

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name: Cyclobutyl bromide

EC number: 224-530-9

CAS-No.: 4399-47-7

Product Code: GEO-00854

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:

Georganics Ltd., Koreničova 1, 811 03 Bratislava, Slovak Republic

Phone Number: +421 33 6403132, E-mail address: georganics@georganics.sk

1.4 Emergency telephone number: National Toxicological Information Centre, Tel: +421-2-54774166, Mob: +421 911 166 066

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 (CPL)

Flammable liquids (Category 2), H225

Skin irritation (Category 2), H315

Eye irritation (Category 2), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

2.1.2 Additional information: For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Hazard pictogram:



Signal word:

Danger

Hazard statements:

H225-Highly flammable liquid and vapour.

H315-Causes skin irritation.

H319-Causes serious eye irritation.

H335-May cause respiratory irritation.

Precautionary statements:

P210-Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P261-Avoid breathing dust/fume/gas/mist/vapours/spray.

P280-Wear protective gloves/protective clothing/eye protection/face protection.

P301+P312-IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P302+P352-IF ON SKIN: Wash with plenty of soap and water.

P304+P340-IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard information (EU): Not applicable

2.3 Other hazards

Lachrymator

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.

SECTION 3 - COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

Identification numbers	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008	SCL / M-factor / ATE
CAS: 4399-47-7 EC: 224-530-9	Cyclobutyl bromide	≤ 100%	H225;H315;H319;H335	-

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures

General notes

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 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

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5 - FIREFIGHTING MEASURES**5.1 Extinguishing media**

Suitable extinguishing media: dry powder, dry sand

Unsuitable extinguishing media: Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture - During a fire, irritating and toxic gases may be generated by thermal decomposition or combustion.

5.3 Advice for firefighters - Wear self-contained breathing apparatus and protective clothing to prevent contact with skin/eyes.

5.4 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

6.1 Personal precautions, protective equipment and emergency procedures - Wear protective equipment. Ensure adequate ventilation. Keep unprotected persons away. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Wash spill site after material pickup is complete.

6.2 Environmental precautions - Prevent further leakage or spillage if safe to do so. Do not let this chemical enter the environment.

6.3 Methods and materials for containment and cleaning up - Spilled product should be covered with suitable (non-flammable) absorbing material. Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation

6.4 Reference to other sections - See Section 7 for information on safe handling. See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling - For precautions see section 2.2.

Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities - Store in a dry, cool and well-ventilated place. Keep container closed when not in use. See Section 10 for stability and reactivity information.

7.3 Specific end use(s) - No further relevant information available

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 Control parameters****8.2 Exposure controls**

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels. Safety shower and eye bath.

Personal Protective Equipment

Eye and face protection: Wear chemical safety glasses.

Skin protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection: Wear appropriate protective mask with a filter against organic vapors.

Thermal hazard: No data available

Environmental exposure controls: Do not let product enter drains.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Physical state:	Liquid	Decomposition temperature:	No data available
Color:	Clear colourless	pH:	No data available
Odor:	No data available	Kinematic viscosity:	No data available
Freezing/Melting Point:	No data available	Solubility:	No data available
Boiling Point:	108 °C	Partition coefficient n-octanol/water (log value):	No data available
Flammability:	No data available	Vapor pressure:	No data available
Lower and upper explosion limit:	No data available	Density and/or relative density:	No data available
Flash Point:	22 °C	Relative vapor density:	No data available
Auto-ignition temperature:	No data available	Particle characteristics:	No data available

9.2 Other safety information - No data available

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity - No data available

10.2 Chemical stability - The product is chemically stable under standard ambient conditions (room temperature)

10.3 Possibility of hazardous reactions - No data available

10.4 Conditions to avoid - Heat, flames and sparks.

10.5 Incompatible materials - Strong oxidizing agents, Strong bases

10.6 Hazardous decomposition products - Carbon oxides, hydrogen bromide

SECTION 11 - TOXICOLOGICAL INFORMATION**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** - No data available**Skin irritation or corrosion** - Causes skin irritation**Serious eye damage / irritation** - Causes serious eye irritation.**Respiratory or skin sensitization** - No data available**Germ cell mutagenicity** - No data available**Carcinogenicity** - No data available**Reproductive toxicity** - No data available**Specific target organ system toxicity (STOT) - repeated exposure:** No data available**Specific target organ system toxicity (STOT) - single exposure:** No data available**11.2 Additional Information** - To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Other dangerous properties cannot be excluded. This substance should be handled with particular care.**SECTION 12 - ECOLOGICAL INFORMATION****12.1 Toxicity** - No data available**12.2 Persistence and degradability** - No data available**12.3 Bioaccumulative potential** - No data available**12.4 Mobility in soil** - No data 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 Endocrine disrupting properties** - No data available**12.7 Other adverse effects** - No data available**12.8 Additional information** - No data available**SECTION 13 - DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods**

Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal. The product must not be disposed of with municipal waste.

Contaminated packaging

Dispose of as unused product.

SECTION 14 - TRANSPORT INFORMATION**14.1 UN number:** ADR/RID: 1993 IMDG: 1993 IATA: 1993**14.2 UN proper shipping name:**

ADR/RID: FLAMMABLE LIQUID, N.O.S. (Cyclobutyl bromide)

IMDG: FLAMMABLE LIQUID, N.O.S. (Cyclobutyl bromide)

IATA: FLAMMABLE LIQUID, N.O.S. (Cyclobutyl bromide)

14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packing group

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user: No data available**14.7 Maritime transport in bulk according to IMO instruments** - No data available**SECTION 15 - REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 as amended. Environmental Protection Act 1990 as amended. Clean Air Act 1993 as amended. Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16th December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended.

15.2 Chemical safety assessment - No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16 - OTHER INFORMATION

Key to abbreviations and acronyms used in the safety data sheet

ATE - Acute Toxicity Estimate	Kow - octanol-water partition coefficient
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road	LC50 - Lethal Concentration to 50 % of a test population
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways	LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
CEN - European Committee for Standardisation	LE - Legal Entity
	LoW - List of Wastes
	(http://ec.europa.eu/environment/waste/framework/list.htm)
C&L - Classification and Labelling	LR - Lead Registrant
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008	M/I - Manufacturer / Importer
CAS# - Chemical Abstracts Service number	MS - Member States
CMR - Carcinogen, Mutagen, or Reproductive Toxicant	MSDS - Material Safety Data Sheet
CSA - Chemical Safety Assessment	OC - Operational Conditions
CSR - Chemical Safety Report	OECD - Organization for Economic Co-operation and Development
DNEL - Derived No Effect Level	OEL - Occupational Exposure Limit
DPD - Dangerous Preparations Directive 1999/45/EC	OJ - Official Journal
DSD - Dangerous Substances Directive 67/548/EEC	OR - Only Representative
DU - Downstream User	OSHA - European Agency for Safety and Health at work
EC - European Community	PBT - Persistent, Bioaccumulative and Toxic substance
ECHA - European Chemicals Agency	
	PEC - Predicted Effect Concentration
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)	PNEC(s) - Predicted No Effect Concentration(s)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)	PPE - Personal Protection Equipment
EEC - European Economic Community	(Q)SAR - Qualitative Structure Activity Relationship
EINECS - European Inventory of Existing Commercial Substances	REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
	RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
ELINCS - European List of notified Chemical Substances	RIP - REACH Implementation Project
	RMM - Risk Management Measure
EN - European Standard	SCBA - Self-Contained Breathing Apparatus
EQS - Environmental Quality Standard	SDS - Safety data sheet
EU - European Union	SIEF - Substance Information Exchange Forum
Euphrac - European Phrase Catalogue	SME - Small and Medium sized Enterprises
EWC - European Waste Catalogue (replaced by LoW – see below)	STOT - Specific Target Organ Toxicity
GES - Generic Exposure Scenario	(STOT) RE - Repeated Exposure
GHS - Globally Harmonized System	(STOT) SE - Single Exposure
IATA - International Air Transport Association	SVHC - Substances of Very High Concern
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air	UFI - Unique Formula Identifier
IMDG - International Maritime Dangerous Goods	UN - United Nations
IMSBC - International Maritime Solid Bulk Cargoes	vPvB - Very Persistent and Very Bioaccumulative
IT - Information Technology	
IUCLID - International Uniform Chemical Information Database	
IUPAC - International Union for Pure Applied Chemistry	
JRC - Joint Research Centre	

The information contained in the SDS are compiled according to the present knowledge of the manufacturer. It does not represent any guarantee of the properties of the product. SDS shall be used only as a guide. Georganics Ltd. is not liable for damages incurred in the handling or contact with chemicals.