**Material Safety Data Sheet**

**1. PRODUCT AND COMPANY IDENTIFICATION**
- **Product name**: Imidazole
- **Product Number**: 12399
- **Company**: Sigma-Aldrich
- **Telephone**: +1 800-325-5932
- **Fax**: +1 800-325-5932
- **Emergency Phone #**: (314) 779-6555

**2. COMPOSITION/INFORMATION ON INGREDIENTS**
- **Synonyms**: 1,3-Diazao 2,4-cyclopentadiene, Glyoxaline
- **Formula**: C3H4N2
- **Molecular Weight**: 68.08 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imidazole</td>
<td>12399</td>
<td>206-019-2</td>
<td>-</td>
</tr>
</tbody>
</table>

**3. HAZARDS IDENTIFICATION**
- **Emergency Overview**
  - **OSHA Hazards**: Toxic by ingestion, Corrosive
- **HMIS Classification**
  - Health Hazard: 3
  - Flammability: 0
  - Physical hazards: 0
- **NFPA Rating**
  - Health Hazard: 3
  - Fire: 0
  - Reactivity Hazard: 0
- **Potential Health Effects**
  - **Inhalation**: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
  - **Skin**: May be harmful if absorbed through skin. Causes skin burns.
  - **Eyes**: Causes eye burns.
  - **Ingestion**: Toxic if swallowed. Causes burns.

**4. FIRST AID MEASURES**
- **General advice**
  - Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
- **Inhaled**
  - If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **In case of skin contact**
  - Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
- **In case of eye contact**
  - Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- **If swallowed**
  - Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5. FIRE-FIGHTING MEASURES**
- **Flammable properties**
  - Flash point: 145 °C (293 °F) - closed cup
- **Ignition temperature**: 480 °C (898 °F)
- **Suitable extinguishing media**
  - Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- **Special protective equipment for fire-fighters**
  - Wear self-contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**
- **Personal precautions**
  - Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.
- **Environmental precautions**
  - Do not let product enter drains.
- **Methods for cleaning up**
  - Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE**
- **Handling**
  - Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.
- **Storage**
  - Keep container tightly closed in a dry and well-ventilated place.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N/100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form: crystalline
Color: white

Safety data
pH: 9.5 - 11 at 6.8 g/l at 25 °C (77 °F)
Melt point: 89 - 91 °C (192 - 196 °F)
Boiling point: 256 °C (493 °F) at 1,013 hPa (760 mmHg)
Flash point: 145 °C (293 °F) - closed cup
Ignition temperature: 480 °C (896 °F)
Lower explosion limit: no data available
Upper explosion limit: no data available
Vapour pressure: 0.003 hPa (0.002 mmHg) at 20 °C (68 °F)
Density: 1.03 g/cm³
Water solubility: 6.8 g/l at 20 °C (68 °F) - completely soluble

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Acids, Acid anhydrides, Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid), Ammonia

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat: 220 mg/kg

Irritation and corrosion
Skin - rabbit: Corrosive

Sensitisation
No data available

Chronic exposure
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Potential Health Effects

Inhalation
May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin
May be harmful if absorbed through skin. Causes skin burns.

Eyes
Causes eye burns.

Ingestion
Toxic if swallowed. Causes burns.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)
Biodegradability

Ecotoxicity effects
Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia - 341.5 mg/l - 48 h

Further information on ecology
No data available

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2923 Class: 8 (6.1) Packing group: III
Proper shipping name: Corrosive solids, toxic, n.o.s. (imidazole)

**IMDG**
UN Number: 2923  Class: 8 (6.1)  Packing group: III  EMS-No: F-A, S-B
Proper shipping name: CORROSIVE SOLID, TOXIC. N.O.S. (imidazole)

Marine pollutant: No

**IATA**
UN Number: 2923  Class: 8 (6.1)  Packing group: III  Proper shipping name: Corrosive solid, toxic n.o.s. (imidazole)

### 5. REGULATORY INFORMATION

**OSHA Hazards**
Toxic by ingestion, Corrosive

**TSCA Status**
On TSCA Inventory

**DSL Status**
All components of this product are on the Canadian DSL list.

**SARA 302 Components**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minima) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Acute Health Hazard

**Massachusetts Right To Know Components**
No Components Listed

**Pennsylvania Right To Know Components**
<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>298-32-4</td>
<td></td>
</tr>
</tbody>
</table>

**New Jersey Right To Know Components**
<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>298-32-4</td>
<td></td>
</tr>
</tbody>
</table>

**California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

### 16. OTHER INFORMATION

Further information
Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.