

**SIGMA-ALDRICH****Material Safety Data Sheet**

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 Version 1.80

Section 1 - Product and Company Information

Product Name	N-Ethylmaleimide, >= 98% HPLC		
Product Number	E3876		
Brand	Sigma-Aldrich		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	800-325-5832	Emergency Phone:	314-776-6555
Fax:	800-325-5052		

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
ETHYLMALEIMIDE	128-53-0	No	204-892-4	
Formula Synonyms	C6H7NO2 N-Ethylmaleimide, Maleic acid N-ethylimide, Maleimide, N-ethyl-, NEM, USAF B-121			

Section 3 - Hazards Identification

Emergency Overview
 Highly Toxic (USA) Very Toxic (EU).
 Harmful in contact with skin. Very toxic if swallowed. Causes burns. May cause sensitization by skin contact.
 Vesicant.

HMIS Rating
 Health: 3 Flammability: 2 Reactivity: 1

NFPA Rating
 Health: 3 Flammability: 2 Reactivity: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
 If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

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

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

Eye Exposure

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.

Section 5 - Fire Fighting Measures

Flash Point: 163.4 °F 73 °C

Autoignition Temp: N/A

Extinguishing Media

Suitable
 Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

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

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

Section 6 - Accidental Release Measures

Procedure 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.

Methods for Cleaning Up
 Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage**Handling**

User Exposure
 Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage

Suitable
 Keep tightly closed. Store at 2-8°C

Special Requirements
 Light sensitive.

Section 8 - Exposure Controls / PPE

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

Personal Protective Equipment**Respiratory**

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

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

Section 9 - Physical/Chemical Properties

Appearance	Physical State	Color	Form
	Solid	Colorless	Crystals

Molecular Weight: 125.13 AMU

Property	Value	At Temperature or Pressure
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pH	N/A	
BP/BP Range	210 °C	760 mmHg
MP/MP Range	44 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	163.4 °F	Method: closed cup
Flash Point °C	73 °C	Method: closed cup
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Solubility	Solvent: 1.0 M in MeOH, 20°C, complete, colorless	

N/A = not available

Section 10 - Stability and Reactivity**Stability**

Stable

Stable.

Conditions of Instability

May discolor on exposure to light.

Materials to Avoid

Strong oxidizing agents, Strong acids, Strong bases.

Hazardous Decomposition Products**Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide, Nitrogen oxides.

Hazardous Polymerization**Hazardous Polymerization**

Will not occur.

Section 11 - Toxicological Information**Route of Exposure****Skin Contact**

Causes burns.

Skin Absorption

Harmful if absorbed through 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

May be fatal if swallowed.

Sensitization**Skin**

May cause allergic skin reaction.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. 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. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: UX9625000

Toxicity Data

Oral - Rat: 25 mg/kg (LD50)

Remarks: Behavioral: Somnolence (general depressed activity).

Behavioral: Convulsions or effect on seizure threshold.

Intraperitoneal - Rat: 1 MG/KG (LD50)

Remarks: Behavioral: Somnolence (general depressed activity).

Oral - Mouse: 25 mg/kg (LD50)

Remarks: Behavioral: Somnolence (general depressed activity).

Intraperitoneal - Mouse: 5 MG/KG (LD50)

Remarks: Behavioral: Somnolence (general depressed activity).

Skin - Guinea pig: 500 mg/kg (LD50)

Chronic Exposure - Mutagen

Species	Dose	Cell Type	Mutation test
Human	750 NMOL/L	HeLa cell	DNA inhibition
Human	6 UMOL/L	Other cell types	DNA inhibition
Rat	2 UMOL	liver	DNA inhibition
Mouse	300 UMOL/L	Other cell types	DNA inhibition
Mouse	2 MMOL/L	Other cell types	DNA inhibition
Mouse	6 UMOL/L	Other cell types	DNA inhibition
Hamster	750 NMOL/L	lung	DNA inhibition

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

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.

Section 14 - Transport Information

DOT

Proper Shipping Name: Toxic solids, corrosive, organic, n.o.s.

UN#: 2928

Class: 6.1

Packing Group: Packing Group II

Hazard Label: Corrosive

PIH: Not PIH

IATA

Proper Shipping Name: Toxic solid, corrosive, organic, n.o.s.

IATA UN Number: 2928

Hazard Class: 6.1

Packing Group: II

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: T+

Indication of Danger

Very toxic.

Risk Statements R: 21 28 34 43

Harmful in contact with skin. Very toxic if swallowed. Causes burns. May cause sensitization by skin contact.

Safety Statements S: 26 28 36/37/39 45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. 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).

US Classification and Label Text

Indication of Danger

Highly Toxic (USA) Very Toxic (EU).

Risk Statements

Harmful in contact with skin. Very toxic if swallowed. Causes burns. May cause sensitization by skin contact.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. 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).

US Statements

Vesicant.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

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 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

