### Material Safety Data Sheet

**Section I. Chemical Product and Company Identification**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Catalog Number</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanolamine Hydrochloride</td>
<td>A0298</td>
<td>TCI America 9211 N. Harborgate St. Portland OR 1-800-423-8616</td>
</tr>
<tr>
<td>Monoethanolamine Hydrochloride</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>HOCH₂CH₂NH₂•HCl</td>
<td></td>
</tr>
<tr>
<td>CAS Number</td>
<td>2002-24-6</td>
<td></td>
</tr>
</tbody>
</table>

**In case of Emergency Call**
- Chemtrec® (800) 424-9300 (U.S.)
- (703) 527-3887 (International)

### Section II. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Percent (%)</th>
<th>TLV/PEL</th>
<th>Toxicology Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanolamine Hydrochloride</td>
<td>2002-24-6</td>
<td>Min. 98.0 (T)</td>
<td>Not available.</td>
<td>Mouse LD₅₀ (subcutaneous) 4053mg/kg</td>
</tr>
</tbody>
</table>

### Section III. Hazards Identification

**Acute Health Effects**
- Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

**Chronic Health Effects**
- CARCINOGENIC EFFECTS: Not available.
- MUTAGENIC EFFECTS: Not available.
- TERATOGENIC EFFECTS: Not available.
- DEVELOPMENTAL TOXICITY: Not available.
- Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

### Section IV. First Aid Measures

<table>
<thead>
<tr>
<th>Eye Contact</th>
<th>Skin Contact</th>
<th>Inhalation</th>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.</td>
<td>In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.</td>
<td>If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.</td>
<td>INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.</td>
</tr>
</tbody>
</table>

### Section V. Fire and Explosion Data

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Auto-Ignition</th>
<th>Flash Points</th>
<th>Flammable Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>May be combustible at high temperature.</td>
<td>Not available.</td>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

**Combustion Products**
- These products are toxic carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂), halogenated compounds. WARNING: Highly toxic HCl gas is produced during combustion.

**Fire Hazards**
- Not available.

**Explosion Hazards**
- Risks of explosion of the product in presence of mechanical impact: Not available.
- Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions**
- SMALL FIRE: Use DRY chemical powder.
- LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.

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Section VI. Accidental Release Measures

Spill Cleanup Instructions: Harmful material. Irritating material. Hygroscopic material. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information: HARMFUL. IRRITANT. HYGROSCOPIC. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe dust. Always store away from incompatible compounds such as oxidizing agents, alkalis (bases).

Section VIII. Exposure Controls/Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Splash goggles, Lab coat, Dust respirator, Boots, Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.

Exposure Limits: Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C: Solid. (White crystals.)

Specific Gravity: Not available.

Molecular Weight: 97.54

Boiling Point: 83°C (181.4°F)

Melting Point: Not available.

Refractive Index: Not available.

Critical Temperature: Not available.

Viscosity: Not available.

Solubility: Not available.

Partition Coefficient: Not available.

Vapor Pressure: Not available.

Vapor Density: Not applicable.

Volatility: Not available.

Odor: Not available.

Taste: Not available.

Section X. Stability and Reactivity Data

Stability: This material is stable if stored under proper conditions. (See Section VII for instructions)

Conditions of Instability: Avoid excessive heat and light.

Incompatibilities: Reactive with oxidizing agents, alkalis (bases).

Section XI. Toxicological Information

RTECS Number: KJ6370000

Routes of Exposure: Eye Contact, Ingestion, Inhalation.

Toxicity Data: Mouse LD50 (subcutaneous) 4053mg/kg.

Chronic Toxic Effects: CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.

Acute Toxic Effects: Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhilation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity: Not available.

Environmental Fate: Not available.

Emergency phone number: (800) 424-9300
Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>Not a DOT controlled material (United States).</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIN Number</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Packing Group (PG)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>DOT Pictograms</td>
<td>No pictograms</td>
</tr>
</tbody>
</table>

Section XV. Other Regulatory Information and Pictograms

<table>
<thead>
<tr>
<th>TSCA Chemical Inventory (EPA)</th>
<th>This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHMIS Classification (Canada)</td>
<td>On DSL.</td>
</tr>
<tr>
<td>EINECS Number (EEC)</td>
<td>217-900-6</td>
</tr>
<tr>
<td>EEC Risk Statements</td>
<td>R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.</td>
</tr>
<tr>
<td></td>
<td>R36/37/38- Irritating to eyes, respiratory system and skin.</td>
</tr>
<tr>
<td>Japanese Regulatory Data</td>
<td>ENCS No. 2-301</td>
</tr>
</tbody>
</table>

Section XVI. Other Information

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Notice to Reader
TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. 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 chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective glasses, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.