

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

1.1 Product identifier

Product name	1-CHLOROBUTANE
CAS-No.	109-69-3
Product code	AR1031, GP1031, LC1031, RP1031

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

Identified uses	Chemical for analysis and production.
-----------------	---------------------------------------

1.3 Details of the manufacturer of the safety data sheet

Manufacturer	RCI LABSCAN LIMITED. 24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand
Telephone number	(662) 613-7911-4
Fax number	(662) 613-7915

1.4 Emergency Telephone Number

Emergency phone	(662) 613-7911-4
-----------------	------------------

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 toxicity (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 vapour.
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.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P316	IF SWALLOWED: Get medical help immediately.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P331	Do NOT induce vomiting.

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients**3.1 Substances**

Synonyms Butyl chloride, n-Butyl chloride, 1-Butyl chloride

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
109-69-3	203-696-6	602-059-00-3	CH ₃ (CH ₂) ₃ Cl	92.58 g/mol	<=100

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Concentration	Classification
1-Chlorobutane		
CAS-No 109-69-3	<=100%	Flammable liquids (Category 2), H225
EC-No 203-696-6		Aspiration hazard (Category 1), H304
EC-Index-No 602-059-00-3		Long-term (chronic) aquatic toxicity (Category 3), H412

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

SECTION 4: First aid measures**4.1 Description of first aid measures**

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.
Skin contact	Remove contaminated clothing and wash affected skin with soap and water. If signs of poisoning appear, treat as for inhalation. Obtain medical attention. Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.
Eye contact	If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.
Ingestion	Rinse mouth. Do not induce vomiting. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11

4.3 Indication of any immediate medical attention and special treatment needed

After swallowing, caution if victim vomits, risk of aspiration. Subsequently: Paraffin oil 3 ml/kg, Sodium sulfate 1 tablespoon/250 ml of water, Activated charcoal. No milk, No castor oil, No alcohol. Summon doctor. (Gastric lavage: only in case of emergency and with utmost caution).

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Extinguish with carbon dioxide, dry chemical or foam. In the event of fire, cool tanks with water spray.

5.2 Special hazards arising from the substance or mixture

Vapors may form explosive mixture with air at ambient temperature. Flash back possible over considerable distance.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

5.4 Further information

Standard procedure for chemical fires. Take measures to prevent electrostatic charging. Prevent firefighting water from entering surface water or groundwater.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

6.3 Methods and materials for containment and cleaning up

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel or chemical absorbent pads). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

6.4 Reference to other sections

For disposal see **Section 13**.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry, cool and well ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials. Store in original container. Electrical equipment should be protected to the appropriate standard.

7.3 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

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls

The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

Individual protection measures (Personal protective equipment, PPE)

Eye/face protection

Goggles giving complete protection to eyes.

Skin protection

Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.

Handle with gloves

- Full contact wears gloves from viton material.
- Splash contact wears gloves from butyl rubber material.

The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter A (EN 141 or EN 14387).

Environmental exposure controls

Prevent liquid entering sewers, basements and workpits.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Color	Colorless
Odour	Pungent
Odour Threshold	Not Available
pH	Not Available
Melting point/range	-123 °C
Boiling point/range	78.4 °C at 1013 hPa
Flash point	-17 °C (closed cup)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Explosion limits: lower	1.8 % (V)
upper	10.1 % (V)
Vapor Pressure	110 hPa at 20°C
Relative Vapor Density	3.2
Density	0.886 g/ml at 20°C
Water solubility	0.5 g/l at 20°C
Partition coefficient (n-octanol/water)	log Pow: 2.66
Auto-Ignition temperature	280 °C
Decomposition Temperature	Not Available
Viscosity	0.45 mPa.s at 20°C
Explosive properties	Not Explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

SECTION 10: Stability and reactivity

10.1 Reactivity

Highly inflammable, light sensitive, sensitive to air.

10.2 Chemical stability

Sensitive to light and air. Decompose on exposure to light and heat. Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Risk of explosion in contact with: alkali metals, metal powders, sodium amide, liquid oxygen.

The substance can react dangerously with: oxidizing agents, alkali hydroxide, light metal powders.

10.4 Conditions to avoid

Heating, flames, sparks and action of light (decomposition).

10.5 Incompatible materials

Alkali metals, light metals in powder form, sodium amides, oxidizing agents, strong bases.

10.6 Hazardous decomposition products

Combustion- and pyrolysis-gases of chlorine containing compounds contain hydrogen chloride, chlorine, phosgene, dioxins and other poisonous or corrosive substances in different concentrations.

Carbon monoxides, carbon dioxides, (Hazardous decomposition products from under fire condition).

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

LD₅₀ (oral, rat): 2200 mg/kg

LC₅₀ (inhalation, rat): 30.8 mg /l/ 4h

Skin corrosion/irritation

No skin irritation.

Serious eye damage/eye irritation

No eye irritation.

Respiratory or skin sensitization

Sensitisation test (guinea pig) is negative.

Germ cell mutagenicity

Bacterial mutagenicity : Ames test ; negative.

Mutagenicity (mammal cell test): chromosome aberration negative. (in vitro)

Carcinogenicity

NTP evaluation for carcinogenicity: negative in animals.

Reproductive toxicity

Not Available

Teratogenicity

Not Available

Specific target organ toxicity (STOT) - single exposure

Not Available

Specific target organ toxicity (STOT) - repeated exposure

Not Available

Aspiration hazard

May be fatal if swallowed and enters airways.

Further information

After absorption of toxic quantities; narcosis.

Possible symptoms; headache, vomiting, inebriation, Dizziness, unconsciousness.

The product should be handled with the care usual when dealing with chemicals.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	LC ₅₀ Brachydanio rerio (zebrafish): 75.6 mg/l /96h.
Toxicity to daphnia and other aquatic invertebrates	EC ₅₀ Daphnia magna: 452 mg/l /48h.
Toxicity to algae	IC ₅₀ Desmodesmus subspicatus: > 450 mg/l /72h.

12.2 Persistence and degradability

Biodegradability	47% /28d. Poor biodegradable.
------------------	-------------------------------

12.3 Bioaccumulative potential

Partition coefficient (n-octanol/water)	log Pow: 2.66 (experimental). No Bioaccumulation is to be expected (log P o/w 1-3)
---	---

12.4 Mobility in soil

Not Available

12.5 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.

12.6 Other adverse effects

Do not allow to enter waters, waste water or soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

SECTION 14: Transport information

Land Transport (ADR/RID)

UN Number	1127
UN proper shipping name	CHLOROBUTANES
Transport hazard class(es)	3
Packing group	II
Environmental hazards	No
Special precautions for user	Yes

Sea transport (IMDG)

UN Number	1127
UN proper shipping name	CHLOROBUTANES
Transport hazard class(es)	3
Packing group	II

Marine pollutant	No
Special precautions for user	Yes
EmS	F-E S-D

Air transport (IATA)

UN Number	1127
UN proper shipping name	CHLOROBUTANES
Transport hazard class(es)	3
Packing group	II
Environmental hazards	No
Special precautions for user	No

River transport (AND/ADNR)

(Not examined)

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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

Not Available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information**Recommended restrictions**

Take notice of labels and safety data sheets for the working. Chemicals Take necessary action to avoid static electricity discharge.

Reference

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.

Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany, Source: IFA for Databases on hazardous substances (GESTIS).

Further information

Contact to RCI Labscan Limited.

Revision Date

02/12/2024

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.