



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.20

Section 1 - Product and Company Information

Product Name: Butylmagnesium chloride, 2.0M solution in diethyl ether
Product Number: 224375
Brand: Aldrich Chemical
Company: Sigma-Aldrich
Street Address: 3050 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Table with columns: Substance Name, CAS #, SARA 313, EC no, Annex I Index Number. Includes entries for BUTYLMAGNESIUM CHLORIDE, SOLUTION IN DIETHYL-ETHER and DIETHYL ETHER, INHIBITOR FREE N-BUTYLMAGNESIUM CHLORIDE.

Section 3 - Hazards Identification

Emergency Overview: Flammable (USA) Extremely Flammable (EU). Corrosive. Extremely flammable. Reacts violently with water, liberating extremely flammable gases. May form explosive peroxides. Harmful if swallowed. Causes burns. Vapors may cause drowsiness and dizziness. Target organ(s): Kidneys, Liver, Central nervous system, G.I. System, Skeletal muscle.

HMIS Rating: Health: 3\*, Flammability: 4, Reactivity: 2, Special Hazard(s): Water reactive
NFPA Rating: Health: 3, Flammability: 4, Reactivity: 2, Special Hazard(s): Water reactive

\*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: Yes
Peroxide Former: Yes

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

Autoignition Temp: N/A
Flammability: Yes

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): Flammable liquid. Emits toxic fumes under fire conditions.

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 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. Store in a cool dry place. Handle and store under nitrogen.
Incompatible Materials: Do not allow contact with water.

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**Special Requirements**

Handle and store under inert gas, Light sensitive, Air sensitive, Heat sensitive.

**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

**Molecular Weight:** 116.9 AMU

pH N/A  
BP/BP Range N/A  
MP/MP Range N/A  
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 N/A  
Flash Point °C N/A

**Explosion Limits** N/A

**Flammability** N/A

**Autoignition Temp** N/A

**Solubility** N/A

N/A = not available

**Section 10 - Stability and Reactivity****Stability****Stable**

Stable.

**Conditions of Instability**

May form peroxides of unknown stability.

**Conditions to Avoid**

Light.

**Materials to Avoid**

Strong oxidizing agents, Reacts violently with water., Strong acids.

**Hazardous Decomposition Products****Hazardous Decomposition Products**

Nature of decomposition products not known.

**Hazardous Polymerization****Hazardous Polymerization**

Will not occur.

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

Causes burns.

**Skin Absorption**

May be harmful if absorbed through the skin.

**Eye Contact**

Causes burns.

**Inhalation**

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

**Ingestion**

Harmful if swallowed.

**Target Organ(s) or System(s)**

Kidneys. Liver. G.I. System. Skeletal muscle. Central nervous system.

**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.

**RTECS Number:** N/A

**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:** Organometallic substance, liquid, water-reactive, flammable  
**UN#:** 3399  
**Class:** 4.3  
**Packing Group:** Packing Group I  
**Hazard Label:** Dangerous when wet  
**Hazard Label:** Flammable liquid  
**PIH:** Not PIH

### IATA

**Proper Shipping Name:** Organometallic substance, liquid, water-reactive, flammable  
**IATA UN Number:** 3399  
**Hazard Class:** 4.3  
**Packing Group:** I  
**Not Allowed - Aircraft:** FORBIDDEN

## Section 15 - Regulatory Information

### EU Additional Classification

**Symbol of Danger:** F+ C

#### Indication of Danger

Extremely Flammable, Corrosive.

**Risk Statements** R: 12 14/15 19 22 34 67

Extremely flammable. Reacts violently with water, liberating extremely flammable gases. May form explosive peroxides. Harmful if swallowed. Causes burns. Vapors may cause drowsiness and dizziness.

**Safety Statements** S: 7 9 16 26 29 33 36/37/39 43 45

Keep container tightly closed. 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. Take precautionary measures against static discharges. Wear suitable protective clothing, gloves, and eye/face protection. In case of fire, use dry powder. Never use water. 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

Flammable (USA) Extremely Flammable (EU), Corrosive.

#### Risk Statements

Extremely flammable. Reacts violently with water, liberating extremely flammable gases. May form explosive peroxides. Harmful if swallowed. Causes burns. Vapors may cause drowsiness and dizziness.

#### Safety Statements

Keep container tightly closed. Keep container dry. 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. Take precautionary measures against static discharges. Wear suitable protective clothing, gloves, and eye/face protection. In case of fire, use dry powder. Never use water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

#### US Statements

Target organ(s): Kidneys, Liver, Central nervous system, G.I. System, Skeletal muscle.

### United States Regulatory Information

**SARA Listed:** No

### 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:** No

**NDSL:** No

## Section 16 - Other Information

### Disclaimer

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

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Sigma-Aldrich Corporation  
www.sigma-aldrich.com

### 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 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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