1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Imidazole
Product Number: I2399
Brand: Sigma-Aldrich
Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Harmful by ingestion., Corrosive, Teratogen

GHS Classification
Acute toxicity, Oral (Category 4)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Reproductive toxicity (Category 1B)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H360 May damage fertility or the unborn child.

Precautionary statement(s)
P201 Obtain special instructions before use.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification
Health hazard: 3
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

NFPA Rating
Health hazard: 3
Fire: 1
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**
Harmful if absorbed through skin. Causes skin burns.

**Eyes**
Causes eye burns.

**Ingestion**
Harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms**
1,3-Diaza-2,4-cyclopentadiene
Glyoxaline

**Formula**
$C_3H_4N_2$

**Molecular Weight**
68.08 g/mol

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<th>CAS-No.</th>
<th>EC-No.</th>
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<th>Concentration</th>
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<td>288-32-4</td>
<td>206-019-2</td>
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### 4. FIRST AID MEASURES

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If 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

**Conditions of flammability**
Not flammable or combustible.

**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.

**Hazardous combustion products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid)

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe 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 N100 (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. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific 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
Colour white, light yellow

Safety data
pH 9.5 - 11 at 6.8 g/l at 25 °C (77 °F)
9 - 11 at 100 g/l at 23 °C (73 °F)
Melting point/freezing point Melting point/range: 88 - 91 °C (190 - 196 °F) - lit.
Boiling point 256 °C (493 °F) - lit.
Flash point > 135 °C (> 275 °F) - ISO 2719 - see user defined free text
Ignition temperature 480 °C (896 °F)
Autoignition temperature no data available
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 1.030 g/cm3
Water solubility 6.8 g/l at 20 °C (68 °F) - completely soluble
633 g/l at 20 °C (68 °F)
Partition coefficient: log Pow: -0.02 at 25 °C (77 °F)
Relative vapour density no data available
Odour amine-like
Odour Threshold no data available
Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

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)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 970 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Corrosive

Serious eye damage/eye irritation
Eyes - rabbit - Risk of serious damage to eyes. - Draize Test

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Did not show mutagenic effects in animal experiments. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity
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.

**Reproductive toxicity**

no data available

**Teratogenicity**

May damage the unborn child.

May damage the unborn child.

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

- **Inhalation**: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
- **Ingestion**: Harmful if swallowed.
- **Skin**: Harmful if absorbed through skin. Causes skin burns.
- **Eyes**: Causes eye burns.

**Signs and Symptoms of Exposure**

No information available.

**Synergistic effects**

no data available

**Additional Information**

RTECS: NI3325000

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

- **Toxicity to fish**: static test LC50 - Leuciscus idus (Golden orfe) - 280 mg/l - 48 h
- **Toxicity to daphnia and other aquatic invertebrates**: EC50 - Daphnia - 341.5 mg/l - 48 h
- **Toxicity to algae**: static test EC50 - Scenedesmus quadricauda (Green algae) - 133 mg/l - 72 h
- **Toxicity to bacteria**: see user defined free text - other microorganisms - 45 mg/l - 0.5 h

**Persistence and degradability**

- **Biodegradability**: aerobic
  - Result: 86 % - Readily biodegradable.

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available
13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve 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: 3263  Class: 8  Packing group: II
Proper shipping name: Corrosive solid, basic, organic, n.o.s. (Imidazole)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 3263  Class: 8  Packing group: II
EMS-No: F-A, S-B
Proper shipping name: CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (Imidazole)
Marine pollutant: No

IATA
UN number: 3263  Class: 8  Packing group: II
Proper shipping name: Corrosive solid, basic, organic, n.o.s. (Imidazole)

15. REGULATORY INFORMATION

OSHA Hazards
Harmful by ingestion., Corrosive, Teratogen

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 Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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

16. OTHER INFORMATION

Further information
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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.