



**SECTION 4*****PRIMARY ROUTES OF EXPOSURE*****1. Effects from Acute Exposure:**

**Eye Exposure:** Corrosive; causes eye burns and permanent tissue damage.

**Skin Exposure:** Corrosive; causes permanent skin damage.

**Inhalation:** Mist may be severely irritating to nose, throat and lungs depending on concentration and duration of exposure.

**Ingestion:** Low acute oral toxicity. May cause nausea, vomiting, irritation. Corrosive to mouth, esophagus and stomach.

**2. Effects from Chronic Exposure:**

The effects from chronic exposure to this product have not been fully evaluated.

**SECTION 5*****Toxicological Information*****Acute Effects:**

Not tested

**Irritant / Sensitization Effects:**

Corrosive; causes eye burns and permanent tissue damage.

Corrosive; causes permanent skin damage.

Mist may be severely irritating to nose, throat and lungs depending on concentration and duration of exposure.

**Carcinogenic Potential:**

Not tested by Buckman Laboratories. Not shown as a carcinogen by OSHA, IARC, or NTP.

**Target Organs Effects:**

May cause damage to the following organs: blood, gastrointestinal tract, upper respiratory tract, skin, eyes, bones.

**Other Health Effects:**

None known.

**SECTION 6*****Environmental Toxicological Information***

LC50 = 527 mg/l 48 hours Daphnia magna

LC50 = 368 mg/l 96 hours Rainbow trout

LC50 = 868 mg/l 96 hours Bluegill sunfish

**SECTION 7*****Physical and Chemical Properties***

**Appearance** ..... Clear, colorless to pale yellow liquid

**Odor** ..... Faint

**Density** ..... 1.45 to 1.49 (25°C / 77°F)

**Flash Point** ..... Closed cup: >100°C (212°F). (Tagliabue.)

**Melting/Freezing Point** .... -40°C (-40°F)

**Boiling Point** ..... 105°C (221°F)

**Solubility** .....

|  |   |
|--|---|
|  | <b>Miscible in water.</b>                 |
| <i>pH (Neat)</i> .....                 | <b>&lt;2 (Conc. (% w/w): 1) [Acidic.]</b> |
| <i>pH (100 ppm in water)</i> .....     | <b>Not available.</b>                     |
| <i>Vapor Pressure</i> .....            | <b>17 mm of Hg ( @ 20°C )</b>             |
| <i>o/w Partition Coefficient</i> ..... | <b>Not available.</b>                     |
| <i>Oxidizing/Reducing Properties</i> . | <b>Not available.</b>                     |
| <i>Viscosity</i> .....                 | <b>Dynamic: 64 cP</b>                     |
| <i>Additional pH Information</i> ..... | <b>Not available.</b>                     |

**NOTE: The physical data presented above are typical values and should not be construed as specifications.**

## SECTION 8

### *Fire and Explosion Information*

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| <i>Flammable Limits</i> .....                | <b>Not available.</b>   |
| <i>Extinguishing Media</i> .....             | <b>Water fog, carbon dioxide, foam, dry chemical.</b>   |
| <i>Special Firefighting Procedures</i> ..... | <b>Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus with full face-piece and full acid-resistant protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind; keep out of low areas.</b> |

## SECTION 9

### *Reactivity Information*

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| <i>Stability</i> .....                        | <b>Stable under normal conditions of use and storage.</b>   |
| <i>Incompatibility</i> .....                  | <b>Strong oxidizers, bases, attacks many metals. Keep away from sodium hypochlorite</b>                         |
| <i>Hazardous Decomposition Products</i> ..... | <b>Oxides of phosphorous and carbon; acids of phosphorous, phosphine , oxides of carbon, oxides of nitrogen</b> |

## SECTION 10

### *Handling Precautions*

**Do not get on skin or in eyes. Avoid breathing vapors and mists. Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures. Select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations. Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area. Face contact should be prevented through use of a face shield. Skin contact should be prevented through use of suitable protective clothing, gloves, and footwear, selected with regard for use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance. Safety showers and eyewash stations are necessary in area of use. 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. 3) Wash exposed skin promptly to remove accidental splashes or contact with this material.**

**NSF Certification: This product is certified by NSF International to NSF/ANSI Standard 60 as a reverse osmosis antiscalant for use in potable water applications up to a maximum use rate of 0.8 mg/l**

**SECTION 11*****Satisfactory Materials of Construction*****Polypropylene****Teflon.****PVC - rigid****Buna-N rubber****Viton****PVC - flexible****Silicone rubber****Tygon tubing R3603****Van leer epoxy liner 136****Polyethylene - high density****Polyethylene - low density**

**NOTE: With respect to all other materials not listed above, user should be aware that use of such materials with this product may be hazardous and result in damages to such materials and other property and personal injuries. No data concerning such materials not listed above should be implied by the user.**

**SECTION 12*****Spill, Leak, and Disposal Procedures*****SPILL AND LEAK RESPONSE GUIDELINES:****Evacuation Procedures and Safety:**

Ventilate closed spaces before entering. Personnel handling this material should be thoroughly trained to handle spills and releases. Wear appropriate protective gear for the situation. See Handling Precaution information in Section 10. Evacuate and isolate spill area.

**Containment of Spill:**

Dike or retain dilution water or water from firefighting for later disposal. Collect and contain contaminated absorbent and dike material for disposal.

**Cleanup and Disposal of Spill:**

Neutralize spill area with soda ash, sodium bicarbonate or lime. Absorb neutralized spill with an inert absorbent. Shovel up into an appropriate closed container. **DO NOT RETURN MATERIAL TO ITS ORIGINAL CONTAINER.** Decontaminate tools and equipment following cleanup. Clean up residual material by washing area with water.

**Environmental and Regulatory Reporting:**

Do not flush to drain. Runoff from fire control or dilution water may cause pollution. Prevent material from entering public sewer system or any waterways. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

**Waste Disposal Method:**

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate, or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

**EPA Hazardous Waste - YES****SECTION 13*****Transportation and Shipping Information******DOT Shipping Information:***

**UN3265 , CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., ((1-Hydroxyethylidene)diphosphonic Acid), , Class 8, P.G. III , ( ERG No. 153 )**

***IMO/IMDG Shipping Information:***

**UN3265 , CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. ((1-Hydroxyethylidene)diphosphonic Acid), , Class 8, P.G. III , ( EmS No. F-A, S-B , ERG Guide 153, HazMat Code 4931255 )**

**IATA Shipping Information:**

**UN3265 , CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. ((1-Hydroxyethylidene)diphosphonic Acid), , Class 8, P.G. III , ( ERG No. 153, ERG Code 8L )**

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**DOT "RQ": NONE**

*Unless otherwise stated, the shipping information provided above applies only to non-bulk containers of this product. Proper shipping name and general shipping information may vary depending on packaging and mode of shipment. All products shipped from Buckman locations have been properly packaged and labeled according to appropriate hazardous materials shipping regulations. If any alteration of packaging, product, or mode of transportation is further intended, different shipping information, including but not limited to proper shipping name, RQ designation, and labeling may apply. For further information pertaining to the shipping requirements for this product, contact Buckman's Transportation Department or DOT Coordinator.*

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| <b>SECTION 14</b> | <b>Regulatory Information</b> |
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The following Regulations are known to apply to the use and disposal of this product. Additional Federal, State and Local regulations may also be applicable.

**SARA (Superfund Amendments and Reauthorization Act)**

*SARA 302 Extremely Hazardous Substances List ...*

**No components of this product are listed.**

*SARA 312 Hazard Category ...*

**Immediate (Acute) Health Hazard**

*SARA 313 Toxic Chemicals List ...*

**No components of this product are present above the *de minimus* levels.**

**CERCLA (Comprehensive Environmental Response, Compensation and Liability Act)**

**No components of this product are present above the *de minimus* levels.**

**RCRA (Resource Conservation and Recovery Act) Listed Hazardous Waste**

**When disposed of, this product may be regulated as a RCRA Hazardous Waste with the characteristic of corrosivity due to the pH of the neat material.**

**CWA (Clean Water Act) Listed Substances**

**No components of this product are listed.**

**FDA ( Food and Drug Administration)**

This product is approved under the following FDA (21 CFR) sections : 173.310, 176.170 (upper limit: 23 ppm based on dry pulp).

**National Sanitation Foundation (NSF)**

**This product is listed by the NSF under NSF/ANSI Standard 60 for use in potable water applications with the following maximum allowable use rates : NSF certified as an antiscalant in reverse osmosis applications up to a maximum use rate of 0.8 mg/l.**

**TSCA (Toxic Substances Control Act) Applicability**

**All components are listed on the TSCA Inventory.**

**FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act)**

**This product is not a registered pesticide.**

**HMIS/NPCA Rating ... Health **3** Flammability **1** Reactivity **1****

**NFPA Ratings ..... Health **3** Flammability **1** Reactivity **1****

**State Regulations**

*Various State Right To Know Acts ...*

**Non-proprietary hazardous chemicals are listed in Section 2 of this MSDS. Should you require further information on specific proprietary or inert ingredients please contact Buckman Laboratories' Regulatory Affairs Department.**

The information on this Material Safety Data Sheet reflects the latest information and data that we have on hazards, properties, and handling of this product under the recommended conditions of use. Any use of this product or method of application which is not described in the Data Sheet is the responsibility of the user. This Material Data Safety Sheet was prepared to comply with the OSHA Hazard Communication regulations. While some components are claimed Trade Secret under OSHA Hazard Communication regulations, all known OSHA hazards associated with the Trade Secret component(s), if contained in this product, are fully disclosed.

Buckman Laboratories, Inc. warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the directions for use when used in accordance with the directions under normal conditions. Buyer assumes the risk of any use contrary to such directions.

Seller makes no other warranty or representation of any kind, express or implied, concerning the product, including **NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OF THE GOODS FOR ANY OTHER PARTICULAR PURPOSE**. No such warranties shall be implied by law and no agent of seller is authorized to alter this warranty in any way except in writing with a specific reference to this warranty.

The exclusive remedy against seller shall be in a claim for damages not to exceed the purchase price of the product, without regard to whether such a claim is based upon breach of warranty or tort.

Any controversy or claim arising out or relating to this contract, or breach thereof, shall be settle by arbitration in accordance with the commercial arbitration rules of the American Arbitration Association, and judgement upon the rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.