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# SAFETY DATA SHEET

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

1.1. Product identifier:
**Acryloyl chloride**

IUPAC name: Acryloyl chloride
CAS number: 814-68-6
EC number: 212-399-0
Registration number: 01-2120749111-65-0001; transported isolated intermedier

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., Pf. 504
Tel.: +36 48 311-991
Fax: (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):
Flammable Liquids 2 – H225
Acute toxicity 1 – H330
Acute toxicity 3 – H301
Acute toxicity 3 – H311
Skin corrosion 1A – H314
Hazardous to the aquatic environment, Acute 1 – H400

Warning **H statements:**
**H225** – Highly flammable liquid and vapour.
**H301** – Toxic if swallowed.
**H311** – Toxic in contact with skin.
**H314** – Causes severe skin burns and eye damage.
**H330** – Fatal if inhaled.
**H400** – Very toxic to aquatic life.

2.2. Label elements:

IUPAC name: Acryloyl chloride
CAS number: 814-68-6
EC number: 212-399-0

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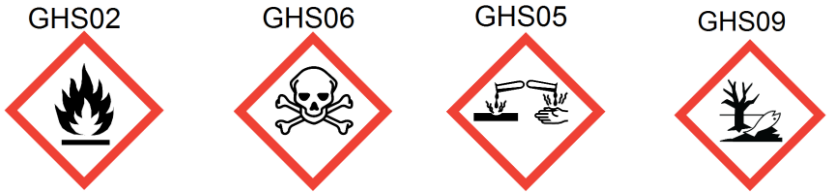


DANGER

Warning **H statements:**
**H225** – Highly flammable liquid and vapour.
**H301** – Toxic if swallowed.
**H311** – Toxic in contact with skin.
**H314** – Causes severe skin burns and eye damage.
**H330** – Fatal if inhaled.
**H400** – Very toxic to aquatic life.

Precautionary **P statements:**
**P210** – Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
**P233** – Keep container tightly closed.
**P260** – Do not breathe gas/mist/vapours/spray.
**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.
**P370 + P378** – In case of fire: Use sand, powder and carbon dioxide for extinction.
**P391** – Collect spillage.

**EUH 014** – Reacts violently with water.

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: Acryloyl chloride
Synonym: Propenoic acid chloride
CAS number: 814-68-6
EC number: 212-399-0
Formula: $C_3H_3ClO$
Molar mass: 90,5 g/mol
Purity: ≥ 99 %

Note: Stabilized with 200 ppm Phenothiazol or 23-29 ppm Chlorpromazine.

## 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 laboured, give him oxygen.
- If the breathing has stopped, give artificial respiration.
- Do not apply mouth-to-mouth resuscitation.
- 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 flowing 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 for 15 minutes 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:
Use sand, powder and carbon dioxide for extinction.

5.1.2. Unsuitable extinguishing media:
Water.

5.2. Special hazards arising from the substance or mixture:
In case of fire, smoke and other combustion products (hydrochloric acid, carbon monoxide, carbon dioxide) may be formed, the inhalation of such combustion products can have 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 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.
Do not breathe the vapour, mist, gas, and aerosol.
Avoid contact with eyes, skin and clothing.
Technical measures:
Ensure adequate ventilation / local extraction.

Precautions against fire and explosion:

Use spark- and explosion proof equipment.

7.2. Conditions for safe storage, including any incompatibilities:
Technical measures and storage condition:
Keep in original, tightly closed and properly labelled container.
The place of storage has to be properly ventilated and cleanable.
Store separate from ignition sources.
Keep in dry place.
Sensitive for humidity.
Ensure adequate ventilation.
Storage temperature: < 0 °C.
Follow all instructions on the label.
Incompatible materials: see section 10.5.
Packaging material: Metal container lined with polyethylene. 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:

Occupational 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)<br>Long term (repeated) | no data available |
| no data available | no data available | Inhalative | Short term (acute)<br>Long term (repeated) | no data available |
| no data available | no data available | Oral | Short term (acute)<br>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)<br>Long term (continuous) | no data available |
| no data available | no data available | no data available | Short term (single use)<br>Long term (continuous) | no data available |
| no data available | no data available | no data available | Short term (single use)<br>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 breathe the vapours.
Wash thoroughly after work.
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 (EN 166).
2. Skin protection:
   a. Hand protection: use appropriate protective gloves (EN 374).
   b. Other: use appropriate, acid resistant protective clothes (EN ISO 6529).
3. Respiratory protection: use appropriate respiratory protective device (for organic vapours, EN 136, EN 141) .
4. Thermal hazard: None known.

8.2.3. Environmental exposure controls:
No special measures required.

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**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:** | slightly pinkish liquid | | |
| *2.* **Odour:** | pungent | | |
| *3.* Odour threshold: | no data available* | | |
| 4. pH value: | not applicable | | |
| 5. Melting point/ freezing point: | no data available* | | |
| *6.* Initial boiling point/boiling range: | 75 °C | | |
| *7.* Flash point: | -4 °C | NFT 60-103 | |
| *8.* Evaporation rate: | no data available* | | |
| *9.* Flammability (solid, gas): | no data available* | | |
| *10.* Upper/lower flammability or explosive limits: | no data available* | | |
| *11.* Vapour pressure: | 106, 6 x $10^2$ Pa (20 °C); 400 x $10^2$ Pa (40°C) | | |
| 12 Vapour density: | 3,1 | air = 1 | |
| *13.* Relative density: | no data available* | | |
| 14. Solubility(ies): | Hydrolyse on contact with water; well soluble in common solvents. | | |
| *15.* Partition coefficient: n-octanol/water: | not applicable | | |
| *16*. Self-ignition temperature: | no data available* | | |
| *17*. Degradation temperature: | 140 °C | ATD | |
| *18.* Viscosity: | no data available* | | |
| *19.* Explosive properties: | no data available* | | |
| *20.* Oxidizing properties: | no data available* | | |

9.2. Other information:

Density (20 °C): 1,113 g/$cm^3$

*: The manufacturer did not carry out any tests on this parameter for the product or the results of the tests are not available at the time of publication of the data sheet.

## SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:
At general conditions of work not stabile.

10.2. Chemical stability:
Decomposes and polymerizes due to heat.

10.3. Possibility of hazardous reactions:
Reacts violently with water.
See also Section 10.5.

10.4. Conditions to avoid:
Contact with water. Keep away from heat, sparks, and open flame.

10.5. Incompatible materials:
Strong bases, water, alcohols and amines.

10.6. Hazardous decomposition products:
Hydrochloric acid, carbon monoxide, carbon dioxide.

## SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects:
Acute toxicity: Toxic if swallowed. Toxic in contact with skin. Fatal if inhaled.
Skin corrosion/irritation: Causes severe skin burns.
Serious eye damage/eye irritation: Causes severe eye damage.
Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.
STOT-single exposure: Based on available data, the classification criteria are not met.
STOT-repeated exposure: Based on available data, the classification criteria are not met.
Aspiration hazard: Based on available data, the classification criteria are not met.

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): 192 mg/kg (calculated)
LD50 (dermal, rabbit): 200 mg/kg (calculated)
LC50 (inhalative, mouse): 92 mg/m$^3$/2 h

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:
Corrosive, may cause burning.
Ingestion: Toxic if swallowed. Causes burns.
Inhalation: Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin contact: Toxic if absorbed through skin. Causes serious burns on skin.
Eye contact: Causes eye burns.

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.
Fatal 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:
Very toxic to aquatic life.
Toxic for fish and Daphnia, very toxic for algae.

12.2. Persistence and degradability:
No data available.

12.3. Bioaccumulation potential:
No data available.

12.4. Mobility in soil:
During hydrolysis it decomposes into hydrochloric acid and acryloyl which are dispersed in the water.

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.

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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:
ADR/RID/IMDG: UN3488
IATA: -
14.2. UN proper shipping name:
ADR/RID/IMDG: TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. (Acryloyl chloride)
IATA: Air transport: FORBIDDEN.
14.3. Transport hazard class(es):
ADR/RID: 6.1. TFC
IMDG: 6.1
IATA: -
14.4. Packaging group:
ADR/RID/IMDG: I
IATA: -
14.5. Environmental hazard:
ADR/RID/IMDG: yes
IATA: -
14.6. Special precautions for user:
Refrigerated transport.
14.7. Transport in bulk according to Annex II of MARPOL 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) 2015/830 of 28 May 2015 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 (EU) 2015/830 (Section 1-16).

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, Very Bioaccumulative. n.d.: not defined. n.a.: not applicable. ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. IMDG: International Maritime Dangerous Goods.

Key literature references and sources for data:
previous version of the safety data sheet (dated 20. 12. 2017, version: CLP_D).

Relevant H-Phrases (number and full text) of Section 2 and 3:
**H225** – Highly flammable liquid and vapour.
**H301** – Toxic if swallowed.

**H311** – Toxic in contact with skin.
**H314** – Causes severe skin burns and eye damage.
**H330** – Fatal if inhaled.
**H400** – Very toxic to aquatic life.
**EUH 014** – Reacts violently with water.

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 Kft. msds-europe.com

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