

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Name:** Ethylmagnesium Bromide

**Product Number:** All applicable American Elements product codes, e.g. ETMG-BR-01-SOL

**CAS #:** 925-90-6

**Relevant identified uses of the substance:** Scientific research and development

**Supplier details:**

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351

**Emergency telephone number:**

Domestic, North America: +1 800-424-9300  
International: +1 703-527-3887

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS02 Flame

Flam. Liq. 1

H224 Extremely flammable liquid and Vapor.

Water-react. 1 H260 In contact with water releases flammable gases which may ignite spontaneously.

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

GHS07

STOT SE 3

H336 May cause drowsiness or dizziness.

Hazards not otherwise classified

No data available

GHS label elements

GHS label elements, including precautionary statements

Hazard pictograms



GHS02 GHS05 GHS07

Signal word

Danger

Hazard-determining components of labeling:

Ethylmagnesium bromide

Hazard statements

H224 Extremely flammable liquid and Vapor.

H260 In contact with water releases flammable gases which may ignite spontaneously.

H314 Causes severe skin burns and eye damage.

H336 May cause drowsiness or dizziness.

Precautionary statements

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P231+P232

Handle under inert gas. Protect from moisture.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405

Store locked up.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

B2 - Flammable liquid

B6 - Reactive flammable material

D2B - Toxic material causing other toxic effects

E - Corrosive material

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 3

Flammability = 4

Physical Hazard = 3

Other hazards

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

Dangerous components:

60-29-7 Diethyl ether Flam. Liq. 1, H224; Acute Tox. 4, H302; STOT SE 3, H336 60.0%

925-90-6 Ethylmagnesium bromide Water-react. 1, H260; Skin Corr. 1B, H314; Eye Dam. 1, H318 40.0%

Additional information

None known.

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## **SECTION 4. FIRST AID MEASURES**

Description of first aid measures

General information

Immediately remove any clothing soiled by the product.

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed

Causes severe skin burns.

Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

For safety reasons unsuitable extinguishing agents

Water

Special hazards arising from the substance or mixture

Reacts violently with water

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen bromide (HBr)

Metal oxide fume

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Environmental precautions:

Do not allow product to enter drains, sewage systems, or other water courses.

Methods and materials for containment and cleanup:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents  
Prevention of secondary hazards:  
Keep away from ignition sources.  
Reference to other sections  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

Handling  
Precautions for safe handling  
Handle under dry protective gas.  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Keep away from heat and direct sunlight.  
Ensure good ventilation at the workplace.  
Open and handle container with care.  
Prevent formation of aerosols.  
Information about protection against explosions and fires:  
Protect against electrostatic charges.  
Fumes can combine with air to form an explosive mixture.  
Keep ignition sources away.  
Do not distill to dryness.  
Explosive peroxides may form, handle container cautiously.  
Conditions for safe storage, including any incompatibilities  
Requirements to be met by storerooms and receptacles:  
Store in a cool location.  
Information about storage in one common storage facility:  
Store away from air.  
Store away from water/moisture.  
Do not store together with acids.  
Store away from strong bases.  
Store away from oxidizing agents.  
Store away from alcohols.  
Further information about storage conditions:  
Store under dry inert gas.  
This product is moisture sensitive.  
This product is air sensitive.  
Protect from humidity and water.  
Store in cool, dry conditions in well-sealed containers.  
Protect from heat and direct sunlight.  
Avoid contact with air/oxygen (formation of peroxide).  
Check container pressure periodically to prevent explosive peroxides.  
Specific end use(s)  
No data available

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

60-29-7 Diethyl ether (60.0%)

PEL (USA)

Long-term value: 1200 mg/m<sup>3</sup>, 400 ppm

TLV (USA)

Short-term value: 1520 mg/m<sup>3</sup>, 500 ppm

Long-term value: 1210 mg/m<sup>3</sup>, 400 ppm

EL (Canada) Short-term value: 500 ppm

Long-term value: 400 ppm

EV (Canada) Short-term value: 1.515 mg/m<sup>3</sup>, 500 ppm

Long-term value: 1.210 mg/m<sup>3</sup>, 400 ppm

Additional information:

No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:

Use a respirator with organic vapor/acid gas cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.

Penetration time of glove material (in minutes)

Not determined

Eye protection:

Tightly sealed goggles

Full face protection

Body protection:

Protective work clothing

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Liquid

Color: Pale yellow to brown

Odor: Ether-like

Odor threshold: Not determined.  
pH: Not determined.  
Melting point/Melting range: Not determined  
Boiling point/Boiling range: 34 °C (93 °F)  
Sublimation temperature / start: Not determined  
Flash point: -45 °C (-49 °F)  
Flammability (solid, gas)  
Not determined.  
Ignition temperature: 170 °C (338 °F)  
Decomposition temperature: Not determined  
Autoignition: Product is not selfigniting.  
Danger of explosion: May form explosive peroxides.  
Do not distill to dryness.  
Explosion limits:  
Lower: 1.7 Vol %  
Upper: 36.0 Vol %  
Vapor pressure at 20 °C (68 °F): 586.3 hPa (440 mm Hg)  
Density at 20 °C (68 °F): 1.02 g/cm<sup>3</sup> (8.512 lbs/gal)  
Relative density  
Not determined.  
Vapor density  
Not determined.  
Evaporation rate  
Not determined.  
Solubility in Water (H<sub>2</sub>O): Reacts violently  
Contact with water releases flammable gases  
Partition coefficient (n-octanol/water): Not determined.  
Viscosity:  
Dynamic: Not determined.  
Kinematic: Not determined.  
Solvent content:  
Organic solvents: 60.0 %  
Other information  
No data available  
Additional information  
This product may form a precipitate.

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity  
Reacts violently with water.  
In contact with water releases flammable gases which may ignite spontaneously.  
May form explosive peroxides.  
Chemical stability  
Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions  
Reacts with strong oxidizing agents  
Contact with water releases flammable gases  
Reacts violently with water  
May form explosive peroxides.  
Conditions to avoid

No data available  
Incompatible materials:  
Acids  
Air  
Bases  
Oxidizing agents  
Alcohols  
Water/moisture  
Hazardous decomposition products:  
Carbon monoxide and carbon dioxide  
Hydrogen bromide  
Metal oxide fume  
Additional information:  
This product may form a precipitate.

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Harmful if swallowed.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 values that are relevant for classification:

60-29-7 Diethyl ether

Oral

LD50 1211 mg/kg (rat)

Dermal LD50 >20 mL/kg (rabbit)

Skin irritation or corrosion:

Causes severe skin burns.

Eye irritation or corrosion:

Causes serious eye damage.

Sensitization:

No sensitizing effects known.

Germ cell mutagenicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

No effects known.

Specific target organ system toxicity - repeated exposure:

No effects known.

Specific target organ system toxicity - single exposure:

May cause drowsiness or dizziness.

May cause respiratory irritation.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Corrosive

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Aquatic toxicity:

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Additional ecological information:

Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

Other adverse effects

No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Recommendation

Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

DOT, IMDG, IATA

UN3399

UN proper shipping name

DOT

Organometallic substance, liquid, water-reactive, flammable (Ethylmagnesium bromide, Diethyl ether (Ether))

IMDG, IATA

ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE(Ethylmagnesium



bromide, DIETHYL ETHER)

Transport hazard class(es)

DOT

Class

4.3 Substances which, in contact with water, emit flammable gases.

Label

4.3+3

Class

4.3 (WF1) Substances which, in contact with water, emit flammable gases

Label

4.3+3

IMDG, IATA

Class

4.3 Substances which, in contact with water, emit flammable gases.

Label

4.3+3

Packing group

DOT, IMDG, IATA

I

Environmental hazards:

Marine pollutant (IMDG):

No

Special precautions for user

Warning: Substances which, in contact with water, emit flammable gases

EMS Number: F-G,S-M

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT):

No

UN "Model Regulation":

UN3399, Organometallic substance, liquid, water-reactive, flammable(Ethylmagnesium bromide, Diethyl ether (Ethyl ether)), 4.3 (3), I

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## SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS GHS label elements, including precautionary statements

Hazard pictograms

GHS02

GHS05

GHS07

Signal word

Danger

Hazard-determining components of labeling:

Ethylmagnesium bromide

Hazard statements

H224 Extremely flammable liquid and Vapor.

H260 In contact with water releases flammable gases which may ignite spontaneously.

H314 Causes severe skin burns and eye damage.

H336 May cause drowsiness or dizziness.

Precautionary statements

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P231+P232

Handle under inert gas. Protect from moisture.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405

Store locked up.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

The components of this product are listed on the Canadian Domestic Substances List (DSL) and/or the Canadian Non-Domestic Substances List (NDSL).

SARA Section 313 (specific toxic chemical listings)

None of the ingredients are listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer

None of the ingredients are listed.

Prop 65 - Developmental toxicity

None of the ingredients are listed.

Prop 65 - Developmental toxicity, female

None of the ingredients are listed.

Prop 65 - Developmental toxicity, male

None of the ingredients are listed.

Information about limitation of use:

For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

None of the ingredients are listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

None of the ingredients is listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)

None of the ingredients is listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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## SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). 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. American Elements 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 1997-2018 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.