

SAFETY DATA SHEET

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

1.1. Product identifier:

Phenyl chloroformate

Synonym: Phenyl methyl chloroformate

CAS number: 1885-14-9

EU number 217-547-8

Registration number: 01-2119957121-45-0001; Transported isolated intermediate.

1.2. 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: -

E-mail: info@framochem.hu

1.4. Emergency telephone number:

Public Toxicological Health Service (ETTSZ)

1096 Budapest, Nagyváradi 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. 4 (oral) - H302

Skin Corr. 1 -H314

Warning H statements:

H302 – Harmful if swallowed.

H314 – Causes severe skin burns and eye damage.

Classification according to Directive 67/548/EEC:

C; Corrosive - R34

Xn; Harmful - R22

R phrases referring to the hazards/risks:

R 22 - Harmful if swallowed.

R 34 - Causes burns.

2.2. Label elements

IUPAC name: Phenyl chloroformate

CAS number: 1885-14-9

EU number: 217-547-8

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DANGER

Warning H statements:

H302 – Harmful if swallowed.

H314 – Causes severe skin burns and eye damage.

Precautionary P statements:

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

P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

P310 – Immediately call a POISON CENTER or doctor/physician.

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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

IUPAC name: Phenyl chloroformate

CAS number: 1885-14-9

EU number: 217-547-8

Synonym: Phenyl methyl chloroformate Chlorformate-phenyl ester

Formula: $C_7H_5ClO_2$

Molar mass: 156.5

Purity: > 99.8

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

GENERAL INFORMATION: Transport the injured into the hospital.

IN CASE OF INGESTION:

Measures:

- Obtain immediate medical help and/or take the victim to the hospital.

IN CASE OF INHALATION:

Measures:

- Take the victim into fresh air, loosen his clothes and let him rest (recovery position is recommended) and protect from cooling down.
- Obtain immediate medical help and/or take the victim to the hospital!

IN CASE OF SKIN CONTACT:

Measures:

- Immediately remove the contaminated clothing and shoes.
- The affected skin surface should be flushed/cleaned with plenty of water and soap for at least 15 minutes, if possible, under a shower.
- Obtain immediate medical help and/or take the victim to the hospital.

IN CASE OF EYE CONTACT:

Measures:

- In case of contact with eyes flush with plenty of flowing water holding eyelids apart and moving the eyeballs (for at least 15 minutes).
- Obtain immediate medical help and/or take the victim to the hospital.

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- 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:
Carbon dioxide, dry powder, foam.
- 5.1.2. Unsuitable extinguishing media:
Do not use water!
- 5.2. Special hazards arising from the substance or mixture:
In case of thermal decomposition, toxic and corrosive, the inhalation of such combustion products may seriously damage health! In case of heating, hydrochloric acid is 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. Wear appropriate protective equipment.
- 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.
Avoid contact of the product with skin, eyes and clothing.
Technical measures:
Ensure adequate ventilation (local suction)!
Precautions against fire and explosion:
No special measures required.
- 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.
Protect from moisture and heat.
Follow all instructions on the label.
Incompatible materials: water, amines, bases, acids.
Packaging material: Metal container lined with polyethylene, with inert material or polyethylene container.
Avoid the use of non-protected metal containers.
- 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:

25/2000.. (IX. 30.) 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. Do not inhale the vapours.

Ensure adequate ventilation, especially in closed areas.

Do not eat or smoke during the processing.

Before the breaks and after the work hours wash your hands and yourself thoroughly.

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 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 special measures required.

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. Appearance:		colourless, clear liquid
2. Odour:		pungent
3. Odour threshold:		no data available
4. pH value:		not applicable in aqueous solution
5. Melting point/ freezing point:		- 38 °C
6. Initial boiling point/boiling range:		185 °C

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7. Flash point:	69 °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:	102 Pa 27x10 ² Pa 20 °C 89 °C	
12 Vapour density:	5,4	air = 1
13. Relative density:	no data available	
14. Solubility(ies):	In case of contact with water, decomposes. Soluble in common solvents.	
15. Partition coefficient: n-octanol/water:	no data available	
16. Self-ignition temperature:	500 °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>		
Density (20 °C):	1.25 g/cm ³	
Reacts with water with formation of HCl and phenol.		

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:
At normal temperature and general conditions of work stabile.
- 10.2. Chemical stability:
Stable at room temperature.
- 10.3. Possibility of hazardous reactions:
Reacts with water.
- 10.4. Conditions to avoid:
Contact with water.
- 10.5. Incompatible materials:
Bases, water, amines and alcohol.
- 10.6. Hazardous decomposition products:
In case of thermal decomposition: carbon dioxide, carbon monoxide and hydrogen chloride, in case of hydrolysis: hydrochloric acid and phenol are formed.

SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. Information on toxicological effects:
Acute toxicity: harmful if swallowed.
Skin corrosion/irritation: causes severe burns.
Serious eye damage/eye irritation: causes serious eye damage.
Respiratory or skin sensitisation: none known.
Germ cell mutagenicity: none known.
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:
LD₅₀ (oral, rat): 1581 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:

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Ingestion: No data available.

Inhalation: May cause pulmonary oedema (even several hours later).

Skin contact: May cause serious irritation and burning.

Eye contact: May cause serious irritation and burning.

Irritation: Extremely irritates the mucous membranes. Extremely skin and eyes irritating substance.

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

Harmful if swallowed.

Causes severe skin burns and eye damage.

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:

LC₅₀ (Pimephales promelas): 11.6 mg/l/48h; EC₅₀ (Daphnia magna): 29 mg/l/24h

12.2. Persistence and degradability

No data available about the substance.

Phenol (degradation product): quickly biodegradable.

12.3. Bioaccumulation potential:

No data available about the substance.

Phenol (degradation product): very slightly bioaccumulative.

12.4. Mobility in soil

The substance decomposes with hydrolysis and hydrochloric acid and phenol is formed, which are soluble in water.

Phenol: solubility in water: 8 w % 20 °C.

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:

Dispose according to the relevant regulations. 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:

None known.

13.1.5. Special precautions for any recommended waste treatment:

No data available.

SECTION 14: TRANSPORT INFORMATION

14.1. UN Number:

2746

14.2. UN proper shipping name:

PHENYL CHLOROFORMATE

14.3. Transport hazard class(es)

ADR/RID: 6.1. TC1

IMDG: 6.1

IATA: 6.1

14.4. Packaging group

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- 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
- COMMISSION REGULATION (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures
- 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).
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: 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.
Data sources: n.d

Relevant R-Phrases (number and full text) of Section 2 and 3:
R 22 - Harmful if swallowed.
R 34 - Causes burns.

Relevant H-Phrases (number and full text) of Section 2 and 3: none.
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.

Training instructions: n.d.

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 Kft.

Professional help regarding the explanation of the safety data sheet:
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Download of safety data sheet:

