

Material Safety Data Sheet

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Version 1.2

According to 91/155/EEC

1 - Product and Company Information

Product Name HYDRANAL<R> IMIDAZOLE
Product Number 37864

Company Sigma-Aldrich Company Ltd.
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United Kingdom

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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
IMIDAZOLE	288-32-4	206-019-2	None

Formula C3H4N2
Molecular Weight 68.08 AMU
Synonyms 1,3-Diaza-2,4-cyclopentadiene * 1,3-Diazole *
Formamidine, N,N'-vinylene- * Glioksal (Polish)
* Glyoxalin * Glyoxaline * Imidazol * Iminazole
* Imutex * Miazole * Pyrro(b)monazole * USAF
EK-4733

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Harmful if swallowed. Causes burns.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

5 - Fire Fighting Measures

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

ENVIRONMENTAL PRECAUTION(S)

Avoid contaminating sewers and waterways with this material.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance

Physical State: Solid

Color: White

Form: Fine crystals

Property

Value

At Temperature or Pressure

pH

9.5 - 11

BP/BP Range

256 °C

760 mmHg

MP/MP Range

89 - 91 °C

Flash Point

145 °C

Method: closed cup

Flammability

N/A

Autoignition Temp

480 °C

Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	0.002 mmHg	20 °C
SG/Density	1.03 g/cm ³	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	550 kg/l	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	< 0.2 %	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:0.1 M in H ₂ O, 20°C complete, colorless	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Acids, Acid anhydrides, Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen cyanide, Ammonia.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: NI3325000

ACUTE TOXICITY

LD50
Oral
Rat
220 mg/kg

LD50
Subcutaneous
Rat
626 MG/KG

LD50
Oral
Mouse
880 mg/kg

LD50
Intraperitoneal
Mouse
300 MG/KG

LD50
Subcutaneous

Mouse
817 MG/KG

LD50
Intravenous
Mouse

475 MG/KG

Remarks: Behavioral:Convulsions or effect on seizure threshold.

LD50
Subcutaneous
Dog
28 MG/KG

LD50
Oral
Guinea pig
760 mg/kg

LD50
Oral
Mammal
1000 mg/kg

IRRITATION DATA

Skin
Rabbit
Remarks: Corrosive.
Eyes
Remarks: Severe irritation effect

SIGNS AND SYMPTOMS OF EXPOSURE

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: Causes burns.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes burns.
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.

CHRONIC EXPOSURE - MUTAGEN

Human
1 MMOL/L
Cell Type: Other cell types
DNA inhibition

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Mouse
Dose: 150 MG/KG
Route of Application: Intraperitoneal

Exposure Time: (1D MALE)
Result: Paternal Effects: Impotence.

12 - Ecological Information

ELIMINATION

Elimination: > 70 %

ECOTOXICOLOGICAL EFFECTS

Test Type: EC50 Daphnia
Species: Daphnia
Time: 48 h
Value: 341.5 mg/l

Test Type: EC50 Algae
Time: 72 h
Value: 130 mg/l

13 - Disposal Considerations

SUBSTANCE DISPOSAL

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. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 3263
Class: 8
PG: III
Proper Shipping Name: Corrosive solid, basic, organic, n.o.s.

IMDG

UN#: 3263
Class: 8
PG: III
Proper Shipping Name: CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.
Marine Pollutant: No
Severe Marine Pollutant: No
Technical Name: Required

IATA

UN#: 3263
Class: 8
PG: III
Proper Shipping Name: Corrosive solid, basic, organic, n.o.s.
Inhalation Packing Group I: No
Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: C
Corrosive.
R-PHRASES: 22 34

Harmful if swallowed. Causes burns.

S-PHRASES: 26 36/37/39 45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

SWITZERLAND

SWISS POISON CLASS: 4

16 - Other Information

WARRANTY

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 Inc., 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. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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