

SAFETY DATA SHEET

according to 1907/2006/EC, Article 3

Revision date: 30/03/2023

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

1.1 Product identifiers

Product name	1-Chlorobutane
Product Number	PSR36745
Brand	PureSynth research chemicals
CAS No.	109-69-3

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

Identified uses : For HPLC

1.3 Details of the supplier of the safety data sheet

Company	PureSynth Research Chemicals Pvt. Ltd. A-27, A.P.I.E, Hyderabad, Telangana-500037
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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

Aspiration hazard (Category 1), H304

Long-term (chronic) aquatic hazard (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

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
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.
P240	Ground and bond container and receiving equipment.

P233	Keep container tightly closed.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor
P331	Do NOT induce vomiting.
Supplemental Hazard Statements	None

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
Butyl chloride	C ₄ H ₉ Cl	109-69-3
Component	Classification	Concentration
1-chlorobutane	Flam. Liq. 2; Asp. Tox. 1; Aquatic Chronic 3; H225, H304, H412	<= 100 %

SECTION 4: First aid measures

Description of first aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	After inhalation: fresh air.
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: Fire fighting measures

Extinguishing media Suitable extinguishing media	Carbon dioxide (CO ₂) Foam Dry powder
Special hazards arising from the substance or mixture	Carbon oxides Hydrogen chloride gas Combustible.

	Pay attention to flashback.
	Vapors are heavier than air and may spread along floors.
	Development of hazardous combustion gases or vapors possible in the event of fire.
Advice for fire-fighters	Forms explosive mixtures with air at ambient temperatures. In the event of fire, wear self-contained breathing apparatus.
Further information	Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. 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. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, and 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 (e.g. Chemizorb®). 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. Change contaminated clothing. Wash hands 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.
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	No data available
Exposure controls	
Appropriate engineering controls	No data available
Personal protective equipment:	
Eye / face protection	Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Skin protection	

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

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

SECTION 9: Physical and chemical properties

Appearance	Form: Liquid Colour: Colourless
Odour	stinging
pH - Value	No data available
Density	0.886 g/cm ³ at 25 °C - lit.
Boiling Point	77 - 78 °C - lit.
Melting Point	-123 °C - lit.
Solubility in water	ca.0.11 g/l at 20 °C - OECD Test Guideline 105- partly soluble
Flash point	-12 °C at ca.1.013,25 hPa - closed cup
Vapour pressure	120.6 hPa at 20 °C - OECD Test Guideline 104
Auto -ignition temperature	245 °C at 1.013.25 hPa
Vapour density	3.2 - (Air = 1.0)
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	log Pow: 2.66 at 20 °C - OECD Test Guideline 107 - Bioaccumulation is not expected.
Viscosity	No data available
Explosive properties	No data available
Upper / lower flammability or explosive limits	Upper explosion limit: 10.1 %(V) Lower explosion limit: 1.8 %(V)
Oxidizing properties	No data available

Other safety information:

Surface tension	63.2 mN/m at 0,1g/l at 20 °C - OECD Test Guideline 115
Relative vapour density	3.2 - (Air = 1.0)

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). Risk of explosion with: Alkali metals Alkaline earth metals
Possibility of hazardous reactions	sodium amide Risk of ignition or formation of inflammable gases or vapours with: Oxidizing agents Powdered light metals
Condition to avoid	Warming
Incompatible materials	various plastics, Light metals
Hazardous decomposition products	In the event of fire: see section 5

SECTION 11: Toxicological information

Acute toxicity	LD50 Oral - Rat - 2.200 mg/kg Remarks: (RTECS) LC50 Inhalation - Rat - male and female - 4 h - > 7,74 mg/l (OECD Test Guideline 403)
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) Buehler Test - Guinea pig
Respiratory or skin sensitization	Result: negative (OECD Test Guideline 406) Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Chromosome aberration test in vitro Test system: Chinese hamster cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473
Germ cell mutagenicity	Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative Test Type: Micronucleus test Species: Mouse Cell type: Bone marrow Application Route: Intraperitoneal Method: OECD Test Guideline 474

	Result: negative.
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	May be fatal if swallowed and enters airways.
Additional Information	Repeated dose toxicity - Rat - male and female - Oral - 90 Days - NOAEL (No observed adverse effect level) - 120 mg/kg - LOAEL (Lowest observed adverse effect level) - 250 mg/kg RTECS: EJ6300000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

Toxicity

Toxicity to fish	semi-static test LC50 - Brachydanio rerio (zebrafish) - ca. 75,6 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 452 mg/l - 48 h (Regulation (EC) No. 440/2008, Annex, C.2)
Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - > 450 mg/l - 72 h (Regulation (EC) No. 440/2008, Annex, C.3)
Toxicity to bacteria	static test EC50 - activated sludge - > 1.000 mg/l - 3 h (OECD Test Guideline 209) aerobic - Exposure time 28 d
Persistence and degradability	Result: 47, 2 % - Not readily biodegradable. (ISO 10708) Cyprinus carpio (Carp) - 6 Weeks at 25 °C - 0,5 mg/l(1-chlorobutane)
Bio accumulative potential	Bio concentration factor (BCF): 7,6 - 21 (OECD Test Guideline 305C)
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.
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
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ADR / RID	1127	CHLOROBUTANES	3	II	No
IMDG	1127	CHLOROBUTANES	3	II	No
IATA	1127	Chlorobutanes	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.

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous Substances.

Other regulations

Take note of Dir 94/33/EC on the protection of young people at work.

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.