

SAFETY DATA SHEET

according to 1907/2006/EC, Article 3

Version no. : 2.0
Prepared on : 14.03.2026
Revised on : -

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

1.1 Product identifiers

Product name Pentane
Product Number PSR50332
Brand PureSynth research chemicals
CAS No. 109-66-0

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

Identified uses : Laboratory chemicals, Manufacture of substances

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 vapour.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic 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 vapour.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H411	Toxic 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.
P233	Keep container tightly closed.

P240 Ground and bond container and receiving equipment
P273 Avoid release to the environment.

Supplemental Hazard Statements(S)

EUH066 Repeated exposure may cause skin dryness or cracking.

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.

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. May form explosible dust-air mixture if dispersed.

SECTION 3: Composition / information on ingredients

3.1 Substances

Common names & Synonyms	Mol. formula	CAS number
n-pentane	CH ₃ (CH ₂) ₃ CH ₃	109-66-0
Component	Classification	Concentration
pentane	specific concentration limit STOT SE 3; H336 20 %	>= 90 - <= 100

SECTION 4: First aid measures

Description of first aid measures

General advice	Show this 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: 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: Firefighting measures

Extinguishing media	
Suitable extinguishing media	Carbon dioxide (CO ₂) 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	Specific hazards during fire- fighting: Combustible. Pay attention to flashback. Vapours are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours

Advice for fire-fighters	possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.
Further information	Hazardous combustion products: Carbon oxides In the event of fire, wear self-contained breathing apparatus. 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 vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. 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 considerations see section 13.

SECTION 7: Handling and storage

Precautions for safe handling	Advice on safe handling: Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Advice on protection against fire and explosion: 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.
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. Store under inert gas.
Specific end use(s)	Storage class (TRGS 510): 3, Flammable liquids Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls / Personal protection

Control parameters	Contains no substances with occupational exposure limit values.
Exposure controls	
Appropriate engineering controls	No data available
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 and Body protection	Flame retardant antistatic protective clothing.
Hand protection	Material: Nitrile rubber

Break through time: 480 min
Glove thickness: 0.4 mm
Protective index: Full contact

Material: Nitrile rubber
Break through time: 10 min
Glove thickness: 0.11 mm
Protective index: Splash contact

Respiratory protection

Remarks: 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.
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
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

Appearance	Form: Liquid Colour: Colourless
Odour	benzine-like
pH - Value	No data available
Density	0.623 g/cm ³ (20 °C)
Boiling Point	36.1 °C
Melting Point	-129,7 °C
Solubility in water	0.038 g/l (20 °C) pH: 7 partly soluble
Flash point	-40 °C (1.013,25 hPa)
Vapour pressure	No data available
Auto -ignition temperature	260 °C
Vapour density	No data available
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	log Pow: 3.45 (25 °C) pH: 7 Bioaccumulation is not expected.
Viscosity	Viscosity, dynamic: 0.224 mPa.s (25 °C) Viscosity, kinematic: No data available
Explosive properties	Not classified as explosive.
Upper / lower flammability or explosive limits	Lower explosion limit 1.4 %(V)
Oxidizing properties	none
Other safety information: No data available	

SECTION 10: Stability and reactivity

Reactivity	Vapours may form explosive mixture with air
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature).
Possibility of hazardous reactions	Violent reactions possible with: Nitric acid Strong oxidizing agents halogens
Condition to avoid	Warming.
Incompatible materials	rubber various plastic
Hazardous decomposition products	In the event of fire: see section 5

SECTION 11: Toxicological information

Acute toxicity	LD50 Oral - Rat - male and female - > 2000 mg/kg (OECD Test Guideline 401) LC50 Inhalation - Rat - male and female - 4 h - > 25.3 mg/l - vapour (OECD Test Guideline 403) Remarks: (in analogy to similar products) The value is given in analogy to the following substances: cyclopentane Dermal: No data available
Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation - 4 h (OECD Test Guideline 404)
Serious eye damage/eye irritation	Eyes - Rabbit Result: No eye irritation (OECD Test Guideline 405)
Respiratory or skin sensitization	Buehler Test - Guinea pig Result: negative (OECD Test Guideline 406)
Germ cell mutagenicity	Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: Regulation (EC) No. 440/2008, Annex, B.10 Result: negative Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: In vivo micronucleus test Species: Rat Cell type: Bone marrow Application Route: inhalation (vapour) Method: Mutagenicity (micronucleus test) Result: negative
Carcinogenicity	No data available
Reproductive toxicity	No data available

Specific target organ toxicity - single exposure	May cause drowsiness or dizziness. - Central nervous system
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	May be fatal if swallowed and enters airways. Aspiration hazard, Aspiration may cause pulmonary oedema and pneumonitis.
Additional Information	<p>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.</p> <p>RTECS: RZ9450000 Contact with eyes can cause, Redness, Blurred vision, provokes tears., Prolonged or repeated contact with skin may cause, defatting, Dermatitis, Central nervous system depression, Damage to the lungs.</p> <p>To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.</p> <p>Stomach - Irregularities - Based on Human Evidence</p>

SECTION 12: Ecological information

Toxicity

Toxicity to fish	<p>LC50 (Oncorhynchus mykiss (rainbow trout)): 4.26 mg/l</p> <p>End point: mortality</p> <p>Exposure time: 96 h</p> <p>Test Type: static test</p> <p>Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 203 GLP: yes</p>
Toxicity to daphnia and other aquatic invertebrates	<p>EC50 (Daphnia magna (Water flea)): 2.7 mg/l</p> <p>Exposure time: 48 h</p> <p>Test Type: static test</p> <p>Analytical monitoring: yes</p> <p>Remarks: (ECHA)</p>
Toxicity to algae	<p>ErC50 (Selenastrum capricornutum (green algae)): 10.7 mg/l</p> <p>Exposure time: 72 h</p> <p>Test Type: static test</p> <p>Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 201</p> <p>GLP: yes</p> <p>NOEC (Selenastrum capricornutum (green algae)): 7.51 mg/l</p> <p>Exposure time: 72 h</p> <p>Test Type: static test Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 201</p> <p>GLP: yes</p>
Toxicity to bacteria	No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	Toxic to aquatic life with long lasting effects.
Persistence and degradability	<p>Biodegradability:</p> <p>Test Type: aerobic</p> <p>Inoculum: activated sludge</p> <p>Concentration: 60 mg/l</p> <p>Result: Readily biodegradable.</p> <p>Biodegradation: 87 %</p> <p>Exposure time: 28 d</p>

	Method: OECD Test Guideline 301F
	GLP: yes
Bioaccumulation	Bioaccumulation: Remarks: No data available Partition coefficient: n-octanol/water: log Pow: 3.45 (25 °C) pH: 7 Remarks: Bioaccumulation is not expected.
Mobility in soil	No data available
Results of PBT and vPvB 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.
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	Avoid release to the environment. Do not empty into drains.

SECTION 13: Disposal considerations

Waste treatment methods	Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.
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SECTION 14: Transport information

	UN no.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR / RID	1265	PENTANES	3	II	YES
IMDG	1265	PENTANES	3	II	YES
IATA	1265	Pentanes	3	II	-

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: pentane Number on list 3 Number on list 40
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	Not applicable
Regulation (EU) No 2024/590 on substances that deplete the ozone layer	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	Not applicable
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Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E2 ENVIRONMENTAL HAZARDS P5c FLAMMABLE LIQUIDS

15.2 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.