SAFETY DATA SHEET

according to 1907/2006/EC, Article 3

Version no. : 2.1
Prepared on : 12.08.2025
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SECTION 1: Identification of the substance/mixture and of the company/undertaking.

1.1 Product identifiers

Product name	Diethyl ether
Product Number	PSR43795 / PSR42211
Brand	PureSynth research chemicals
CAS No.	60-29-7

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

Identified uses : Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Company **PureSynth Research Chemicals GmbH.**

64683 Einhausen Marie-Curie-StraBe. 3, Germany

1.4 Emergency telephone number

Worldwide Helpline No.: 1800-8908-260

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids, (Category 1)	H224: Extremely flammable liquid and vapor.
Acute toxicity, (Category 4)	H302: Harmful if swallowed.
Specific target organ toxicity - single exposure, (Category 3), Central nervous system	H336: May cause drowsiness or dizziness.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word Danger

Hazard statement(s)

H224	Extremely flammable liquid and vapor.
H302	Harmful if swallowed.
H336	May cause drowsiness or dizziness.

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sc smoking.
P233	Keep container tightly closed.

P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

2.3 **Other hazards:**

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

SECTION 3: Composition / information on ingredients

3.1 Substances

Common names & Synonyms	Mol. formula	CAS number
Ethyl Ether	$C_4H_{10}O$	60-29-7

Component	Classification	Concentration
Diethyl ether	Flam. Liq. 1; Acute Tox. 4; STOT SE 3; H224, H302, H336 Concentration limits: >= 20 %: STOT SE 3, H336;	<= 100 %
ethanol	Flam. Liq. 2; Eye Irrit. 2; H225, H319 Concentration limits: >= 50 %: Eye Irrit. 2A, H319;	>= 1 - < 10 %

SECTION 4: First aid measures

Description of first aid measures

General advice	Show this material safety data sheet to the doctor in attendance.
If inhaled	After inhalation: fresh air. Call in physician.
In case of skin contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.
In case of eye contact	After eye contact: rinse out with plenty of water. Remove contact lenses.
If swallowed	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
Most important symptoms and effects, both acute and delayed	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
Indication of any immediate medical attention and special treatment needed	No data available

SECTION 5: Fire fighting measures

Extinguishing media **suitable extinguishing media**	Carbon dioxide (CO2) Foam Dry powder
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given.
Special hazards arising from the substance or mixture	Carbon oxides Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.
Advice for fire-fighters	In the event of fire, wear self-contained breathing apparatus.
Further information	Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Environmental precautions	Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning up	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material. Dispose of properly. Clean up affected area.
Reference to other sections	For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance. For precautions see section 2.2.
Conditions for safe storage, including any incompatibilities	Protected from light.Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Recommended storage temperature see product label. Storage class (TRGS 510): 3: Flammable liquids
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls / Personal protection

Control parameters	Ingredients with workplace control parameters
Appropriate engineering controls	
Personal protective equipment:	
Eye / face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
Skin protection	This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves
Body Protection	Flame retardant antistatic protective clothing.
Respiratory protection	required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type AX
Control of environmental exposure	Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

Appearance	Form: liquid Colour: colorless
Odour	sweet, ether-like
pH - Value	No data available
Density	0.71 g/cm3 at 20 °C
Boiling Point	34.6 °C at 1013 hPa
Melting Point	-116 °C
Solubility in water	65 g/l at 20 °C - completely soluble
Flash point	-40 °C - closed cup
Vapour pressure	189 hPa at 0 °C 389 hPa at 10 °C 563 hPa at 20 °C 863 hPa at 30 °C 1228 hPa at 40 °C 2311 hPa at 60 °C
Auto -ignition temperature	175 °C at 1013.25 hPa
Vapour density	No data available
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	log Pow: 1.1 - Bioaccumulation is not expected.
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 0.195 mPa.s at 40 °C
Explosive properties	Not classified as explosive.
Upper / lower flammability or explosive limits	Upper explosion limit: 36 %(V) Lower explosion limit: 1.7 %(V)
Oxidizing properties	None

Other safety information: Relative vapor density: 2.56 - (Air = 1.0)

SECTION 10: Stability and reactivity

Reactivity	Formation of peroxides possible. Vapors may form explosive mixture with air.
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature) . Contains the following stabilizer(s): ethanol (<=22 %)
Possibility of hazardous reactions	Risk of ignition or formation of inflammable gases or vapours with: chromyl chloride Peroxides Risk of explosion with: azides halogens halogen-halogen compounds nonmetallic oxyhalides Strong oxidizing agents chromium(VI) oxide halogen oxides peroxi compounds perchloric acid perchlorates Nitric acid nitrating acid Oxygen Ozone turpentine oils and/or turpentine substitutes nitrates metallic chlorides salts of oxyhalogenic acids nitrogen oxides nonmetallic oxides chromosulfuric acid chlorates hydrogen peroxide permanganic acid sulfuric acid with Nitric acid sulfur Risk of explosion during distillation. Exothermic reaction with: acid halides
Condition to avoid	Warming. Moisture.
Incompatible materials	No data available
Hazardous decomposition products	Peroxides In the event of fire: see section 5

SECTION 11: Toxicological information

Acute toxicity	Acute toxicity estimate Oral - 1.236 mg/kg LD50 Oral - Rat - 1.211 mg/kg (Diethyl ether) Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.

	Acute toxicity estimate Oral - 1.211 mg/kg (Diethyl ether) LC50 Inhalation - Mouse - 4 h – 97.5 mg/l - vapor Symptoms: mucosal irritations LD50 Dermal - Rabbit - male - > 20.000 mg/kg (Diethyl ether)
Skin corrosion/irritation	Skin - Rabbit (Diethyl ether) Result: No skin irritation - 4 h Remarks: Dermatitis
Serious eye damage/eye irritation	Eyes - Rabbit (Diethyl ether) Result: No eye irritation
Respiratory or skin sensitization	Local lymph node assay (LLNA) - Mouse (Diethyl ether) Result: negative
Germ cell mutagenicity	Test Type: Micronucleus test (Diethyl ether) Test system: Human lymphocytes Metabolic activation: with and without metabolic activation Result: negative Test Type: In vitro mammalian cell gene mutation test (Diethyl ether) Test system: Mouse lymphoma test Metabolic activation: with and without metabolic activation Result: negative Test Type: Ames test (Diethyl ether) Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Result: negative (Diethyl ether) Test Type: Micronucleus test Species: Mouse Cell type: Red blood cells (erythrocytes) Application Route: Intraperitoneal Result: negative
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	Oral - May cause drowsiness or dizziness. - Central nervous system (Diethyl ether)
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	
Endocrine disrupting properties	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

Toxicity	
Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill sunfish) - > 10.000 mg/l - 96 h (Diethyl ether)

Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1.380 mg/l - 48 h (Diethyl ether)
Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - > 100 mg/l - 72 h (Diethyl ether) static test NOEC - Desmodesmus subspicatus (green algae) - 100 mg/l - 72 h (Diethyl ether)
Toxicity to bacteria	static test EC50 - activated sludge - 21.000 mg/l - 3 h (Diethyl ether) static test NOEC - activated sludge - 42 mg/l - 3 h (Diethyl ether)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test NOEC - Daphnia magna (Water flea) - > 100 mg/l - 21 d (Diethyl ether)
Persistence and degradability	
Biodegradability	Not readily biodegradable.
Bio accumulative potential	No bioaccumulation is to be expected (log Pow <= 4).
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher
Endocrine disrupting properties	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.
Other adverse effects	No data available

SECTION 13: Disposal considerations

Waste treatment methods Products	Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleansed containers like the product itself.
Contaminated packaging	Dispose of as unused product.

SECTION 14: Transport information

	UN no.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR / RID	1155	DIETHYL ETHER	3	I	No
IMDG	1155	DIETHYL ETHER	3	I	No
IATA	1155	Diethyl ether	3	I	No

SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

The information in this SDS 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. The user must be determined suitability of this information for his application.