

# Safety data sheet

according to 1907/2006/EC, Article 31

Revision: 29.11.2012

Printing date 02.07.2013

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade name

**4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether**

Stock number:

H60905

### 1.2 Relevant identified uses of the substance or mixture and uses advised against.

Identified use:

SU24 Scientific research and development

### 1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
A Johnson Matthey Company  
Zeppelinstr. 7b  
76185 Karlsruhe / Germany  
Tel: +49 (0) 721 84007 280  
Fax: +49 (0) 721 84007 300  
Email: tech@alfa.com  
www.alfa.com

Informing department:

Product safety Tel + +049 (0) 7275 988687-0

### 1.4 Emergency telephone number:

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 1, H224 Extremely flammable liquid and vapour.



GHS05 corrosion

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



GHS07

Acute Tox. 4, H302 Harmful if swallowed.

STOT SE 3, H336 May cause drowsiness or dizziness.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive

R34: Causes burns.

Xn; Harmful

R22: Harmful if swallowed.

F+; Extremely flammable

R12: Extremely flammable.

R19-67: May form explosive peroxides. Vapours may cause drowsiness and dizziness.

**Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.  
Has a narcotizing effect.

**Other hazards that do not result in classification**

No information known.

### 2.2 Label elements

**Labelling according to Regulation (EC) No 1272/2008**

Hazard pictograms

The product is classified and labelled according to the CLP regulation.

Signal word

GHS02, GHS05, GHS07  
Danger
**Hazard-determining components of labelling:**

Diethyl ether

Hazard statements

4-Bromobenzylmagnesium bromide

H224 Extremely flammable liquid and vapour.

H302 Harmful if swallowed.

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.

P241

Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Remove/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.

Additional information:

EUH019 May form explosive peroxides.

### 2.3 Other hazards

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Dangerous components:

CAS: 60-29-7

EINECS: 200-467-2

Diethyl ether

Xn R22; F+ R12

R19-66-67

93,1%

CAS: 92206-72-9

4-Bromobenzylmagnesium bromide

C R34

R14

Skin Corr. 1B, H314

6,9%

Additional information

None known.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General information

Instantly remove any clothing soiled by the product.

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After inhalation	Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.	(Contd. of page 1)
After skin contact	Seek immediate medical advice. Instantly wash with water and soap and rinse thoroughly.	
After eye contact	Seek immediate medical advice.	
After swallowing	Rinse opened eye for several minutes under running water. Then consult doctor.	
4.2 Most important symptoms and effects, both acute and delayed	Seek medical treatment.	
4.3 Indication of any immediate medical attention and special treatment needed	No further relevant information available.	

**SECTION 5: Firefighting measures**

5.1 Extinguishing media Suitable extinguishing agents	CO <sub>2</sub> , extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
5.2 Special hazards arising from the substance or mixture	If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dioxide Hydrogen bromide (HBr) Metal oxide
5.3 Advice for firefighters Protective equipment:	Wear self-contained breathing apparatus. Wear full protective suit.

**SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures	Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Keep away from ignition sources
6.2 Environmental precautions:	Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach sewage system or water bodies. Do not allow to enter the ground/soil.
6.3 Methods and material for containment and cleaning up:	Keep away from ignition sources. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralizing agent. Dispose of contaminated material as waste according to item 13. Ensure adequate ventilation.
Prevention of secondary hazards:	Keep away from ignition sources.
6.4 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 information on disposal.

**SECTION 7: Handling and storage**

7.1 Precautions for safe handling	Handle under dry protective gas. Keep containers tightly sealed. Store in cool, dry place in tightly closed containers. Keep away from heat and direct sunlight. Ensure good ventilation/exhaustion at the workplace. Open and handle container with care.
Information about protection against explosions and fires:	Protect against electrostatic charges. Fumes can combine with air to form an explosive mixture. Do not distill to dryness. Explosive peroxides may form, handle container cautiously.
7.2 Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and containers: Information about storage in one common storage facility:	Store in cool location.  Store away from air. Store away from water. Store away from strong bases. Store away from oxidizing agents.
Further information about storage conditions:	Store under dry inert gas. This product is moisture sensitive. This product is air sensitive. Store in cool, dry conditions in well sealed containers. Protect from heat and direct sunlight. Protect from humidity and keep away from water. Avoid contact with air / oxygen (formation of peroxide). Store in a locked cabinet or with access restricted to technical experts or their assistants. Check container pressure periodically to prevent explosive peroxides.
7.3 Specific end use(s)	No further relevant information available.

**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.
8.1 Control parameters	
Components with critical values that require monitoring at the workplace:	
60-29-7 Diethyl ether (93,1%)	
AGW (Germany)	1200 mg/m <sup>3</sup> , 400 ppm 1(l);DFG, EU
PEL (USA)	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
Additional information:	No data
8.2 Exposure controls	
Personal protective equipment	
General protective and hygienic measures	The usual precautionary measures should be adhered to in handling the chemicals. Keep away from foodstuffs, beverages and food.

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Trade name **4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether**

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**Breathing equipment:****Protection of hands:****Material of gloves****Penetration time of glove material****Eye protection:****Body protection:**

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Do not inhale dust / smoke / mist.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Use breathing protection with high concentrations.

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Impervious gloves

Not determined

Tightly sealed safety glasses.

Full face protection

Protective work clothing.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form: Liquid

Smell: Not determined

Odour threshold: Not determined.

pH-value: Not determined.

**Change in condition**

Melting point/Melting range: Not determined

Boiling point/Boiling range: 34 °C

Sublimation temperature / start: Not determined

Flash point: -45 °C

Inflammability (solid, gaseous): Not determined.

Ignition temperature: 170 °C

Decomposition temperature: Not determined

Self-inflammability: Product is not selfigniting.

Danger of explosion: May form explosive peroxides.

Do not distill to dryness.

**Critical values for explosion:**

Lower: 1,7 Vol %

Upper: 36,0 Vol %

Steam pressure at 20 °C: 586,3 hPa

Density at 20 °C: 0,77 g/cm<sup>3</sup>

Relative density: Not determined.

Vapour density: Not determined.

Evaporation rate: Not determined.

Solubility in / Miscibility with

Water: Not miscible or difficult to mix

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

dynamic: Not determined.

kinematic: Not determined.

**Solvent content:**

Organic solvents: 93,1 %

Solids content: 6,9 %

**9.2 Other information** No further relevant information available.**SECTION 10: Stability and reactivity****10.1 Reactivity****10.2 Chemical stability****Thermal decomposition / conditions to be avoided:****10.3 Possibility of hazardous reactions****10.5 Incompatible materials:****10.6 Hazardous decomposition products:****Additional information:**

May form explosive peroxides.

Stable under recommended storage conditions.

No decomposition if used and stored according to specifications.

Reacts with strong oxidizing agents

Forms peroxides

Air

Water/moisture

Bases

Oxidizing agents

Carbon monoxide and carbon dioxide

Hydrogen bromide

Metal oxide

This product may form a precipitate.

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:****Skin irritation or corrosion:****Eye irritation or corrosion:****Sensitization:****Germ cell mutagenicity:****Carcinogenicity:****Reproductive toxicity:****Specific target organ system toxicity -****repeated exposure:****Specific target organ system toxicity - single****exposure:****Aspiration hazard:**

Harmful if swallowed.

Swallowing will lead to a strong caustic 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.

No data

Causes severe skin burns.

Causes serious eye damage.

No sensitizing effect known.

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

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

No effects known.

No effects known.

May cause drowsiness or dizziness.

No effects known.

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Trade name **4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether****Additional toxicological information:**

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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 the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:  
Harmful  
Corrosive

**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:**

No further relevant information available.

**12.2 Persistence and degradability**

No further relevant information available.

**12.3 Bioaccumulative potential**

No further relevant information available.

**12.4 Mobility in soil**

No further relevant information available.

**Additional ecological information:****General notes:**

Do not allow material to be released to the environment without proper governmental permits.  
Water hazard class 1 (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.  
Avoid transfer into the environment.

**12.5 Results of PBT and vPvB assessment****PBT:**

Not applicable.

**vPvB:**

Not applicable.

**12.6 Other adverse effects**

No further relevant information available.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation**

Hand over to disposers of hazardous waste.  
Must be specially treated under adherence to official regulations.  
Consult state, local or national regulations for proper disposal.

**Uncleaned packagings:****Recommendation:**

Disposal must be made according to official regulations.

**SECTION 14: Transport information****UN-Number****ADR, IMDG, IATA**

UN2924

**14.2 UN proper shipping name****ADR**

2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (DIETHYL ETHER, 4-Bromobenzylmagnesium bromide)  
FLAMMABLE LIQUID, CORROSIVE, N.O.S. (DIETHYL ETHER, 4-Bromobenzylmagnesium bromide)

**IMDG, IATA****14.3 Transport hazard class(es)****ADR****Class****Label****IMDG, IATA****Class****Label**

3 (FC) Flammable liquids.  
3+8

3 Flammable liquids.  
3+8

**Packing group****ADR, IMDG, IATA**

I

**14.5 Environmental hazards:****Marine pollutant:**

No

**14.6 Special precautions for user****Kemler Number:**

Warning: Flammable liquids.

338

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

Not applicable.

**Transport/Additional information:****ADR****Excepted quantities (EQ):**

E0

**Limited quantities (LQ)**

0

**Transport category**

1

**Tunnel restriction code**

C/E

**UN "Model Regulation":**

UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S. (DIETHYL ETHER, 4-Bromobenzylmagnesium bromide), 3 (8), I

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Australian Inventory of Chemical Substances**

60-29-7 Diethyl ether

**Standard for the Uniform Scheduling of Drugs and Poisons**

60-29-7 Diethyl ether

S2, S4, S5,

**National regulations****Information about limitation of use:**

For use only by technically qualified individuals.  
Employment restrictions concerning young persons must be observed.  
A1

**Classification according to VbF:****Technical instructions (air):**

Class	Share in %
NK	93.1

**Water hazard class:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

**Other regulations, limitations and prohibitive regulations****ELINCS (European List of Notified Chemical Substances)**

None of the ingredients is listed.

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**Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients are listed.

**REACH - Pre-registered substances**

60-29-7 Diethyl ether

**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Relevant phrases**

H224 Extremely flammable liquid and vapour.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H336 May cause drowsiness or dizziness.

R12 Extremely flammable.  
R14 Reacts violently with water.  
R19 May form explosive peroxides.  
R22 Harmful if swallowed.  
R34 Causes burns.  
R66 Repeated exposure may cause skin dryness or cracking.  
R67 Vapours may cause drowsiness and dizziness.

**Department issuing data specification sheet:****Abbreviations and acronyms:**

Health, Safety and Environmental Department.  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

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