

## SAFETY DATA SHEET

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

1.1. Product identifier:

**HEXYL CHLOROFORMATE**

Synonym: Chloroformic Acid Hexyl Ester

CAS number: 6092-54-2

EU number: 228-036-4

Index number: 607-064-00-4

Registration number:

Registration number is not available for this substance since this substance or its use is exempted from registration based on Article 2 of REACH regulation, or registration is not necessary due to the annual tonnage band, or the registration is scheduled to a later registration date.

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 str. 5., POB. 504

Telephone: +36 (48) 311-991

Fax: +36 (48) 512-162

1.3.1. Responsible person:

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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):

Acute Tox (oral) 3 – H301

Acute Tox. 3 (dermal) – H311

Skin Corr. 1B – H314

Acute Tox. (inhalative) – H331

**Warning H statements:**

**H301** – Toxic if swallowed.

**H311** – Toxic in contact with skin.

**H314** – Causes severe skin burns and eye damage.

**H331** – Toxic if inhaled.

Classification according to Directive 67/548/EEC:

T; Toxic – R 23/24/25

C; Corrosive – R34

**R phrases** referring to the hazards/risks:

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**R 23/24/25** - Toxic by inhalation, in contact with skin and if swallowed.  
**R 34** - Causes burns.

## 2.2. Label elements

IUPAC name: Chloroformic Acid Hexyl Ester  
CAS number: 6092-54-2  
EU number: 228-036-4



**DANGER**

### Warning **H statements:**

**H301** – Toxic if swallowed.  
**H311** – Toxic in contact with skin.  
**H314** – Causes severe skin burns and eye damage.  
**H331** – Toxic if inhaled.

### Precautionary **P statements:**

**P202** – Do not handle until all safety precautions have been read and understood.  
**P273** – Avoid release to the environment.  
**P280** – Wear protective gloves/protective clothing/eye protection/face protection.  
**P305 + P351 + P338** – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**P310** – Immediately call a POISON CENTER or doctor/physician.  
**P405** – Store locked up.  
**P501** – Dispose of contents/container to hazardous waste collection point.

## 2.3. Other hazards:

**The substance meets the PBT criteria according to Annex XIII of Regulation 1907/2006/EC:** No.  
Information concerning specific hazards for human and environment: See Section 11.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

IUPAC name: Chloroformic Acid Hexyl Ester  
CAS number: 6092-54-2  
EU number: 228-036-4  
Formula: C<sub>7</sub>H<sub>13</sub>ClO<sub>2</sub>  
Molar weight: 164, 63  
Purity: > 99, 6

**Other hazardous contaminant / Concentration:** The product contains phosgene and hydrochloric acid in traces.  
**Other hazardous additives / Concentration:** The presence of hazardous additive is not known.

## SECTION 4: FIRST AID MEASURES

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#### 4.1. Description of first aid measures:

GENERAL INFORMATION: Transport the injured into the hospital.

##### IN CASE OF INGESTION:

Measures:

- Obtain immediate medical attention and show him the label or this safety data sheet.

##### IN CASE OF INHALATION:

Measures:

- Take the victim into fresh air, loosen his clothes and let him rest.
- If the victim is unconscious and breathing, place him into recovery position.
- Obtain immediate medical attention and show him the label or this safety data sheet.

##### 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)!
- If symptoms occur, obtain immediate medical attention and show him 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 or this safety data sheet.

#### 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:

Water spray, dry powder or foam.

##### 5.1.2. Unsuitable extinguishing media:

Water.

#### 5.2. Special hazards arising from the substance or mixture:

Corrosive substance, reacts violently with water.

During the thermal decomposition of the product, toxic gases/vapours may be formed.

#### 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 for 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 the substance and the resulting waste 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, 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.

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Avoid contact of the product with skin, eyes and clothing.

Technical measures:

Local vapour suction is needed while handling the product.

Precautions against fire and explosion:

No specific prescription.

7.2. Conditions for safe storage, including any incompatibilities:

Technical measures and storage condition:

Keep in original, closed and labelled container.

The place of storage has to be properly ventilated and cleanable.

Store in dry place.

Follow all instructions on the label.

Store away from heat.

Incompatible materials: water, alcohols, amines, bases, acids.

Packaging material: container lined with adequate polyethylene.

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 the place of regular use/in the workplace, hand washing facility should be available. Disinfectant should be available.

Ensure adequate ventilation, especially in closed areas.

Do not eat or smoke during the processing.

Do not inhale the vapours.

Keep away from skin and eyes.

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:

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- a. Hand protection: use appropriate protective gloves according to EN 374.
  - b. Other: use appropriate, 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:
1. <b>Appearance:</b>	colourless liquid		
2. <b>Odour:</b>	characteristic		
3. Odour threshold:	no data available		
4. pH value:	not applicable		
5. Melting point/ freezing point:	< 21 °C		
6. Initial boiling point/boiling range:	60 – 61 °C	10 Pa	
7. Flash point:	61 °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:	4 Pa	20 °C	
12. Vapour density:	5.6		
13. Relative density:	no data available		
14. Solubility(ies):	reacts with water		
15. Partition coefficient: n-octanol/water:	not applicable		
16. Self-ignition temperature:	no data available		
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. Other information:

Density (20 °C): 1.007 g/cm<sup>3</sup>

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:  
Stable at room temperature.
- 10.2. Chemical stability:  
Stable at room temperature.  
Decomposes due to heat, moist air or water.
- 10.3. Possibility of hazardous reactions:  
Reacts with alkalis, water, acids, amines and alcohols.
- 10.4. Conditions to avoid:  
Contact with water.
- 10.5. Incompatible materials:  
Alkalis, water, acids, amines and alcohols.
- 10.6. Hazardous decomposition products:  
In case of thermal decomposition carbon monoxide, hydrogen chloride gas and carbon dioxide are formed.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects:

Acute toxicity: Toxic if swallowed. Toxic if inhaled. Toxic in contact with skin.  
Skin corrosion/irritation: Causes severe skin burns and eye damage.

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Serious eye damage/eye irritation: Causes severe skin burns and eye damage.

Respiratory or skin sensitisation: none known.

Germ cell mutagenicity: none known.

Carcinogenicity: none known.

Reproductive toxicity: none known.

STOT-single exposure: may cause respiratory irritation.

STOT-repeated exposure: none known.

Aspiration hazard: none known.

Toxic if swallowed.

Toxic in contact with skin.

Causes severe skin burns and eye damage.

Toxic if inhaled.

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 (oral, rat): 300 – 500 mg/kg

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:**

Corrosive substance. In case of inhalation, ingestion or absorption through skin is toxic, may cause fatal poisoning! The product extremely destructs the tissues, the mucous membranes, the upper respiratory tract, the eyes and the skin.

Ingestion: Toxic! Mucous membrane irritation and burning is likely.

Inhalation: Toxic! The inhalation of the vapors may cause mucous membrane irritation, and it may cause convulsions and inflammation in the larynx and in the bronchia.

May cause burning in the respiratory tract. Pneumonia, pulmonary edema may occur.

Symptoms of the exposition: burning feeling, coughing, labored breath, inflammation of the larynx, short breath, headache, nausea, vomiting.

Skin contact: Toxic, corrosive substance, causes skin irritation.

Eye contact: It may cause serious eye damage, the injury of the cornea, the deterioration of the eyesight, blindness.

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

Toxic if swallowed.

Toxic in contact with skin.

Causes severe skin burns and eye damage.

Toxic if inhaled.

11.1.6. Interactive effects:

No data available.

11.1.7. Absence of specific data:

No information.

11.1.8. Other information:

No data available.

## SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

LC<sub>50</sub> (aerosol, rat) 0, 880 mg/l/4h

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

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:

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- 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:  
The packaging material contaminated with hazardous waste should be disposed according to the local regulations.  
The emptied packaging material should be collected and disposed according to the pertinent regulation.
- 13.1.3. Physical/chemical properties that may affect waste treatment options shall be specified:  
None known.
- 13.1.4. Sewage disposal:  
None known.
- 13.1.5. Special precautions for any recommended waste treatment:  
No data available.

## SECTION 14: TRANSPORT INFORMATION

- 14.1. UN Number:  
3277
- 14.2. UN proper shipping name:  
ADR/RID: CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S. (Hexyl-chloroformate)  
IMDG: CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S. (Hexyl-chloroformate)  
IATA: CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S. (Hexyl-chloroformate)
- 14.3. Transport hazard class(es)  
ADR/RID: 6.1 (8)  
IMDG: 6.1 (8)  
IATA: 6.1 (8)
- 14.4. Packaging group  
ADR/RID: II  
IMDG: II  
IATA: II
- 14.5. Environmental hazard  
ADR/RID: no  
IMDG: no  
IATA: no
- 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.

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## 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).

The classification has been amended according to Regulation 1272/2008/EC (CLP) and its amendments.

Full text of the abbreviations in the safety data sheet:

DNEL: Derived no effect level. PNEC: Predicted no effect concentration. CMR effects: carcinogenity, mutagenicity and toxicity for reproduction. PBT: Persistent, bioaccumulative and toxic. vPvB: very persistent and very bioaccumulative. n.d.: not defined. n.a.: not applicable.

Data sources: information submitted by the manufacturer.

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

**R 23/24/25** - Toxic by inhalation, in contact with skin and if swallowed.

**R 34** - Causes burns.

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

**H301** - Toxic if swallowed.

**H311** - Toxic in contact with skin.

**H314** - Causes severe skin burns and eye damage.

**H331** - Toxic if inhaled.

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:

