2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity - Dermal</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Label elements

Emergency Overview

Danger

Hazard statements
Causes severe skin burns and eye damage
Suspected of damaging fertility or the unborn child

Appearance Clear Red

Physical state Liquid

Odor Fresh

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific Treatment (See Section 4 on the SDS)
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 doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Drink plenty of water
Immediately call a POISON CENTER or doctor/physician

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information
* Harmful to aquatic life with long lasting effects
* Harmful to aquatic life
Unknown Acute Toxicity 0.0633% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrapotassium Pyrophosphate</td>
<td>7320-34-5</td>
<td>3-7</td>
<td>*</td>
</tr>
<tr>
<td>2-(2-methoxyethoxy)ethanol</td>
<td>111-77-3</td>
<td>1-5</td>
<td>*</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>141-43-5</td>
<td>1-5</td>
<td>*</td>
</tr>
<tr>
<td>Tetrasodium EDTA</td>
<td>64-02-8</td>
<td>1-5</td>
<td>*</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

General advice
Immediate medical attention is required.

Skin Contact
Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact
Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

Inhalation
Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion
Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.

Self-protection of the first aider
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.
Most important symptoms and effects, both acute and delayed

Symptoms
Any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion data
- Sensitivity to Mechanical Impact: None.
- Sensitivity to Static Discharge: None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions
Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities
Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoethanolamine 141-43-5</td>
<td>STEL: 6 ppm</td>
<td>TWA: 3 ppm</td>
<td>IDLH: 30 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA: 3 ppm</td>
<td>TWA: 6 mg/m³</td>
<td>TWA: 3 ppm</td>
</tr>
<tr>
<td></td>
<td>(vacated) TWA: 3 ppm</td>
<td>TWA: 8 mg/m³</td>
<td>TWA: 8 mg/m³</td>
</tr>
<tr>
<td></td>
<td>(vacated) TWA: 6 ppm</td>
<td>TWA: 15 mg/m³</td>
<td>STEL: 6 ppm</td>
</tr>
<tr>
<td></td>
<td>(vacated) STEL: 15 mg/m³</td>
<td>TWA: 15 mg/m³</td>
<td>STEL: 15 mg/m³</td>
</tr>
<tr>
<td>Diethanolamine 111-42-2</td>
<td>TWA: 1 mg/m³</td>
<td>(vacated) TWA: 3 ppm</td>
<td>TWA: 3 ppm</td>
</tr>
<tr>
<td></td>
<td>inhalable fraction</td>
<td>(vacated) TWA: 15 mg/m³</td>
<td>TWA: 15 mg/m³</td>
</tr>
<tr>
<td></td>
<td>and vapor S²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Hydroxide 1310-73-2</td>
<td>Ceiling: 2 mg/m³</td>
<td>TWA: 2 mg/m³</td>
<td>IDLH: 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>(vacated) Ceiling: 2 mg/m³</td>
<td>TWA: 2 mg/m³</td>
<td>Ceiling: 2 mg/m³</td>
</tr>
</tbody>
</table>

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Information

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls

Showers, Eyewash stations & Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Tight sealing safety goggles. Face protection shield.

Skin and body protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene

When using do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear Red</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Fresh</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No Information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>12.5 - 13.5</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.053</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>&lt; 25 cP @ 25°C</td>
<td></td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Exposure to air or moisture over prolonged periods.

Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information
Harmful by inhalation, ingestion, in contact with eyes and skin.

Inhalation
Avoid breathing vapors or mists. Breathing of vapor can cause respiratory irritation and inflammation. Breathing of mist or liquid can cause burns to the respiratory tract.

Eye contact
Avoid contact with eyes. Corrosive. Causes serious eye damage.

Skin Contact
Avoid contact with skin. Corrosive. Contact with skin may cause severe irritation and burns.

Ingestion
Do not taste or swallow. Ingestion causes acute irritation and burns to the mucous membranes of the mouth, trachea, esophagus and stomach.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrapotassium Pyrophosphate</td>
<td>= 2980 mg/kg (Rat)</td>
<td>&gt; 4640 mg/kg (Rabbit)</td>
<td>-</td>
</tr>
<tr>
<td>7320-34-5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-(2-methoxyethoxy)ethanol</td>
<td>= 4 mL/kg (Rat)</td>
<td>= 650 mg/kg (Rabbit) = 2500 µL/kg (Rabbit)</td>
<td>-</td>
</tr>
<tr>
<td>111-77-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>= 1720 mg/kg (Rat)</td>
<td>= 1000 mg/kg (Rabbit) = 1 mL/kg (Rabbit)</td>
<td>-</td>
</tr>
<tr>
<td>141-43-5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetrasodium EDTA</td>
<td>= 1658 mg/kg (Rat) = 10 g/kg (Rat)</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>64-02-8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information on toxicological effects.
Symptoms
No Information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization
No Information available.

Germ cell mutagenicity
No Information available.

Carcinogenicity
No Information available.

Reproductive toxicity
No Information available.

STOT - single exposure
No Information available.

STOT - repeated exposure
Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

Target organ effects
Central nervous system, EYES, Respiratory system, Skin.

Aspiration hazard
No Information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity
0.0633% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrapotassium Pyrophosphate</td>
<td>7320-34-5</td>
<td>100: 96 h Oncorhynchus mykiss mg/L LC50</td>
<td>100: 48 h water flea mg/L EC50</td>
</tr>
<tr>
<td>2-(2-methoxyethoxy)ethanol</td>
<td>111-77-3</td>
<td>7500: 96 h Lepomis macrochirus mg/L LC50 5741: 96 h Pimephales promelas mg/L LC50 7500: 96 h Lepomis macrochirus mg/L LC50 static</td>
<td>500: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>141-43-5</td>
<td>500 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 200: 96 h Oncorhynchus mykiss mg/L LC50 15: 72 h Desmodesmus subspicatus mg/L EC50 300 - 1000: 96 h Lepomis macrochirus mg/L LC50 610: 24 h Daphnia magna mg/L EC50</td>
<td></td>
</tr>
<tr>
<td>Tetrasodium EDTA</td>
<td>64-02-8</td>
<td>1.01: 72 h Desmodesmus subspicatus mg/L EC50</td>
<td>59.8: 96 h Pimephales promelas mg/L LC50 static 4460 - 4980: 96 h Pimephales promelas mg/L LC50 static 600 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 55: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Diethanolamine</td>
<td>111-42-2</td>
<td>7.8: 72 h Desmodesmus subspicatus mg/L EC50 2.1 - 2.3: 96 h Pseudokirchneriella subcapitata mg/L EC50</td>
<td>4460 - 4980: 96 h Pimephales promelas mg/L LC50 flow-through 600 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 41: 96 h Lepomis macrochirus mg/L LC50 static 55: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Trisodium nitrilotriacetate</td>
<td>5064-31-3</td>
<td>560 - 1000: 96 h Chlorella vulgaris mg/L EC50</td>
<td>72 - 133: 96 h Oncorhynchus mykiss mg/L LC50 static 175 - 225: 96 h Lepomis macrochirus mg/L LC50 static 252: 96 h Lepomis macrochirus mg/L LC50 470: 96 h Pimephales promelas mg/L LC50 static 93 - 170: 96 h Pimephales promelas mg/L LC50 flow-through 560 - 1000: 96 h Pimephales promelas mg/L LC50 semi-static 560 - 1000: 96 h Pimephales promelas mg/L LC50 static</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicity

0.0633% of the mixture consists of components(s) of unknown hazards to the aquatic environment
Persistence and degradability
No Information available.

Bioaccumulation
Bioaccumulative potential.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-methoxyethoxy)ethanol 111-77-3</td>
<td>-0.682</td>
</tr>
<tr>
<td>Monoethanolamine 141-43-5</td>
<td>-1.91</td>
</tr>
</tbody>
</table>

Other adverse effects
No Information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
Do not reuse container.

14. TRANSPORT INFORMATION

The basic description below is specific to the container size. This information is provided for at a glance DOT information. Please refer to the container and/or shipping papers for the appropriate shipping description before tendering this material for shipment. For additional information, please contact the distributor listed in section 1 of this SDS.

DOT
UN/ID No. UN1760
Proper shipping name Corrosive liquids, n.o.s.
Hazard Class 8
Packing Group III
Special Provisions IB3, T7, TP1, TP28
Description UN1760, Corrosive liquids, n.o.s (contains Ethanolamine), 8, III
Emergency Response Guide Number 154

TDG
UN/ID No. UN1760
Proper shipping name Corrosive liquids, n.o.s.
Hazard Class 8
Packing Group III
Description UN1760, Corrosive liquids, n.o.s (contains Ethanolamine), 8, III

15. REGULATORY INFORMATION

International Inventories
TSCA Complies
DSL/NDSL Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-methoxyethoxy)ethanol - 111-77-3</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

- Acute health hazard: Yes
- Chronic Health Hazard: Yes
- Fire hazard: No
- Sudden release of pressure hazard: No
- Reactive Hazard: No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethanolamine - 111-42-2</td>
<td>Carcinogen</td>
</tr>
<tr>
<td>Trisodium nitrilotriacetate - 5064-31-3</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproduction harm.

Chemical Name(s):
2-methoxyethanol

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-methoxyethoxy)ethanol - 111-77-3</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Monoethanolamine - 141-43-5</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Diethanolamine - 111-42-2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Trisodium nitrilotriacetate - 5064-31-3</td>
<td>-</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Sodium Hydroxide - 1310-73-2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
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U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>C</td>
</tr>
</tbody>
</table>
Issue Date: 09-Nov-2015
Revision Date: 06-May-2015
Revision Note: No Information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet