

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Phenylmagnesium bromide solution

Product Number : 171565  
Brand : Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Flammable liquid, Water Reactive, Target Organ Effect, Harmful by ingestion., Corrosive

##### Target Organs

Central nervous system, Liver, Kidney, Gastrointestinal tract, Skeletal muscle.

##### GHS Classification

Flammable liquids (Category 2)  
Substances, which in contact with water, emit flammable gases (Category 1)  
Acute toxicity, Oral (Category 5)  
Skin corrosion (Category 1B)  
Serious eye damage (Category 1)  
Specific target organ toxicity - single exposure (Category 3)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.  
H260 In contact with water releases flammable gases which may ignite spontaneously.  
H303 May be harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H336 May cause drowsiness or dizziness.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.  
P231 + P232 Handle under inert gas. Protect from moisture.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

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.  
P370 + P378                              In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P422                                        Store contents under inert gas.

**HMIS Classification**

**Health hazard:**                        3  
**Chronic Health Hazard:**            \*  
**Flammability:**                         3  
**Physical hazards:**                    2

**NFPA Rating**

**Health hazard:**                        3  
**Fire:**                                     3  
**Reactivity Hazard:**                 2  
**Special hazard.:**                     W

**Potential Health Effects**

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

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula                                    : C<sub>6</sub>H<sub>5</sub>BrMg  
Molecular Weight                         : 181.31 g/mol

Component	Classification	Concentration
<b>Bromophenylmagnesium</b>		
CAS-No.                                  100-58-3	Skin Corr. 1B; H314, EUH014	30 - 60 %
EC-No.                                    202-867-2		
<b>Diethyl ether</b>		
CAS-No.                                  60-29-7	Flam. Liq. 1; Acute Tox. 4; STOT SE 3; H224, H302, H336, EUH019, EUH066	30 - 60 %
EC-No.                                    200-467-2		
Index-No.                                603-022-00-4		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

**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**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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## 5. FIREFIGHTING MEASURES

### Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. May burn in presence of air, or emit a flammable gas in the presence of water or water vapour. Keep away from heat/sparks/open flame/hot surface. No smoking. Keep away from heat/sparks/open flame/hot surface/air/water. No smoking.

### Suitable extinguishing media

Dry powder

### Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen bromide gas, Magnesium oxide

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

### 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

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Never allow product to get in contact with water during storage.

Light sensitive.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Diethyl ether	60-29-7	TWA	400 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks				Central Nervous System impairment Upper Respiratory Tract irritation
		STEL	500 ppm	USA. ACGIH Threshold Limit Values (TLV)
				Central Nervous System impairment Upper Respiratory Tract irritation
		TWA	400 ppm 1,200 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	500 ppm 1,500 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	400 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1

		1,200 mg/m <sup>3</sup>	Limits for Air Contaminants
	The value in mg/m <sup>3</sup> is approximate.		
	See Appendix D - Substances with No Established RELs		

## Personal protective equipment

### Respiratory protection

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. 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

Tightly fitting safety goggles. Faceshield (8-inch minimum). 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, Flame retardant antistatic protective clothing, 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	liquid
Colour	no data available

### Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	-40 °C (-40 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	1.134 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available

Odour Threshold no data available

Evaporation rate no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Reacts violently with water.

### Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight. Exposure to moisture.

### Materials to avoid

Water, Oxidizing agents, Strong oxidizing agents, Strong acids, Alcohols, acids

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen bromide gas, Magnesium oxide

Other decomposition products - no data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

no data available

#### Inhalation LC50

no data available

#### Dermal LD50

no data available

#### Other information on acute toxicity

no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/eye irritation

Eyes: no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### 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

no data available

### 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

<b>Inhalation</b>	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Vapours may cause drowsiness and dizziness.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin burns.
<b>Eyes</b>	Causes eye burns.

### Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

### Synergistic effects

no data available

### Additional Information

RTECS: Not available

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## 12. ECOLOGICAL INFORMATION

### Toxicity

no data available

### Persistence and degradability

no data available

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

### PBT and vPvB assessment

no data available

### Other adverse effects

no data available

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## 13. DISPOSAL CONSIDERATIONS

### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 3399 Class: 4.3 (3) Packing group: I

Proper shipping name: Organometallic substance, liquid, water-reactive, flammable (Bromophenylmagnesium, Diethyl ether)

Reportable Quantity (RQ): 248 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

#### IMDG

UN number: 3399 Class: 4.3 (3) Packing group: I EMS-No: F-G, S-N

Proper shipping name: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Bromophenylmagnesium, Diethyl ether)

Marine pollutant: No

#### IATA

UN number: 3399 Class: 4.3 (3) Packing group: I

Proper shipping name: Organometallic substance, liquid, water-reactive, flammable (Bromophenylmagnesium, Diethyl ether)

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### 15. REGULATORY INFORMATION

#### OSHA Hazards

Flammable liquid, Water Reactive, Target Organ Effect, Harmful by ingestion., Corrosive

#### 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

Fire Hazard, Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

#### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Diethyl ether	60-29-7	2007-03-01

#### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Diethyl ether	60-29-7	2007-03-01
Bromophenylmagnesium	100-58-3	

#### New Jersey Right To Know Components

	CAS-No.	Revision Date
Diethyl ether	60-29-7	2007-03-01
Bromophenylmagnesium	100-58-3	

#### 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.

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### 16. OTHER INFORMATION

#### Text of H-code(s) and R-phrase(s) mentioned in Section 3

Acute Tox.	Acute toxicity
EUH014	Reacts violently with water.
EUH019	May form explosive peroxides.
EUH066	Repeated exposure may cause skin dryness or cracking.
Flam. Liq.	Flammable liquids
H224	Extremely flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H336	May cause drowsiness or dizziness.
Skin Corr.	Skin corrosion
STOT SE	Specific target organ toxicity - single exposure

**Further information**

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