SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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

1.1 Product identifier

Trade name	:	Allylmagnesium Bromide (ca. 13% in Ethyl Ether, ca. 0.7mol/L)
Product code	:	A0963
EC-No.	:	217-046-4

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

Use of the Substance/Mixture	:	Use as laboratory reagent

1.3 Details of the supplier of the safety data sheet

Company	:	TCI EUROPE N.V.
Address	:	Boereveldseweg 6 - Haven 1063, B-2070 Zwijndrecht, Belgium
Telephone	:	+32 (0)3 735 07 00
Telefax	:	+32 (0)3 735 07 01
E-mail address of person responsible for the SDS	:	sales-eu@tcichemicals.com

1.4 Emergency telephone number

Emergency telephone number	:	+44 844 892 0111

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2	H225: Highly flammable liquid and vapour.
Substances and mixtures, which in contact with water, emit flammable gases, Category 1	H260: In contact with water releases flammable gases which may ignite spontaneously.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

H225 Highly flammable liquid and vapour.
H260 In contact with water releases flammable gases which may ignite spontaneously.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H361 Suspected of damaging fertility or the unborn child.

Supplemental Hazard Statements :

EUH014 Reacts violently with water.
EUH019 May form explosive peroxides.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P231 + P232 Handle and store contents under inert gas. Protect from moisture.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302 + P335 + P334 IF ON SKIN: Brush off loose particles from skin. Immerse in cool water.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Hazardous components which must be listed on the label:

Diethyl Ether
Allylmagnesium Bromide

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS RN EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Diethyl Ether	60-29-7 200-467-2 603-022-00-4	Flam. Liq. 1; H224 Acute Tox. 4; H302 Eye Irrit. 2; H319 Repr. 2; H361 STOT SE 3; H336 (Central nervous system) STOT SE 3; H335 (Respiratory system) STOT RE 1; H372 (Central nervous system) EUH019, EUH066	>= 70 - < 90
Allylmagnesium Bromide	1730-25-2 217-046-4 012-003-00-4	Pyr. Liq. 1; H250 Water-react. 1; H260 Skin Corr. 1B; H314 Eye Dam. 1; H318 EUH014	>= 10 - < 20

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled	:	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
In case of skin contact	:	Take off all contaminated clothing immediately. If on skin, rinse well with water. Get medical advice/ attention.
In case of eye contact	:	Rinse with plenty of water. If easy to do, remove contact lens, if worn. Immediately call a POISON CENTER or doctor/ physician.
If swallowed	:	Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

None known.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Dry powder, Dry sand, Carbon dioxide (CO2)
Unsuitable extinguishing media	:	Water

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting	:	No information available.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Use personal protective equipment.
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circum-stances and the surrounding environment. Immediately evacuate personnel to safe areas. Remove undamaged containers from fire area if it is safe to do so.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Wear suitable protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

6.2 Environmental precautions

Environmental precautions	:	Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Collect as much of the spill as possible with a suitable absorbent material.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : Prevent generation of vapour or mist.
Take precautionary measures against static discharge.
Use explosion-proof equipment.

Local/Total ventilation : Ensure adequate ventilation.
Handle product only in closed system or provide appropriate exhaust ventilation at machinery.
Use a local exhaust ventilation.

Advice on safe handling : Avoid contact with skin, eyes and clothing.
Wear personal protective equipment.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not subject to grinding, shock or friction.
Wash hands and face thoroughly after handling.
Confirm in advance if peroxides exist when operations involving heating such as distillation are carried out.
Don't leave used equipment or rag.
This product may ignite if it is left stuck on combustibles such as paper, rags, etc.
Use only clean and dry utensils.
Do not allow contact with water.
Handle under inert gas.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed. Store in a cool and shaded area. Keep in a well-ventilated place. Use explosion-proof equipment. Protect from moisture. Keep under inert gas. Store locked up.

Storage class (TRGS 510) : 4.3

7.3 Specific end use(s)

Specific use(s) : No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS RN	Value type (Form of exposure)	Control parameters	Basis
Diethyl Ether	60-29-7	STEL	200 ppm 616 mg/m3	2000/39/EC
	Further information: Indicative			
		TWA	100 ppm 308 mg/m3	2000/39/EC
	Further information: Indicative			
		AGW	400 ppm 1 200 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 1;(I)			
	Further information: Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., European Union (The EU has established a limit value: deviations in value and peak limit are possible)			

8.2 Exposure controls

Engineering measures

Install a closed system or local exhaust.
Also install safety shower and eye bath.

Personal protective equipment

Eye/face protection	:	Safety glasses, Safety goggles, Face-shield
Hand protection	:	Impervious gloves
Skin and body protection	:	Impervious protective clothing
Respiratory protection	:	Gas mask Self-contained breathing apparatus

*Use personal protective equipment(PPE) approved under appropriate government standards and follow local and national regulations.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	No data available
Odour	:	No data available
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flammability	:	No data available
Upper explosion limit/Upper flammability limit	:	No data available
Lower explosion limit/Lower flammability limit	:	No data available
Flash point	:	-40 °C
Auto-ignition point	:	No data available
Decomposition temperature	:	No data available
pH	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	No data available
Relative density	:	0,83
Relative vapour density	:	No data available
Particle characteristics	:	No data available

9.2 Other information

Substances and mixtures, which in contact with water, emit flammable gases	:	The substance or mixture emits flammable gases in contact with water and is classified as category 1.
Molecular weight	:	145,28 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	May ignite or evolve a flammable gas upon contact with water. Reacts with air to form peroxides.

10.4 Conditions to avoid

Conditions to avoid : Electrical spark, Open flame, Electrostatic discharge, Exposure to air., Exposure to moisture

10.5 Incompatible materials

Materials to avoid : Oxidizing agents,
Acids,
water,

10.6 Hazardous decomposition products

Carbon monoxide, 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

Acute toxicity

Product:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Components:

Diethyl Ether:

Acute oral toxicity : LD50 (Rat): 1 211 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (Mouse): 31000 ppm
Exposure time: 30 min
Test atmosphere: gas
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 14 g/kg
Assessment: The substance or mixture has no acute dermal toxicity

Acute toxicity (other routes of administration) : LD50 (Mouse): 2 420 mg/kg
Application Route: Intraperitoneal injection

Skin corrosion/irritation

Product:

Result : Causes burns.

Components:

Allylmagnesium Bromide:

Result : Causes burns.

Serious eye damage/eye irritation

Product:

Result : Irreversible effects on the eye

Components:

Diethyl Ether:

Result : Mild eye irritation

Allylmagnesium Bromide:

Result : Irreversible effects on the eye

Respiratory or skin sensitisation : No information available.

Germ cell mutagenicity : No information available.

Carcinogenicity : No information available.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : Suspected human reproductive toxicant

Components:

Diethyl Ether:

Reproductive toxicity - Assessment : Suspected human reproductive toxicant

STOT - single exposure

Product:

Assessment : May cause respiratory irritation., May cause drowsiness or dizziness.

Components:

Diethyl Ether:

Assessment : May cause respiratory irritation., May cause drowsiness or dizziness.

STOT - repeated exposure

Components:

Diethyl Ether:

Target Organs : Central nervous system

Assessment : Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity : No information available.

Aspiration toxicity

Product:

May be harmful if swallowed and enters airways.

RTECS No. : KI5775000 (Diethyl Ether)

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Diethyl Ether:

Toxicity to fish	:	LC50 (Oryzias latipes (Japanese medaka)): > 1 g/l Exposure time: 48 h

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Components:

Diethyl Ether:

Bioaccumulation	:	Concentration: 500 µg/l Bioconcentration factor (BCF): 0,9 - 1,4 Concentration: 50 µg/l Bioconcentration factor (BCF): 1,7 - 9,1
Partition coefficient: n-octanol/water	:	0,89

12.4 Mobility in soil

Components:

Diethyl Ether:

Distribution among environmental compartments	:	Koc: 73

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Disposal in accordance with local and national regulations. Take precautions against ignition or explode. Entrust disposal to a licensed waste disposal company.
Contaminated packaging	:	Disposal in accordance with local and national regulations. Before disposal of used container, remove contents completely.

SECTION 14: Transport information

14.1 UN number or ID number

ADR	:	UN 3399
IMDG	:	UN 3399
IATA (Cargo)	:	UN 3399
IATA (Passenger)	:	UN 3399 Not permitted for transport

14.2 UN proper shipping name

ADR	:	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE
IMDG	:	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE
IATA (Cargo)	:	Organometallic substance, liquid, water-reactive, flammable
IATA (Passenger)	:	Organometallic substance, liquid, water-reactive, flammable Not permitted for transport

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADR	:	4.3	3
IMDG	:	4.3	3
IATA (Cargo)	:	4.3	3
IATA (Passenger)	:	Not permitted for transport	

14.4 Packing group

ADR		
Packing group	:	I
Classification Code	:	WF1
Hazard Identification Number	:	X323
Tunnel restriction code	:	(B/E)
IMDG		
Packing group	:	I
EmS Code	:	F-G, S-N
IATA (Cargo)		
Packing instruction (cargo aircraft)	:	494
Packing group	:	I
IATA (Passenger)	:	Not permitted for transport

14.5 Environmental hazards

ADR		
Environmentally hazardous	:	no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable

Water hazard class (Germany)	:	WGK 1 slightly hazardous to water Classification according to AwSV, Annex 1 (5.2)

Other regulations:

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

CH BAGREG	:	On the inventory, or in compliance with the inventory
TSCA	:	Substance(s) not listed on TSCA inventory
AICS	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. Allylmagnesium Bromide
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

Full text of H-Statements

H224	:	Extremely flammable liquid and vapour.
H250	:	Catches fire spontaneously if exposed to air.
H260	:	In contact with water releases flammable gases which may ignite spontaneously.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H335	:	May cause respiratory irritation.
H336	:	May cause drowsiness or dizziness.
H361	:	Suspected of damaging fertility or the unborn child.
H372	:	Causes damage to organs through prolonged or repeated exposure.
EUH014	:	Reacts violently with water.
EUH019	:	May form explosive peroxides.
EUH066	:	Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Pyr. Liq.	:	Pyrophoric liquids
Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
Water-react.	:	Substances and mixtures, which in contact with water, emit flammable gases
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Cooperation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Flam. Liq. 2	H225	Based on product data or assessment
Water-react. 1	H260	Based on product data or assessment
Acute Tox. 4	H302	Based on product data or assessment
Skin Corr. 1B	H314	Based on product data or assessment
Eye Dam. 1	H318	Based on product data or assessment
Repr. 2	H361	Based on product data or assessment
STOT SE 3	H336	Based on product data or assessment
STOT SE 3	H335	Based on product data or assessment

This SDS was prepared sincerely based on the information obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling operations, sufficient care should be taken, in addition to the safety measures suitable for the given situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

DE / 6N