**Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME**
ALGAEFIX

**STATEMENT OF HAZARDOUS NATURE**
Not considered a hazardous substance according to OSHA 29 CFR 1910.1200.

**SUPPLIER**
Company: Aquarium Pharmaceuticals Incorporated
Address: 50 East Hamilton Street
          Chalfont
          PA, 18914
          USA
Telephone: +1 215 822 8181

**PRODUCT USE**
For product 87.

**SYNONYMS**
"Solution ID# 3504"

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**Section 2 - COMPOSITION / INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS RN</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyliminoethylene dichloride, ethoxylate</td>
<td>31512-74-0</td>
<td>4.5</td>
</tr>
</tbody>
</table>

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**Section 3 - HAZARDS IDENTIFICATION**

**CANADIAN WHMIS SYMBOLS**
None

**EMERGENCY OVERVIEW**

**RISK**
Harmful to aquatic organisms.

**POTENTIAL HEALTH EFFECTS**

**ACUTE HEALTH EFFECTS**

**SWALLOWED**
The material has NOT been classified as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident. Present definitions...
Section 3 - HAZARDS IDENTIFICATION

of harmful or toxic substances are generally based on doses producing mortality (death) rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, unintentional ingestion is not thought to be cause for concern.

EYE
Although the liquid is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).

SKIN
The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

INHALED
The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

CHRONIC HEALTH EFFECTS
Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified using animal models); nevertheless exposure by all routes should be minimized as a matter of course.

Section 4 - FIRST AID MEASURES

SWALLOWED
- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE
If this product comes in contact with eyes:
- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN
If skin or hair contact occurs:
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED
- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN
Treat symptomatically.
Section 5 - FIRE FIGHTING MEASURES

Flash Point (°F): Not Applicable
Lower Explosive Limit (%): Not Applicable
Upper Explosive Limit (%): Not Applicable
Autoignition Temp (°F): Not Applicable

EXTINGUISHING MEDIA
- There is no restriction on the type of extinguisher which may be used.
Use extinguishing media suitable for surrounding area.

FIRE FIGHTING
- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
- Non combustible.
- Not considered to be a significant fire risk, however containers may burn.
Decomposition may produce toxic fumes of, carbon dioxide (CO2), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY
Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION
- Glasses:
  Chemical goggles.
- Gloves:
  When handling larger quantities:
  General purpose rubber glove.
- Respirator:

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
- Clean up all spills immediately.
- Avoid breathing vapors and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labeled container for waste disposal.

MAJOR SPILLS
- Minor hazard.
- Clear area of personnel.
- Alert Emergency Responders and tell them location and nature of hazard.
- Control personal contact by using protective equipment as required.
- Prevent spillage from entering drains or water ways.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labeled containers for recycling.

continued...
Section 6 - ACCIDENTAL RELEASE MEASURES

- Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.
- Wash area and prevent runoff into drains or waterways.
- If contamination of drains or waterways occurs, advise emergency services.

ACUTE EXPOSURE GUIDELINE LEVELS (AEGL) (in ppm)

AEGL 1: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

AEGL 2: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

AEGL 3: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

RECOMMENDED STORAGE METHODS
- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer
- Check all containers are clearly labeled and free from leaks.

STORAGE REQUIREMENTS
- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

continued...
Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS
No data available: AlgaeFix as (CAS: 31512-74-0)
No data available: dimethyliminoethylene dichloride, ethoxylate as (CAS: 31512-74-0) / (CAS: 31075-24-8)

Not available. Refer to individual constituents.

INGREDIENT DATA
DIMETHYLIMINOETHYLENE DICHLORIDE, ETHOXYLATE:
- Dusts not otherwise classified, as inspirable dust;
  ES TWA: 10 mg/m³.
- Particulate (insoluble or poorly soluble *) Not Otherwise Specified (P.N.O.C)

TLV TWA: 10 mg/m³ Inhalable particulate
TLV TWA: 3 mg/m³ Respirable particulate
OEL-Sweden, United Kingdom: 10 mg/m³ total dust, 5 mg/m³ respirable dust

These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:
- the architecture of the air spaces remain intact,
- scar tissue (collagen) is not synthesised to any degree,
- tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:
- seriously reduce visibility,
- cause unpleasant deposits in the eyes, ears and nasal passages,
- contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:
- to brief exposures to higher concentrations
- nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which
- are insoluble or poorly soluble* in water or, preferably, in aqueous lung fluid (if data is available) and
- have a low toxicity (i.e., are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization, or cause toxic effects other than by inflammation or by a mechanism of lung overload)
* Notice of intended change.

PERSONAL PROTECTION

EYE
- Safety glasses with side shields
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.
HANDS/FEET
Wear general protective gloves, e.g., light weight rubber gloves.

OTHER
No special equipment needed when handling small quantities.
OTHERWISE:
- Overalls.
- Barrier cream.
- Eyewash unit.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

ENGINEERING CONTROLS
General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear an approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES
Liquid.
Mixes with water.

Molecular Weight: Not Applicable
Melting Range (°C): Not Available
Solubility in water (g/L): Miscible
pH (1% solution): Not Available
Volatile Component (%vol): Not Available
Relative Vapor Density (air=1): Not Available
Lower Explosive Limit (%): Not Applicable
Autoignition Temp (°C): Not Applicable
State: Liquid

Boiling Range (°C): >100 (WSCP)
Specific Gravity (water=1): 1.006
pH (as supplied): 5.8-6.8
Vapor Pressure (kPa): Not Available
Evaporation Rate: Not Available
Flash Point (°C): Not Applicable
Upper Explosive Limit (%): Not Applicable
Decomposition Temp (°C): Not Available

APPEARANCE
Clear pale yellow liquid with no odor; mixes with water.

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY
Product is considered stable and hazardous polymerization will not occur.
Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

STORAGE INCOMPATIBILITY
Avoid reaction with oxidizing agents.

Section 11 - TOXICOLOGICAL INFORMATION

AlgaeFix
Not available. Refer to individual constituents.
unless otherwise specified data extracted from RTECS - Register of Toxic Effects
of Chemical Substances

DIMETHYLIMINOETHYLENE DICHLORIDE, ETHOXYLATE:
~TOXICITY FIGURE
Oral~rat~LD50~1850~mg/kg
~OTHER
IRRITATION

Section 12 - ECOLOGICAL INFORMATION

No data for AlgaeFix.
Refer to data for ingredients, which follows:

DIMETHYLIMINOETHYLENE DICHLORIDE, ETHOXYLATE:
The material is classified as an ecotoxin* because the Fish LC50 (96 hours) is
less than or equal to 0.1 mg/l

* Classification of Substances as Ecotoxic (Dangerous to the Environment)
Appendix 8, Table 1
Compiler's Guide for the Preparation of International Chemical Safety Cards:
1993 Commission of the European Communities.
Cationic substances, and their polymers and those polymers that are reasonably
anticipated to become cationic in the natural aquatic environment (pH range 4-9)
may be environmental hazards.
Exempt from this concern are those polymers to be used only in solid phase, such
as ion-exchange resins, and where the FGEW (Functional Group Equivalent Weight)
of cationic groups is not 5000 and above.
Cationic groups such as alkylsulfoniums, alkylphosphoniums and quaternary
ammonium polymers are highly toxic to fish an other aquatic organisms. Similarly
potentially cationic groups such as amines and isocyanates are of concern. Some
cationics, however, may fall into the category of PLCs (polymers of low concern)
provided they possess low charge density, and/or are not water-soluble or are
not self-dispersing polycarboxylates or poly- (aromatic or aliphatic) sulfonate
polymers.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions
All waste must be handled in accordance with local, state and federal
regulations.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management

continued...
Section 13 - DISPOSAL CONSIDERATIONS

Authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: Burial in a licensed land-fill or Incineration in a licensed apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION

Shipping Name: None
Hazard Class: None
SubRisk: None
UN/NA Number: None
Packing Group: None
Additional Shipping Information:
  International Transport Regulations:
    IMO: None

Section 15 - REGULATORY INFORMATION

RISK

Harmful to aquatic organisms.

US Federal Regulations
A. General Product Information
In addition to Federal and State regulation, local regulations may apply. Check with your local regulatory authorities.

B. Component Information
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 455 Appendix A) SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4): None

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyliminoethylene dichloride, ethoxylate</td>
<td>Y</td>
</tr>
</tbody>
</table>

State Regulations
A. General Product Information

B. Component Information
The following components appear on one or more of the following state hazardous substance lists.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>CA</th>
<th>FL</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
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</thead>
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<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Y=Yes this material appears on that state's hazardous substances list.
N=No this material does not appear on that state's hazardous substances list.

Other Regulations
A. Component Information

CANADA
All of this product's components are on the Canadian Domestic REGULATIONS.

- dimethyliminoethylene dichloride, ethoxylate (CAS: 31512-74-0) is found on the following regulatory lists
- US EPA High Production Volume Program Chemical List
- dimethyliminoethylene dichloride, ethoxylate (CAS: 31075-24-8) is found on the following regulatory lists
- US Toxic Substances Control Act (TSCA)
- Canadian Domestic Substances List (DSL)

Section 16 - OTHER INFORMATION

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