

SAFETY DATA SHEET

according to 1907/2006/EC, Article 3

Revision date: 30/09/2023

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

1.1 Product identifiers

Product name	Di-tert-butyl Peroxide, >98%
Product Number	PSR46822
Brand	PureSynth research chemicals
CAS No.	110-05-4

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

Flammable liquids, (Category 2)	H225: Highly flammable liquid and vapor
Organic peroxides, (Type E)	H242: Heating may cause a fire.
Germ cell mutagenicity, (Category 2)	H341: Suspected of causing genetic defects.
Long-term (chronic) aquatic hazard, (Category 3)	H412: Harmful to aquatic life with long lasting effects.

Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapor.
H242	Heating may cause a fire.
H341	Suspected of causing genetic defects.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.

P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
Supplemental Hazard Statements	none

2.2 **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
di-tert-butyl peroxide	C8H18O2	110-05-4
Component	Classification	Concentration
di-tert-butyl peroxide	Flam. Liq. 2; Org. Perox. E; Muta. 2; Aquatic Chronic 3; H225, H242, H341, H412	<= 100 %

SECTION 4: First aid measures

Description of first aid measures

General advice	First aiders need to protect themselves. 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. Consult a physician.
In case of eye contact	After eye contact: rinse out with plenty of water. Call in ophthalmologist. 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	Carbon dioxide (CO2) Foam Dry powder
Suitable extinguishing media	
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.
Advice for fire-fighters	Forms explosive mixtures with air at ambient temperatures Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
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: Do not breathe vapors, aerosols. 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 carefully 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	Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
Hygiene measures	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	Tightly closed. Separately or together with other organic peroxides only and away from sources of ignition and heat. Storage class (TRGS 510): 5.2: Organic peroxides and self-reacting hazardous materials
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
Exposure 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

Recommended Filter type: Respirator.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

Appearance	Form : liquid
Odour	Colour: Colourless
pH - Value	very faint
Density	No data available
Boiling Point	0.794 g/cm ³
Melting Point	111 °C
Solubility in water	< -29 °C
Flash point	0.171 g/l at 20 °C
Vapour pressure	6 °C at ca.1013 hPa - closed cup
Auto -ignition temperature	53 hPa at 20 °C
Vapour density	No data available
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	No data available
Viscosity	log Pow: 3.2 at 22 °C
Explosive properties	Viscosity, kinematic: No data available
Upper / lower flammability or explosive limits	Viscosity, dynamic: 7.5 mPa.s at 20 °C
Oxidizing properties	No data available
	Upper explosion limit: > 99 %(V)
	none

Other safety information: No data available

SECTION 10: Stability and reactivity

Reactivity	Vapors may form explosive mixture with air.
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature). Risk of explosion with: Amines alkalines Heavy metal salts strong reducing agents boron compounds acids
Possibility of hazardous reactions	Impurities halogen-halogen compounds Rust Heavy metals sulfur Sulfur compounds Risk of ignition or formation of inflammable gases or vapours with: highly flammable solvents
Condition to avoid	Warming.
Incompatible materials	No data available
Hazardous decomposition products	In the event of fire: see section 5

SECTION 11: Toxicological information

Acute toxicity	LD50 Oral - Rat - > 2.000 mg/kg LC50 Inhalation - Rat - male and female - 4 h - > 22 mg/l - vapor LD50 Dermal - Rat - male and female - > 2.000 mg/kg
Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation - 4 h
Serious eye damage/eye irritation	Eyes - Rabbit Result: No eye irritation
Respiratory or skin sensitization	Buehler Test - Guinea pig Result: Does not cause skin sensitization. Suspected of causing genetic defects. In vitro tests showed mutagenic effects Test Type: Ames test Test system: TA1535 Metabolic activation: with and without metabolic activation Result: negative Remarks: (National Toxicology Program)
Germ cell mutagenicity	Test Type: gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Result: negative Test Type: In vivo micronucleus test Species: Rat Application Route: inhalation (vapor) Result: negative Remarks: DNA damage

Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available

Additional Information

Endocrine disrupting properties

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

Toxicity

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - > 73.1 mg/l - 48 h

Toxicity to algae

static test ErC50 - Pseudokirchneriella subcapitata (algae) - ca. 36 mg/l - 72 h

Toxicity to bacteria

static test EC50 - activated sludge - > 1.000 mg/l - 30 min

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)

semi-static test NOEC - Daphnia magna (Water flea) – 7.2 mg/l – 21 d

semi-static test EC50 - Daphnia magna (Water flea) - 12 mg/l - 21 d

Persistence and degradability

aerobic - Exposure time 28 d

Result: 6 % - Not readily biodegradable.

Bio accumulative potential

No data available

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

Discharge into the environment must be avoided.

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	3107	ORGANIC PEROXIDE TYPE E, LIQUID (DI-tert-BUTYL PEROXIDE)	5.2	-	No
IMDG	3107	ORGANIC PEROXIDE TYPE E, LIQUID (DI-tert-BUTYL PEROXIDE)	5.2	-	No
IATA	3107	Organic peroxide type E, liquid (di-tert-butyl peroxide)	5.2	-	No

Special Provisions: "Keep away from heat" label required.

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

For this product a chemical safety assessment was not carried out

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.