

# SAFETY DATA SHEET

18012

## Section 1. Identification

**Product name** : HI-TECH Glass Cleaner  
**Product code** : HT 18012  
**Other means of identification** : Not available.  
**Product type** : Aerosol.  
**Relevant identified uses of the substance or mixture and uses advised against**  
Not applicable.

**Manufacturer** : Mfd. for HI-TECH INDUSTRIES, INC.  
19270 W. Eight Mile Rd.  
Southfield, MI 48075

**Emergency telephone number of the company** : Infotrac (352) 323-3500

**Product Information Telephone Number** : (800) 789-9065

**Regulatory Information Telephone Number** : (248) 358-5533

**Transportation Emergency Telephone Number** : Infotrac (352) 323-3500

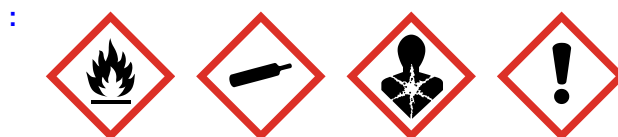
## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : FLAMMABLE AEROSOLS - Category 1  
GASES UNDER PRESSURE - Compressed gas  
SKIN CORROSION/IRRITATION - Category 2  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A  
CARCINOGENICITY - Category 1A  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1.3%

### GHS label elements

#### Hazard pictograms



#### Signal word

#### Hazard statements

: Danger  
: Extremely flammable aerosol.  
Contains gas under pressure; may explode if heated.  
Causes serious eye irritation.  
Causes skin irritation.  
May cause cancer.  
May cause damage to organs through prolonged or repeated exposure.

### Precautionary statements

## Section 2. Hazards identification

- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Pressurized container: Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source. Do not breathe dust or mist. Wash hands thoroughly after handling.
- Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY.  
Please refer to the SDS for additional information. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
- Hazards not otherwise classified** : None known.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

### CAS number/other identifiers

| <b>Ingredient name</b> | <b>% by weight</b> | <b>CAS number</b> |
|------------------------|--------------------|-------------------|
| Butane                 | 2.7                | 106-97-8          |
| 2-Butoxyethanol        | 1.5                | 111-76-2          |
| Ethanol                | 1.5                | 64-17-5           |
| Propane                | 1.3                | 74-98-6           |
| Morpholine             | 1.0                | 110-91-8          |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

## Section 4. First aid measures

- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

## Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| <b>Ingredient name</b> | <b>Exposure limits</b>  |
|------------------------|---|
| Butane                 | <b>NIOSH REL (United States, 10/2013).</b><br>TWA: 800 ppm 10 hours.<br>TWA: 1900 mg/m <sup>3</sup> 10 hours.   |
| 2-Butoxyethanol        | <b>ACGIH TLV (United States, 4/2014).</b><br>STEL: 1000 ppm 15 minutes.<br><b>ACGIH TLV (United States, 4/2014).</b><br>TWA: 20 ppm 8 hours.<br><b>NIOSH REL (United States, 10/2013).</b><br><b>Absorbed through skin.</b><br>TWA: 5 ppm 10 hours.<br>TWA: 24 mg/m <sup>3</sup> 10 hours.  |
| Ethanol                | <b>OSHA PEL (United States, 2/2013).</b><br><b>Absorbed through skin.</b><br>TWA: 50 ppm 8 hours.<br>TWA: 240 mg/m <sup>3</sup> 8 hours.<br><b>ACGIH TLV (United States, 4/2014).</b><br>STEL: 1000 ppm 15 minutes.<br><b>NIOSH REL (United States, 10/2013).</b><br>TWA: 1000 ppm 10 hours.<br>TWA: 1900 mg/m <sup>3</sup> 10 hours. |
| Propane                | <b>OSHA PEL (United States, 2/2013).</b><br>TWA: 1000 ppm 8 hours.<br>TWA: 1900 mg/m <sup>3</sup> 8 hours.<br><b>NIOSH REL (United States, 10/2013).</b><br>TWA: 1000 ppm 10 hours.<br>TWA: 1800 mg/m <sup>3</sup> 10 hours.  |
| morpholine             | <b>OSHA PEL (United States, 2/2013).</b><br>TWA: 1000 ppm 8 hours.<br>TWA: 1800 mg/m <sup>3</sup> 8 hours.<br><b>ACGIH TLV (United States, 4/2014).</b><br><b>Absorbed through skin.</b>  |

## Section 8. Exposure controls/personal protection

TWA: 20 ppm 8 hours.  
TWA: 71 mg/m<sup>3</sup> 8 hours.  
**NIOSH REL (United States, 10/2013).**  
**Absorbed through skin.**  
TWA: 20 ppm 10 hours.  
TWA: 70 mg/m<sup>3</sup> 10 hours.  
STEL: 30 ppm 15 minutes.  
STEL: 105 mg/m<sup>3</sup> 15 minutes.  
**OSHA PEL (United States, 2/2013).**  
**Absorbed through skin.**  
TWA: 20 ppm 8 hours.  
TWA: 70 mg/m<sup>3</sup> 8 hours.

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

|  |  |
|--|--|
| Physical state                               | : Liquid.  |
| Color  | : Not available.   |
| Odor   | : Not available.   |
| Odor threshold                               | : Not available.   |
| pH   | : 10   |
| Melting point                                | : Not available.   |
| Boiling point                                | : Not available.   |
| Flash point                                  | : Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]  |
| Evaporation rate                             | : 1.6 (butyl acetate = 1)  |
| Flammability (solid, gas)                    | : Not available.   |
| Lower and upper explosive (flammable) limits | : Lower: 1.1%<br>Upper: 19%  |
| Vapor pressure                               | : 13.5 kPa (101.325 mm Hg) [at 20°C]   |
| Vapor density                                | : 1 [Air = 1]  |
| Relative density                             | : 0.96   |
| Solubility                                   | : Not available.   |
| Partition coefficient: n-octanol/water       | : Not available.   |
| Auto-ignition temperature                    | : Not available.   |
| Decomposition temperature                    | : Not available.   |
| Viscosity                                    | : Kinematic (room temperature): >0.205 cm <sup>2</sup> /s (>20.5 cSt)<br>Kinematic (40°C (104°F)): >0.205 cm <sup>2</sup> /s (>20.5 cSt) |

### Aerosol product

|                    |                    |
|--------------------|--------------------|
| Type of aerosol    | : Spray            |
| Heat of combustion | : 0.000003058 kJ/g |

## Section 10. Stability and reactivity

|                                    |  |
|------------------------------------|--|
| Reactivity                         | : No specific test data related to reactivity available for this product or its ingredients.           |
| Chemical stability                 | : The product is stable.   |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur.                      |
| Conditions to avoid                | : Avoid all possible sources of ignition (spark or flame).   |
| Incompatible materials             | : No specific data.  |
| Hazardous decomposition products   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name   | Result                | Species    | Dose                     | Exposure |
|---------------------------|-----------------------|------------|--------------------------|----------|
| Butane<br>2-Butoxyethanol | LC50 Inhalation Vapor | Rat        | 658000 mg/m <sup>3</sup> | 4 hours  |
|                           | LCLo Inhalation Vapor | Guinea pig | >3.1 mg/l                | 1 hours  |
|                           | LD50 Dermal           | Guinea pig | >2000 mg/kg              | -        |
| Ethanol                   | LD50 Oral             | Rat        | 1300 mg/kg               | -        |
|                           | LC50 Inhalation Vapor | Rat        | 124700 mg/m <sup>3</sup> | 4 hours  |
| morpholine                | LD50 Oral             | Rat        | 7 g/kg                   | -        |
|                           | LD50 Oral             | Rat        | 1738 mg/kg               | -        |

#### Irritation/Corrosion

| Product/ingredient name | Result                   | Species | Score | Exposure                           | Observation |
|-------------------------|--------------------------|---------|-------|------------------------------------|-------------|
| 2-Butoxyethanol         | Eyes - Moderate irritant | Rabbit  | -     | 24 hours 100 milligrams            | -           |
|                         | Eyes - Severe irritant   | Rabbit  | -     | 100 milligrams                     | -           |
|                         | Skin - Mild irritant     | Rabbit  | -     | 500 milligrams                     | -           |
| Ethanol                 | Eyes - Mild irritant     | Rabbit  | -     | 24 hours 500 milligrams            | -           |
|                         | Eyes - Moderate irritant | Rabbit  | -     | 0.066666667 minutes 100 milligrams | -           |
|                         | Eyes - Moderate irritant | Rabbit  | -     | 100 microliters                    | -           |
|                         | Eyes - Severe irritant   | Rabbit  | -     | 500 milligrams                     | -           |
|                         | Skin - Mild irritant     | Rabbit  | -     | 400 milligrams                     | -           |
| morpholine              | Skin - Moderate irritant | Rabbit  | -     | 24 hours 20 milligrams             | -           |
|                         | Eyes - Severe irritant   | Rabbit  | -     | 2 milligrams                       | -           |
|                         | Skin - Moderate irritant | Rabbit  | -     | 500 milligrams                     | -           |

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Classification

| Product/ingredient name | OSHA | IARC | NTP |
|-------------------------|------|------|-----|
| 2-Butoxyethanol         | -    | 3    | -   |
| Ethanol                 | -    | 1    | -   |
| morpholine              | -    | 3    | -   |

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)



## Section 11. Toxicological information

| Name            | Category   | Route of exposure | Target organs                                     |
|-----------------|------------|-------------------|---|
| Butane          | Category 3 | Not applicable.   | Respiratory tract irritation and Narcotic effects |
| 2-Butoxyethanol | Category 3 | Not applicable.   | Respiratory tract irritation and Narcotic effects |
| Ethanol         | Category 3 | Not applicable.   | Respiratory tract irritation and Narcotic effects |
| Propane         | Category 3 | Not applicable.   | Respiratory tract irritation and Narcotic effects |

### Specific target organ toxicity (repeated exposure)

| Name            | Category   | Route of exposure | Target organs  |
|-----------------|------------|-------------------|----------------|
| Butane          | Category 2 | Not determined    | Not determined |
| 2-Butoxyethanol | Category 2 | Not determined    | Not determined |
| Ethanol         | Category 2 | Not determined    | Not determined |
| Propane         | Category 2 | Not determined    | Not determined |

### Aspiration hazard

| Name    | Result                         |
|---------|--------------------------------|
| Butane  | ASPIRATION HAZARD - Category 1 |
| Propane | ASPIRATION HAZARD - Category 1 |

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Long term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Potential chronic health effects**

Not available.

**General** : May cause damage to organs through prolonged or repeated exposure.

**Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

| Route               | ATE value     |
|---------------------|---------------|
| Oral                | 57829.5 mg/kg |
| Dermal              | 110000 mg/kg  |
| Inhalation (vapors) | 1100 mg/l     |

## Section 12. Ecological information

**Toxicity**

| Product/ingredient name | Result                               | Species                                    | Exposure |
|-------------------------|--------------------------------------|--|----------|
| 2-Butoxyethanol         | Acute EC50 >1000 mg/l Fresh water    | Daphnia - Daphnia magna                    | 48 hours |
|                         | Acute LC50 800000 µg/l Marine water  | Crustaceans - Crangon crangon              | 48 hours |
| Ethanol                 | Acute LC50 1250000 µg/l Marine water | Fish - Menidia beryllina                   | 96 hours |
|                         | Acute EC50 17.921 mg/l Marine water  | Algae - Ulva pertusa                       | 96 hours |
|                         | Acute EC50 2000 µg/l Fresh water     | Daphnia - Daphnia magna                    | 48 hours |
|                         | Acute LC50 25500 µg/l Marine water   | Crustaceans - Artemia franciscana - Larvae | 48 hours |
| morpholine              | Acute LC50 42000 µg/l Fresh water    | Fish - Oncorhynchus mykiss                 | 4 days   |
|                         | Chronic NOEC 4.995 mg/l Marine water | Algae - Ulva pertusa                       | 96 hours |
|                         | Chronic NOEC 0.375 ul/L Fresh water  | Fish - Gambusia holbrooki - Larvae         | 12 weeks |
| morpholine              | Acute EC50 28 mg/l Fresh water       | Algae - Pseudokirchneriella subcapitata    | 96 hours |
|                         | Acute LC50 180 mg/l Fresh water      | Fish - Oncorhynchus mykiss                 | 96 hours |

**Persistence and degradability**

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| 2-Butoxyethanol         | -                 | -          | Readily          |
| Ethanol                 | -                 | -          | Readily          |

**Bioaccumulative potential**

| Product/ingredient name | LogP <sub>ow</sub> | BCF  | Potential |
|-------------------------|--------------------|------|-----------|
| morpholine              | -                  | <2.8 | low       |

## Section 12. Ecological information

### Mobility in soil






Soil/water partition coefficient ( $K_{oc}$ ) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

|                            | DOT<br>Classification  | TDG<br>Classification  | Mexico<br>Classification   | IATA   | IMDG   |
|----------------------------|--|--|--|--|--|
| UN number                  | UN1950   | UN1950   | UN1950   | UN1950   | UN1950   |
| UN proper shipping name    | AEROSOLS   | AEROSOLS   | AEROSOLS   | Aerosols, non-flammable  | AEROSOLS   |
| Transport hazard class(es) | 2.2<br> | 2.2<br> | 2.2<br> | 2.2<br> | 2.2<br> |
| Packing group              | -  | -  | -  | -  | -  |
| Environmental hazards      | No.  | No.  | No.  | No.  | No.  |
| Additional information     | <u>Special provisions</u><br>LIMITED QUANTITY  | <u>Special provisions</u><br>LIMITED QUANTITY  | <u>Special provisions</u><br>(ERG#126)   | <u>Special provisions</u><br>LIMITED QUANTITY  | <u>Emergency schedules (EmS)</u><br>LIMITED QUANTITY, F-D, S-U                               |

**Special precautions for user** : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

## Section 15. Regulatory information

[U.S. Federal regulations](#) :

[State regulations](#)

[California Prop. 65](#)

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

## Section 16. Other information

[Hazardous Material Information System \(U.S.A.\)](#)

|                  |   |
|------------------|---|
| Health           | 3 |
| Flammability     | 2 |
| Physical hazards | 0 |
|                  |   |

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### [Notice to reader](#)

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

