

SAFETY DATA SHEET

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

1.1. Product identifier:

METHACRYLOYL CHLORIDE

IUPAC name: Methacryloyl chloride

CAS number: 920-46-7

EC number: 213-058-9

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):

Flammable liquids, Hazard Category 2 – H225

Acute toxicity (oral), Hazard Category 4 – H302

Skin corrosion/irritation, Hazard Category 1A – H314

Acute toxicity (inhalation), Hazard Category 4 – H332

Specific target organ toxicity - Single exposure, Hazard Category 3, Respiratory tract irritation – H335

Warning H statements:

H225 – Highly flammable liquid and vapour.

H302 – Harmful if swallowed.

H314 – Causes severe skin burns and eye damage.

H332 – Harmful if inhaled.

H335 – May cause respiratory irritation.

2.2. Label elements:

IUPAC name: Methacryloyl chloride

CAS number: 920-46-7

EC number: 213-058-9



DANGER

Warning H statements:

- H225** – Highly flammable liquid and vapour.
H302 – Harmful if swallowed.
H314 – Causes severe skin burns and eye damage.
H332 – Harmful if inhaled.
H335 – May cause respiratory irritation.

Precautionary P statements:

- P210** – Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P260 – Do not breathe gas/mist/vapours/spray.
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 foam for extinction. The use of water is prohibited!

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 criteria for PBT or vPvB substances.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance:

IUPAC name: Methacryloyl chloride
Synonym: 2-methyl-2-propenoyl chloride
CAS number: 920-46-7
EC number: 213-058-9
Formula: C₄H₅ClO
Molar mass: 104,5 g/mol
Purity: ≥ 99,3 %

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 help and/or take the victim to the hospital.
- Flush the mouth of the victim with plenty of water and give him plenty of water to drink.
- Show the label or the safety data sheet to the physician.

IN CASE OF INHALATION:

Measures:

- In case of inhalation take the victim into fresh air and take him into comfortable position (recovery position is recommended) and protect him from hypothermia.
- Obtain immediate medical help and/or take the victim to the hospital.

IN CASE OF SKIN CONTACT:

Measures:

- Remove the contaminated clothes 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.

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: FIRE-FIGHTING MEASURES

5.1. Extinguishing media:

- 5.1.1. Suitable extinguishing media:
Foam.
- 5.1.2. Unsuitable extinguishing media:
The use of water is prohibited!
- 5.2. Special hazards arising from the substance or mixture:
In case of fire, smoke and other combustion products (carbon dioxide, carbon monoxide and hydrogen chloride) 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.
Wear appropriate personal 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 with skin, eyes and clothing, avoid inhalation.
Do not eat, drink and smoke in the workplace.
Use adequate personal protective equipment (see point 8).
The contaminated clothes should be removed immediately and should be cleaned before re-use.
After the handling of the product and before breaks or before eating wash your hands, after the work hours thorough washing (warm water hand washing and showering with soap) is required.
Technical measures:
Effective ventilation is required (general ventilation) during the handling of the product.
Precautions against fire and explosion:
Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- 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.
Storage temperature: ≤ 0 °C.
Keep away from water, acids, alcohols, amines and bases.
Incompatible materials: see section 10.5.
Packaging material: no special prescriptions.
- 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) 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. Avoid inhalative exposure.

Do not eat and smoke during work.

Avoid contact with skin, eyes and clothing, avoid inhalation.

Before the breaks and after the work hours wash thoroughly (hand and body).

The contaminated clothes should be removed immediately and should be cleaned before re-use.

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, 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 liquid
2. Odour:		unpleasant
3. Odour threshold:		no data available*
4. pH value:		no data available*
5. Melting point/ freezing point:		no data available*
6. Initial boiling point/boiling range:		96 °C
7. Flash point:		2 °C
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:		6,26 x 10 ² Pa 20 °C 27 x 10 ² Pa 100 °C
12 Vapour density:		3.6 air = 1
13. Relative density:		no data available*

14. Solubility(ies): Reacts with water.
Well soluble in common solvents.
15. Partition coefficient: n-octanol/water: no data available*
16. Auto-ignition temperature: no data available*
17. Decomposition 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): 1.07 g/cm³
*: 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:
Reacts with water, toxic and combustible gases may be formed. Thermally non-stable. In case of heating, polymerizes.
- 10.2. Chemical stability:
Under 10 °C temperature: stabile at general conditions of work.
- 10.3. Possibility of hazardous reactions:
Thermally non stable. In case of heating, polymerize.
See Section 10.5.
- 10.4. Conditions to avoid:
Reacts with water, toxic and combustible gases may be formed.
Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- 10.5. Incompatible materials:
Acids, bases, water, amines and alcohol.
- 10.6. Hazardous decomposition products:
In case of thermal decomposition carbon dioxide, carbon monoxide and hydrogen chloride are formed.

SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. Information on toxicological effects:
Acute toxicity: Harmful if swallowed. Harmful if inhaled.
Skin corrosion/irritation: Causes severe skin burns.
Serious eye damage/eye irritation: Causes 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: May cause respiratory irritation.
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) value: 1320 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, may cause burning.
Skin contact: causes corrosion.
Eye contact: may cause serious burns.
- 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.
Harmful if inhaled.
May cause respiratory irritation.
- 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 (inhalative, rat): 7.1 mg/l/4 h
LC50 (Onchorynchus mykiss) = 85 mg/l/96 h: harmful to fish
- 12.2. Persistence and degradability:
The methacryloyl biodegradates: 86 % in 28 days.
- 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:
Do not enter into drains, watercourses and soil.

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 regulations 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:
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: UN2924 IMDG: UN2924 IATA: UN2924.
- 14.2. UN proper shipping name:
ADR/RID: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methacryloyl chloride)
IMDG: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methacryloyl chloride)
IATA: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Methacryloyl chloride)
- 14.3. Transport hazard class(es):
ADR/RID: 3.FC IMDG: 3 IATA: 3
Labels: 3 + 8
- 14.4. Packaging group:
ADR/RID: II IMDG: II IATA: II.
- 14.5. Environmental hazard:
ADR/RID: no IMDG: no IATA: none
- 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: carcinogenicity, mutagenicity and toxicity for reproduction. PBT: Persistent, bioaccumulative and toxic. vPvB: Very Persistent, Very Bioaccumulative. n.d.: not defined. n.a.: not applicable.

Key literature references and sources for data:

previous version of the safety data sheet (dated 15. 01. 2015, version: CLP_B)

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

H225 – Highly flammable liquid and vapour.

H302 – Harmful if swallowed.

H314 – Causes severe skin burns and eye damage.

H332 – Harmful if inhaled.

H335 – May cause respiratory irritation.

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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