# SAFETY DATA SHEET

## LUBRICUT 1144 TM

### Section 1. Identification

<table>
<thead>
<tr>
<th><strong>GHS product identifier</strong></th>
<th>LUBRICUT 1144 TM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other means of identification</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Product type</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Product code</strong></td>
<td>2312000000</td>
</tr>
<tr>
<td><strong>MSDS #</strong></td>
<td>1063</td>
</tr>
</tbody>
</table>

#### Relevant identified uses of the substance or mixture and uses advised against

| **Product use:** For professional use only. | Industrial applications: Metal working fluids |

#### Supplier's details

Chemtool Incorporated  
801 West Rockton Road  
Rockton, IL 61072  
U.S.A.  
Tel: 815.957.4140  
Fax: 815.624.0292

#### Emergency telephone number

INFOTRAC  
U.S. and Canada - 800.535.5053  
Outside the U.S. and Canada - +1 352.323.3500

### 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

- SKIN CORROSION/IRRITATION - Category 1B
- SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
- SKIN SENSITIZATION - Category 1
- SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

#### GHS label elements

**Hazard pictograms**

#### Signal word

Danger

#### Hazard statements

Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause respiratory irritation.
Section 2. Hazards identification

Precautionary statements

Prevention: Wear protective gloves. Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash 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. Immediately call a POISON CENTER or physician.

Storage: Store locked up.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

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

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-nitrilotriethanol</td>
<td>3-7</td>
<td>102-71-6</td>
</tr>
<tr>
<td>2-aminoethanol</td>
<td>3-7</td>
<td>141-43-5</td>
</tr>
<tr>
<td>Alcohols, C12-15, ethoxylated</td>
<td>1-5</td>
<td>68131-39-5</td>
</tr>
<tr>
<td>7a-ethyldihydro-1H,3H,5H-oxazolo[3,4-c]oxazole</td>
<td>1-5</td>
<td>7747-35-5</td>
</tr>
<tr>
<td>Undecan-1-ol, ethoxylated</td>
<td>1-5</td>
<td>34398-01-1</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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: Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.

Inhalation: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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

Validated on 5/26/2015.
Section 4. First aid measures

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.

Skin contact: Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and 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. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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 damage.

Inhalation: May cause respiratory irritation.

Skin contact: Causes severe burns. May cause an allergic skin reaction.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following:
  - pain
  - watering
  - redness

Inhalation: Adverse symptoms may include the following:
  - respiratory tract irritation
  - coughing

Skin contact: Adverse symptoms may include the following:
  - pain or irritation
  - redness
  - blistering may occur

Ingestion: Adverse symptoms may include the following:
  - stomach pains

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.

**Specific hazards arising from the chemical**

- In a fire or if heated, a pressure increase will occur and the container may burst.

**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.

**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. Do not touch or walk through spilled material. Do not breathe 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. 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. 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**

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Section 7. Handling and storage

**Protective measures**: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**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 in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-nitrilotriethanol</td>
<td>ACGIH TLV (United States, 4/2014). TWA: 5 mg/m³ 8 hours.</td>
</tr>
<tr>
<td>2-aminoethanol</td>
<td>ACGIH TLV (United States, 4/2014). TWA: 3 ppm 8 hours. TWA: 7.5 mg/m³ 8 hours. STEL: 6 ppm 15 minutes. STEL: 15 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL 1989 (United States, 3/1989). TWA: 3 ppm 8 hours. TWA: 8 mg/m³ 8 hours. STEL: 6 ppm 15 minutes. STEL: 15 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>NIOSH REL (United States, 10/2013). TWA: 3 ppm 10 hours. TWA: 8 mg/m³ 10 hours. STEL: 6 ppm 15 minutes. STEL: 15 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 2/2013). TWA: 3 ppm 8 hours. TWA: 6 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

**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.

**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.

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Section 8. Exposure controls/personal protection

**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. Contaminated work clothing should not be allowed out of the workplace. 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

**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.

**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**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid [Hazy liquid.]</td>
</tr>
<tr>
<td>Color</td>
<td>Amber</td>
</tr>
<tr>
<td>Odor</td>
<td>Petroleum oil [Slight]</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>9.8 to 10.8</td>
</tr>
<tr>
<td>Melting point</td>
<td>-1.11°C (30°F)</td>
</tr>
<tr>
<td>Boiling point</td>
<td>100°C (212°F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Closed cup: Not applicable. [Product does not sustain combustion.]</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.03 to 1.05 g/cm³</td>
</tr>
<tr>
<td>Solubility</td>
<td>Easily soluble in the following materials: cold water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

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Section 9. Physical and chemical properties

Auto-ignition temperature: Not applicable.
Decomposition temperature: Not available.
Viscosity: Not available.
VOC: 89.0 g/L
VOC Method: ASTM E 1868

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: No specific data.
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

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-nitritriethanol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>7.39 g/kg</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-aminoethanol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1720 mg/kg</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alcohols, C12-15, ethoxylated</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2 g/kg</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary: May be harmful if swallowed.

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-nitritriethanol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Human</td>
<td>-</td>
<td>72 hours 15 milligrams Intermittent</td>
<td>-</td>
</tr>
<tr>
<td>2-aminoethanol</td>
<td>Skin - Severe irritant</td>
<td>Mouse</td>
<td>-</td>
<td>50 Percent</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 560 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>250 Micrograms</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>505 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin: Severely irritating to the skin.

Eyes: Severely irritating to eyes.

Respiratory: Repeated or prolonged exposure to spray or mist may produce respiratory tract irritation. Pre-existing respiratory disorders may be aggravated by over-exposure to this product.

Sensitization

Conclusion/Summary

Skin: No specific information is available in our database regarding the skin sensitizing properties of this product. Sensitization not suspected for humans.

Respiratory: Sensitization not suspected for humans.

Validated on 5/26/2015.
Section 11. Toxicological information

**Mutagenicity**

**Conclusion/Summary**

There are no data available on the mixture itself. Mutagenicity not suspected for humans.

**Carcinogenicity**

**Conclusion/Summary**

There are no data available on the mixture itself. Carcinogenicity not suspected for humans.

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-nitrilotriethanol</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**

**Conclusion/Summary**

There are no data available on the mixture itself. Not considered to be dangerous to humans, according to our database.

**Teratogenicity**

**Conclusion/Summary**

There are no data available on the mixture itself. Teratogenicity not suspected for humans.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-aminoethanol</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure**

Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential acute health effects**

**Eye contact**

Causes serious eye damage.

**Inhalation**

May cause respiratory irritation.

**Skin contact**

Causes severe burns. May cause an allergic skin reaction.

**Ingestion**

No known significant effects or critical hazards.

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

**Eye contact**

Adverse symptoms may include the following:
- pain
- watering
- redness

**Inhalation**

Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

**Skin contact**

Adverse symptoms may include the following:
- pain or irritation
- redness
- blistering may occur

**Ingestion**

Adverse symptoms may include the following:
- stomach pains
Section 11. Toxicological information

**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**
- Conclusion/Summary: Contains material that may cause target organ damage, based on animal data.
- General: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity: No known significant effects or critical hazards.
- 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**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>14210.5 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>12203.8 mg/kg</td>
</tr>
<tr>
<td>Inhalation (vapors)</td>
<td>161.8 mg/l</td>
</tr>
<tr>
<td>Inhalation (dusts and mists)</td>
<td>67.66 mg/l</td>
</tr>
</tbody>
</table>

**Section 12. Ecological information**

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2&quot;-nitrilotriethanol</td>
<td>Acute EC50 609.98 mg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 11800000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 16000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 8.42 mg/l Fresh water</td>
<td>Algae - Desmodesmus subspicatus</td>
<td>72 hours</td>
</tr>
<tr>
<td>2-aminoethanol</td>
<td>Acute LC50 &gt;100000 µg/l Marine water</td>
<td>Crustaceans - Crangon crangon - Adult</td>
<td>48 hours</td>
</tr>
<tr>
<td>Alcohols, C12-15, ethoxylated</td>
<td>Acute LC50 170000 µg/l Fresh water</td>
<td>Fish - Carassius auratus</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.7 mg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.39 mg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 302 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1400 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1 mg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 83 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>21 days</td>
</tr>
</tbody>
</table>

Validated on 5/26/2015.
Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUBRICUT 1144 TM</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-nitrilotriethanol</td>
<td>-1</td>
<td>&lt;3.9</td>
<td>low</td>
</tr>
<tr>
<td>2-aminoethanol</td>
<td>-1.31</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Alcohols, C12-15, ethoxylated</td>
<td>2.03 to 6.24</td>
<td>237</td>
<td>low</td>
</tr>
<tr>
<td>7a-ethylidihydro-1H,3H,5H-oxazolo[3,4-c]oxazole</td>
<td>-1.1</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

Soil/water partition coefficient (K<sub>oc</sub>): Not available.

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

**Conclusion/Summary**: No known significant effects or critical hazards. May be harmful to the environment if released in large quantities.

**Persistence and degradability**

**Conclusion/Summary**: This product has not been tested for biodegradation. Not expected to be rapidly degradable. This product is not expected to bioaccumulate through food chains in the environment.

**Acute LC50 130 ppm Fresh water**

**Acute EC50 2100 µg/l Fresh water**

**Acute LC50 3900 µg/l Fresh water**

**Conclusion/Summary**: Not readily

**Soil/water partition coefficient (K<sub>oc</sub>)**: Not available.

**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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Section 14. Transport information**

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Section 14. Transport information

<table>
<thead>
<tr>
<th>Transport hazard class(es)</th>
<th>-</th>
<th>-</th>
<th>-</th>
<th>-</th>
<th>-</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Special precautions for user**: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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

Section 15. Regulatory information

<table>
<thead>
<tr>
<th>U.S. Federal regulations</th>
<th>TSCA 4(a) proposed test rules: sodium 4(or 5)-methyl-1H-benzotriazolide</th>
<th>TSCA 4(a) final test rules: Alkenes, C12-24, chloro</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TSCA 8(a) PAIR: heptanal; vanillin; pentyl acetate</td>
<td>TSCA 8(a) CDR Exempt/Partial exemption: Not determined</td>
</tr>
<tr>
<td></td>
<td>TSCA 12(b) one-time export: Alkenes, C12-24, chloro</td>
<td>Commerce control list precursor: 2,2',2&quot;-nitrilotriethanol</td>
</tr>
<tr>
<td></td>
<td>United States inventory (TSCA 8b): All components are listed or exempted.</td>
<td>Clean Water Act (CWA) 307: zinc chloride; diethyl phthalate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clean Water Act (CWA) 311: zinc chloride; pentyl acetate</td>
</tr>
<tr>
<td>Clean Air Act Section 112</td>
<td></td>
<td>Clean Air Act Section 602 Class I Substances: Not listed</td>
</tr>
<tr>
<td>(b) Hazardous Air Pollutants (HAPs)</td>
<td></td>
<td>Clean Air Act Section 602 Class II Substances: Not listed</td>
</tr>
<tr>
<td>Clean Air Act Section 602</td>
<td></td>
<td>DEA List I Chemicals (Precursor Chemicals): Not listed</td>
</tr>
<tr>
<td>Class I Substances</td>
<td></td>
<td>DEA List II Chemicals (Essential Chemicals): Not listed</td>
</tr>
<tr>
<td>Clean Air Act Section 602</td>
<td></td>
<td>SARA 302/304</td>
</tr>
<tr>
<td>Class II Substances</td>
<td></td>
<td>Composition/information on ingredients: No products were found.</td>
</tr>
<tr>
<td>DEA List I Chemicals</td>
<td></td>
<td>SARA 304 RQ: Not applicable.</td>
</tr>
<tr>
<td>(Precursor Chemicals)</td>
<td></td>
<td>SARA 311/312</td>
</tr>
<tr>
<td>DEA List II Chemicals</td>
<td></td>
<td>Classification: Immediate (acute) health hazard</td>
</tr>
<tr>
<td>(Essential Chemicals)</td>
<td></td>
<td>Composition/information on ingredients:</td>
</tr>
</tbody>
</table>

Validated on 5/26/2015.
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-nitrilotriethanol</td>
<td>3-7</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>2-aminoethanol</td>
<td>3-7</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>7a-ethylidydro-1H,3H,5H-oxazolo[3,4-c]oxazole</td>
<td>1-5</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>Undecan-1-ol, ethoxylated</td>
<td>1-5</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>No listed substance</td>
<td></td>
</tr>
<tr>
<td>Supplier notification</td>
<td>No listed substance</td>
<td></td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- **Connecticut Carcinogen Reporting**: None of the components are listed.
- **Connecticut Hazardous Material Survey**: None of the components are listed.
- **Florida substances**: None of the components are listed.
- **Illinois Chemical Safety Act**: None of the components are listed.
- **Illinois Toxic Substances Disclosure to Employee Act**: None of the components are listed.
- **Louisiana Reporting**: None of the components are listed.
- **Louisiana Spill**: None of the components are listed.
- **Massachusetts Spill**: None of the components are listed.
- **Massachusetts Substances**: The following components are listed: TRIETHANOLAMINE; ETHANOLAMINE.
- **Michigan Critical Material**: None of the components are listed.
- **Minnesota Hazardous Substances**: None of the components are listed.
- **New Jersey Spill**: None of the components are listed.
- **New Jersey Toxic Catastrophe Prevention Act**: None of the components are listed.
- **New Jersey Hazardous Substances**: None of the components are listed.
- **New York Acutely Hazardous Substances**: None of the components are listed.
- **New York Toxic Chemical Release Reporting**: None of the components are listed.
- **Pennsylvania RTK Hazardous Substances**: The following components are listed: ETHANOL, 2,2',2''-NITRILOTRIS-; ETHANOLAMINE; ETHANOL, 2-AMINO-
- **Rhode Island Hazardous Substances**: None of the components are listed.

**California Prop. 65**

**WARNING**: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>methanol</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
<td>23000 µg/day (ingestion) 47000 µg/day (inhalation)</td>
</tr>
</tbody>
</table>

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>List name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethanolamine</td>
<td>Schedule III</td>
<td>Listed</td>
</tr>
</tbody>
</table>

**Montreal Protocol (Annexes A, B, C, E)**

Not listed.

**International lists**

**National inventory**

- **Australia**: At least one component is not listed.
- **China**: All components are listed or exempted.
- **Europe**: At least one component is not listed in EINECS but all such components are listed in ELINCS. Please contact your supplier for information on the inventory status of this material.
- **Japan**: At least one component is not listed.
- **Malaysia**: Not determined.
- **New Zealand**: Not determined.
- **Philippines**: At least one component is not listed.
- **Republic of Korea**: At least one component is not listed.
- **Taiwan**: Not determined.

**Canada**

- **WHMIS (Canada)**: Class E: Corrosive material
- **Canadian lists**
  - **Canadian NPRI**: None of the components are listed.
  - **CEPA Toxic substances**: None of the components are listed.
  - **Canada inventory; DSL/NDSL**: At least one component is not listed in DSL but all such components are listed in NDSL.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16. Other information

**Hazardous Material Information System (U.S.A.)**

- **Health**: 2
- **Flammability**: 0
- **Physical hazards**: 0

Validated on 5/26/2015.
Section 16. Other information

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.

National Fire Protection Association (U.S.A.)

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 5/26/2015
Date of previous issue : No previous validation
Version : 1

Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Validated on 5/26/2015.