**BATH CLEAR ALGICIDE**

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**MATERIAL SAFETY DATA SHEET**

FISHER SCIENTIFIC

EMERGENCY NUMBER: (201) 796-7100

CHEMICAL DIVISION

TEAGUE LANE

FAIR LAWN NJ 07410

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**SUBSTANCE IDENTIFICATION**

**SUBSTANCE**: **BATH CLEAR ALGICIDE**

**TRADE NAMES/SYNONYMS**: 13-641-336; AEC54534

**CHEMICAL FAMILY**: Mixture

**CERCLA RATING (SCALE 0-3); HEALTH=U; FIRE=2; REACTIVITY=0; PERSISTENCE=3**

**NTP RATING (SCALE 0-4); HEALTH=U; FIRE=2; REACTIVITY=0**

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**COMPONENTS AND CONTAMINANTS**

**COMPONENT**:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS#</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLYOXETHYLENE DIETHYLIMINO DIETHYLENE DIMETHYL</td>
<td>31075-24-8</td>
<td>20.0%</td>
</tr>
<tr>
<td>IMINO</td>
<td>ETHYLENE DICHLORIDE</td>
<td>141-11-5</td>
</tr>
<tr>
<td>ETHANOLAMINE</td>
<td>102-71-6</td>
<td>31.0%</td>
</tr>
<tr>
<td>COPPER CARBONATE</td>
<td>12089-80</td>
<td>3.07%</td>
</tr>
</tbody>
</table>

**OTHER CONTAMINANTS**: NONE.

**EXPOSURE LIMITS**:

**ETHANOLAMINE**: 3 ppm (8 mg/m³) OSHA TWA; 6 ppm (15 mg/m³) OSHA STEL

**ACGIH TWA**: 6 ppm (15 mg/m³) ACGIH TWA

**NIOSH Recommended TWA**: 10 hour TWA

**NIOSH Recommended STEL**: 15 ppm (40 mg/m³) DFG MAX TWA

**Measurement method**: Silica gel tube; methanol/water; gas chromatography with flame ionization detection; (NIOSH III # 2007, Aminothiol Compounds).

**OSHA revoked the final rule limits of January 19, 1969 in response to the 11th Circuit Court of Appeals decision (AFL-CIO v. OSHA) effective June 30, 1989**

**TRIETHANOLAMINE**: 3 mg/m³ ACGIH TWA

**COPPER DUST AND MIST (as Cu)**:

1 mg/m³ OSHA TWA

1 mg/m³ ACGIH TWA

1 mg/m³ NIOSH recommended 10 hour TWA

2 mg/m³ DFG MAX TWA (total dust).

**Measurement method**: Particulate filter; acid; atomic absorption spectrophotometry; (NIOSH III # 7029).

**SUBJECT TO SARA Section 313 Annual Toxic Chemical Release Reporting**

**PHYSICAL DATA**

**DESCRIPTION**: Blue, viscous liquid with a slight odor.

**BOILING POINT**: 212 °F (100 °C) **SPECIFIC GRAVITY**: 1.20 @ 27 C

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**VOLATILITY**: n/a **VAPOR PRESSURE**: not available

**EVAPORATION RATE**: not available **SOLUBILITY IN WATER**: soluble

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**FIRE AND EXPLOSION DATA**

**FIRE AND EXPLOSION HAZARD**: Moderate fire hazard when exposed to heat or flame.

**AUTOINJECTION TEMPERATURE**: 205 F (90 C)

**FIREFIGHTING MEDIA**: Dry chemical, carbon dioxide, water spray or regular foam

**FOR LARGER FIRES**: Use water spray, fog or regular foam (1993 Emergency Response Guidebook, USAF P 5804.6).

**FIRE PROTECTION**: Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until wild after fire is extinguished. Keep away from ends of tanks (1993 Emergency Response Guidebook, USAF P 5804.6, Guide Page 60).

**EXTINGUISH USING AGENTS INDICATED**: do not use water directly on material. If large amounts of combustible materials are involved, use water spray or fog in flooding amounts. Use water spray to absorb corrosive vapors. Cool containers with flooding amounts of water from as far a distance as possible. Avoid breathing corrosive vapors; keep upwind.

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**TOXICITY**

**POLYOXETHYLENE DIETHYLIMINO ETHYLENE DIMETHYL IMINO ETHYLENE DICHLORIDE**: Carcinogen status: None

**ACUTE TOXICITY LEVEL**: No data available

**TARGET EFFECTS**: No data available.

**ETHANOLAMINE**

**IRRITATION DATA**: 905 mg open skin rabbit-mild; 250 mg eye-rabbit-severe

**TOXICITY DATA**: 2420 mg/m³ 2 hours inhalation-mouse LC50 3420 mg/m³ 2 hours inhalation-horse LC50 385 mg/m³ 1 hour horse (550 mg/m³) inhalation-guinea pig LD50 (SEMKA); 35 ppm guinea pig LD50: 1720 mg/kg oral rat LD50: 700 mg/kg oral-mouse LD50: 670 mg/kg oral-guinea pig LD50. 1 ppm guinea pig LD50: 105 mg/kg 30 weeks intermittent oral rat LD50: 1900 mg/kg subacute oral rat LD50: 225 mg/kg intravenous rat LD50: 57 mg/kg intraperitoneal rat LD50: 50 mg/kg intraperitoneal mouse LD50: 1750 mg/kg intraperitoneal rat LD50: mutagenic data (RTCS): epidoplicus effects data (RTCS).

**CARCINOGEN STATUS**: None

**LOCAL EFFECTS**: Corrosive - inhalation, skin, eye, ingestion.

**ACUTE TOXICITY LEVEL**: Moderately toxic by dermal absorption, and ingestion.

**TARGET EFFECTS**: Poisoning may affect the central nervous system, liver, and kidneys.

**AT INCREASED RISK FROM EXPOSURE**: Persons with pre-existing liver, kidney, skin or respiratory disease.

**TRIETHANOLAMINE**

**IRRITATION DATA**: 15 mg/3 days intermittent skin-human mild; 590 mg/24 hours skin rabbit-mild; 250 mg eye-rabbit-severe

**TOXICITY DATA**: 20 mg/g skin rabbit LD50: 6 mg/kg oral rat LD50: 585 mg/kg oral-mouse LD50: 2200 mg/kg oral-guinea pig LD50: 3200 mg/kg oral-rat LD50: 1450 mg/kg intraperitoneal mouse-LD50: mutagenic data (RTCS), tumorigenic data (RTCS)

**CARCINOGEN STATUS**: None.

**LOCAL EFFECTS**: Irritant - skin, eye.

**ACUTE TOXICITY LEVEL**: Slightly toxic by ingestion; relatively non-toxic by dermal absorption.

**TARGET ORGAN EFFECTS**: Poisoning may affect the kidneys and liver.

**AT INCREASED RISK FROM EXPOSURE**: Persons with liver and kidney diseases.

**ADDITIONAL DATA**: Cross sensitization reactions have been reported between triethanolamine and other tertiary amines.

**CUPRIC CARBONATE**

**TOXICITY DATA**: 1350 mg/kg oral-rat LD50: 159 mg/kg oral-rat LD50.

**CARCINOGEN STATUS**: None.

**LOCAL EFFECTS**: Irritant - inhalation, skin, eye.

**ACUTE TOXICITY LEVEL**: Moderately toxic by ingestion.

**TARGET EFFECTS**: Poisoning may affect the liver, kidneys and the blood.

**AT INCREASED RISK FROM EXPOSURE**: Persons with pre-existing respiratory, liver, kidney, skin or hepatorenal disorders or Wilson's disease.

**ADDITIONAL DATA**: May be excreted in breast milk.

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* May be based on general information on copper salts.
HEALTH EFFECTS AND FIRST AID

INHALATION:
POLYETHYLENEETHYLIDINEETHYLENEETHYLIDINEETHYLENE DICHLORIDE: ACUTE EXPOSURE - May cause mild irritation. Chronic CHRONIC EXPOSURE: - No data available.

ETHANOLAMINE: CORROSIVE. 30 ppm Immediately Dangerous to Life or Health. ACUTE EXPOSURE - May cause severe respiratory tract irritation possibly including coughing, sore throat, choking, shortness of breath, hoarseness, pain in the nose, mouth and throat and burns of the mucous membranes. If sufficient quantities of a corrosive substance are inhaled, pulmonary edema may develop, often with a latent period of 5-72 hours. The symptoms may include tightness in the chest, dyspnea, frothy sputum, cough, and dizziness. Physical findings may include wheeze, rapid pulse, hypotension, hiccups, concentration and visual stigmas. Animal exposure resulted in pulmonary edema, myocardial depression and respiratory arrest. Chronic CHRONIC EXPOSURE - Depending on the concentration and duration of exposure, repeated or prolonged exposure to corrosive substances may cause inflammatory and ulcerative changes in the mouth and possible changes in the gastro-intestinal tract and gastrointestinal disturbances. Chronic exposure of animals resulted in lethargy, apathy, poor appetite, decreased alertness and changes in the lungs, liver and kidneys.

TRIETHANOLAMINE: ACUTE EXPOSURE - Due to low vapor pressure, inhalation of toxic amounts is unlikely. However, if sufficient quantities are inhaled, irritation of the mucous membranes, coughing, sore throat, and shortness of breath may occur. Animal experiments indicate that acute high level exposures to triethanolamine may cause central nervous system depression, pulmonary damage and non-specific hepatic and renal lesions in animals. CHRONIC EXPOSURE - No data available.

CUPRIC CARBONATE: IRRITANT. ACUTE EXPOSURE - May cause irritation to the respiratory tract with sore throat, coughing, shortness of breath, and headache. CHRONIC EXPOSURE - Prolonged inhalation of dust or mist of copper salts may cause congestion of the nasal mucous membranes. Sometimes of the pharynx, and on occasion ulceration and perforation of the nasal septum. Atrophic changes in the mucous membranes were noted in subjects exposed to complex copper salts for long periods of time. Inhalation of copper compounds has been associated with injury to the lungs and liver with hemorrhage, edema, and necrosis. CHRONIC EXPOSURE - No data available.

FIRST AID - Remove from exposure area to fresh air immediately. Perform artificial respiration if necessary. Maintain airway, blood pressure and respiration. Keep warm and at rest. Treat symptomatically and supportive as necessary. Treat medical attention immediately. Qualified medical personnel should consider administering oxygen.

SKIN CONTACT:
POLYETHYLENEETHYLIDINEETHYLENEETHYLIDINEETHYLENE DICHLORIDE: ACUTE EXPOSURE - May cause mild irritation. CHRONIC EXPOSURE - No data available.

ETHANOLAMINE: CORROSIVE. ACUTE EXPOSURE - The vapor may be irritating. Contact with the undiluted material may cause severe irritation with edema and blistering. When applied to human skin for 1.5 hours reddness and infiltration of the skin will occur. CHRONIC EXPOSURE - Effects depend on concentration and duration of exposure. Repeated or prolonged contact with corrosive substances may result in dermatitis or effects similar to acute exposure.

TRIETHANOLAMINE: IRRITANT. ACUTE EXPOSURE - Contact may cause irritation with redness, pain, and possibly blistering. Systemic poisoning may occur due to skin absorption. CHRONIC EXPOSURE - Repeated exposure may cause allergic contact dermatitis or eczema in previously sensitized individuals. Repeated application to the skin of guinea pigs resulted in inflammation and skin absorption affecting the lungs, liver, and kidneys. In two-year studies there was some evidence of carcinogenic activity based on the increased incidence of hepato-cellular neoplasms in female mice. Dosed rats and mice had varying degrees of inflammation and atrophy, and exposed rats had ulceration, at the application site.

CUPRIC CARBONATE: IRRITANT. ACUTE EXPOSURE - May cause irritation, redness, and pain. Some copper salts have been reported to cause an itching papulovesicular skin discoloration, and eczematoid lesions. CHRONIC EXPOSURE - Repeated or prolonged contact with some copper salts has resulted in irritation, necrosis, and greenish skin discoloration.

FIRST AID - Remove contaminated clothing and shoes immediately. Wash with soap and warm water for at least 15 minutes. If burns occur, proceed with the following: Cool and cover burned area securely with sterile, dry, local dressings. Treat symptomatically and supportive. Get medical attention immediately.

EYE CONTACT:
POLYETHYLENEETHYLIDINEETHYLENEETHYLIDINEETHYLENE DICHLORIDE: ACUTE EXPOSURE - May cause mild irritation with a possible burning sensation. CHRONIC EXPOSURE - No data available.

ETHANOLAMINE: CORROSIVE. ACUTE EXPOSURE - Direct contact with corrosive substances may cause severe irritation to the skin, and burns to eye explosively severe. The degree of injury depends on the concentration and duration of contact. For the last extent of the effects of the attempted ingestion are not known. CHRONIC EXPOSURE - Effects depend on concentration and duration of exposure. Repeated or prolonged contact with corrosive substances may result in conjunctivitis or effects as in acute exposure.

TRIETHANOLAMINE: IRRITANT. ACUTE EXPOSURE - Contact may cause irritation, possibly severe. Application of a drop to rabbit eyes caused moderate, transient injury graded 5 on a scale of 1-10 after 24 hours. Continuous application of a 0.02% molar solution adjusted to pH 11 tested on rabbit eyes caused transient irritation with moderate corneal swelling. Hypoplasia of the iris and conjunctiva. CHRONIC EXPOSURE - Repeated or prolonged exposure to irritants may cause conjunctivitis.

CUPRIC CARBONATE: ACUTE EXPOSURE - May cause irritation with redness, pain, and blurred vision. Some copper salts have been reported to cause conjunctivitis, corneal ulcers, and turbidity possibly with palpebral edema. Copper salts embedded in the eye may result in a pronounced foreign-body response with characteristic discoloration of ocular tissue. CHRONIC EXPOSURE - No data available.

FIRST AID - Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15 minutes). Remove contaminated contact lenses if present. Cover with sterile bandages. Get medical attention immediately.

INGESTION:
POLYETHYLENEETHYLIDINEETHYLENEETHYLIDINEETHYLENE DICHLORIDE: ACUTE EXPOSURE - May cause nausea and diarrhea.

ETHANOLAMINE: CORROSIVE. ACUTE EXPOSURE - May cause abdominal pain, nausea, vomiting and mucosal burns of the mouth and esophagus. There may be discoloration of the tissue. Swallowing and vomiting may be difficult at first and then almost impossible. The effects on the esophagus and gastrointestinal tract may range from irritation to severe corrosive. Edema of the epiglottis and larynx may occur. CHRONIC EXPOSURE - Depending on the concentration, repeated ingestion of corrosive substances may cause effects as with acute ingestion. Dose dependent increases in embryotoxicity and lethality (mortality, increased deaths, and intrateric growth retardation) occurred when pregnant rats were given 500, 300, or 50 mg/kg per day of organophosphates.

TETRAETHANOLAMINE: ACUTE EXPOSURE - Ingestion of several ounces of unneutralized solution may cause alkali burns of the mouth, pharynx, and esophagus, gastrointestinal irritation, abdominal pain, vomiting, and diarrhea. Systemic alkalosis and liver and kidney effects have been reported in animals.

CHRONIC EXPOSURE: Animal studies indicate that prolonged or repeated feeding of tetraethanolamine has caused alterations in liver and kidney weight, nephrotoxicity, myocardial lesions, and decreased activity of rat liver microsomal and purified rat liver cytochrome P-450. Repeated oral administration to mice resulted in a statistically significant increase in the incidence of lymphoid and carcinogenic tumors of the stomach and appendages. The administration of tetraethanolamine at levels of 1% and 2% in drinking water to 50 male and 50 female 8-12 weeks produced no dose-related increase in the incidence of tumors in either sex or did affect survival rates, organ weights, or the occurrence of neoplasms as compared to the control group.

CUPRIC CARBONATE: ACUTE EXPOSURE - May cause sore throat, abdominal pain, diarrhea, and vomiting. Some copper salts have been reported to cause an immediate metallic taste, salivation, epigastric burning, ulcers, hemorrhagic gastritis, anuria, coma, convulsions, and death.
CHRONIC EXPOSURE: Repeated or prolonged ingestion of copper salts has produced hemolytic anemia and liver, kidney, and spleen damage in animals.

FIRST AID: Give large amounts of milk or water immediately. Do not give anything by mouth if person is unconscious or otherwise unable to swallow. If vomiting occurs, keep head lower than hips to prevent aspiration. Qualified medical personnel should consider the following: Perform gastric lavage if there is no sign of perforation or corrosive injury. Treat symptomatically and supportive. Get medical attention immediately.

----- REACTIVITY ----- 

STORAGE AND DISPOSAL

Observe all federal, state and local regulations when storing or disposing of this substance.

**Storage**

Store in a cool, dry place.

Store away from incompatible substances.