/acre	22 fl oz/acre	22 fl oz/acre
bedstraw (cleavers)	chickweed	blackberry	buckhorn plantain
common purslane	cocklebur	catsear	common mullein
hairy buttercup	coffeeweed, common ragweed	giant ragweed	cudweed
hemp dogbane	curly dock	goldenrod	field bindweed
kochia (1), (2), (4)	cutleaf primrose	henbane	field horsetail
marshelder (2)	dandelion	hop clover	field pennycress
sericea lespedeza (2)	dogfennel	horsenettle	leafy spurge
tropic croton	grape	ironweed	mustard
	horseweed/marestail	lantana	narrowleaf plantain
	morningglory	musk thistle	nightshade species
	prickly lettuce	wild carrot	spiny amaranth
	sunflower		wild buckwheat
	vetch		yellow thistle
	velvetleaf		
	venice mallow		
	western ragweed		
	white clover		
	white cockle		

(1) Includes herbicide tolerant or resistant biotypes.
(2) Use the higher rate in the range to control these weeds.
(3) Suppression is expressed as a reduction in weed competition (reduction population or vigor) as compared to untreated areas. The degree of weed control and duration of effect may vary with weed size, density, application rate, coverage, and growing conditions before, during and after treatment.
(4) The addition of a methylated seed oil surfactant (i.e. MSO or ESO) at the rate of 1-2 quarts per acre is recommended for control of kochia. For kochia infestations with larger plants at more advanced growth stages, increasing the rate of Vista XRT to 13 - 17 fl oz or the addition of 1-2 quarts per acre of 2,4-D along with the 1-2 quarts per acre of methylated seed oil will improve control.

Specific Use Directions

Non-Cropland and Pine Plantations

(Including industrial sites, non-irrigation ditch banks, and rights-of-way such as electrical power lines, communication lines, pipelines, roadsides and railroads including grazed areas within these sites)

Precautions for Use in Pine Plantations:
Do not apply Vista XRT to pine plantations as an over-the-top broadcast treatment during active terminal growth (from initiation of budbreak/growth flush until seasonal terminal growth has hardened off and over-wintering buds have formed). Directed spray applications may be made to pine plantations during periods of active growth, but care should be taken to avoid spray contact with actively growing foliage.

Do not apply Vista XRT in tank mix combination to pine plantations unless the tank mix product is labeled for weed or brush control in pines by the application method being employed.

Apply at the broadcast rate of 6 to 22 fl oz per acre when weeds are small and/or actively growing. Split applications of Vista XRT herbicide may be made during a single year, provided the total amount of Vista XRT applied does not exceed the maximum-labeled rate of 22 fl oz per acre. See listing of Weeds Controlled or Suppressed at end of General Information Section.

Spot treatments should be applied at rates and spray volumes equivalent to broadcast application. See instructions for "Spot Application" above.

Brush Control: Vista XRT may be tank-mixed with Garlon® 4 herbicide, Garlon 3A herbicide, Accord® SP herbicide, Accord XRT herbicide, Tordon® K herbicide or Tordon 101M herbicide at indicated rates to increase control of pine species, shingle oak, red maple, red oak and other woody species.

Products In Tank Mix	Application Rates	Woody Plants Controlled
Vista XRT + Garlon 4	17 - 22 fl oz + 2 - 3 qt/acre	bay species black cherry dogwood water oak willow oak
Vista XRT + Garlon 3A	17 - 22 fl oz + 3 - 4 qt/acre	bay species black cherry dogwood water oak willow oak
Vista XRT + Garlon 3A + Tordon 101M	17 - 22 fl oz + 2 - 4 qt/acre + 4 - 8 qt/acre	pine species red maple red oak shingle oak Virginia pine water oak
Vista XRT + Garlon 3A + Tordon K	17 - 22 fl oz + 4 qt/acre + 2 qt/acre	pine species red maple red oak shingle oak Virginia pine water oak
Vista XRT + Accord® SP or Accord XRT herbicide	17 - 22 fl oz + 4 - 6 qt/acre	dogwood gallberry pines wax myrtle

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. Crop 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 temperatures, 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 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.

Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

Label Code: D02-362-001
Initial Printing
LOES Number: 010-02181

EPA accepted 12/10/07

MATERIAL SAFETY DATA SHEET

Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

Dow AgroSciences

VISTA* XRT HERBICIDE

Effective Date: 08-May-08
Product Code: 116392

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Vista* XRT Herbicide

COMPANY IDENTIFICATION:
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW
Clear pale yellow liquid with an aromatic odor. May cause eye and skin irritation. Toxic to aquatic organisms.
EMERGENCY PHONE NUMBER: 800-992-5994

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Component	CAS Number	W/W%
Fluroxypyr-meptyl	81406-37-3	45.5
Naphthalene	91-20-3	0.5
N-methylpyrrolidinone	872-50-4	0.1
Balance		53.9

4. FIRST AID:

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

SKIN: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Items which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands should be disposed of properly.

INGESTION: Immediately call a poison control center or doctor for treatment advice. 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.

INHALATION: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). If breathing is difficult, oxygen should be administered by qualified personnel.

NOTE TO PHYSICIAN: Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. Skin contact may aggravate preexisting dermatitis. 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:

FLASH POINT: >212°F (>100C)
METHOD USED: Closed Cup

FLAMMABLE LIMITS
LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Foam, CO_2, or Dry chemical

FIRE AND EXPLOSION HAZARDS: Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Toxic irritating gases may be formed under fire conditions.

FIRE-FIGHTING EQUIPMENT: Use positive-pressure, self-contained breathing apparatus and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS: Absorb small spills with materials such as sand, sawdust, Zorball, or dirt. Wash exposed body areas thoroughly after handling. Report large spills to Dow AgroSciences at 800-992-5994.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors and spray mist. Handle concentrate in ventilated area. Wash thoroughly with soap and water after handling and before eating, chewing gum, using tobacco, using the toilet or smoking. Keep away from food, feedstuffs, and water supplies. Store in original container in a well-ventilated area.

MATERIAL SAFETY DATA SHEET

Dow AgroSciences

Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

VISTA* XRT HERBICIDE

Effective Date: 08-May-08
Product Code: 116392

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINES:
Fluroxypyr-meptyl: Dow AgroSciences Industrial Hygiene Guide is 10 mg/M^3.
Naphthalene: ACGIH TLV is 10 ppm TWA, 15 ppm STEL, Skin, A4. OSHA PEL is 10 ppm TWA.
N-Methyl-2-pyrrolidinone: AIHA WEEL is 10 ppm, Skin.
Interim Dow AgroSciences Industrial Hygiene Guide is 500 ppm.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use chemical goggles.

SKIN PROTECTION: Use gloves chemically resistant to this material.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Clear pale yellow liquid
ODOR: Aromatic
DENSITY: 1.054 g/mL
BOILING POINT: Not determined
SOLUBILITY IN WATER: Not determined

10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) Stable under normal storage conditions.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) None known.

HAZARDOUS DECOMPOSITION PRODUCTS: None known.

HAZARDOUS POLYMERIZATION: Not know to occur.

11. TOXICOLOGICAL INFORMATION:

EYE: May cause slight temporary eye irritation. May cause slight temporary corneal injury.

SKIN: Brief contact may cause skin irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts. Has caused allergic skin reactions when tested in mice. The dermal LD_{50} for rats is >5000 mg/kg.

INGESTION: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. The oral LD_{50} for female rats is >5000 mg/kg.

INHALATION: Vapor concentrations are attainable which could be hazardous on single exposure. The aerosol LC_{50} for rats is >5.5 mg/L for 4 hours.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For fluroxypyr, based on available data, repeated exposures are not anticipated to cause significant adverse effects. Excessive exposure to the solvent(s) may cause respiratory irritation and central nervous system depression. For N-methylpyrrolidinone, in animals, effects have been reported on the following organs: liver and blood-forming organs (bone marrow & spleen).

CANCER INFORMATION: Fluroxypyr did not cause cancer in laboratory animals. Contains naphthalene, which has caused cancer in some laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.

TERATOLOGY (BIRTH DEFECTS): Fluroxypyr did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. N-methylpyrrolidinone has caused toxic effects to the fetus in laboratory animals at high dose levels with either mild or undetectable maternal toxicity.

REPRODUCTIVE EFFECTS: Fluroxypyr, in animal studies, did not interfere with reproduction. N-methylpyrrolidinone did not interfere with reproduction in animal studies.

MUTAGENICITY: For the active ingredient, in-vitro and animal genetic toxicity studies were negative. For naphthalene: in-vitro genetic toxicity studies were negative in some cases and positive in other cases. For N-methylpyrrolidinone, studies were negative in some in-vitro genetic toxicity studies and positive in others.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:
Based largely or completely on information for fluroxypyr.
Bioconcentration potential is low (BCF is <100 or Log Pow <3).
Potential for mobility in soil is slight (Koc is between 2000 and 5000).
Based largely or completely on information for the solvent.
Bioconcentration potential is high (BCF is >3000 or Log Pow between 5 and 7).

DEGRADATION & PERSISTENCE:
Based largely or completely on information for fluroxypyr.
Chemical degradation (hydrolysis) is expected in the environment within minutes to hours.
Degradation is expected in the soil environment within days to weeks.
Based largely or completely on information for the solvent.
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.

ECOTOXICOLOGY:
Material is moderately toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} is between 1 and 10 mg/L in the most sensitive species tested).

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: 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 and regulations.

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

DOT Non-Bulk
NOT REGULATED

DOT Bulk
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S
Technical Name: NAPHTHALENE
Hazard Class: 9 **ID Number:** UN3082
Packing Group: PG III

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

Additional Information
Reportable quantity: 25,000 lb - NAPHTHALENE

15. REGULATORY INFORMATION:

NOTICE: The information herein is presented 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 from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

MATERIAL SAFETY DATA SHEET

Dow AgroSciences

Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

VISTA* XRT HERBICIDE

Effective Date: 08-May-08
Product Code: 116392

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
Naphthalene	91-20-3	0.5%
N-methylpyrrolidinone	872-50-4	0.1%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

This product contains a chemical(s) known to the State of California to cause cancer. The chemical is naphthalene (CAS # 91-20-3).

This product contains a chemical(s) known to the State of California to be a developmental toxin. The chemical is N-methylpyrrolidinone (CAS # 872-50-4).

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Naphthalene	91-20-3	PA1 PA3
N-methylpyrrolidinone	872-50-4	PA1

PA1=Pennsylvania Hazardous Substance (present at > or = to 1.0%).
PA3=Pennsylvania Environmental Hazardous Substance (present at > or = to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA, which may require reporting of releases:

Chemical Name	CAS Number	RQ	% in Product
Naphthalene	91-20-3	100 lb.	0.5%

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Category	Rating
Health	1
Flammability	1
Reactivity	0

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 14 & 15
Replaces MSDS Dated: 09-Nov-07
Document Code: D03-362-001

The Information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult Dow AgroSciences for Further Information.

SUNSTREAM™

SPRAY ADJUVANT FOR LOW VOLUME FOLIAR APPLICATIONS

CAUTION

Do not take internally. Avoid skin and eye contact. KEEP OUT OF THE REACH OF CHILDREN.

FIRST AID

If Swallowed:
Do not induce vomiting. Get medical help.

If on Skin:
Thoroughly wash area with soap and water. Remove contaminated clothing. Launder clothing before re-use.

If In Eyes:
Flush with large amounts of water. Get medical attention.

If Breathed:
Remove individual to fresh air. If affected, get medical attention.

Non-combustible.

ACTIVE INGREDIENTS:

Blend of Natural Vegetable Oils and Special Emulsifiers	100%

CAUTION: May cause skin and eye irritation. Harmful if swallowed. KEEP OUT OF REACH OF CHILDREN.

DIRECTIONS FOR USE

- **SUNSTREAM™ is a spray adjuvant that is especially formulated for low volume foliar applications of herbicides for weed and brush control.**
- **SUNSTREAM™ provides a heavy emulsified spray pattern with larger droplets, better visibility and more efficient herbicide uptake. SUNSTREAM™ also helps reduce evaporation loss.**
- **Use up to 15% to 20% by volume of SUNSTREAM™ to achieve desired results. Rates will depend on low volume spray equipment chosen.**

ALWAYS FOLLOW HERBICIDE LABEL INSTRUCTIONS.

NET CONTENTS: _____

BREWER International
P.O. BOX 6006 • VERO BEACH, FL 32961-6006
(561) 562-0555 (800) 228-1833

www.brewerint.com

CONDITIONS OF SALE

We warrant that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth on the label when used according to directions under normal use conditions.

THERE ARE NO OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

This warranty does not extend to the handling or use of this product contrary to label instructions or under abnormal conditions or under conditions not reasonably foreseeable to seller, and buyer assumes all risk of any such use.

BREWER International
The Natural Leader In Chemistry

SUNSTREAM.... Specimen Label

Spray Adjuvant For Low-Volume Foliar Applications

Ingredients

Active Ingredients: Blend of all natural vegetable oils and special emulsifiers.....100%

Inert Ingredients: components ineffective as adjuvant.....0%

Total:.....100%

Sunstream isa spray adjuvant that is especially formulated for low volume foliar applications of herbicides for weed and brush control. Sunstream provides a heavy emulsified spray pattern with larger droplets, better visibility and more efficient herbicide uptake. Sunstream can be used in backpack applications, low volume ground, rights-of-way, forestry, agriculture, and aquatics.

CAUTION

Do not take internally. Avoid skin contact. May cause skin and eye irritation, and staining. Keep out of the reach of children.

ANTIDOTE

If swallowed: Do not induce vomiting. Get medical attention. In case of skin contact, flush thoroughly with water.

CHARACTERISTICS

Sunstream is a natural oil blend, biodegradable, drift control product. Ingredients are exempt from the requirements of tolerance under Title 40, CFR, 180.1001 (d).

DIRECTIONS FOR USE

Use up to 15% to 20% by volume of Sunstream to achieve desired results. Rates will depend on low volume spray equipment chosen.

CONDITIONS FOR SALE

We warrant that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth on the label when used according to directions under normal use conditions. There are no other warranties, whether expressed or implied, including a warranty of fitness for a particular purpose. This warranty does not extend to the handling or use of this product contrary to label instructions or under abnormal conditions not reasonably foreseeable to seller, and buyer assumes all risk of any such use.

Brewer International | e-mail:info@brewerint.com

P.O. Box 690037 | Vero Beach , Florida 32969-0037

(772) 562-0555 | 1-800-228-1833 | FAX (772) 778-2490

SUNSTREAM

SPRAY ADJUVANT FOR LOW-VOLUME FOLIAR APPLICATIONS

SUNSTREAM is a spray adjuvant that is especially formulated for low volume foliar applications of herbicides for weed and brush control.

SUNSTREAM provides a heavy emulsified spray pattern with larger droplets, better visibility and more efficient herbicide uptake.

SUNSTREAM also helps reduce evaporation loss.

SUNSTREAM can be used in backpack applications, low volume ground spray, rights-of-way, forestry, agriculture and aquatics.

SUNSTREAM has the following advantages:

- NATURAL OIL BLEND
- BIODEGRADABLE
- DRIFT CONTROL
- GETS PRODUCT ON TARGET

DIRECTIONS FOR USE:

Use up to 15% to 20% by volume of SUNSTREAM to achieve desired results. Rates will depend on low volume spray equipment chosen.

BREWER INTERNATIONAL
PO Box 690037
Vero Beach, FL 32969-0037
1-800-228-1833 / Fax (772) 778-2490
www.brewerint.com