

Material Safety Data Sheet
according to Regulation (EC) No. 1907/2006

CYCLOBUTYL CHLOROFORMATE

Revision date 22.05.2025
Version 1
Replaces version from -

1. Identification of the substance/Mixture and of the company/undertaking

1.1 Product identifier

Product name Cyclobutyl chloroformate
CAS-No. 81228-87-7

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

Identified uses Laboratory chemicals, research and development use only.

1.3 Details of the supplier of the safety data sheet

Name Valsynthese SA
Factory address Valsynthese SA
Fabrikstrasse 48
PO Box 636
3900 Brig / Switzerland
Office address Valsynthese SA
Societe Suisse des Explosifs Group
PO Box 636
3900 Brig / Switzerland

Information Departement This number is available only during office hours.
Phone +41 27 922 71 11
E-Mail (Responsible person):
msds@sse-group.com

1.4 Emergency Phone Number +41 27 922 71 11 (only during office hours) or
Toxicological Information Centre in Switzerland: Tel. 145
or +41 (0) 44 251 51 51

2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids (Category 3), H226
Acute toxicity, oral (Category 3), H301
Acute toxicity, dermal (Category 3), H311
Acute toxicity, inhalation (Category 3), H331
Skin corrosion/irritation (Category 1B), H314

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

Hazard pictogram(s)



Signal word

Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H314	Causes severe skin burns and eye damage.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing.
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 Statements

none

2.3 Other hazards

Lacrimator

3. Composition / Information on ingredients

3.1 Substance

Product name	Cyclobutyl chloroformate
Molecular formula	C ₅ H ₇ ClO ₂
Molecular weight	134.5606 g/mol
CAS-No.	81228-87-7

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

Component	Classification	Concentration
Cyclobutyl chloroformate		
CAS-No. 81228-87-7	Flam. Liq. 3, Acute Tox. 3, Skin. Corr. 1B, H226, H301, H311, H331, H314	<=100%

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

4. First-aid measures

4.1 Description of first aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If swallowed	If swallowed, wash out mouth with water provided person is conscious. Call a physician.
If inhaled	If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.
In case of skin contact	In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.
In case of eye contact	In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available



5. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media Sand, carbon dioxide, dry chemical powder, or appropriate foam.

5.2 Special hazards arising from the substance or mixture

Carbon monoxide
Carbon dioxide
Hydrogen chloride
Danger of containers bursting upon heating.

5.3 Advice for fire fighters

Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: remove movable containers if safe to do so.

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5.4 Additional information

No data available

6. Accidental release measures

6.1 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, consult an expert.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and material 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.

6.4 Reference to other sections

For further and detailed information see section 8 and 13.

7. Handling and storage

7.1 Precautions for safe handling

Handling is performed in a well ventilated place. Wear suitable protective equipment. Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Wash hands and face thoroughly after handling.



7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed and upright. Avoid overheating. Store in a dry and well-ventilated place at -10°C.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. Exposure controls / Personal protection

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure 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). Tightly fitting safety goggles.
Skin protection	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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Body Protection	Flame retardant antistatic protective clothing.
Respiratory protection	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 ABEK. 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.
Environmental exposure controls	Do not let product enter drains. Risk of explosion.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colorless
Odor	No data available



pH value	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Relative density	No data available
Water solubility	No data available
Partition coefficient: n-octanol/water	1.473
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Particle characteristics	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other information

No data available

10. Stability and reactivity

10.1 Reactivity

Compound is hydrolytically unstable and can decompose in presence of water.

10.2 Chemical stability

Stable under specified storage temperature.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

In the event of fire: see section 5



11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Eye damage/irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
STOT-single exposure	No data available
STOT-repeated exposure	No data available
Aspiration hazard	No data available

11.2 Additional information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulation potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available



13. Disposal considerations

13.1 Waste treatment methods

Product

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as unused product.

14. Transport information

14.1 UN Number

ADR/RID: 2742

IMDG: 2742

IATA: 2742

14.2 UN proper shipping name

ADR/RID:
CHLOROFORMATES, TOXIC,
CORROSIVE, FLAMMABLE,
N.O.S. (cyclobutyl
chloroformate)

IMDG: CHLOROFORMATES,
TOXIC, CORROSIVE,
FLAMMABLE, N.O.S.
(cyclobutyl
chloroformate)

IATA: Chloroformates, toxic,
corrosive, flammable, n.o.s.
(cyclobutyl chloroformate)

14.3 Transport hazard class(es)

ADR/RID: 6.1 (3, 8)

IMDG: 6.1 (3, 8)

IATA: 6.1 (3, 8)

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

15. Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

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



16. Other information

16.1 Information regarding the revision of the safety data sheet

Version 1 based on the classification according to Regulations (EC) No 1272/2008, (EU) 878/2020 and (EU) 707/2023.

16.2 Full text of H-Statements referred to under sections 2 and 3

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H314	Causes severe skin burns and eye damage.

16.3 Additional information

The information contained herein is in conformity with EU Directive EC 1907/2006 and EC 1272/2008, and is believed to be accurate and represents the best information currently available to us on the date of publication. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Valsynthese SA be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Valsynthese SA has been advised of the possibility of such damages.

