

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

- 1.1. Product identifier:
1-CHLOROETHYLCYCLOHEXYL CARBONATE
- IUPAC name: 1-chloroethylcyclohexyl carbonate
International chemical identification: Cyclohexyl 1-chloroethyl carbonate
CAS number: 99464-83-2
EC number: 444-950-8
Index number: 607-667-00-2
Registration number: not available.
- 1.2. Relevant identified uses of the substance and uses advised against:
Organic synthesis intermediate for industrial use.
- 1.3. Details of the supplier of the safety data sheet:
FRAMOCHEM FRENCH-HUNGARIAN FINE CHEMICALS LTD.
3700 Kazincbarcika, Szerviz út 5, Pf. 504
Telephone: +36 (48) 311-991
Fax: +36 (48) 512-162
- 1.3.1. Responsible person: -
E-mail: info@framochem.hu
- 1.4. Emergency telephone number: **Public Toxicological Health Service (ETTSZ)**
1096 Budapest, Nagyvárad tér 2.
Tel.: 06 1 476 6464, 06 80 201 199 (0-24 h)

SECTION 2: HAZARDS IDENTIFICATION

- 2.1. Classification of the substance:
- Classification according to Regulation 1272/2008/EC (CLP):
Skin Sens. 1 – H317
Muta. 2 – H341
- Warning H statements:**
H317 – May cause an allergic skin reaction.
H341 - Suspected of causing genetic defects
- Classification according to Directive 67/548/EEC:
Xn; Harmful – R68 (Muta. cat. 3)
Xi; Irritant - R43 (Sensitization)
- R phrases** referring to the hazards/risks:
R 43 - May cause sensitisation by skin contact
R 68 - Possible risk of irreversible effects.

- 2.2. Label elements
- IUPAC name: 1-chloroethylcyclohexyl carbonate
CAS number: 99464-83-2
EC number: 444-950-8

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GHS07



GHS08



WARNING

Warning H statements:

H317 – May cause an allergic skin reaction.

H341 - Suspected of causing genetic defects

Precautionary P statements:

P201 – Obtain special instructions before use.

P202 – Do not handle until all safety precautions have been read and understood.

P262 – Do not get in eyes, on skin, or on clothing.

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

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

P308 + P313 – IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards:

The substance does not meet the PBT criteria according to Annex XIII of Regulation 1907/2006/EC.

Information concerning specific hazards for human and environment: see Section 11 and 12.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

IUPAC name: 1-chloroethylcyclohexyl carbonate

CAS number: 99464-83-2

EC number: 444-950-8

Index number: 607-667-00-2

Formula: C₉H₁₅ClO₃

Molar weight: 206.7 g/mol

Purity: ≥ 99 %

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

GENERAL INFORMATION: Obtain immediate medical attention and show him the label!

IN CASE OF INGESTION:

Measures:

- Obtain immediate medical attention and show him the label!
- Place the victim into comfortable position.
- Do not give the victim anything to eat or drink, and do not induce vomiting if the victim is unconscious.
- Flush the mouth of the victim with clean water.
- If the victim is conscious, give him 2-4 glasses of milk or water to drink.

IN CASE OF INHALATION:

Measures:

- Take the victim into fresh air, loosen his clothes and let him rest.
- If the breathing is labored, give him oxygen.
- If the breathing has stopped, give artificial respiration.
- Obtain immediate medical attention and show him the label.

IN CASE OF SKIN CONTACT:

Measures:

- Immediately remove the contaminated clothes.
- Immediately wash the contaminated area with plenty of water and soap (for 15 minutes)!

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- If symptoms occur, obtain immediate medical attention and show him the safety data sheet or the label.

IN CASE OF EYE CONTACT:

Measures:

- Flush with plenty of flowing water holding eyelids apart (for at least 15 minutes).
 - Obtain immediate medical attention and show him the label!
- 4.2. Most important symptoms and effects, both acute and delayed:
See section 11 for information on health effects and symptoms.
- 4.3. Indication of any immediate medical attention and special treatment needed:
See section 11 for information on health effects and symptoms.

SECTION 5: FIRE-FIGHTING MEASURES

- 5.1. Extinguishing media:
- 5.1.1. Suitable extinguishing media:
In case of smaller fire: dry chemical, carbon dioxide, foam.
In case of bigger fire: water spray or water mist.
- 5.1.2. Unsuitable extinguishing media:
Water.
- 5.2. Special hazards arising from the substance or mixture:
Hazardous decomposition products:
Smoke and other combustion products (hydrochloric acid, carbon dioxide and carbon monoxide).
The inhalation of such combustion products can cause serious adverse effects on health!
- 5.3. Advise for fire fighters
Wear appropriate full protective clothing and self-contained breathing apparatus (self-rescue breathing apparatus). These means can protect from the skin and eye contact and from the inhalation of the hazardous gases and smoke.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1. Personal precautions, protective equipment and emergency procedures:
- 6.1.1. For non-emergency personnel:
Keep unprotected people away, allow only well trained experts wearing suitable protective clothing to abide in the field of accident.
- 6.1.2. For emergency responders:
Evacuate the unauthorized persons from the place of the accident. Remove all ignition sources from the affected area. Close the designated area. Ensure adequate ventilation.
- 6.2. Environmental precautions:
Dispose of spillage and waste (product/packaging) in accordance with all applicable environmental laws. Do not allow to enter sewers/soil/surface or ground water. Notify the respective authorities in accordance with local law in the case of environmental pollution immediately.
- 6.3. Methods and material for containment and cleaning up:
Collect the spilled material with inert, non-combustible, mineral absorbent (sand, earth, and perlite), then place into a suitable, closed, properly labelled chemical waste container for disposal. During disposal wear suitable personal protective equipment.
- 6.4. Reference to other sections:
For further and detailed information see section 8 and 13.

SECTION 7: HANDLING AND STORAGE

- 7.1. Precautions for safe handling:
Observe conventional hygiene precautions.
Avoid contact of the product with skin, eyes and clothing.
Technical measures:
Ensure adequate ventilation/local exhaust.
Precautions against fire and explosion:
Use non sparking tools.
- 7.2. Conditions for safe storage, including any incompatibilities:
Technical measures and storage condition:
Keep in original, closed and appropriately labelled container.
The place of storage has to be properly ventilated and cleanable.
Store in cool and dry place.
Follow all instructions on the label.
Keep away from moisture.
Ensure adequate ventilation.

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Incompatible materials: strong oxidizing agents.

Packaging material: metal container lined with polyethylene or polyethylene container. Do not use metal containers without lining.

7.3. Specific end use(s):

No specific instructions available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Exposure limit values:

The substance is not regulated with exposure limit value.

DNEL		Routes of exposure	Exposure frequency:	Remarks:
Worker	Consumer			
no data available	no data available	Dermal	Short term (acute) Long term (repeated)	no data available
no data available	no data available	Inhalative	Short term (acute) Long term (repeated)	no data available
no data available	no data available	Oral	Short term (acute) Long term (repeated)	no data available

PNEC			Exposure frequency:	Remarks:
Water	Soil	Air		
no data available	no data available	no data available	Short term (single use) Long term (continuous)	no data available
no data available	no data available	no data available	Short term (single use) Long term (continuous)	no data available
no data available	no data available	no data available	Short term (single use) Long term (continuous)	no data available

8.2. Exposure controls:

In case of a hazardous material with no controlled concentration limit it is the employer's duty to keep concentration levels down to a minimum achievable by existing scientific and technological means, where the hazardous substance poses no harm to workers.

8.2.1 Appropriate engineering controls

In pursuance of work is proper foresight needed to avoid spilling onto clothes and floors and to avoid contact with eyes and skin.

Ensure adequate ventilation, especially in closed areas.

Do not eat or smoke during the processing.

Do not inhale spray/vapour.

Wash thoroughly after the work hours.

In the vicinity of the workplace safety shower and eye wash fountain has to be installed.

8.2.2. Individual protection measures, such as personal protective equipment:

1. Eye/face protection: use appropriate protective glasses/protective mask according to EN 166.
2. Skin protection:
 - a. Hand protection: use adequate protective gloves according to EN 374.
 - b. Other: use adequate acid resistant protective clothes according to EN ISO 6529.
3. Respiratory protection: use adequate respirator (for organic vapours) according to EN 136, EN 141.
4. Thermal hazard: none known.

8.2.3. Environmental exposure controls:

No specific prescription.

The requirements detailed in Section 8 assume skilled work under normal conditions and usage of the product for appropriate aims. If conditions differ from normal or work is carried out under extreme conditions an expert's advice should be sought out before deciding upon further protective measures.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

Parameter

Test method:

Remarks:

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1. Appearance:	colourless liquid	
2. Odour:	characteristic	
3. Odour threshold:	no data available	
4. pH value:	no data available	
5. Melting point/ freezing point:	- 16 °C	
6. Initial boiling point/boiling range:	123 °C	20 mbar
7. Flash point:	107 °C	
8. Evaporation rate:	no data available	
9. Flammability:	no data available	
10. Upper/lower flammability or explosive limits:	no data available	
11. Vapour pressure:	80 Pa	20 °C
12 Vapour density:	7,1	air = 1
13. Relative density:	1, 128 g/cm ³	20 °C
14. Solubility(ies):	immiscible with water, soluble in common solvents	
15. Partition coefficient: n-octanol/water:	no data available	
16. Self-ignition temperature:	292 °C	
17. Degradation temperature:	no data available	
18. Viscosity:	no data available	
19. Explosive properties:	no data available	
20. Oxidizing properties:	no data available	
9.2. <u>Other information:</u>	No data available.	

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:
Stable at room temperature and general conditions of work.
- 10.2. Chemical stability:
Stable at room temperature and general conditions of work.
- 10.3. Possibility of hazardous reactions:
Reacts with water.
- 10.4. Conditions to avoid:
Contact with water.
- 10.5. Incompatible materials:
Strong oxidizing agents.
- 10.6. Hazardous decomposition products:
In case of thermal decomposition, hydrochloric acid is formed.

SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. Information on toxicological effects:
Acute toxicity: none known.
Skin corrosion/irritation: none known.
Serious eye damage/eye irritation: none known.
Respiratory or skin sensitisation: may cause an allergic skin reaction.
Germ cell mutagenicity: suspected of causing genetic defects. Mutagenic category 2 (two positive in vitro test and a slightly positive micronucleus test).
Carcinogenicity: none known.
Reproductive toxicity: none known.
STOT-single exposure: none known.
STOT-repeated exposure: none known.
Aspiration hazard: none known.
- 11.1.1. For substances subject to registration, brief summaries of the information derived from the test conducted:
No data available.
- 11.1.2. Relevant toxicological properties of the hazardous substances:
Acute toxicity (LD₅₀):
LD₅₀ (oral, rat): > 2000 mg/kg

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LD₅₀ (dermal, rabbit): > 2000 mg/kg.

Irritation: none known.

Sensitization: may cause sensitization.

Subacute and chronic toxicity:

NOEL = 1000 mg/kg (28 day, rat)

11.1.3. Information on likely routes of exposure:

Ingestion, inhalation, skin contact, eye contact.

11.1.4. Symptoms related to the physical, chemical and toxicological characteristics:

Acute effects:

Ingestion: no data available.

Inhalation: no data available.

Skin contact: no data available.

Eye contact: may produce irritant symptoms.

11.1.5. Delayed and immediate effects as well as chronic effects from short and long-term exposure:

May cause an allergic skin reaction.

Suspected of causing genetic defects

11.1.6. Interactive effects:

No data available.

11.1.7. Absence of specific data:

No information.

11.1.8. Other information:

Summarized evaluation of the CMR properties:

Mutagenic category 2 (two positive in vitro test and a slightly positive micronucleus test).

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

Toxicity (LC₅₀):

LC₅₀ (Trout): 53.3 mg/l/96h

EC₅₀ (Daphnia magna): 320 mg/l/48h

ErC₅₀ (Algae): 76 mg/l/72 h

12.2. Persistence and degradability

In case of contact with water, decomposes.

12.3. Bioaccumulation potential:

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the criteria of PBT or vPvB.

12.6. Other adverse effects:

No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods:

Disposal according to the local regulations.

13.1.1. Information regarding the disposal of the product:

The product can be incinerated in a chemical incinerator equipped with an afterburner and scrubber.

European Waste Code:

No appropriate EWC code can be given for the substance, since the identification of the proper code can be done with the method of use defined by the user of the substance. The European waste code number has to be determined after a discussion with a specialist dealing with waste disposal.

13.1.2. Information regarding the disposal of the packaging:

According to the consideration regarding the product.

The contaminated packaging should be cleaned with alkaline solution.

13.1.3. Physical/chemical properties that may affect waste treatment options shall be specified:

None known.

13.1.4. Sewage disposal:

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- None known.
13.1.5. Special precautions for any recommended waste treatment:
No data available.

SECTION 14: TRANSPORT INFORMATION

- 14.1. UN Number:
1760
- 14.2. UN proper shipping name:
ADR/RID: CORROSIVE LIQUID, M.N.N. (1-chloroethylcyclohexyl carbonate)
IMDG: CORROSIVE LIQUID, N.O.S (Chloro-1-ethylcyclohexyl carbonate)
IATA: CORROSIVE LIQUID, N.O.S (Chloro-1-ethylcyclohexyl carbonate)
- 14.3. Transport hazard class(es)
ADR/RID: 8. C9
IMDG: 8
IATA: 8
- 14.4. Packaging group
ADR/RID: III
IMDG: III
IATA: III
- 14.5. Environmental hazard
ADR/RID: no IMDG: no IATA: none
- 14.6. Special precautions for user:
No relevant information available.
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
Not applicable.

SECTION 15: REGULATORY INFORMATION

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:
REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a 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

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 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

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- 15.2. Chemical safety assessment: no information available.

SECTION 16: OTHER INFORMATION

Information regarding the revision of the safety data sheet:
The safety data sheet has been revised according to Regulation 453/2010/EU (Section 1-16).
There is no change in the hazard classification compared to the previous version.
Full text of the abbreviations in the safety data sheet:
DNEL: Derived no effect level. PNEC: Predicted no effect concentration. CMR effects: carcinogenicity, mutagenicity and toxicity for reproduction. PBT: Persistent, bioaccumulative and toxic. vPvB: very persistent and very bioaccumulative. n.d.: not defined. n.a.: not applicable.

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Data sources: previous version of the safety data sheet (30. 01. 2015.)

Relevant R-Phrases (number and full text) of Section 2 and 3:

R 43 - May cause sensitisation by skin contact

R 68 - Possible risk of irreversible effects.

Relevant H-Phrases (number and full text) of Section 2 and 3:

H317 - May cause an allergic skin reaction.

H341 - Suspected of causing genetic defects

Training advice: no data available.

This safety data sheet had been prepared on the basis of information provided by the manufacturer/supplier and conform to the relevant regulations.

The information, data and recommendations contained herein are provided in good faith, obtained from reliable sources and believed to be true and accurate as of the date issued; however, no representation is made as to the comprehensiveness of the information. The SDS shall be used only as a guide for handling the product; in the course of handling and using the product other considerations may arise or be required.

Users are cautioned to determine the appropriateness and applicability of the above information to their particular circumstances and purposes and assume all risk associated with the use of this product. It is the responsibility of the user to fully comply with local, national and international regulations concerning the use of this product.

Safety data sheet was prepared by: ToxInfo Ltd.

Professional help regarding the explanation of the safety data sheet:

+36 70 335 8480; info@msds-europe.hu

Download of safety data sheet:

