

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE 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; supplied separated intermediate

1.2. Relevant identified uses of the substance or mixture 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

Tel: (48) 311-991

Fax: (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)

1097 Budapest, Albert Flórián út 2-6.

Tel.: +36 80 201 199 (0-24, free of charge – only from Hungary)

Tel.: +36 1 476 6464 (0-24, normal charge – also from foreign countries)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008 (CLP):

Flammable liquids, Hazard Category 2 – H225

Acute toxicity (oral), Hazard Category 4 – H302

Acute toxicity (inhalation), Hazard Category 1 – H330

Skin corrosion/irritation, Hazard Category 1B – H314

Hazard statements:

H225 – Highly flammable liquid and vapour.

H302 – Harmful if swallowed.

H330 – Fatal if inhaled.

H314 – Causes severe skin burns and eye damage.

2.2. Label elements:

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



Hazard statements:

H225 – Highly flammable liquid and vapour.
H302 – Harmful if swallowed.
H330 – Fatal if inhaled.
H314 – Causes severe skin burns and eye damage.

Precautionary statements:

P210 – Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P303 + P361 + P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.
P320 – Specific treatment is urgent (see on this label).
P405 – Store locked up.
P501 – Dispose of contents/container in accordance with local/regional/national /international regulations.

EUH 014 – Reacts violently with water.

2.3. Other hazards:

Information concerning specific hazards for human and environment: See Section 11.
The substance does not meet the PBT or vPvB criteria according to Annex XIII of Regulation 1907/2006/EC.
Endocrine disrupting property: Not an endocrine disruptor.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance:

IUPAC name: Acryloyl chloride
Synonym: Popenoic acid chloride; 2-Propenoyl chloride; Prop-2-enoyl chloride
CAS number: 814-68-6
EC number: 212-399-0
Formula: C_3H_3ClO
Molar mass: 90.5 g/mol
Purity: $\geq 99\%$

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

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

General information: Instantly remove any clothing soiled by the product. Remove breathing apparatus only after soiled clothing has been completely removed.

INGESTION:

Measures:

- Seek medical treatment.

INHALATION:

Measures:

- Supply fresh air.
- If required, provide artificial respiration.
- Keep patient warm.
- Consult doctor if symptoms persist.
- Seek immediate medical advice.

SKIN CONTACT:

Measures:

- Instantly wash with water and soap and rinse thoroughly.
- Seek immediate medical advice.

EYE CONTACT:

Measures:

- Rinse opened eye for several minutes under running water.
- Then consult doctor.

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:

No special treatment needed; treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media:

5.1.1. Suitable extinguishing media:

Sand, carbon dioxide, extinguishing powder agent. Never use water.

5.1.2. Unsuitable extinguishing media:

Water.

5.2. Special hazards arising from the substance or mixture:

Highly flammable liquid and vapour.

Reacts violently with water. Danger of containers bursting upon heating. If this product is involved in a fire, the following can be released: carbon monoxide, carbon dioxide, hydrogen chloride.

5.3. Advice for firefighters:

Wear full protective clothing and self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

6.1.1. For non-emergency personnel:

Allow only well-trained experts wearing suitable protective clothing to abide in the field of the accident.

6.1.2. For emergency responders:

Wear protective equipment.
Keep unprotected persons away.
Ensure adequate ventilation.
Keep away from ignition sources.

6.2. Environmental precautions:

Dispose of the spillage and the resulting waste according to the applicable environmental regulations. Do not allow the product 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:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralising agents. Dispose of contaminated material as waste. Keep away from sources of ignition. Ensure adequate ventilation. Do not flush with water or aqueous cleansing agents.

6.4. Reference to other sections:

For further and detailed information see Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling:

Observe conventional hygiene precautions.
Handle under dry protective gas.
Keep containers tightly sealed.
Open and handle container with care.

Technical measures:

Ensure good ventilation/exhaustion at the workplace.

Precautions against fire and explosion:

Protect against electrostatic charges.
Fumes can form an explosive mixture with air.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

7.2. Conditions for safe storage, including any incompatibilities:

Technical measures and storage condition:

Store in the dark.
Protect from heat.
Store away from water, strong bases, oxidising agents and amines.
Store under dry inert gas.
This product is sensitive to moisture.
Keep container tightly sealed.
Protect from humidity and keep away from water.
Protect from effects of light.
Store in a locked area or with access restricted to technical experts or their assistants.
Refrigerate.
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 (Commission Directive (EC) No 2000/39 of 8 June 2000):
The substance is not regulated with exposure limit value.

DNEL values		Oral exposure		Dermal exposure		Inhalative exposure	
		Short term (acute)	Long term (chronic)	Short term (acute)	Long term (chronic)	Short term (acute)	Long term (chronic)
Consumer	Local	no data	no data	no data	no data	no data	no data
	Systemic	no data	no data	no data	no data	no data	no data
Worker	Local	no data	no data	no data	no data	no data	no data
	Systemic	no data	no data	no data	no data	no data	no data

PNEC values		
Compartment	Value	Note(s)
Freshwater	no data	no notes
Marine water	no data	no notes
Freshwater sediment	no data	no notes
Marine water sediment	no data	no notes
Sewage Treatment Plant (STP)	no data	no notes
Intermittent release	no data	no notes
Secondary poisoning	no data	no notes
Soil	no data	no notes

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. Use properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

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

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and animal feed.

Instantly remove any soiled and impregnated clothing.

Wash hands during breaks and at the end of the work.

Store protective clothing separately.

Do not inhale dust, smoke or mist.

Avoid contact with eyes and skin.

1. **Eye/face protection:** Use appropriate tightly sealed protective glasses with side shields (EN 166).

2. **Skin protection:**

a. **Hand protection:** Use appropriate protective gloves (EN 374).

Check protective gloves prior to each use for their proper condition. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves: impervious gloves.

b. **Other:** Use appropriate protective clothing.

3. **Respiratory protection:** Use appropriate respiratory protective device in case of high concentrations.

4. **Thermal hazards:** No thermal hazards 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 is necessary before deciding upon further protective measures.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

Parameter	Value / Test method / Remarks
1. Physical state	liquid
2. Colour	slightly pinkish
3. Odour, odour threshold	pungent
4. Melting point/freezing point	no data*
5. Boiling point or initial boiling point and boiling range	75 °C
6. Flammability	no data*
7. Lower and upper explosion limit	no data*
8. Flash point	-4 °C /
9. Auto-ignition temperature	no data*
10. Decomposition temperature	140 °C / ATD

11. pH	not applicable
12. Kinematic viscosity	no data*
13. Solubility in water in other solvents	hydrolyses in contact with water; well soluble in common solvents
14. Partition coefficient n-octanol/water (log value)	not applicable
15. Vapour pressure	106.6 x 102 Pa (20 °C); 400 x 102 Pa (40°C)
16. Density and/or relative density	1,113 g/cm ³ / 20 °C
17. Relative vapour density	3.1 / air=1
18. Particle characteristics	no data*

9.2. **Other information:**

9.2.1. **Information with regard to physical hazard classes:**

No further data available or not applicable for the product.

9.2.2. **Other safety characteristics:**

No other characteristics available.

*: 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, or the property is not applicable for the product.

SECTION 10: STABILITY AND REACTIVITY

10.1. **Reactivity:**

At general conditions of work not stabile.

10.2. **Chemical stability:**

Stable under recommended storage conditions.

Decomposes and polymerizes due to heat.

10.3. **Possibility of hazardous reactions:**

Reacts violently with water.

Reacts with strong oxidising agents.

Danger of polymerisation.

Avoid loss of stabiliser. Unless inhibited, the product can polymerise resulting in a temperature and pressure increase that may rupture the container.

10.4. **Conditions to avoid:**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Contact with water.

10.5. **Incompatible materials:**

Bases, oxidising agents, water/moisture, amines, heat, light, ultraviolet radiation, free radical initiators.

Strong bases, water, alcohols and amines.

10.6. **Hazardous decomposition products:**

No decomposition if used and stored according to specifications.

Hydrochloric acid, carbon monoxide, carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. **Information on hazard classes as defined in Regulation (EC) No 1272/2008:**

Acute toxicity: Harmful if swallowed. Fatal if inhaled.

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

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. **Summaries of the information derived from the test conducted:**

No data available.

11.1.2. Relevant toxicological properties:

LD50 (oral, rat): 192 mg/kg (calculated)
LD50 (dermal, rabbit): 200 mg/kg (calculated)
LC50 (inhalative, mouse): 92 mg/m³/2 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 burns.

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:

Harmful if swallowed.

Fatal if inhaled.

Causes severe skin burns and eye damage.

11.1.6. Interactive effects:

No data available.

11.1.7. Absence of specific data:

No information.

11.2. Information on other hazards:

Endocrine disrupting properties:

Endocrine disrupting property: Not an endocrine disruptor.

Other information:

No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

The substance is not classified as hazardous for the environment.

12.2. Persistence and degradability:

No data available.

12.3. Bioaccumulative 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:

The substance does not meet the criteria for PBT or vPvB substances.

12.6. Endocrine disrupting properties:

Endocrine disrupting property: Not an endocrine disruptor.

12.7. 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:

Recommendation: Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult local, regional or national regulations for proper disposal.

List of Waste Code:

No waste disposal key according to the List of Waste Code (LoW code) can be determined for this product, as only the purpose of application defined by the user enables an allocation. The LoW code number has to be determined after a discussion with a waste disposal specialist.

13.1.2. Information regarding the disposal of the packaging:

Recommendation: Disposal must be made according to official regulations.

Recommended cleaning agent: water, if necessary with cleaning agent.

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

No data available.

- 13.1.4. Sewage disposal:**
No data available.
- 13.1.5. Special precautions for any recommended waste treatment:**
No data available.

SECTION 14: TRANSPORT INFORMATION

- 14.1. UN number or ID number:**
ADR/RID: UN3488
IMDG: UN3488
IATA: -
- 14.2. UN proper shipping name:**
ADR/RID: TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. (Acryloyl chloride)
IMDG: TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. (Acryloyl chloride)
IATA: Air transport of the substance is PROHIBITED!
- 14.3. Transport hazard class(es):**
ADR/RID: 6.1 Classification Code: TFC
Labels: 6.1 + 3 + 8
IMDG: 6.1
IATA: -
- 14.4. Packing group:**
ADR/RID: I
IMDG: I
IATA: -
- 14.5. Environmental hazards:**
ADR/RID: No
IMDG: No
IATA: -
- 14.6. Special precautions for user:**
Refrigerated transport!
- 14.7. Maritime transport in bulk according to IMO instruments:**
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 (EC) No 1999/45 and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive (EEC) No 76/769 and Commission Directives (EEC) No 91/155, (EEC) No 93/67, (EC) No 93/105 and (EC) No 2000/21

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 (EEC) No 67/548 and (EC) No 1999/45, and amending Regulation (EC) No 1907/2006

COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

- 15.2. Chemical safety assessment:** No information.

SECTION 16: OTHER INFORMATION

Information regarding the revision of the safety data sheet:

The safety data sheet has been revised according to Regulation (EU) 2020/878 (Section 1-16).

The hazard classification of the substance did not change compared to the previous version.

This safety data sheet supersedes all previous versions according to Annex II of Regulation (EC) No 1907/2006.

Literature references / data sources:

Previous version of the safety data sheet (17. 09. 2018, version CLP_F).

Relevant hazard statements (code and full text) of Sections 2 and 3:

H225 – Highly flammable liquid and vapour.

H302 – Harmful if swallowed.

H330 – Fatal if inhaled.

H314 – Causes severe skin burns and eye damage.

EUH 014 – Reacts violently with water.

Training advice: No data available.

Full text of the abbreviations in the safety data sheet:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.

ATE: Acute Toxicity Estimate.

AOX: Adsorbable organic halides.

BCF: Bioconcentration factor.

BOD: Biological Oxygen Demand.

CAS number: Chemical Abstract Service number.

CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

CMR effects: Carcinogenic, mutagenic, reprotoxic effects.

COD: Chemical Oxygen Demand.

CSA: Chemical Safety Assessment.

CSR: Chemical Safety Report.

DNEL: Derived-No-Effect-Level.

ECHA: European Chemical Agency.

EC: European Community.

EC number: EINECS and ELINCS numbers (see also EINECS and ELINCS).

EEC: European Economic Community.

EEA: European Economic Area (EU + Iceland, Liechtenstein and Norway).

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

EN: European Norm.

EU: European Union.

EWC: European Waste Catalogue (replaced by LoW – see below).

GHS: Globally Harmonized System of Classification and Labelling of Chemicals.

IATA: International Air Transport Association.

ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air.

IMDG: International Maritime Dangerous Goods.

IMO: International Maritime Organization.

IMSBC: International Maritime Solid Bulk Cargoes.

IUCLID: International Uniform Chemical Information Database.

IUPAC: International Union of Pure and Applied Chemistry.

Kow: n-Octanol - Water Partition Coefficient.

LC50: Lethal concentration resulting in 50 % mortality.

LD50: Lethal dose resulting in 50 % mortality (median lethal dose).

LoW: List of Waste.

LOEC: Lowest Observed Effect Concentration.

LOEL: Lowest Observed Effect Level.

NOEC: No Observed Effect Concentration.

NOEL: No Observed Effect Level.

NOAEC: No Observed Adverse Effect Concentration.

NOAEL: No Observed Adverse Effect Level.

OECD: Organization for Economic Cooperation and Development.
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bioaccumulative and Toxic.
PNEC: Predicted No Effect Concentration.
QSAR: Quantitative Structure Activity Relationship.
REACH: Regulation 1907/2006/EC concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.
SCBA: Self Contained Breathing Apparatus.
SDS: Safety Data Sheet.
STOT: Specific Target Organ Toxicity.
SVHC: Substances of Very High Concern.
UN: United Nations.
UVCB: Chemical Substances of Unknown or Variable Composition, Complex Reaction Products and Biological Materials.
VOC: Volatile Organic Compound.
vPvB: very Persistent and very Bioaccumulative.

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:
MSDS-Europe
International branch of ToxInfo Kft.

Professional help regarding the explanation of
the safety data sheet:
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