MATERIAL SAFETY DATA SHEET

FEBRUARY 1999

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EMERGENCY PHONE #: CHEMTREC 800-424-9300

SECTION I. PRODUCT IDENTIFICATION

Chemical Name: Hydriodic Acid, Ethylenediamine Salt
Common Name: EDDI
Product Name: Ethylenediamine Dihydriodide
CAS Number: 5700-49-2
Chemical Formula: HI-NH2CH2CH2NH2-HI
Product Use: Nutritional source of iodine in animal feed

SECTION II. HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Common Name</th>
<th>CAS No.</th>
<th>%</th>
<th>OSHA PEL</th>
<th>ACGIH TLV-TW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylenediamine Dihydriodide</td>
<td>Eddi</td>
<td>5700-49-2</td>
<td>99</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

Iodide salts are eye, skin and mucous membrane irritants and skin sensitizer.

CERCLA RATINGS (SCALE 0-3): Health=2 Fire=0 Reactivity=0 Persistence=0
NFPA RATINGS (SCALE 0-4): Health=2 Fire=0 Reactivity=0

SECTION III. PHYSICAL DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (760mm Hg.)</td>
<td>N/A</td>
<td>Specific Gravity (Water=1)</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg.)</td>
<td>N/A</td>
<td>% Non-Volatile</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Density (AIR=1)</td>
<td>N/A</td>
<td>Evaporation Rate (Ether=1)</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Very Soluble</td>
<td>pH: Approx. 4 (5% Sln.)</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>White to creamy powder</td>
<td>Odor: Slight possible</td>
<td></td>
</tr>
</tbody>
</table>

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point Deg. F.</td>
<td>N/A</td>
<td>Flammable Limits:</td>
<td>LeL - N/A</td>
</tr>
<tr>
<td>Method Used</td>
<td>N/A</td>
<td>Uel - N/A</td>
<td></td>
</tr>
</tbody>
</table>

Extinguishing Media: Use extinguishing media as appropriate for surrounding fire conditions.

Special Fire Fighting Procedure: No acute hazard; avoid breathing vapors or dust; wear self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: None
Hazardous Decomposition Products: Fire conditions may liberate fumes of iodine, hydrogen iodide, and nitrogen oxides.

SECTION V. REACTIVITY DATA

Stability: Stable
Conditions to Avoid: Protect from moisture and sunlight.

Incompatibility: (Materials to Avoid) Oxidizers, acids.

Can Hazardous Polymerization Occur: Not known to occur.

Hazardous Decomposition Products and Conditions:
Oxidation may liberate fumes of iodine, hydrogen iodide, and nitrogen oxides.

SECTION VI. HEALTH HAZARD DATA

Oral Toxicity: Not established. EDDI is considered to be of low toxicity.

Dermal Toxicity: No data available.

Eye: No data available.

Inhalation: No data available.

Chronic Toxicity: No data available.

Mutagenesis: No data available.

Effects of Overexposure:

Ingestion: Data not available.
Skin Contact: May cause irritation in some sensitive individuals.
Eye Contact: May cause irritation and tearing of the eyes; other effects not established.
Inhalation: May cause irritation to mucous membranes and respiratory passages. Other data not available.

Acute Systemic Effects: No data available.

Chronic Systemic Effects: Some individuals may develop allergic reactions to ethylenediamine salt. Other chronic effects not established.

EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids until no evidence of chemical remains (15-20 min.) Get medical attention.
Skin Contact: Remove contaminated clothing and shoes. Wash affected area with mild detergent and large amounts of water until no evidence of chemicals remain. Get medical attention if needed.

Inhalation: Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Keep affected persons warm and at rest. Get medical attention.

Ingestion: If victim is conscious, immediately give 2 to 4 glasses of water and induce vomiting by touching fingers to back of throat. Get medical attention immediately.

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

SPILL OR LEAK PROCEDURES

Response to Small Spills: Sweep up and place in suitable (e.g. plastic) container. Wash spill area.

Response to Large Spills: Avoid creating dust; contain spillage so as to prevent contamination of waters or soils; sweep up and place in suitable (e.g. plastic, poly-lined) drum.

Hazards to be Avoided: Avoid breathing dust or other bodily contact.

Reportable Quantity: N/A

Waste Classification: Material in solution is corrosive.

Disposal Methods: Recycle or dispose in a chemical landfill in accordance with all local, state, or federal regulations.

LABEL INFORMATION

DOT Shipping Name: Ethylenediamine Dihydriodide
DOT Label: N/A
UN No.: N/A

Other Contents of Product Label: 79.5% Iodine Minimum

WARNING: WARNING: This material can cause allergic reactions in some individuals. Gloves, dust masks and protective clothing must be worn. Wash up thoroughly after handling.
SECTION VIII. CONTROL MEASURES

SPECIAL PROTECTION INFORMATION

Respiratory Protection: High efficiency particulate respirator necessary.

For Hands, Body: Wear appropriate protective gloves and garments to prevent bodily contact.

For Eyes: Wear splash-proof or dust resistant safety goggles to prevent contact with this substance.

Ventilation: Provide local exhaust or general dilution ventilation.

SPECIAL PRECAUTIONS

Other Precautions: Protect from sunlight or moisture. Store in original container secure from children, pets, or livestock.

REGULATORY STATUS

Hazard Categories for SARA Section 311/312 Reporting

<table>
<thead>
<tr>
<th>Acute</th>
<th>Chronic</th>
<th>Fire</th>
<th>Pressure</th>
<th>Reactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CERCLA RCRA SARA EHS SARA 313 Chemicals

Products or Components of Products

<table>
<thead>
<tr>
<th>ETHYLENEDIAMINE DIHYDRIODIDE (5700-49-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sec.103  Sec. 302  Name  Chemical</td>
</tr>
<tr>
<td>RQ LBS  261.33  RQ  TPQ  List  Category</td>
</tr>
<tr>
<td>No  No  No  No  No  No</td>
</tr>
</tbody>
</table>

SARA Section 302 EHS RQ:
Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:
Threshold Planning Quantity of Extremely Hazardous Substance. An asterisk (*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.
SARA Section 313 Chemicals:
Toxic Substances subject to annual release reporting requirements list at 40 CFR 372.65.

CERCLA Sec.103:
Comprehensive Environmental Response, Compensation and Liability Act (Superfund). Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4.

RCRA:

The information included herein is believed to be accurate and represents the best information currently available to us. However, we make no warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine suitability of this information for their particular use.