

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 Toluene
Product Number PSR38076 / PSR38227 / PSR44970 / PSR44929 / PSR45072
Brand PureSynth research chemicals
CAS No. 108-88-3

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

Identified uses : Solvent for analytical purpose

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 2)	H225: Highly flammable liquid and vapor.
Skin irritation, (Category 2)	H315: Causes skin irritation.
Reproductive toxicity, (Category 2)	H361d: Suspected of damaging the unborn child.
Specific target organ toxicity - single exposure, (Category 3), Central nervous system	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure, (Category 2), Central nervous system	H373: May cause damage to organs through prolonged or repeated exposure if inhaled.
Aspiration hazard, (Category 1)	H304: May be fatal if swallowed and enters airways.
Long-term (chronic) aquatic hazard, (Category 3)	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapor.

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse with water.
P331	Do NOT induce vomiting.

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
	C ₇ H ₈	108-88-3
Component	Classification	Concentration
Toluene	Flam. Liq. 2; Skin Irrit. 2; Repr. 2; STOT SE 3; STOT RE 2; Asp. Tox. 1; Aquatic Chronic 3; H225, H315, H361d, H336, H373, H304, H412 Concentration limits: 20 %: STOT SE 3, H336;	<= 100 %

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. 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: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.
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	Foam Carbon dioxide (CO ₂) Dry powder
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given. Carbon oxides Combustible.
Special hazards arising from the substance or mixture	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	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: 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 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	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. Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

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

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

Appearance	Form: liquid
Odour	Colour: No data available benzene-like
pH - Value	No data available
Density	0.87 g/cm ³ at 20 °C
Boiling Point	110.6 °C at 1.013 hPa
Melting Point	-95 - -93 °C
Solubility in water	0.58 g/l at 25 °C - partly soluble
Flash point	4.4 °C - closed cup
Vapour pressure	30.88 hPa at 21.1 °C
Auto -ignition temperature	No data available
Vapour density	No data available
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	log Pow: 2.73 at 20 °C - Bioaccumulation is not expected.
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 0.56 mPa.s at 25 °C
Explosive properties	No data available
Upper / lower flammability or explosive limits	Upper explosion limit: 7.1 %(V) Lower explosion limit: 1.2 %(V)
Oxidizing properties	None

Other safety information: Conductivity: < 0.01 µS/cm
Surface tension: 27.73 mN/m at 0.516g/l at 25 °C
Relative vapor density: 3.18

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: fuming sulfuric acid Nitric acid silver perchlorates nitrogen dioxide nonmetallic halides
Possibility of hazardous reactions	halogen-halogen compounds uranium hexafluoride organic nitro compounds Violent reactions possible with: Strong acids Strong oxidizing agents sulfur with Heat.
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 - male - 5.580 mg/kg LC50 Inhalation - Rat - male - 4 h – 25.7 mg/l - vapor LD50 Dermal - Rabbit - male - > 5.000 mg/kg
Skin corrosion/irritation	Skin - Rabbit Result: irritating - 4 h
Serious eye damage/eye irritation	Eyes - Rabbit Result: No eye irritation
Respiratory or skin sensitization	Maximization Test - Guinea pig Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: Mouse lymphoma test Metabolic activation: with and without metabolic activation Result: negative Test Type: Ames test Test system: S. typhimurium
Germ cell mutagenicity	Metabolic activation: with and without metabolic activation Result: negative Test Type: Chromosome aberration test Species: Rat Cell type: Bone marrow Application Route: Intraperitoneal Result: negative
Carcinogenicity	No data available

Reproductive toxicity	Suspected of damaging the unborn child.
Specific target organ toxicity - single exposure	Inhalation - May cause drowsiness or dizziness. - Central nervous system
Specific target organ toxicity - repeated exposure	Inhalation - May cause damage to organs through prolonged or repeated exposure. - Central nervous system
Aspiration hazard	Aspiration may cause pulmonary edema and pneumonitis.
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	flow-through test LC50 - Oncorhynchus kisutch (coho salmon) – 5.5 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Ceriodaphnia dubia (water flea) – 3.78 mg/l - 48 h
Toxicity to bacteria	static test EC50 - Bacteria - 84 mg/l - 24 h
Toxicity to fish(Chronic toxicity)	flow-through test NOEC - Oncorhynchus kisutch (coho salmon) – 1.39 mg/l - 40 d
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	NOEC - Ceriodaphnia dubia (water flea) – 0.74 mg/l - 7 d
Persistence and degradability	
Biodegradability	aerobic - Exposure time 20 d Result: 86 % - Readily biodegradable.
Bio accumulative potential	Leuciscus idus (Golden orfe) - 3 d - 0.05 mg/l(Toluene) Bioconcentration factor (BCF): 90
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 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.
Endocrine disrupting properties	
Other adverse effects	No data available

SECTION 13: Disposal considerations

Waste treatment methods	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 uncleaned containers like the product itself.
Products	
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	1294	TOLUENE	3	II	No
IMDG	1294	TOLUENE	3	II	No
IATA	1294	Toluene	3	II	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.