### Section I. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Dimethylaminoethyl Chloride Hydrochloride (beta-)</td>
<td>4584-46-7</td>
<td>TCI America</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9211 N. Harborgate St.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Portland OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-800-423-8616</td>
</tr>
</tbody>
</table>

### 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>2-Dimethylaminoethyl Chloride Hydrochloride (beta-)</td>
<td>4584-46-7</td>
<td>Min. 98.0 (T)</td>
<td>Not available.</td>
<td>Rat LD₅₀ (oral) 238mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mouse LD₅₀ (intraperitoneal) 280mg/kg</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rabbit LD₅₀ (dermal) 290mg/kg</td>
</tr>
</tbody>
</table>

### Section III. Hazards Identification

#### Acute Health Effects
- Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness 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: Tumorogenic- mouse (intraperitoneal) 720mg/kg/8 weeks intermittent. Tumorogenic- Neoplastic by RTECS criteria. DEVELOPMENTAL TOXICITY: Not available.

#### Section IV. First Aid Measures

**Eye Contact**
- Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper eyelids. Seek medical attention. Treat symptomatically and supportively.

**Skin Contact**
- After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.

**Inhalation**
- Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

**Ingestion**
- 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, administer artificial respiration. 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. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

### Section V. Fire and Explosion Data

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Auto-Ignition</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>
</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**
- No specific information is available regarding the flammability of this compound in the presence of various materials.
Section VI. Accidental Release Measures

Spill Cleanup Instructions
- Toxic material. Irritating material. Hygroscopic material.
- In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise caution. Use a shovel to put the material into a convenient waste disposal container. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information
- TOXIC. IRRITANT. HYGROSCOPIC. Handle with caution and minimize exposure. Keep away from heat and sources of ignition. 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 ingest. DO NOT breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents.

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. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits
- Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C
- White to off white crystalline powder.

Solubility
- Not available.

Specific Gravity
- Not available.

Molecular Weight
- 144.04

Boiling Point
- Not available.

Melting Point
- 205 to 208°C (401 to 406.4°F)

Critical Temperature
- Not available.

Viscosity
- 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 strong oxidizing agents.

Section XI. Toxicological Information

RTECS Number
- KQ9020000

Routes of Exposure
- Eye contact. Ingestion. Inhalation. Skin contact.

Toxicity Data
- Rat LD₅₀ (oral) 238mg/kg
- Mouse LD₅₀ (intraperitoneal) 280mg/kg
- Rabbit LD₅₀ (dermal) 290mg/kg

Chronic Toxic Effects
- CARCINOGENIC EFFECTS: Not available.
- MUTAGENIC EFFECTS: Not available.
- TERATOGENIC EFFECTS: Tumorogenic- mouse (intraperitoneal) 720mg/kg/8 weeks intermittent.
- Tumorogenic- Neoplastic by RTECS criteria.
- DEVELOPMENTAL TOXICITY: Not available.

Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Acute Toxic Effects

Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness 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.

Section XII. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Fate</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section XIII. Disposal Considerations

| Waste Disposal | Recycle to process, if possible. Consult your local or 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>DOT CLASS 6.1: Toxic material.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIN Number</td>
<td>UN2811</td>
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<tr>
<td>Proper Shipping Name</td>
<td>Toxic solids, organic, n.o.s.</td>
</tr>
<tr>
<td>Packing Group (PG)</td>
<td>III</td>
</tr>
<tr>
<td>DOT Pictograms</td>
<td></td>
</tr>
</tbody>
</table>

Section XV. Other Regulatory Information and Pictograms

| TSCA Chemical Inventory (EPA) | This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list. |
| WHMIS Classification (Canada) | Not available. |
| EINECS Number (EEC)           | 224-970-1         |
| EEC Risk Statements           | R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. |
| Japanese Regulatory Data      | Not available. |

Section XVI. Other Information

Version 1.0
Validated on 10/12/1998.
Printed 1/26/2005.

Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household, 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 goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.