

## MATERIAL SAFETY DATA SHEET

<b>Product Name</b>	<b>MICACEOUS IRON OXIDE</b>
<b>Product Number</b>	<b>62598</b>
<b>MANUFACTURER &amp; SUPPLIER</b>	PARADISE MINERALS 221 RUNWAL HEIGHT,L.B.S. MARG, MULUND, MUMBAI – 400080 25908265/ 9820635370
<b>Substance Name</b>	<b>CAS # SARA 313</b>
Synonyms	1,2-Butene oxide * 1,2-Butylene oxide *

### Hazards Identification

#### EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Corrosive.  
Harmful by inhalation, in contact with skin and if swallowed.  
Causes burns. Limited evidence of a carcinogenic effect. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Possible Carcinogen (US).

#### HMIS RATING

HEALTH: 3\*

FLAMMABILITY: 3

REACTIVITY: 1

#### NFPA RATING

HEALTH: 3

FLAMMABILITY: 3

REACTIVITY: 1

\*additional chronic hazards present.

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. Do not induce vomiting.

##### 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

##### FLAMMABLE HAZARDS

Flammable Hazards: Yes

##### EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

##### FLASH POINT

5 °F - 15.0 °C Method: closed cup

##### EXPLOSION LIMITS

Lower: 1.7 % Upper: 19 %

##### AUTOIGNITION TEMP

370 °C

##### FLAMMABILITY

N/A

##### EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

##### 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.

Extremely flammable.

#### Section 6 - Accidental Release Measures

##### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

##### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

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

##### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered RIEDEL - 62598 [www.sigma-aldrich.com](http://www.sigma-aldrich.com) Page 2 containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is

complete.

## Section 7 - Handling and Storage

### HANDLING

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

### STORAGE

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame.

## Section 8 - Exposure Controls / PPE

### ENGINEERING CONTROLS

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

### 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 respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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.

Other: Faceshield (8-inch minimum).

### GENERAL HYGIENE MEASURES

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

## Section 9 - Physical/Chemical Properties

Appearance Physical State: Liquid

Color: Colorless

Odor: Unpleasant odor.

Property Value At Temperature or Pressure

Molecular Weight 72.11 AMU

pH N/A

BP/BP Range 61.0 - 65.0 °C

MP/MP Range N/A

Freezing Point N/A

Vapor Pressure 140 mmHg 20 °C

Vapor Density 2.2 g/l

Saturated Vapor Conc. N/A

SG/Density 0.829 g/cm<sup>3</sup>

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  
Surface Tension N/A  
RIEDEL - 62598 www.sigma-aldrich.com Page 3  
Partition Coefficient Log Kow: 0.4 - 0.7  
Decomposition Temp. N/A  
Flash Point 5 °F - 15.0 °C Method: closed cup  
Explosion Limits Lower: 1.7 %  
Upper: 19 %  
Flammability N/A  
Autoignition Temp 370 °C  
Refractive Index 1.384  
Optical Rotation N/A  
Miscellaneous Data N/A  
Solubility N/A

N/A = not available

#### Section 10 - Stability and Reactivity

##### STABILITY

Stable: Decomposes easily

Conditions of Instability: May decompose on exposure to moist air or water.

Materials to Avoid: Oxidizing agents.

##### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

##### 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: Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

##### SIGNS AND SYMPTOMS OF EXPOSURE

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

##### TOXICITY DATA

Oral

Rat

500 mg/kg

LD50  
Inhalation  
Rat  
6,300 mg/m<sup>3</sup>  
LC50  
Skin  
Rabbit  
2100 UL/KG  
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LD50  
IRRITATION DATA

Skin  
Rabbit  
500 mg  
24H  
Remarks: Mild irritation effect

Eyes  
Rabbit  
100 mg  
24H

Remarks: Moderate irritation effect

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Species: Rat  
Route of Application: Inhalation  
Dose: 400 PPM  
Exposure Time: 6H/5D/2Y  
Frequency: C

Result: Lungs, Thorax, or Respiration:Tumors.  
Tumorigenic:Carcinogenic by RTECS criteria. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Olfaction:Tumors.

IARC CARCINOGEN LIST

Rating: Group 2B  
NTP CARCINOGEN LIST  
Rating: Clear evidence.

Species: Rat  
Route: Inhalation

CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

Species: Rat  
Dose: 700 MG/L  
Cell Type: Embryo  
Mutation test: Morphological transformation.  
Species: Mouse

Dose: 400 MG/L (+S9)

Cell Type: lymphocyte

Mutation test: Mutation in microorganisms

Species: Mouse

Dose: 400 MG/L

Cell Type: lymphocyte

Mutation test: Mutation in mammalian somatic cells.

Species: Hamster

Dose: 50 UG/L

Cell Type: Embryo

Mutation test: Morphological transformation.

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Species: Hamster

Dose: 2500 UMOL/L

Cell Type: lung

Mutation test: Sister chromatid exchange

Species: Mammal

Dose: 100 MMOL/L

Cell Type: lymphocyte

Mutation test: DNA damage

**CHRONIC EXPOSURE - REPRODUCTIVE HAZARD**

Species: Rabbit

Dose: 1000 PPM/7H

Route of Application: Inhalation

Exposure Time: (1-24D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

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. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: 1,2-Butylene oxide, stabilized

UN#: 3022

Class: 3

Packing Group: Packing Group II

Hazard Label: Flammable liquid

PIH: Not PIH

IATA

Proper Shipping Name: 1,2-Butylene oxide, stabilized

IATA UN Number: 3022

Hazard Class: 3

Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F-Xn

Indication of Danger: Highly Flammable. Harmful.

R: 11-20/21/22-36/37/38-40-52/53

Risk Statements: Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S: 9-16-29-36/37-61

Safety Statements: Keep container in a well-ventilated place.

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Keep away from sources of ignition - no smoking. Do not empty into drains. Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU). Corrosive.

Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Causes burns. Limited evidence of a carcinogenic effect. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements: Keep container in a well-ventilated place.

Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Statements: Possible Carcinogen (US).

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

DEMINIMIS: 1 %

NOTES: This product is subject to SARA section 313 reporting requirements.

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.

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