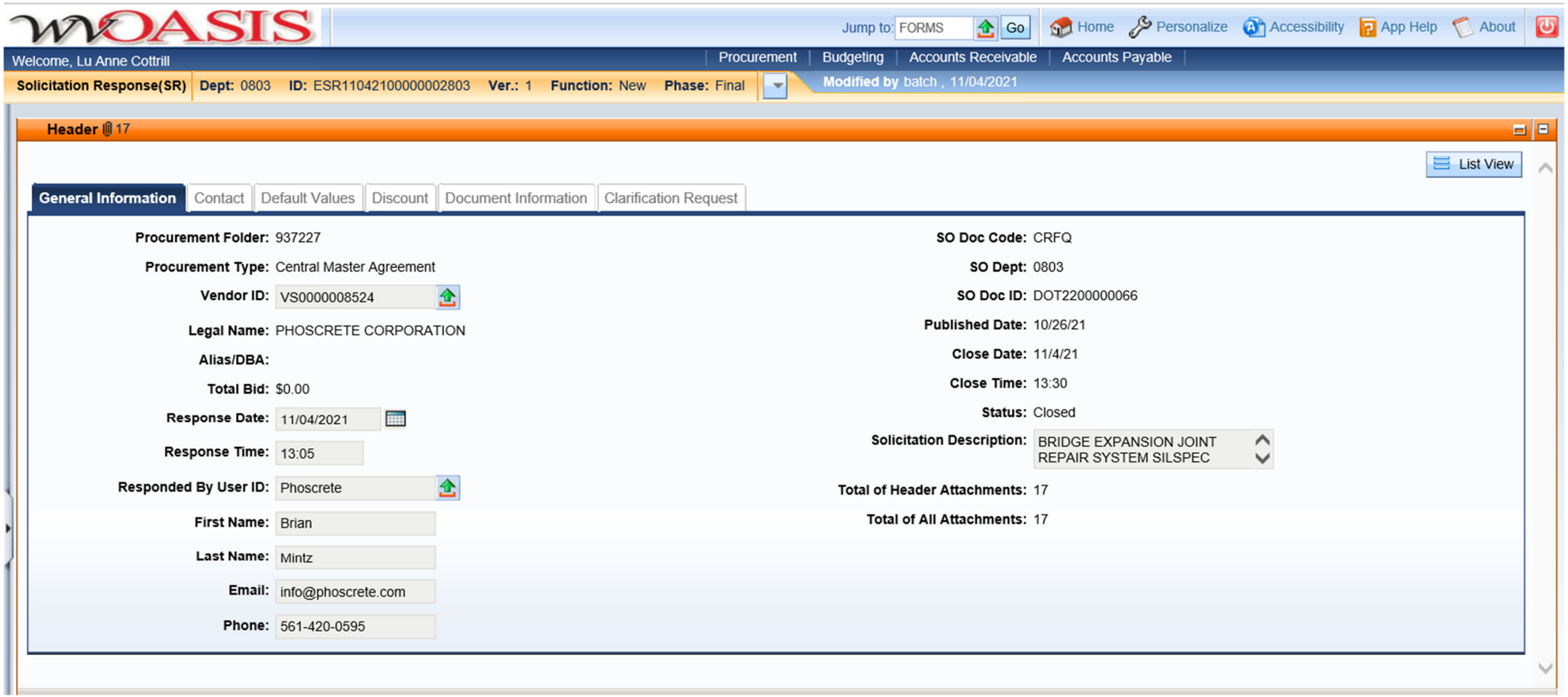
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.


wvOASIS
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Welcome, Lu Anne Cottrill
Procurement
Budgeting
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Accounts Payable
Solicitation Response(SR) Dept: 0803 ID: ESR11042100000002803 Ver.: 1 Function: New Phase: Final
Modified by batch , 11/04/2021
Header 17
List View
General Information
Contact
Default Values
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Document Information
Clarification Request
Procurement Folder: 937227
Procurement Type: Central Master Agreement
Vendor ID: VS0000008524
Legal Name: PHOSCRETE CORPORATION
Alias/DBA:
Total Bid: $0.00
Response Date: 11/04/2021
Response Time: 13:05
Responded By User ID: Phoscrete
First Name: Brian
Last Name: Mintz
Email: info@phoscrete.com
Phone: 561-420-0595
SO Doc Code: CRFQ
SO Dept: 0803
SO Doc ID: DOT2200000066
Published Date: 10/26/21
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Status: Closed
Solicitation Description: BRIDGE EXPANSION JOINT REPAIR SYSTEM SILSPEC
Total of Header Attachments: 17
Total of All Attachments: 17

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

State of West Virginia
Solicitation Response

Proc Folder:	937227
Solicitation Description:	BRIDGE EXPANSION JOINT REPAIR SYSTEM SILSPEC 6622C019
Proc Type:	Central Master Agreement

Solicitation Closes	Solicitation Response	Version
2021-11-04 13:30	SR 0803 ESR11042100000002803	1

VENDOR

VS0000008524
PHOSCRETE CORPORATION

Solicitation Number: CRFQ 0803 DOT2200000066

Total Bid: 0 **Response Date:** 2021-11-04 **Response Time:** 13:05:09

Comments:

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

Vendor
Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	BRIDGE EXPANSION JOINT REPAIR PRODUCT SYSTEMS	0.00000	EA	85.000000	0.00

Comm Code	Manufacturer	Specification	Model #
30111902			

Commodity Line Comments: Phoscrete HC pricing below per existing WVDOH State contract: for Patching Materials:
1-2 Pallets: $85 per kit or $188.88 per CF
3-6 Pallets: $76.50 Per Kit or $170 per CF
7-11 Pallets: $73.10 per kit or $162.44 per CF
12+ Pallets: $69.79 per kit or $154.89 per cf

Extended Description:

BRIDGE EXPANSION JOINT REPAIR PRODUCT SYSTEMS, Pricing Pages, Exhibit A Pricing Page

Contact the Phoscrete Team
for personal assistance.

Email: info@phoscrete.com
Call us: 561-420-0595

PRODUCTS AND PRICES

PRODUCT/LINK	DESCRIPTION	COVERAGE	PRICE
PC-HC-MP-K	Phoscrete® HC Mini Pallet Kits (16 kits + lg. mixer)	0.45 cf/kit	1,655.00
PC-HC-FP-K	Phoscrete HC Full Pallet Kits (48 kits)		4,080.00
PC-HC-MP-P	Phoscrete HC Mini Pallet Small Pails (16 pails + sm. mixer)	1.0 bf/kit	825.00
PC-HC-FP-P	Phoscrete HC Full Pallet Pails (64 pails)		2560.00
PC-HC-ENDURE-MP-K	Phoscrete HC-ENDURE™ Mini Pallet Kits (16 kits + lg. mixer)	0.45 cf/kit	1,719.00
PC-HC-ENDURE-FP-K	Phoscrete HC-ENDURE Full Pallet Kits (48 kits)		4,272.00
PC-HC-ENDURE-FP-P	Phoscrete HC-ENDURE Full Pallet Small Pails (64 pails)	1.0 bf/kit	2624.00
PC-SG-ENDURE-FP-K	Phoscrete SG-ENDURE™ Full Pallet Kits (48 kits)	0.8 cy/pallet*	4,272.00
PC-EKO-ENDURE-MP-P	Phoscrete EKO-ENDURE™ Mini Pallet Pails (12 pails + lg. mixer)	0.43 cf/kit	1,363.00
PC-EKO-ENDURE-FP-P	Phoscrete EKO-ENDURE Full Pallet Pails (36 pails)		3,204.00
PC-VO-MP-K	Phoscrete VO Mini Pallet Kits (12 kits + lg. mixer)	0.5 cf/kit	1,581.00
PC-VO-FP-K	Phoscrete VO Full Pallet Kits (36 kits, 72 bags/36 jugs)		3,888.00
PC-VO-MP-P	Phoscrete VO Mini Pallet Small Pails (16 sm pails + sm. mixer)	1.0 bf/kit	825.00
PC-VO-FP-P	Phoscrete VO Full Pallet Small Pails (64 sm. pails)		2560.00
PC-PRIMER-TUB	Phoscrete Primer Tub (4 pack)	32 si/tub†	40.00
PC-PRIMER-PAIL	Phoscrete Primer Pail (each)	4 sf/pail†	40.00
PC-PRIMER-MP-P	Phoscrete Primer Mini Pallet Small Pails (16 pails + sm. mixer)		825.00
PC-FAST-PAIL-S	Phoscrete Fast-Set Admix – Small Pail (32 doses)		80.00
PC-FAST-PAIL-F	Phoscrete Fast-Set Admix – Large Pail (96 doses)		240.00
PC-SLOW-PAIL-S	Phoscrete Slow-Set Admix – Small Pail (32 doses)		80.00
PC-SLOW-PAIL-S	Phoscrete Slow-Set Admix – Large Pail (96 doses)		240.00
PC-ENDURE-JUG	Phoscrete ENDURE™ Admix – Jug (1 gallon)		40.00
PC-ENDURE-PAIL	Phoscrete ENDURE Admix – Pail (5 gallons)		200.00
PC-ENDURE-DRUM	Phoscrete ENDURE Admix – Drum (55 gallons)		2,200.00
PC-ENDURE-TOTE	Phoscrete ENDURE Admix – Tote (275 gallons)		11,000.00
PC-MIXER-LA	Phoscrete Urethane Large Mixing Paddle		95.00
PC-MIXER-S	Phoscrete Urethane Small Mixing Paddle		85.00
PC-DRILL	Phoscrete Drill Mixer 9 Amp, Variable speed ½ inch		289.00
PC-NEEDLER	Phoscrete Needle Scaler - Compact		60.00
PC-STINGER-A	Phoscrete Air Pencil Vibrator		408.00
PC-STINGER-B	Phoscrete Battery Pencil Vibrator		
PC-STINGER-E	Phoscrete Electric Pencil Vibrator		
PC-COOLER-150	Phoscrete Cooler 150qt. Cools 16 Activator Jugs		175.00

***COVERAGE KEY**: cf=cubic foot, cy=cubic yard, bf=board foot, si=square inch, sf=square foot, *coverage less rebound, †at ¼ inch*

CUSTOMER DISCOUNT SCHEDULE

3-6 Pallets	**10%**
7-11 Pallets	**14%**
12+ Pallets (Full Truckload)	**18%**

Manufacturer-Direct Quantity Discount Schedule
is for end-user Phoscrete customers.

Discount is calculated on single order delivered in full
to a single shipping point.

FOB Origin
Manufacturing Point = MI 48189 • Distribution Point = FL 33069

Free Standard Shipping to customers in
Continental US on Full Pallets and Mini Pallets

Multi-Pallet Discount Pricing
applies to full-pallet orders only (not mini-pallets)

Full Pallets can be combined on a single order for maximum discount.
All items added to an order are discounted based on total full pallets ordered.

Ask about our Points Promotion Program
Earn free tools with every purchase of Phoscrete!

Visit our website or contact your representative for detailed technical information.

All orders subject to Phoscrete's Terms and Conditions of Sale as of the order date, and acceptance by Phoscrete Corporation. Prices and discounts subject to change without notice.

CONSTRUCTION SPECIFICATIONS

Magnesium-Alumino-Liquid-Phosphate (MALP) Concrete Specifications for the Repair of Damaged Concrete Members

Horizontal and Castable Repairs

1. DESCRIPTION

This work consists of placement of Magnesium-Alumino-Liquid-Phosphate (MALP) concrete by Phoscrete Corporation for the horizontal repair of damaged concrete members by pour, form-and-pour, or pre-cast as indicated in the contract documents. Phoscrete HC is the commercial name of MALP concrete by Phoscrete Corporation.

MALP concrete has been available since 1990 in the United States. This technology incorporates a pre-packaged magnesium-alumino-aggregate dry bag component with a liquid component based on an aluminum phosphate activator. When mixed, the two components develop MALP concrete, a long lasting, rapid return to service concrete material that can be applied in a safe, fast, and easy manner.

MALP concrete is well suited for concrete repairs characterized by fast-setting and high-early strength.

Install MALP concrete to repair damaged concrete as indicated on the contract documents. Examples of MALP concrete repairs may include but are not limited to repair of concrete pavements, expansion joint headers, spalls, concrete beam ends, concrete precast members, full and partial depth bridge deck repairs, pier cap, dowel bar, and other repairs.

MALP concrete bonds to Portland-cement based concrete and to itself.

MALP concrete does not out-gas after cure. It accepts polymer coatings (epoxies, elastomers, silicones) and silane coatings as soon as one hour following initial set. Do not confuse with MAPC (Magnesium Ammonia Phosphate Cement) concrete that activates with ammonium di-hydrogen phosphate and water.

In case of MALP concrete applications as joint header of bridge expansion joints, the material accepts sealants without need of saw-cutting or shot-blasting the concrete face.

MALP concrete is reinforced with rigid fibers for improved compressive, bond, and flexural strengths, and enhanced freeze-thaw resistance.

MALP concrete stops rust on contact by converting iron oxide to metal phosphate. MALP inhibits/limits future corrosion by bonding to and encapsulating the reinforcing steel.

MALP concrete can be installed in ambient temperatures as cold as -5°F. In regions where temperatures can vary from extreme heat to cold in a 24-hour period, MALP Concrete can withstand this variation without loss of bond.

2. MATERIALS

2.A. Performance Properties of MALP concrete for Horizontal and Castable Repairs

Provide MALP concrete for horizontal and castable repairs having performance properties in accordance with table 2.A.

Table 2.A- Performance Properties of MALP Concrete

Requirement	Test Method	Test Value
Initial Time of Setting (Maximum[1])	AASHTO T131 / ASTM C191	15 minutes
Final Time of Setting (Maximum[1])	AASHTO T131 / ASTM C191	25 minutes
Compressive Strength (Minimum)	ASTM C109	5,000 psi [35 MPa] @ 1 hour 7,500 psi [50 MPa] @1 day 10,000 psi [70 MPa] @28 days
Flexural Strength Modulus of Rupture (Minimum)	ASTM C78	500 psi [3.4 MPa] @ 1 hour 600 psi [4.1 MPa] @ 1 day 700 psi [4.8 MPa] @ 28 days
Splitting Tensile Strength (Minimum)	ASTM C496	800 psi [5.5 MPa] @28 days
Modulus of Elasticity in Compression (Minimum)	ASTM C469	Modulus Elasticity: 3.0 x 10^6 psi [20,700 MPa] @28 days Poisson's Ratio: 0.274 @28 days
Bond Strength Slant Shear (Minimum)	ASTM C882	MALP over Concrete 1500 psi @ 1 hour 2,000 psi [13.8 MPa] @ 1 day 2,500 psi [17.2 MPa] @ 28 days MALP over MALP 2000 psi @ 1 hour 2,500 psi [13.8 MPa] @ 1 day 3,500 psi [17.2 MPa] @ 28 days

Direct Tension - Pull-off Adhesion (Minimum)	ASTM C1543	250 psi [1.7 MPa] @ 28 days
Length Change (Maximum)	ASTM C157 per C928	-0.05% Dry Cure @28 days +0.05% Wet Cure @28 days
Restrained Shrinkage (Ring) Test (Minimum)	ASTM C1581	No cracks @ 90 days
Freeze / Thaw Resistance (Minimum)	ASTM C666 Procedure A	Durability: 100% @ 300 cycles
Scaling Resistance to Deicing Salts (@ 25 cycles) (Maximum)	ASTM C672	NaCl: 0 Visual Rating 0.0 lbs./ft2 Material Loss CaCl2: 0 Visual Rating 0.0 lbs./ft2 Material Loss MgCl2: 0 Visual Rating 0.0 lbs./ft2 Material Loss
Chloride Content (Maximum)	AASHTO T260	Water Soluble: 0.002% by mass of sample 0.20% by mass cementitious Acid Soluble: 0.002% by mass of sample 0.15% by mass cementitious
Resistance to Chloride Ion Penetration (Maximum)	AASHTO T277 / ASTM C1202	500 Coulombs @ 28 days with 5 minutes current (mA)
Abrasion (Maximum)	California Test 550	Mass Loss: 20 g @28 days

[1]Supercool liquid component as specified by Manufacturer to achieve desired set time.

2.B. Product Data

Provide the Engineer with a copy of the Safety Data Sheets (SDS) for MALP Concrete's components to be used on site.

Provide certifications stating the conformity of the material with local, state, federal, environmental and worker safety laws and regulations, as requested.

Provide Technical Data Guide of MALP concrete, which must report yield, mechanical and environmental performance properties.

Provide Installation Guide of MALP concrete, which must include storage, handling, surface preparation, mixing, placing, and finishing guidelines.

When installing Expansion Joints, provide Expansion Joint Installation and Repair Guide of MALP concrete, which must include installation details specific to the expansion joint design covered under this Construction Specification.

3. EQUIPMENT AND TOOLS

Use mixing equipment and application tools as indicated by the manufacturer's installation guide for the proper application of MALP concrete.

Clean tools with water. Be sure to wipe off excess water between batches to prevent the contact of water with MALP concrete.

Wear proper Personal Protective Equipment (PPE), as recommended by the Manufacturer, when mixing and placing MALP concrete. Refer to the Manufacturer's Installation Guide for detailed application and safety precautions.

4. INSTALLATION METHOD

Provide a technical representative from the Manufacturer of MALP Concrete at the start of work for a minimum of one full working day. Alternatively, provide a written statement by the Manufacturer assuring that the Contractor is qualified to install MALP concrete.

The written statement must be dated within the last twelve (12) months. It must include the names of key personnel who will perform and supervise the actual installation of MALP concrete. The Engineer may suspend work if unauthorized personnel are substituted for authorized personnel during construction.

4.A. Delivery, Storage and Disposal

Deliver the material in original, unopened, undamaged, factory-sealed package.

Verify that the Manufacturer's labels are intact and legible. Labels must include brand, product name, weight, system identification number, and batch number, with verification of date of manufacture and shelf life.

Store the material's components in a clean, dry location, out of direct sunlight. Maintain storage temperature required by the Manufacturer. Avoid contact with moisture.

Do not use components that have exceeded their shelf life.

Dispose of expired material in accordance with Manufacturer's recommendations and local environmental regulations.

4.B. Installation

4.B.1. Surface Preparation

Apply MALP concrete to dry surfaces only. Do not apply over Saturated Surface Dry (SSD) concrete surfaces. Clean all slurry and dust from saw-cutting and demolition. Do not apply to surfaces contaminated with oil, or on unsound concrete.

Follow Manufacturer's Installation Guide for preparing the surface prior to placing MALP concrete. Follow Manufacturer's Expansion Joint Installation and Repair Guide for additional surface preparation instructions for that application.

4.B.2. Primer Treatment

Use MALP Concrete Primer as indicated per Manufacturer's Installation guide and Expansion Joint Installation and Repair Guide for that application.

4.B.3. Mixing Instructions

Follow Manufacturer's Installation Guide for mixing MALP concrete using a drill mixer and paddle in buckets, or in larger quantities using a paddle-style mortar mixer.

Refer to Manufacturer's Installation Guide and All Temperature Guidelines usage of Admixtures to speed or slow initial set of MALP concrete, and for best practices on cooling/supercooling MALP Liquid Activator to extend working time.

4.B.4. Placement and Finishing

Follow Manufacturer's Installation Guide for instructions and usage of concrete finishing tools, vibration, grinding, and when sealing can begin.

4.B.5. Sealing

Follow Sealant Manufacturer's Installation Guide for application of joint seal and for MALP concrete sealants.

5. METHOD OF MEASUREMENT

Measure by cubic foot [cubic meter] of the area covered by the MALP Concrete, accounting for a minimum depth of 2" or the Engineer's required depth.

6. BASIS OF PAYMENT

The Department will pay for each pay item at the contract unit price per the specified pay unit as follows:

MALP Concrete Repairs	*Cubic Foot [Cubic Meter]*
MALP Concrete Joint Headers	*Linear Foot [Meter]*

The Owner will consider the cost of all materials, equipment, labor, and incidentals necessary for proportioning, mixing, delivery, storage, handling, surface preparation, installation, sampling, and testing of MALP Concrete to be included in the unit price bid.

TECHNICAL DATA GUIDE

PHOSCRETE® HC (Horizontal/Castable)

Very Rapid Hardening MALP (Magnesium Alumino Liquid Phosphate) concrete for full and partial depth horizontal and castable concrete repairs.

DESCRIPTION

PHOSCRETE HC is a two-part cementitious concrete repair material composed of magnesium oxide, aluminosilicates, aggregates, and reinforcing fibers (Dry Mix), plus a liquid phosphate activator (Liquid Activator). PHOSCRETE HC is very rapid hardening, and gains strength suitable to vehicular traffic in less than one hour at a wide range of ambient temperatures. PHOSCRETE HC forms both a chemical and a mechanical bond to cured concrete and to itself.

PHOSCRETE HC meets ASTM C 928, Type R3.

PROVEN APPLICATIONS

- Full depth and partial depth concrete repairs
- Interior and exterior concrete installation and repairs
- Horizontal surfaces: poured/castable applications
- Vertical and overhead surfaces: form and pour applications
- Bridge deck and parking deck repairs of reinforced concrete
- Highway concrete spall and rutting repairs
- Airport runway and apron concrete repairs
- Dowel bar retrofit, pre-cast joint grouting, bearing locations
- Freezer floors, industrial floors, and loading dock repairs
- Expansion joint nosing construction and repairs

ADVANTAGES

- Labor and time saving material: no sandblasting of steel bars, no anti-corrosion primer, no sacrificial anodes, no curing.
- Easy and accurate mixing: two components, Dry Mix in a bag and Liquid Activator in a jug. No water, pre-extended mix. self-consolidating, fast setting, easy clean up with water.
- Rapid return to service: exceeds 4,000 psi (28 MPa) compressive strength and 1,500 psi (10 MPa) bond strength 1 hour after placement at 68°F (20°C).
- Durable: freeze-thaw and salt scaling resistant, even when exposed to $MgCl_2$ and $CaCl_2$.
- Fiber reinforced: high flexural strength and ductility.
- Strong mechanical and chemical bond to clean cured concrete and to itself with no cold joints
- Stops rust and inhibits corrosion: converts iron oxide to metal phosphate.
- Does not out-gas after cure: accepts sealers and polymer coatings as soon as 15 minutes following initial set.
- Chemically stable: no added chlorides, resists chloride penetration.
- Not a vapor barrier; allows on grade applications.
- Environmentally friendly: no odor, no free silica.
- All temperature use – sets in temperatures cold as -5°F (-20°C)
  -use Phoscrete Fast-Set/Slow-Set Admixture to manage setting/working time.

Packaging

Full Kit: [1] bag + [1] jug

Dry Mix bag: 55 lb. (25 kg) polyethylene-lined paper bag

Liquid Activator jug: 10.4 lb. (4,7 kg) HDPE plastic jug
Kit Yield: 0.45 ft^3 (0,0127 m^3)
48 kits per full pallet.

Small Pail: 12.8 lb. (5,8 kg)
HDPE pail contains Dry Mix paper bag and HDPE Liquid Activator jar.
Small Pail Yield: 1.0 bf (144 in^3, 0.0024 m^3)

Patch Kit tub: 0.8 lb. (0,4 kg)
HDPE Patch Kit tub contains plastic Dry Mix zip bag
HDPE Liquid Activator jar
plus plastic mixing stick.
Patch Kit Yield: (8 in^3, 131 mm^3)

Mixing Ratio

Pre-extended mix. Do not extend with sand or aggregate.

Wet-To-Dry Ratio: 18.75%
Mix Entire Patch Kit: [1] jar + [1] bag
Mix Entire Small Pail: [1] jar + [1] bag
Mix Entire Full Kit: [1] jugs + [1] bag

Storage

Store in clean, dry conditions in unopened, original packaging.

Shelf Life

Dry Mix: 24 months
Liquid Activator: 12 months
(*when properly stored*)

VOC Content

0 g/L: Less exempt solvents

Fresh Properties

Test	Specification	Description	Time	Typical Results		
Set Time	ASTM C191	Time of Setting by Vicat Needles	lab temp supercooled†	Initial 8 min 15 min	Final 10 min 19 min	
Slump	ASTM C143	Slump of Hydraulic-Cement Concrete	0 | 5 | 15 min supercooled†	9.5 in (24cm)	8.7 in (22cm)	6.2 in (16cm)
Density	ASTM C387	Density (Unit Weight) of Concrete		141 lb/ft^3	2259 kg/m^3	
Air Content	ASTM C231	Air Content by Pressure Method		5.7%		

Strength Properties

Test	Specification	Description	Time	Typical Results	
				psi	MPa
Compressive Strength	ASTM C109	Compressive Strength of Hydraulic Cement Mortars Using 2-in. Cube Specimens	1 hour	5000	34,4
			1 day	9000	62.1
			28 days	11500	79,3
Flexural Strength	ASTM C78	Flexural Strength of Concrete Using Simple Beam with Third-Point Loading	1 day	500	3,4
			28 days	700	4,8
Bond Strength	ASTM C882	Bond Strength by Slant Shear: Phoscrete - Concrete	1 hour	1500	10,3
			1 day	2500	17,2
			28 days	3000	20,7
		Bond Strength by Slant Shear: Phoscrete - Phoscrete	1 hour	1750	12,1
			1 day	2500	17,2
			28 days	3000	20,7
Tensile Strength	ASTM C496	Splitting Tensile Strength of Cylindrical Concrete Specimens	1 day	1000	6,9
			28 days	1200	8,3
Modulus of Elasticity	ASTM C469	Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression	28 days	3.1E^{+06}	21E^{+06}
				0.274	

Durability Properties

Test	Specification	Description	Test	Typical Results	
Free Shrinkage	ASTM C157	Length Change of Hardened Concrete (Std)	28 Days Wet | Dry	0.00%	-0.03%
Restrained Shrinkage	ASTM C1581	Age at Cracking and Induced Tensile Stress Characteristics under Restrained Shrinkage	180 Days Deformation	Did Not Crack	-60 µstrain
Freeze Thaw	ASTM C666-A	Resistance of Concrete to Rapid Freezing and Thawing in a Saturated Condition (300 cycles)	Durability Factor	94%	
Scaling	ASTM C672	Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals (25 cycles) Results = Visual | Material Loss lbs./ft^2	NaCl	0	0.00
			$CaCl_2$	0	0.00
			$MgCl_2$	0	0.00
Chlorides	ASTM C1202	Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration (Coulombs)	28 days	122 C (very low)	
	ASTM C1543	Penetration of Chloride Ion into Concrete by Ponding	90 days	10-20 mm	0.135%
				55-65 mm	0.117%
			180 days	10-20 mm	0.195%
				55-65 mm	0.145%
Abrasion	California CT-550	Determining the Surface Abrasion Resistance of Concrete Specimens (mass loss)	24 hours	16 g	1.8%

All results were obtained at Lab temp of 68°F (20°C) with both components, Dry Mix and Liquid Activator, stored at Lab temp.
† Supercooled Liquid Activator at 17°F (-8°C)

GENERAL INSTALLATION GUIDELINES

- Refer to Phoscrete MALP Full Installation Guide, for the most complete documentation on best installation practices.
- Refer to Phoscrete All Temperature Guidelines, for information on how to mix Phoscrete materials in warm (>70°F/20°C) and cold climates (<50°F/10°C), The Guidelines contain information about the use of Phoscrete Fast- and Slow-Set Admixtures, and best practices for cooling or supercooling the Liquid Activator. Cooling the Liquid Activator can be achieved on ice at 40°F (4°C), supercooling in a freezer at 10°F (-12°C). Liquid Activator's freezing point is -20°F (-29°C).
- Refer to Phoscrete Admixture Chart for details on working with Phoscrete Admixtures (ENDURE, Fast-Set, Slow-Set)

SURFACE PREPARATION

- Concrete must be sound and fully cured (28 days).
- Remove loose, damaged, and contaminated concrete.
- Concrete profile should reach minimum CSP of 7-9 per ICRI Guidelines. Water-blasting is not recommended.
- Repair area must not be less than 1-inch (2,5 cm) deep. >2-inch (>5 cm) depth is recommended. Saw-cut the edges of the repair area parallel and perpendicular to traffic to limit the number of load-bearing stress points.
- Clean the surface of the area to be repaired from oil, grease, and other bond-inhibiting materials.
- Surface must be frost-free, dry, and free of standing water. Use heat (torch) to eliminate surface moisture.
- Remove loose scale (rust) from steel bars with a wire brush. Sandblasting is not required.
- Replace reinforcing bars according to instructions from the designer. Generally, bars that lost 25% or more of their original diameter must be replaced.

PRIMER COAT

For challenging applications, where maximum bond strength is required, use Phoscrete Primer. Using a cooled Liquid Activator, apply a scrub coat of Phoscrete Primer to the prepared concrete substrate. Be sure to fill all voids. Complete the primer coat by placing a ¼ in. (1,5 cm) thin layer of Phoscrete Primer over the scrub coat, either wet or dry. Wait at least 15 minutes for Phoscrete Primer to set and bond prior to proceeding with PHOSCRETE HC full repair installation.
If Phoscrete Primer is not available, Phoscrete VO or HC can be used as an alternative, with cooled Liquid Activator.

MIXING

- Mix PHOSCRETE HC at the placement site.
- The mix ratio is 18.75% Liquid Activator to Dry Mix. On-site measurement for partial unit mixing is not recommended. Inaccurate measurements will lead to poor material performance.
- When mixing Full Kits, use a heavy-duty five [5] gallon bucket for mixing. Mix with a paddle (Phoscrete's urethane auger is highly recommended), using a dual or variable speed drill suitable for mixing (min. 7-amp, ½" chuck, side handle).
- When mixing multiple Full Kits at once, use a paddle-style mortar mixer for placing large quantities (>2 cy) of Phoscrete.
- When mixing Small Pails, use a minimum 18v variable speed drill on the high torque setting. Phoscrete's small urethane auger is highly recommended.
- When mixing Patch Kit tubs, use the provided stirrer and mix by hand until the material is completely wetted out.
- Pour the Liquid Activator in a clean bucket or the mortar mixer first. Next add admixtures (ENDURE and /or, Fast-Set or Slow-Set). Then add the Dry Mix into the bucket or mortar mixer, preferably while slowly running the mixer.
- Mix for about 1 minute, until the material is fully wetted out and shows a uniform consistency. Do not over-mix.
- A batch of Phoscrete MALP must be mixed, placed, and finished within 5 - 15 minutes depending on ambient temperature.

APPLICATION

- Install immediately after mixing. Discard the batch if the material begins to setup in the pail or mixer.
- Using a trowel or float, or with a gloved hand, scrub Phoscrete into the bottom and sides of the area to be repaired, being careful to fill all voids. Force the material against the edges of the repair.
- Place Phoscrete level to the adjacent concrete surface. Screed off excess.
- Finish Phoscrete using clean concrete floats and trowels. Magnesium floats work best. Tap on surface with trowel to bring liquid to the surface for best finish. Clean Phoscrete from trowels with a water-dampened cloth. Do not pour water on repair. Stop finishing once the surface of the placed material develops a "skin."
- If the material finishes higher than the adjacent surface, use a diamond grinder to level surface as soon as 15 minutes following final set.

APPLICATION *(continued from page 3)*

- When multiple layers are applied, scarify the surface by scratching crisscross lines in the layer with a trowel prior to set for best adhesion. Phoscrete bonds to itself with no cold joints, whether wet or completely cured. If installing in lifts, do not apply a final layer thinner than 1-inch. (2,5 cm).
- If rain begins prior to final set, cover the surface with plastic sheeting for at least 15 minutes following initial set.
- On sloped surfaces, pour the material at the bottom of the slope and work your way up. Use a hand screed to move the material up the slope. When installing on steep inclines, use forms, or work in smaller increments (one kit at a time), and allow the material to set prior to the next pour.
- For expansion joint nosings, ensure that the hardened repair material is not higher than the approach slab. Use a grinding tool to cut a 45° bevel at the edge of the joint no sooner than 15 minutes after initial set. Standard compression or silicone seals can be applied immediately after grinding. Refer to Phoscrete's Expansion Joint Installation and Repair.

CLEANING

- In-between batches, clean tools with water and wipe off excess water prior to contact with Phoscrete.
- When the job is completed, clean tools with water. Clean hands with soap and water.

LIMITATIONS

- Do not use any primer or admixtures other than those provided by Phoscrete.
- Do not extend PHOSCRETE HC with aggregate. Do not add sand and/or any type of cement.
- Do not mix partial units unless accurately pre-measured.
- Minimum application thickness: 1-inch (2,5 cm), 2-inches (5 cm) recommended. Maximum application thickness: none
- Minimum ambient temperature: -5°F (-20°C)
- Do not use water when mixing, placing, or finishing PHOSCRETE HC
- When wet, PHOSCRETE HC cannot be placed in direct contact with galvanized steel (zinc).
- Proper application is the responsibility of the user. Field visits by Phoscrete personnel are for the purpose of making technical recommendations, not for supervising or providing quality control on the jobsite.

LIMITED WARRANTY NOTICE

Phoscrete Corporation (Phoscrete) warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, when used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond Phoscrete's control. PHOSCRETE MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is the replacement of product or refund of the purchase price, at the sole option of Phoscrete. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. PHOSCRETE WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND. Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on Phoscrete's present knowledge and experience. However, Phoscrete assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third-party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. Phoscrete reserves the right to make changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.

HEALTH, SAFETY, AND ENVIRONMENTAL

Read, understand, and follow all Installation Instructions, Safety Data Sheets, and product label information for this product prior to use. The latest SDS can be obtained by visiting phoscrete.com, emailing your request to safety@phoscrete.com, or calling +1 561-420-0595. Use only as directed. For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC® 24 Hours 800-424-9300 / +1 703-527-3887. Contracted by Phoscrete, CCN 866520.

INSTALLATION GUIDELINES FOR
EXPANSION JOINT INSTALLATION AND REPAIR

Overview

Phoscrete is a cementitious concrete repair material with similar properties to the adjacent concrete and is especially well-suited to repair the nosings and headers of many common expansion joints.

Phoscrete Advantages for Expansion Joints

- *Rapid Return to Service*: In less than one [1] hour, Phoscrete achieves compressive strengths in excess of FHWA guidelines to open a lane to traffic.
- *Same Day Joint Sealant*: As soon as one [1] hour following placement, Silicone and Epoxy adhesives can be applied to Phoscrete, eliminating the need for a second traffic closing to install silicone or compressed foam joint sealants.
- *Tenacious Bond to Concrete and Steel*: Phoscrete bonds chemically and mechanically to sound host concrete for a permanent repair. Phoscrete also bonds to metal.
- *No Cold Joints*: Phoscrete's chemical bond combined with its tensile properties means both the bond between Phoscrete and the host concrete, and the bond between Phoscrete and itself are stronger than the occurring stresses of shrinkage or expansion, and therefore Phoscrete does not delaminate at the bond line.
- *Sandblasting Not Required Prior to Installation of Joint Sealant*: Phoscrete does not bond to plastics including polystyrene (blue board), and urethane-painted forms, so these materials can be cleanly removed after forming the joint nosing.
- *No Primers or Curing Compounds Required*: Phoscrete bonds strong to clean, dry concrete without the need for primers. Phoscrete is traffic or sealant ready without curing compounds.
- *Easy to Use*: Phoscrete has no odor, contains no VOCs, and no free silica on mixing. Phoscrete is mixed, placed and finished using standard concrete tools. Everything cleans up with water.

Bridge Joint Repair Site Preparation

Remove all loose and damaged concrete from the repair area. Phoscrete chemically bonds with the host concrete for a permanent repair, however if the host concrete is not solid and in place, when the host concrete fails, Phoscrete will come off with it.

Remove all non-cementitious previously used repair materials. Phoscrete will not bond to in-place polymer and silicone materials. However, once Phoscrete is in place, silicone and epoxy sealing products bond very well to Phoscrete.

Remove dirt and film from exposed concrete if present. Wet saw cutting can leave a slurry on the bond surface of the host concrete. Jackhammer or sandblast the exposed concrete surface to remove oil and other residues. Phoscrete bonds best to clean dry concrete.

Insure at least a two inch [2"] edge around the repair: Do not leave a feather edge for horizontal or cast-in-place repairs. For best results, saw cut parallel and perpendicular to traffic around the edges of the spall area to limit the number of load-bearing stress points. Remove concrete slurry from cut edges.

Remove loose exposed rust with a wire brush or by sandblasting: Phoscrete is a natural rust-dissolving agent when placed, and sandblasting is not required if all loose exposed rust is removed.

Tack-weld expanded metal when installing Phoscrete onto a horizontal metal surface.

Blow out any remaining dust or standing water from the repair area prior to placing Phoscrete.

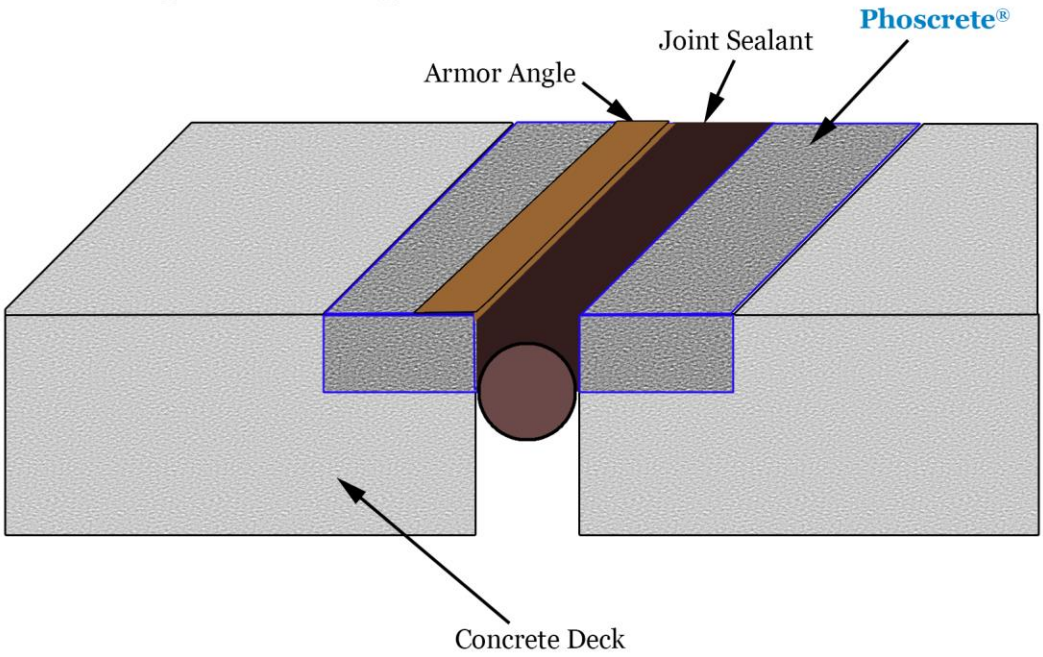
Use Bond-Breaking materials such as plastic or blue board to form the edge and to establish uniform expansion joint width.

Bridge Joint Repair Nosing Material Placement

Follow Phoscrete Mixing and Placing Instructions. Most joint header installations are performed mixing and placing Phoscrete in 5 gallon buckets. For larger repairs a mortar mixer may be preferred.

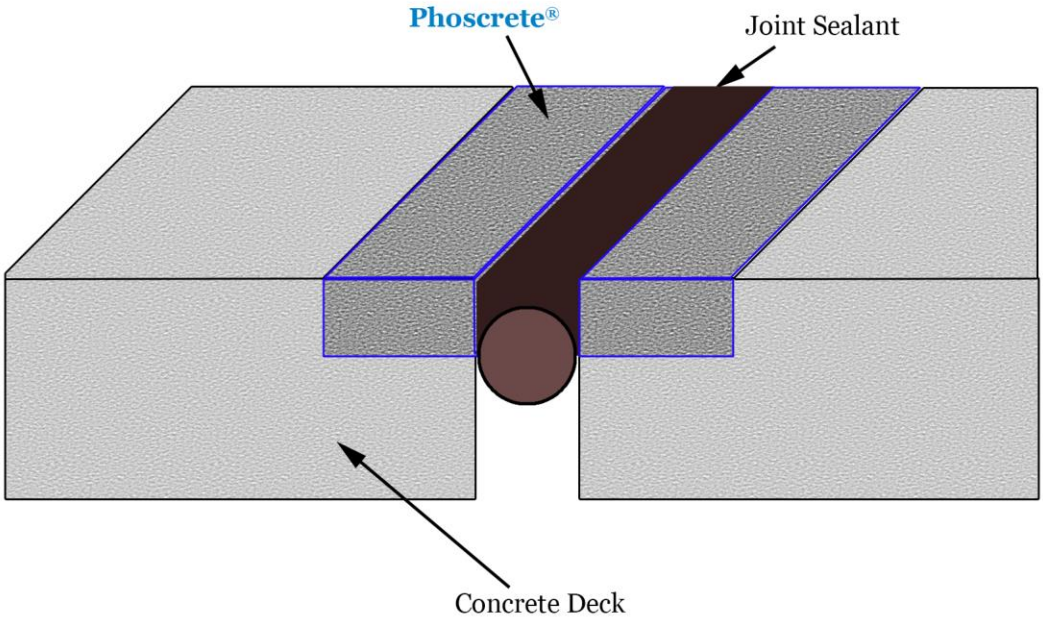
Insure minimum depth and thickness of material placement. For long lasting nosing repairs, install Phoscrete with a minimum depth of 4 inches. Phoscrete can be placed as a nosing material as thin as 2 inches, however hairline cracks due to flexural stress may occur. These cracks do not cause delamination at the bond line. Cracks measured less than 0.2mm are generally not treated, and those greater than 0.2 mm should be sealed with a crack filler.

Armor Angle Joint Repairs



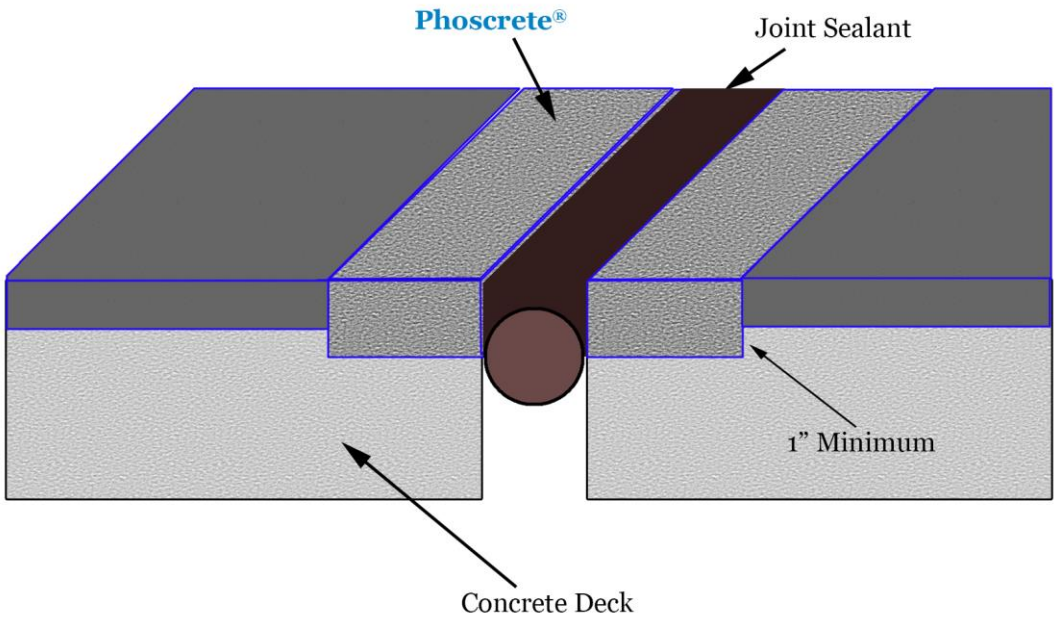
When repairing Bridge Armor Joints, remove the damaged armor joint and damaged concrete and install Phoscrete similar to the "T" Joint repair. In some cases you may keep the armor angle in place and install Phoscrete below the metal to replace the damaged concrete.

"T" Joint Repairs



When repairing "T" Joints, saw cut and remove at least 2 inches of concrete at the edges and install Phoscrete.

Asphalt Overlay Joint Repairs



When repairing Asphalt Overlay Joints, saw cut and remove weak and damaged asphalt (minimum 4" width). Sandblast, water blast, or chip out any concrete with petroleum products (asphalt) on the surface at least 1" into the host concrete.

Bridge Joint Repair Nosing Material Finishing

Finish or grind a 45° angle at the nosing edge. Eliminating the sharp edge on the nosing protects the repair material from impact damage.

Insure the nosing material is level or slightly below the approach slab. Use an angle grinder or a bump grinder if the nosing material is higher than the approach slab.

Install Joint Sealant

Both Silicone sealants and Epoxy adhesives for compressed foam seals can be installed as soon as 1 hour following initial set of Phoscrete. If you cleanly remove the form board and no oil or release agent is used, sandblasting is not required to adhere the joint seal to Phoscrete. Follow manufacturer's instructions for sealant.

Contact your Phoscrete Representative if you have any questions or concerns.

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/05/2020 *Reviewed on 03/05/2020*

1 Identification

· ***Product identifier***

· ***Trade name: Phoscrete HC***

· ***Article number:*** PC-HC
· ***Application of the substance / the mixture*** Concrete/Mortar admixtures

· ***Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
Phoscrete Corporation
265 S Federal Hwy Suite 320
Deerfield Beach FL USA 33441

Tel: 561-420-0595
Fax: 561-420-0599
Email: safety@phoscrete.com
Website: www.phoscrete.com

· ***Information department:***
For Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC 24 Hours
1-800-424-9300
703-527-3887
CCN: 866520
· ***Emergency telephone number:*** 1.800.424.9300

2 Hazard(s) identification

· ***Classification of the substance or mixture***

GHS08 Health hazard

Carc. 1A H350 May cause cancer.
Repr. 1A H360 May damage fertility or the unborn child.

· ***Label elements***
· ***GHS label elements*** The product is classified and labeled according to the Globally Harmonized System (GHS).
· ***Hazard pictograms***

GHS08

· ***Signal word*** Danger

· ***Hazard-determining components of labeling:***
cristobalite

(Contd. on page 2)

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Trade name: Phoscrete HC

(Contd. of page 1)

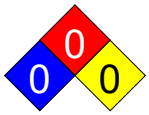
Quartz (SiO2)

· ***Hazard statements***
May cause cancer.
May damage fertility or the unborn child.

· ***Precautionary statements***
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***Classification system:***

· ***NFPA ratings (scale 0 - 4)***



Health = 0
Fire = 0
Reactivity = 0

· ***HMIS-ratings (scale 0 - 4)***

Health = *0
Fire = 0
Reactivity = 0

· ***Other hazards***

· ***Results of PBT and vPvB assessment***

· ***PBT:*** Not applicable.

· ***vPvB:*** Not applicable.

3 Composition/information on ingredients

· ***Chemical characterization: Mixtures***

· ***Description:*** Mixture of the substances listed below with nonhazardous additions.

· ***Dangerous components:***		
1309-48-4	magnesium oxide	5-12%
14464-46-1	cristobalite	≤2.5%
14808-60-7	Quartz (SiO2)	≤2.5%
10043-35-3	boric acid	≤2.5%

4 First-aid measures

· ***Description of first aid measures***

· ***After inhalation:*** Supply fresh air; consult doctor in case of complaints.

· ***After skin contact:*** Generally the product does not irritate the skin.

· ***After eye contact:*** Rinse opened eye for several minutes under running water.

· ***After swallowing:*** If symptoms persist consult doctor.

· ***Information for doctor:***

· ***Most important symptoms and effects, both acute and delayed*** No further relevant information available.

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(Contd. of page 2)

· ***Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

5 Fire-fighting measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:*** Use fire fighting measures that suit the environment.
· ***Special hazards arising from the substance or mixture*** No further relevant information available.
· ***Advice for firefighters***
· ***Protective equipment:*** No special measures required.

6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures*** Not required.
· ***Environmental precautions:*** Do not allow to enter sewers/ surface or ground water.
· ***Methods and material for containment and cleaning up:***
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· ***Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· ***Protective Action Criteria for Chemicals***

· ***PAC-1:***		
1309-48-4	magnesium oxide	30 mg/m³
7631-86-9	silicon dioxide (Amorphous)	18 mg/m³
65997-17-3	Fibrous Glass	15 mg/m³
1302-76-7	Kyanite	3 mg/m³
14464-46-1	cristobalite	0.075 mg/m³
14808-60-7	Quartz (SiO2)	0.075 mg/m³
10043-35-3	boric acid	6 mg/m³
100-42-5	styrene	20 ppm

· ***PAC-2:***		
1309-48-4	magnesium oxide	120 mg/m³
7631-86-9	silicon dioxide (Amorphous)	740 mg/m³
65997-17-3	Fibrous Glass	170 mg/m³
1302-76-7	Kyanite	33 mg/m³
14464-46-1	cristobalite	33 mg/m³
14808-60-7	Quartz (SiO2)	33 mg/m³
10043-35-3	boric acid	23 mg/m³
100-42-5	styrene	130 ppm

· ***PAC-3:***		
1309-48-4	magnesium oxide	730 mg/m³
7631-86-9	silicon dioxide (Amorphous)	4,500 mg/m³
65997-17-3	Fibrous Glass	990 mg/m³
1302-76-7	Kyanite	200 mg/m³

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14464-46-1	cristobalite	200 mg/m³
14808-60-7	Quartz (SiO2)	200 mg/m³
10043-35-3	boric acid	830 mg/m³
100-42-5	styrene	1100* ppm

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:** Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
1309-48-4 magnesium oxide	
PEL	Long-term value: 15* mg/m³ fume; *total particulate
TLV	Long-term value: 10* mg/m³ *as inhalable fraction
14464-46-1 cristobalite	
PEL	Long-term value: 0.05* mg/m³ *resp. dust;½ value from resp.dust formulae Quartz
REL	Long-term value: 0.05* mg/m³ *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m³ *as respirable fraction
14808-60-7 Quartz (SiO2)	
PEL	Long-term value: 0.05* mg/m³ *resp. dust; 30mg/m3/%SiO2+2
REL	Long-term value: 0.05* mg/m³ *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m³ *as respirable fraction
10043-35-3 boric acid	
TLV	Short-term value: 6* mg/m³ Long-term value: 2* mg/m³ *as inhalable fraction

(Contd. on page 5)

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Trade name: Phoscrete HC

(Contd. of page 4)

· ***Additional information:*** The lists that were valid during the creation were used as basis.

· ***Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
· ***Breathing equipment:***
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· ***Protection of hands:***

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· ***Material of gloves***
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· ***Penetration time of glove material***
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 374 Part 3: Level 6).
· ***Eye protection:***

Tightly sealed goggles

9 Physical and chemical properties

· ***Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	Solid
Color:	According to product specification
· ***Odor:***	Characteristic
· ***Odor threshold:***	Not determined.
· ***pH-value:***	Not applicable.
· ***Change in condition***	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· ***Flash point:***	Not applicable.
· ***Flammability (solid, gaseous):***	Not determined.
· ***Decomposition temperature:***	Not determined.

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Trade name: Phoscrete HC

(Contd. of page 5)

· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure:**	Not applicable.
· **Density:**	Not determined.
· **Relative density**	Not determined.
· **Vapor density**	Not applicable.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with**	
Water:	Insoluble.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· **Solvent content:**	
Organic solvents:	0.1 %
VOC content:	0.05 %
Solids content:	80.7 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
7631-86-9	silicon dioxide (Amorphous)	3

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14464-46-1	cristobalite	1
14808-60-7	Quartz (SiO2)	1
100-42-5	styrene	2B

· **NTP (National Toxicology Program)**

14464-46-1	cristobalite	K
14808-60-7	Quartz (SiO2)	K
100-42-5	styrene	R

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**
· **DOT, ADR, IMDG, IATA** None

· **UN proper shipping name**
· **DOT, ADR, IMDG, IATA** None

· **Transport hazard class(es)**

· **DOT, ADR, ADN, IMDG, IATA**
· **Class** None

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· **Packing group** · **DOT, ADR, IMDG, IATA**	None
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	None

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

100-42-5	styrene

· **TSCA (Toxic Substances Control Act):**

92704-41-1	Kaolin, calcined	ACTIVE
1302-93-8	Calcined Bauxitic Kaolin (Mullite)	ACTIVE
1309-48-4	magnesium oxide	ACTIVE
7631-86-9	silicon dioxide (Amorphous)	ACTIVE
65997-17-3	Fibrous Glass	ACTIVE
14464-46-1	cristobalite	ACTIVE
14808-60-7	Quartz (SiO2)	ACTIVE
10043-35-3	boric acid	ACTIVE
100-42-5	styrene	ACTIVE

· **Hazardous Air Pollutants**

100-42-5	styrene

· **Proposition 65**

· **Chemicals known to cause cancer:**

14464-46-1	cristobalite
14808-60-7	Quartz (SiO2)
100-42-5	styrene

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

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Trade name: Phoscrete HC

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· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**		
10043-35-3	boric acid	I (oral)

· **TLV (Threshold Limit Value established by ACGIH)**		
1309-48-4	magnesium oxide	A4
14464-46-1	cristobalite	A2
14808-60-7	Quartz (SiO2)	A2
10043-35-3	boric acid	A4
100-42-5	styrene	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**	
14464-46-1	cristobalite
14808-60-7	Quartz (SiO2)

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
cristobalite
Quartz (SiO2)
· **Hazard statements**
May cause cancer.
May damage fertility or the unborn child.
· **Precautionary statements**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
Exceptions can be made by the authorities in certain cases.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Manufacturing Facaility - Engineering Department
· **Contact:** Manufacturer / Supplier
· **Date of preparation / last revision** 03/05/2020 / -
· **Abbreviations and acronyms:**
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

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IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Carc. 1A: Carcinogenicity – Category 1A
Repr. 1A: Reproductive toxicity – Category 1A

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/05/2020 *Reviewed on 03/05/2020*

1 Identification

· ***Product identifier***

· ***Trade name: Phoscrete Activator***

· ***Article number:*** PC-ACT
· ***Application of the substance / the mixture*** Concrete/Mortar admixtures

· ***Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
Phoscrete Corporation
265 S Federal Hwy Suite 320
Deerfield Beach FL USA 33441

Tel: 561-420-0595
Fax: 561-420-0599
Email: safety@phoscrete.com
Website: www.phoscrete.com

· ***Information department:***
For Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC 24 Hours
1-800-424-9300
703-527-3887
CCN: 866520
· ***Emergency telephone number:*** 1.800.424.9300

2 Hazard(s) identification

· ***Classification of the substance or mixture***


GHS05 Corrosion

Skin Corr. 1C H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.


GHS07

Acute Tox. 4 H302 Harmful if swallowed.

· ***Label elements***
· ***GHS label elements*** The product is classified and labeled according to the Globally Harmonized System (GHS).

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· ***Hazard pictograms***

GHS05 GHS07

· ***Signal word*** Danger

· ***Hazard-determining components of labeling:***
Phosphoric acid, aluminum salt (1:3)
· ***Hazard statements***
Harmful if swallowed.
Causes severe skin burns and eye damage.
· ***Precautionary statements***
Do not breathe dusts or mists.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· ***Classification system:***
· ***NFPA ratings (scale 0 - 4)***

Health = 3
Fire = 0
Reactivity = 0

· ***HMIS-ratings (scale 0 - 4)***

Health = *3
Fire = 0
Reactivity = 0

· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.

3 Composition/information on ingredients

· ***Chemical characterization: Mixtures***
· ***Description:*** Mixture of the substances listed below with nonhazardous additions.

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· **Dangerous components:**

13530-50-2	Phosphoric acid, aluminum salt (1:3)	38-44%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Immediately rinse with water.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Immediately call a doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Carefully neutralize spill with soda ash. OR use any neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**

13530-50-2	Phosphoric acid, aluminum salt (1:3)	3 mg/m³

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· ***PAC-2:***		
13530-50-2	Phosphoric acid, aluminum salt (1:3)	33 mg/m³

· ***PAC-3:***		
13530-50-2	Phosphoric acid, aluminum salt (1:3)	200 mg/m³

7 Handling and storage

· ***Handling:***
· ***Precautions for safe handling***
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· ***Information about protection against explosions and fires:*** Keep respiratory protective device available.

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:*** No special requirements.
· ***Information about storage in one common storage facility:*** Not required.
· ***Further information about storage conditions:*** Keep receptacle tightly sealed.
· ***Specific end use(s)*** No further relevant information available.

8 Exposure controls/personal protection

· ***Additional information about design of technical systems:*** No further data; see item 7.

· ***Control parameters***
· ***Components with limit values that require monitoring at the workplace:***
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· ***Additional information:*** The lists that were valid during the creation were used as basis.

· ***Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· ***Breathing equipment:***
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· ***Protection of hands:***

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· ***Material of gloves***
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR (0.4 mm)
Natural rubber, NR
Chloroprene rubber, CR (0.5 mm)

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Neoprene gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· ***Penetration time of glove material***
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 374 Part 3: Level 6).

· ***Eye protection:***

Tightly sealed goggles

9 Physical and chemical properties

· ***Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	Fluid
Color:	According to product specification
· ***Odor:***	Characteristic
· ***Odor threshold:***	Not determined.
· ***pH-value at 20 °C (68 °F):***	1.5
· ***Change in condition***	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	213 °C (415.4 °F)
· ***Flash point:***	Not applicable.
· ***Flammability (solid, gaseous):***	Not applicable.
· ***Decomposition temperature:***	Not determined.
· ***Auto igniting:***	Product is not selfigniting.
· ***Danger of explosion:***	Product does not present an explosion hazard.
· ***Explosion limits:***	
Lower:	Not determined.
Upper:	Not determined.
· ***Vapor pressure:***	Not determined.
· ***Density:***	Not determined.
· ***Relative density***	Not determined.
· ***Vapor density***	Not determined.
· ***Evaporation rate***	Not determined.
· ***Solubility in / Miscibility with***	
Water:	Fully miscible.
· ***Partition coefficient (n-octanol/water):***	Not determined.

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· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Water:	56.0 %
VOC content:	0.00 %
Solids content:	0.1 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.

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· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1805
· **UN proper shipping name**	
· **DOT**	Phosphoric acid solution
· **ADR**	1805 PHOSPHORIC ACID, SOLUTION
· **IMDG, IATA**	PHOSPHORIC ACID, SOLUTION
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	8 Corrosive substances
· **Label**	8
· **ADR, IMDG, IATA**	

· **Class**	8 Corrosive substances
· **Label**	8
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	III

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· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Warning: Corrosive substances
· **Hazard identification number (Kemler code):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	Acids
· **Stowage Category**	A
· **Segregation Code**	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations**	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· **ADR**	
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **IMDG**	
· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **UN "Model Regulation":**	UN 1805 PHOSPHORIC ACID, SOLUTION, 8, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

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· ***Chemicals known to cause developmental toxicity:***
None of the ingredients is listed.

· ***Cancerogenity categories***

· ***EPA (Environmental Protection Agency)***
None of the ingredients is listed.

· ***TLV (Threshold Limit Value established by ACGIH)***
None of the ingredients is listed.

· ***NIOSH-Ca (National Institute for Occupational Safety and Health)***
None of the ingredients is listed.

· ***GHS label elements*** The product is classified and labeled according to the Globally Harmonized System (GHS).
· ***Hazard pictograms***

GHS05 GHS07

· ***Signal word*** Danger

· ***Hazard-determining components of labeling:***
Phosphoric acid, aluminum salt (1:3)
· ***Hazard statements***
Harmful if swallowed.
Causes severe skin burns and eye damage.
· ***Precautionary statements***
Do not breathe dusts or mists.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· ***Chemical safety assessment:*** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· ***Department issuing SDS:*** Manufacturing Facaility - Engineering Department
· ***Contact:*** Manufacturer / Supplier
· ***Date of preparation / last revision*** 03/05/2020 / -
· ***Abbreviations and acronyms:***
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

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IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1C: Skin corrosion/irritation – Category 1C
Eye Dam. 1: Serious eye damage/eye irritation – Category 1