

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: 4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether
Cat No. : H60905
Molecular Formula C7 H6 Br2 Mg

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

Thermo Fisher (Kandel) GmbH
 Erlenbachweg 2, 76870 Kandel, Germany
 Tel: +49 (0) 721 84007 280
 Fax: +49 (0) 721 84007 300

Swiss distributor - Fisher Scientific AG
 Neuhofstrasse 11, CH 4153 Reinach
 Tel: +41 (0) 56 618 41 11
<https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html>

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

customers in Switzerland:
 Tox Info Suisse Emergency Number: **145 (24hr)**
 Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
 Chemtrec (24h) Toll-Free: 0800 564 402
 Chemtrec Local: +41-43 508 20 11 (Zurich)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

Flammable liquids

Category 1 (H224)

Health hazards

Acute oral toxicity

Category 4 (H302)

Skin Corrosion/Irritation

Category 1 B (H314)

Serious Eye Damage/Eye Irritation

Category 1 (H318)

Specific target organ toxicity - (single exposure)

Category 3 (H336)

Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H224 - Extremely flammable liquid and vapor

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H336 - May cause drowsiness or dizziness

EUH014 - Reacts violently with water

EUH019 - May form explosive peroxides

EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

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

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

2.3. Other hazards

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
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SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

Ethyl ether	60-29-7	EEC No. 200-467-2	93.1	Flam. Liq. 1 (H224) Acute Tox. 4 (H302) STOT SE 3 (H336) (EUH019) (EUH066)
4-Bromobenzylmagnesium Bromide	92206-72-9		6.9	Acute Tox. 4 (H302) Skin Corr. 1B (H314) EUH014

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.
Ingestion	Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.
Inhalation	If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting; Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically. Symptoms may be delayed.
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SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

Water.

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Reacts violently with water. Extremely flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen bromide, Metal oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Do not expose spill to water. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. If peroxide formation is suspected, do not open or move container. Keep away from open flames, hot surfaces and sources of ignition. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Corrosives area. Keep away from water or moist air. Keep containers tightly closed in a dry, cool and well-ventilated place. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Keep away from heat, sparks and flame.

Technical Rules for Hazardous Substances (TRGS) 510
Storage Class (LGK) (Germany)

Class 3

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

Switzerland - Storage of hazardous substances

Storage class - SC 3

<https://www.kvu.ch/de/themen/stoffe-und-produkte>

<https://www.kvu.ch/fr/themes/substances-et-produits>

<https://www.kvu.ch/it/temi/sostanze-e-prodotti>

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Ethyl ether	TWA: 100 ppm (8h) TWA: 308 mg/m ³ (8h) STEL: 200 ppm (15min) STEL: 616 mg/m ³ (15min)	STEL: 200 ppm 15 min STEL: 620 mg/m ³ 15 min TWA: 100 ppm 8 hr TWA: 310 mg/m ³ 8 hr	TWA / VME: 100 ppm (8 heures). restrictive limit TWA / VME: 308 mg/m ³ (8 heures). restrictive limit STEL / VLCT: 200 ppm. restrictive limit STEL / VLCT: 616 mg/m ³ . restrictive limit	TWA: 100 ppm 8 uren TWA: 308 mg/m ³ 8 uren STEL: 200 ppm 15 minuten STEL: 616 mg/m ³ 15 minuten	STEL / VLA-EC: 200 ppm (15 minutos). STEL / VLA-EC: 616 mg/m ³ (15 minutos). TWA / VLA-ED: 100 ppm (8 horas) TWA / VLA-ED: 308 mg/m ³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Ethyl ether	TWA: 100 ppm 8 ore. Time Weighted Average TWA: 308 mg/m ³ 8 ore. Time Weighted Average STEL: 200 ppm 15 minuti. Short-term STEL: 616 mg/m ³ 15 minuti. Short-term	TWA: 400 ppm (8 Stunden). AGW - exposure factor 1 TWA: 1200 mg/m ³ (8 Stunden). AGW - exposure factor 1 TWA: 400 ppm (8 Stunden). MAK TWA: 1200 mg/m ³ (8 Stunden). MAK Höhepunkt: 400 ppm Höhepunkt: 1200 mg/m ³	STEL: 200 ppm 15 minutos STEL: 616 mg/m ³ 15 minutos TWA: 100 ppm 8 horas TWA: 308 mg/m ³ 8 horas	STEL: 616 mg/m ³ 15 minuten TWA: 308 mg/m ³ 8 uren	TWA: 100 ppm 8 tunteina TWA: 310 mg/m ³ 8 tunteina STEL: 200 ppm 15 minuutteina STEL: 620 mg/m ³ 15 minuutteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Ethyl ether	MAK-KZGW: 200 ppm 15 Minuten MAK-KZGW: 600 mg/m ³ 15 Minuten MAK-TMW: 100 ppm 8 Stunden MAK-TMW: 300 mg/m ³ 8 Stunden	TWA: 100 ppm 8 timer TWA: 309 mg/m ³ 8 timer STEL: 616 mg/m ³ 15 minutter STEL: 200 ppm 15 minutter	STEL: 400 ppm 15 Minuten STEL: 1200 mg/m ³ 15 Minuten TWA: 400 ppm 8 Stunden TWA: 1200 mg/m ³ 8 Stunden	STEL: 600 mg/m ³ 15 minutach TWA: 300 mg/m ³ 8 godzinach	TWA: 100 ppm 8 timer TWA: 300 mg/m ³ 8 timer STEL: 150 ppm 15 minutter. value calculated STEL: 375 mg/m ³ 15 minutter. value calculated

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Ethyl ether	TWA: 100 ppm TWA: 308 mg/m ³ STEL : 200 ppm STEL : 616 mg/m ³	TWA-GVI: 100 ppm 8 satima. TWA-GVI: 308 mg/m ³ 8 satima. STEL-KGVI: 200 ppm 15 minutama. STEL-KGVI: 616 mg/m ³ 15 minutama.	TWA: 100 ppm 8 hr. TWA: 308 mg/m ³ 8 hr. STEL: 200 ppm 15 min STEL: 616 mg/m ³ 15 min	STEL: 200 ppm STEL: 616 mg/m ³ TWA: 100 ppm TWA: 308 mg/m ³	TWA: 300 mg/m ³ 8 hodinách. Ceiling: 600 mg/m ³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
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SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

Ethyl ether	TWA: 100 ppm 8 tündides. TWA: 308 mg/m ³ 8 tündides. STEL: 200 ppm 15 minutites. STEL: 616 mg/m ³ 15 minutites.	TWA: 100 ppm 8 hr TWA: 308 mg/m ³ 8 hr STEL: 200 ppm 15 min STEL: 616 mg/m ³ 15 min	STEL: 500 ppm STEL: 1500 mg/m ³ TWA: 400 ppm TWA: 1200 mg/m ³	STEL: 616 mg/m ³ 15 percekben. CK TWA: 308 mg/m ³ 8 órában. AK lehetséges bőrön keresztüli felszívódás	STEL: 200 ppm STEL: 616 mg/m ³ TWA: 100 ppm 8 klukkustundum. TWA: 308 mg/m ³ 8 klukkustundum.
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Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Ethyl ether	STEL: 200 ppm STEL: 616 mg/m ³ TWA: 100 ppm TWA: 308 mg/m ³	TWA: 308 mg/m ³ IPRD TWA: 100 ppm IPRD STEL: 616 mg/m ³ STEL: 200 ppm	TWA: 100 ppm 8 Stunden TWA: 308 mg/m ³ 8 Stunden STEL: 200 ppm 15 Minuten STEL: 616 mg/m ³ 15 Minuten	TWA: 100 ppm TWA: 308 mg/m ³ STEL: 200 ppm 15 minuti STEL: 616 mg/m ³ 15 minuti	TWA: 100 ppm 8 ore TWA: 308 mg/m ³ 8 ore STEL: 200 ppm 15 minute STEL: 616 mg/m ³ 15 minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Ethyl ether	TWA: 300 mg/m ³ 2469 MAC: 900 mg/m ³	Ceiling: 616 mg/m ³ TWA: 100 ppm TWA: 308 mg/m ³	TWA: 100 ppm 8 urah TWA: 308 mg/m ³ 8 urah STEL: 200 ppm 15 minutah STEL: 616 mg/m ³ 15 minutah	Binding STEL: 200 ppm 15 minuter Binding STEL: 616 mg/m ³ 15 minuter TLV: 100 ppm 8 timmar. NGV TLV: 308 mg/m ³ 8 timmar. NGV	TWA: 100 ppm 8 saat TWA: 308 mg/m ³ 8 saat STEL: 200 ppm 15 dakika STEL: 616 mg/m ³ 15 dakika

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography

MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry

MDHS 99 Metals in air by ICP-AES

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Ethyl ether 60-29-7 (93.1)				DNEL = 44mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Ethyl ether 60-29-7 (93.1)		DNEL = 616mg/m ³		DNEL = 308mg/m ³

Predicted No Effect Concentration (PNEC)

See values below.

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Ethyl ether 60-29-7 (93.1)	PNEC = 2mg/L	PNEC = 9.14mg/kg sediment dw	PNEC = 1.65mg/L	PNEC = 4.2mg/L	PNEC = 0.66mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Ethyl ether 60-29-7 (93.1)	PNEC = 0.2mg/L	PNEC = 0.914mg/kg sediment dw			

8.2. Exposure controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Viton (R)	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection Long sleeved clothing.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141
When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid

Appearance

Odor No information available

Odor Threshold No data available

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	34 °C / 93.2 °F	
Flammability (liquid)	Extremely flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Flash Point	-45 °C / -49 °F	Method - No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	No data available	
Water Solubility	Immiscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Ethyl ether	0.82	
Vapor Pressure	>1100 hPa @ 50 °C	
Density / Specific Gravity	0.77 g/cm3	@ 20 °C
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

9.2. Other information

Molecular Formula	C7 H6 Br2 Mg
Molecular Weight	274.24
Explosive Properties	Vapors may form explosive mixtures with air

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes

10.2. Chemical stability

Air sensitive. Moisture sensitive. May form precipitate.

10.3. Possibility of hazardous reactions

Hazardous Polymerization	No information available.
Hazardous Reactions	None under normal processing. Reacts violently with water.

10.4. Conditions to avoid

Exposure to moist air or water. Exposure to moisture. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Strong bases.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrogen bromide. Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

Oral Category 4
Dermal Based on available data, the classification criteria are not met
Inhalation Based on available data, the classification criteria are not met

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl ether	1215 mg/kg (Rat)	20 mL/kg (Rabbit)	32000 ppm (Rat) 4 h

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available
There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; Category 3
Results / Target organs Central nervous system (CNS).

(i) STOT-repeated exposure; No data available
Target Organs No information available.

(j) aspiration hazard; No data available

Symptoms / effects, both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Ethyl ether	LC50: > 10000 mg/L, 96h static (Lepomis macrochirus)	EC50 = 165 mg/L/24h	

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

	LC50: = 2560 mg/L, 96h flow-through (Pimephales promelas)		
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Component	Microtox	M-Factor
Ethyl ether	EC50 = 5600 mg/L 15 min	

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary based on information available, May persist.
Persistence
Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
Ethyl ether	0.82	No data available

12.4. Mobility in soil The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air.

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Endocrine disrupting properties
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC) According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Switzerland - Waste Ordinance Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600
<https://www.fedlex.admin.ch/eli/cc/2015/891/en>

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number	UN2924
14.2. UN proper shipping name	Flammable liquid, corrosive, n.o.s.
Technical Shipping Name	(DIETHYL ETHER, 4-Bromobenzylmagnesium bromide)
14.3. Transport hazard class(es)	3
Subsidiary Hazard Class	8
14.4. Packing group	I

ADR

14.1. UN number	UN2924
14.2. UN proper shipping name	Flammable liquid, corrosive, n.o.s.
Technical Shipping Name	(DIETHYL ETHER, 4-Bromobenzylmagnesium bromide)
14.3. Transport hazard class(es)	3
Subsidiary Hazard Class	8
14.4. Packing group	I

IATA

14.1. UN number	UN2924
14.2. UN proper shipping name	Flammable liquid, corrosive, n.o.s.
Technical Shipping Name	(DIETHYL ETHER, 4-Bromobenzylmagnesium bromide)
14.3. Transport hazard class(es)	3
Subsidiary Hazard Class	8
14.4. Packing group	I

14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Ethyl ether	60-29-7	200-467-2	-	-	X	X	KE-27690	X	X
4-Bromobenzylmagnesium Bromide	92206-72-9	-	-	-	-	-	-	-	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Ethyl ether	60-29-7	X	ACTIVE	X	-	X	X	X
4-Bromobenzylmagnesium Bromide	92206-72-9	-	-	-	-	-	-	-

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

Authorisation/Restrictions according to EU REACH

Not applicable

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Ethyl ether	60-29-7	-	-	-
4-Bromobenzylmagnesium Bromide	92206-72-9	-	-	-

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Ethyl ether	60-29-7	Not applicable	Not applicable
4-Bromobenzylmagnesium Bromide	92206-72-9	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification Water endangering class = 1 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Ethyl ether	WGK1	

Component	France - INRS (Tables of occupational diseases)
Ethyl ether	Tableaux des maladies professionnelles (TMP) - RG 84

Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Ethyl ether 60-29-7 (93.1)		Group I	

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H336 - May cause drowsiness or dizziness
EUH014 - Reacts violently with water
EUH019 - May form explosive peroxides
EUH066 - Repeated exposure may cause skin dryness or cracking
H224 - Extremely flammable liquid and vapor

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (volatile organic compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data

Health Hazards Calculation method

Environmental hazards Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Prepared By

Health, Safety and Environmental Department

Revision Date

17-Mar-2024

Revision Summary

New emergency telephone response service provider.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No
1907/2006 .**

**For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2,
Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and
Preparations).**

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the

SAFETY DATA SHEET

4-Bromobenzylmagnesium bromide, 0.25M in diethyl ether

Revision Date 17-Mar-2024

date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet