

Inhalation: Slightly hazardous in case of inhalation. Effects will depend on concentration and length of time of exposure.

Ingestion: Ingestion is not expected to be a primary route of exposure.

2. Effects from Chronic Exposure:

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

SECTION 5

Toxicological Information

Acute Effects:

Acute	Oral	(LD50) = 1951 mg/kg	Male rat
Acute	Oral	(LD50) = 2587 mg/kg	Female rat
Acute	Dermal	(LD50) = >2000 mg/kg	Rabbit
Acute	Inhalation	(LC50) = 2.9 ppm (4 hours)	Rat

Irritant / Sensitization Effects:

Slightly hazardous in case of eye contact (irritant).

Slightly hazardous in case of skin contact (irritant). Non-sensitizer for skin. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Slightly hazardous in case of inhalation. Effects will depend on concentration and length of time of exposure.

Carcinogenic Potential:

Not tested by Buckman Laboratories. Not shown as a carcinogen by OSHA, IARC, or NTP. A two year rat carcinogenicity study showed a slight increase in c-cell adenomas in female rats. Studies with male rats and male and female mice did not show any evidence of carcinogenic response. This product is not considered a carcinogen.

Target Organs Effects:

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

Other Health Effects:

None known.

SECTION 6

Environmental Toxicological Information

LC50 = 0.37 mg/l 48 hours Invertebrate
 LC50 = 0.26 mg/l 96 hours Fathead minnow
 LC50 = 0.21 mg/l 96 hours Bluegill sunfish
 LC50 = 0.047 mg/l 96 hours Rainbow trout
 LC50 = >600 mg/l 96 hours Sheepshead minnow
 LC50 = 13 mg/l 96 hours Mysid shrimp

SECTION 7

Physical and Chemical Properties

Appearance	Clear, pale yellow liquid
Odor	Mild.
Density	1.15 g/cm³
Flash Point	Closed cup: >100°C (212°F). (Tagliabue.)
Melting/Freezing Point	<-16°C (3.2°F)
Boiling Point	>100°C (212°F)
Solubility	Easily soluble in cold water. Easily soluble in hot water.

<i>pH (Neat)</i>	7 [Neutral.]
<i>pH (100 ppm in water)</i>	6-7
<i>Vapor Pressure</i>	Not available.
<i>o/w Partition Coefficient</i>	Not available.
<i>Oxidizing/Reducing Properties</i> .	Not available.
<i>Viscosity</i>	Kinetic: 125 cS
<i>Additional pH Information</i>	pH (neat) = 6.0 - 8.0

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

SECTION 8***Fire and Explosion Information***

<i>Flammable Limits</i>	Not available.
<i>Extinguishing Media</i>	Water fog, carbon dioxide, foam, dry chemical.
<i>Special Firefighting Procedures</i>	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

SECTION 9***Reactivity Information***

<i>Stability</i>	Stable under normal conditions of use and storage.
<i>Incompatibility</i>	Anionic polymers
<i>Hazardous Decomposition Products</i>	Carbon monoxide may be formed upon burning.

SECTION 10***Handling Precautions***

Eye-wash fountains in the work place are recommended. Rubber gloves, safety glasses or goggles and body protective clothing and shoes are required. The handling precautions for this product are based on the characteristics of the neat product unless otherwise specified.

SECTION 11***Satisfactory Materials of Construction***

Buna-N rubber
Butyl rubber
Polypropylene
Plexiglas
Teflon.
PVC - rigid
Viton
EPDM rubber
PVC - flexible
Fiberglass
Neoprene
Polyethylene - low density
Tygon
Tyrl 880
Gum rubber
Silicone rubber
Hypalon
Polyethylene - high density
Stainless steels 304 and 316

ABS (Plastic)
Morton test liner (108 T 44LV)
6/6 Nylon
FRP lined mild steel

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

Important: Before responding to a spill or leak of this product, review each section of this MSDS. Follow the recommendations given in the Handling Precautions sections. Check the Fire and Explosion Data section to determine if the use of non-sparking tools is merited. Insure that spilled or leaked product does not come into contact with materials listed as incompatible. If irritating fumes are present, consider evacuation of enclosed areas.

Emergency Response Assistance: Emergency technical assistance is available at any time from Buckman Laboratories, Inc., by calling (901) 767-2722.

Initially minimize area affected by the spill or leak. Block any potential routes to water systems (e.g., sewers, streams, lakes, etc.). Based on the product's toxicological and chemical properties, and on the size and location of the spill or leak, assess the impact on contaminated environments (e.g. water systems, ground, air equipment, etc.). There are no methods available to completely eliminate any toxicity this product may have on aquatic environments. Minimize adverse effects on these environments. Buckman Laboratories, Inc. can be contacted for technical assistance. Determine if federal, state, and/or local release notification is required (see Regulatory Classifications section of this MSDS). Recover as much of the pure product as possible into appropriate containers. Later, determine if this recovered product can be used for its intended purpose. Address clean-up of contaminated environments. Spill or leak residuals may have to be collected and disposed of. Clay, soil, or commercially available absorbents may be used to recover any material that can not readily be recovered as pure product. Flushing residual material to an industrial sewer, if present at the site of a spill or leak incident, may be acceptable if authorized approval is obtained. If product and/or spill/leak residuals are flushed to an industrial sewer, insure that they do not come into contact with incompatible materials. Contact the person(s) responsible for the operation of your facility's industrial sewer system prior to intentionally flushing or pumping spills or leaks of this product to the industrial sewer.

DISPOSAL GUIDELINES

Note: Follow federal, state, and local regulations governing the disposal of waste materials.

Neat Product: Contact your Buckman representative or Buckman Laboratories, Inc., at (901) 278-0330.

Contaminated Materials: Determine if waste containing this product can be handled by available industrial effluent system or other on-site waste management unit. If off-site management is required, contact a company experienced in industrial waste management. This product is not specifically listed in 40 CFR 261 as a Resource Conservation and Recovery Act (RCRA) hazardous waste. However, spill or leak residuals may meet the criteria of a characteristic hazardous waste under this Act. Check the characteristics of the material to be disposed of and/or the physical and reactivity data given in this MSDS for the neat product.

Container Disposal: Empty containers, as defined by appropriate sections of the RCRA, are not RCRA hazardous wastes. However, insure proper management of any residuals remaining in container.

SECTION 13***Transportation and Shipping Information***

DOT Shipping Information:

Not Regulated.

IMO/IMDG Shipping Information:

UN3082 , ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Poly[oxyethylene (dimethyliminio)ethylene(dimethyliminio)ethylene dichloride]) , Class 9, P.G. III , MARINE POLLUTANT (EmS No. F-A, S-F , ERG Guide 171, HazMat Code 4960131)

IATA Shipping Information:

Not Regulated.

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.

SECTION 14	Regulatory Information
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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

No components of this product are listed.

CWA (Clean Water Act) Listed Substances

No components of this product are listed.

FDA (Food and Drug Administration)

This product is not approved for food contact uses.

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 : Concentrations of 2-5 ppm can be used at the initiation of treatment for up to 21 days. Thereafter, the maximum use rate is 0.5 ppm for potable water systems.

TSCA (Toxic Substances Control Act) Applicability

All components may not be listed on the TSCA Inventory. Registered pesticides are exempt from the requirements of TSCA.

FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act)

This product is a registered pesticide. EPA Reg. No. 1448-32

HMIS/NPCA Rating ... Health **1** Flammability **1** Reactivity **0**

NFPA Ratings Health **1** Flammability **1** Reactivity **0**

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.