1. Product and Company Identification

Product identifier: Monoethanolamine
Version #: 01
Issue date: 06-10-2014
Chemical description: Aliphatic amino alcohol
CAS #: Mixture
MSDS Number: COM033
Product use: Professional use only
Manufacturer information: Refer to supplier
Supplier: Comet Chemical
3463 Thomas Street
Innisfill, ON L9S 3W4 CA
Information (M-F 8:00-5:00): 705-436-5580
24 Hour Number (Newalta): 800-567-7455

2. Hazards Identification

Emergency overview: Clear, colorless liquid. Fishy odor.
DANGER!
Combustible liquid. May be corrosive to metals. Contact with most metals will generate flammable hydrogen gas. Hydroscopic (absorbs moisture from the air). Corrosive. Causes severe skin burns and eye damage. Causes respiratory tract irritation. Causes digestive tract burns.

Potential health effects

Routes of exposure
- Inhalation: May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.
- Ingestion: May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.
- Skin: Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring.
- Eyes: Causes chemical burns. Corrosive to the eyes and may cause severe damage including blindness.

Chronic effects: Chronic skin contact with low concentrations may cause dermatitis. May cause an allergic skin reaction (e.g. hives, rash) in some hypersensitive individuals. May cause allergic respiratory reaction in hyper-sensitive individuals.

Signs and symptoms: Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.

Potential environmental effects: See ECOLOGICAL INFORMATION, Section 12.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoethanolamine</td>
<td>141-43-5</td>
<td>99</td>
</tr>
<tr>
<td>Diethanolamine</td>
<td>111-42-2</td>
<td>&gt;1</td>
</tr>
</tbody>
</table>

Material name: Monoethanolamine
MSDS No. COM033  Version #: 01  Issue date: 06-10-2014
MSDS CANADA
4. First Aid Measures

First aid procedures

Eye contact
Immediately flush eyes with plenty of water for at least 20 minutes. Continue rinsing. Get medical attention immediately.

Skin contact
Immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing and shoes. Do not rub affected area. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse. Leather and shoes that have been contaminated with the solution may need to be destroyed.

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. If breathing is difficult, trained personnel should give oxygen. Seek immediate medical attention/advice.

Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Drink 1 or 2 glasses of water. Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs spontaneously, keep victim’s head lowered (forward) to reduce the risk of aspiration.

Notes to physician
Immediate medical attention is required. Causes chemical burns. Treat symptomatically.

General advice
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties
Combustible by WHMIS criteria. Vapors are heavier than air and may spread along floors. Material will react with water and may release a flammable (and/or) toxic gas. Heat may cause the containers to explode. Vapors may travel considerable distance to a source of ignition and flash back. Combustible liquid and vapor. This material may be ignited by heat, sparks, flames, or other sources of ignition (e.g static electricity, pilot lights, or mechanical / electrical equipment).

Extinguishing media

Suitable extinguishing media
Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Protection of firefighters

Protective equipment for firefighters
Firefighters should wear full protective clothing including self contained breathing apparatus.

Fire fighting equipment/instructions
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Move containers from fire area if you can do so without risk.

Explosion data

Sensitivity to static discharge
May be sensitive to static discharge.

Sensitivity to mechanical impact
Not expected to be sensitive to mechanical impact.

Hazardous combustion products
Burning will produce toxic fumes containing carbon monoxide and carbon dioxide. Other irritating fumes and smoke.

General fire hazards
Combustible liquid and vapor.

6. Accidental Release Measures

Personal precautions
Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Wear positive pressure self-contained breathing apparatus (SCBA). For personal protection, see section 8 of the MSDS.

Environmental precautions
For large (industrial) releases, prevent spill from entering a waterway. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

Methods for containment
Stop leak if you can do so without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up
Ventilate the contaminated area. Remove sources of ignition. Place all material into loosely covered plastic containers for later disposal. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Dilute acid with water and neutralize with Sodium Carbonate (soda ash) or lime. Local authorities should be advised if significant spillages cannot be contained. For waste disposal, see section 13 of the MSDS.
Other information

Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling

Keep away from heat and sources of ignition. Keep containers closed when not in use. Use only in well-ventilated areas. Wash thoroughly after handling. Wear chemically resistant protective equipment during handling. Avoid contact with eyes, skin and clothing. Keep away from metals and other incompatibles. When preparing or diluting solution, always add to water, slowly and with stirring. When diluting, always add the product to water. Never add water to the product. Label containers appropriately.

Storage

Store locked up. Store away from incompatible materials. Store in corrosive resistant container with a resistant inner liner. Keep container tightly closed in a dry and well-ventilated place. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethanolamine (CAS 111-42-2)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Inhalable fraction and vapor.</td>
</tr>
<tr>
<td>Monoethanolamine (CAS 141-43-5)</td>
<td>STEL</td>
<td>6 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoethanolamine (CAS 141-43-5)</td>
<td>PEL</td>
<td>6 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 ppm</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Canada - Alberta OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - Quebec OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas. Eye wash facilities and emergency shower must be available when handling this product. Provide adequate general and local exhaust ventilation.

Personal protective equipment

Eye/face protection

Face-shield. Do not get in eyes. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. A full face shield may also be necessary.

Skin protection

Do not get this material in contact with skin. Wear chemical protective equipment that is specifically recommended by the manufacturer. Eye wash facilities and emergency shower must be available when handling this product. It may provide little or no thermal protection. Use of impervious boots is recommended.
Respiratory protection
If ventilation is insufficient, suitable respiratory protection must be provided. A NIOSH/MSHA approved air-purifying respirator with the appropriate chemical cartridges or a positive-pressure, air-supplied respirator may be used to reduce exposure. Advice should be sought from respiratory protection specialists.

Hand protection
Wear appropriate chemical resistant gloves. Butyl rubber gloves are recommended. Advice should be sought from glove suppliers.

9. Physical & Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colorless, viscous liquid.</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Form</td>
<td>Viscous liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Fishy</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>2.6</td>
</tr>
<tr>
<td>pH</td>
<td>12</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>2 mm Hg</td>
</tr>
<tr>
<td>Vapor density</td>
<td>2.1</td>
</tr>
<tr>
<td>Boiling point</td>
<td>339.44 °F (170.8 °C)</td>
</tr>
<tr>
<td>Melting point/Freezing point</td>
<td>50.9 °F (10.5 °C) / 50.9 °F (10.5 °C) (Supercools readily to -10°C or lower)</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Soluble</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.02</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>204.8 °F (96.0 °C) Cleveland Closed Cup</td>
</tr>
<tr>
<td>Flammability limits in air,</td>
<td>Not available.</td>
</tr>
<tr>
<td>upper, % by volume</td>
<td></td>
</tr>
<tr>
<td>Flammability limits in air,</td>
<td>Not available.</td>
</tr>
<tr>
<td>lower, % by volume</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>770 °F (410 °C)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available.</td>
</tr>
<tr>
<td>(n-octanol/water)</td>
<td></td>
</tr>
<tr>
<td>Other data</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>1.02 g/cm3</td>
</tr>
</tbody>
</table>

10. Chemical Stability & Reactivity Information

Reactivity
Contact with most metals will generate flammable hydrogen gas.
May be corrosive to: Aluminum. Brass. Bronze Zinc.
Hygroscopic; absorbs moisture from the air.

Chemical stability
Material is stable under normal conditions.

Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Temperatures exceeding the flash point. Exposure to air.

Incompatible materials

Hazardous decomposition products
None known, refer to hazardous combustion products in Section 5.

Possibility of hazardous reactions
The following may be released during a fire: Carbon oxides. Other irritating fumes and smoke.
Hazardous polymerization does not occur.
11. Toxicological Information

Toxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethanolamine (CAS 111-42-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>Rabbit</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td></td>
<td>8180 mg/kg</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>No Data in Literature</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>680 mg/kg</td>
</tr>
<tr>
<td>Monoethanolamine (CAS 141-43-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>Rabbit</td>
<td>1000 mg/kg</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 1.21 mg/l/4h</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>1720 mg/kg</td>
</tr>
</tbody>
</table>

**Acute effects**
This product is not classified as an acute toxicity hazard. See data for individual ingredient acute toxicity data.

Corrosive to the eyes and may cause severe damage including blindness. Causes skin severe irritation. May cause severe irritation to the digestion tract. May cause respiratory irritation.

**Sensitization**
Not expected to be hazardous by WHMIS criteria. May cause asthma-like reaction in hyper-sensitive persons. May cause an allergic skin reaction (e.g. hives, rash) in some hypersensitive individuals.

**Chronic effects**
Chronic skin contact with low concentrations may cause dermatitis. May cause allergic respiratory reaction in hyper-sensitive individuals.

**Carcinogenicity**
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**ACGIH Carcinogens**
Diethanolamine (CAS 111-42-2) A3 Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity
Diethanolamine (CAS 111-42-2) 2B Possibly carcinogenic to humans.

**Skin corrosion/irritation**
Corrosive effects. Causes severe skin burns.

**Serious eye damage/irritation**
Causes serious eye damage.

**Mutagenicity**
Not expected to be mutagenic.

**Reproductive effects**
This product is not expected to cause reproductive or developmental effects.

**Teratogenicity**
This product is not expected to be a teratogen.

**Symptoms and target organs**
Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring. May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.

**Epidemiology**
No epidemiological data is available for this product.

**Synergistic materials**
Not available.
12. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicological data Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diethanolamine (CAS 111-42-2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>LC50</td>
<td>Algae magna</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fathead minnow (Pimephales promelas)</td>
</tr>
<tr>
<td>Chronic</td>
<td>NOEC</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td><strong>Monoethanolamine (CAS 141-43-5)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>EC50</td>
<td>Green algae (Desmodesmus subspicatus)</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Carp (Cyprinus carpio communis)</td>
</tr>
<tr>
<td>Chronic</td>
<td>NOEC</td>
<td>Green algae (Desmodesmus subspicatus)</td>
</tr>
<tr>
<td>Crustacea</td>
<td>NOEC</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td>Fish</td>
<td>NOEC</td>
<td>Japanese rice fish (Oryzias latipes)</td>
</tr>
</tbody>
</table>

**Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Environmental effects**

Harmful to aquatic organisms. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**Aquatic toxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability**

Readily biodegradable.

**Partition coefficient**

<table>
<thead>
<tr>
<th></th>
<th>-1.43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethanolamine</td>
<td></td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>-1.31</td>
</tr>
</tbody>
</table>

**Mobility in environmental media**

This product is miscible in water.

13. Disposal Considerations

**Disposal instructions**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

**Waste from residues / unused products**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

**TDG**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN2491</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>ETHANOLAMINE</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>8</td>
</tr>
<tr>
<td>Class</td>
<td>-</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>III</td>
</tr>
<tr>
<td>Packing group</td>
<td></td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Special precautions for user: Read safety instructions, MSDS and emergency procedures before handling.

### IATA

| UN number | UN2491 |
| UN proper shipping name | ETHANOLAMINE |
| Transport hazard class(es) |  
  - Class: 8  
  - Subsidiary risk: -  
  - Packing group: III  
  - Environmental hazards: Yes  
  - ERG Code: 8L |

Special precautions for user: Read safety instructions, MSDS and emergency procedures before handling.

**Other information**

- **Passenger and cargo aircraft:** Allowed.
- **Cargo aircraft only:** Allowed.

### IMDG

| UN number | UN2491 |
| UN proper shipping name | ETHANOLAMINE |
| Transport hazard class(es) |  
  - Class: 8  
  - Subsidiary risk: -  
  - Packing group: III  
  - Environmental hazards  
  - Marine pollutant: Yes  
  - EmS: F-A, S-B |

Special precautions for user: Read safety instructions, MSDS and emergency procedures before handling.

### IATA; IMDG; TDG

- **Marine pollutant**

### 15. Regulatory Information

**Canadian regulations**: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS status**: Controlled

**WHMIS classification**: E - Corrosive


**WHMIS labeling**

**International Inventories**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other Information**

**HMIS® ratings**

- Health: 3*
- Flammability: 1
- Physical hazard: 0

**NFPA ratings**

- Health: 3
- Flammability: 1
- Instability: 0

**Disclaimer**

Prepared by: ICC The Compliance Center Inc. 1-888-442-9628
http://www.thecompliancecenter.com

Disclaimer

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Comet Chemical Company Ltd. and CCOHS’ Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc and Comet Chemical Company Ltd. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Comet Chemical Company Ltd.
Legend to abbreviations and acronyms used in the SDS

- ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Services
- CEPA: Canadian Environmental Protection Act
- CPR: Controlled Products Regulation
- DSL: Domestic Substance List
- EPA: Environmental Protection Agency
- HMIS: Hazardous Materials Identification System
- HPA: Hazardous Protection Act
- HSDB®: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- IMDG: International Maritime Dangerous Goods
- IUCLID: International Uniform Chemical Information Database
- LC: Lethal Concentration
- LD: Lethal Dose
- MSDS: Material Safety Data Sheet
- NFPA: National Fire Protection Association
- NIOSH: National Institute of Occupational Safety and Health
- NOEC: No observable effect concentration
- NTP: National Toxicology Program
- OEL: National occupational exposure limits
- OECD: Organisation for Economic Co-operation and Development
- OSHA: Occupational Safety and Health Administration
- PPE: Personal Protective Equipment
- RTECS: Registry of Toxic Effects of Chemical Substances
- STEL: Short Term Exposure Limit
- TDG: Canadian Transportation of Dangerous Goods Act & Regulations
- TLV: Threshold Limit Values
- TWA: Time Weighted Average

References

- Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2014 (Chempendium, RTECs, HSDB, INCHEM)
- Material Safety Data Sheet from manufacturer.