

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade name **Acryloyl chloride**

Stock number: L10363

CAS Number:

814-68-6

EC number:

212-399-0

1.2 Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

### 1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Thermo Fisher (Kandel) GmbH

Zeppelinstr. 7b

76185 Karlsruhe / Germany

Tel: +49 (0) 721 84007 280

Fax: +49 (0) 721 84007 300

Email: tech@alfa.com

www.alfa.com

Informing department: Product safety Tel + +049 (0) 7275 988687-0

### 1.4 Emergency telephone number:

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS06 skull and crossbones

Acute Tox. 1 H330 Fatal if inhaled.



GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Other hazards that do not result in classification No information known.

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.

#### Hazard pictograms



GHS02 GHS05 GHS06

Signal word Danger

#### 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/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.

#### Additional information:

EUH014 Reacts violently with water.

### 2.3 Other hazards

#### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

CAS# Designation:

814-68-6 Acryloyl chloride

Concentration: ≤100%

Identification number(s):

EC number: 212-399-0

Impurities and stabilising additives:

Stabilised with:

Phenothiazine (CAS# 92-84-2)

## 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.

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In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

**After skin contact**

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact** Rinse opened eye for several minutes under running water. Then consult doctor.

**After swallowing** Seek medical treatment.

**4.2 Most important symptoms and effects, both acute and delayed**

Causes severe skin burns.

Harmful if swallowed.

Fatal if inhaled.

**4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

**Suitable extinguishing agents** In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

**For safety reasons unsuitable extinguishing agents** Water.

**5.2 Special hazards arising from the substance or mixture**

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 and carbon dioxide

Hydrogen chloride (HCl)

**5.3 Advice for firefighters**

**Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.

**6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

**Prevention of secondary hazards:** Keep away from ignition sources.

**6.4 Reference to other sections**

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

Handle under dry protective gas.

Keep containers tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Open and handle container with care.

**Information about protection against explosions and fires:**

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Keep ignition sources away - Do not smoke.

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage**

**Requirements to be met by storerooms and containers:** Refrigerate

**Information about storage in one common storage facility:**

Store in the dark.

Protect from heat.

Store away from water.

Store away from strong bases.

Store away from oxidising agents.

Store away from amines.

**Further information about storage conditions:**

Store under dry inert gas.

This product is moisture sensitive.

Protect from humidity and keep away from water.

Keep container tightly sealed.

Protect from the effects of light.

Store in a locked cabinet or with access restricted to technical experts or their assistants.

Refrigerate

**7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

**Additional information about design of technical systems:**

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

**8.1 Control parameters**

**Components with critical values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** No data

**8.2 Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

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

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

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

Store protective clothing separately.

Do not inhale dust / smoke / mist.

Avoid contact with the eyes and skin.

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Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use self-contained respiratory protective device in emergency situations.

**Protection of hands:**

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** Chloroprene rubber, CR

**Penetration time of glove material (in minutes)** 30

**Glove thickness:** 0.6 mm

**Eye protection:**

Tightly sealed safety glasses.

Full face protection

Safety glasses with side shields / NIOSH (US) or EN 166(EU)

**Body protection:** Protective work clothing.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

**General Information**

**Appearance:**

**Form:** Liquid

**Odour:** Acrid

**Odour threshold:** Not determined.

**pH-value:** Not determined.

**Change in condition**

**Melting point/freezing point:** Not determined

**Initial boiling point and boiling range:** 74-76 °C

**Sublimation temperature / start:** Not determined

**Flash point:** -4 °C

**Inflammability (solid, gaseous)** Not determined.

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

**Self-inflammability:** Not determined.

**Explosive properties:** Product is not explosive. However, formation of explosive air/steam mixtures is possible.

**Critical values for explosion:**

**Lower:** Not determined

**Upper:** Not determined

**Steam pressure at 20 °C:** 106,6 hPa

**Density at 20 °C** 1,114 g/cm<sup>3</sup>

**Relative density** Not determined.

**Vapour density** Not determined.

**Evaporation rate** Not determined.

**Solubility in / Miscibility with**

**Water:** Reacts violently

**Partition coefficient: n-octanol/water:** Not determined.

**Viscosity:**

**dynamic:** Not determined.

**kinematic:** Not determined.

**9.2 Other information** No further relevant information available.

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** Reacts violently with water.

**10.2 Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.

**10.3 Possibility of hazardous reactions**

Reacts with strong oxidising agents

Danger of polymerisation

Reacts violently with water

**10.4 Conditions to avoid** No further relevant information available.

**10.5 Incompatible materials:**

Bases

Oxidising agents

Amines

Water/moisture

Heat

Light

Ultraviolet radiation

Free radical initiators

**10.6 Hazardous decomposition products:**

Carbon monoxide and carbon dioxide

Hydrogen chloride (HCl)

**Additional information:**

Avoid loss of stabilizer.

Unless inhibited, the product can polymerize resulting in a temperature and pressure increase that may rupture the container.

**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**

**Acute toxicity**

Harmful if swallowed.

Fatal if inhaled.

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

Harmful if swallowed.

Fatal if inhaled.

**LD/LC50 values that are relevant for classification:**

Inhalative LC50/2H 92 mg/m3/2H (mouse)

**Skin irritation or corrosion:**

Causes severe skin burns.

Causes severe skin burns and eye damage.

**Eye irritation or corrosion:**

Causes serious eye damage.

Causes severe skin burns and eye damage.

**Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity:** No effects known.

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**Carcinogenicity:** No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.  
**Reproductive toxicity:** No effects known.  
**Specific target organ system toxicity - repeated exposure:** No effects known.  
**Specific target organ system toxicity - single exposure:** No effects known.  
**Aspiration hazard:** No effects known.  
**Subacute to chronic toxicity:** No effects known.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.




**SECTION 12: Ecological information**

**12.1 Toxicity**  
**Aquatic toxicity:** No further relevant information available.  
**12.2 Persistence and degradability** No further relevant information available.  
**12.3 Bioaccumulative potential** No further relevant information available.  
**12.4 Mobility in soil** No further relevant information available.  
**Additional ecological information:**  
**General notes:**  
Do not allow product to reach ground water, water bodies or sewage system.  
Water hazard class 2 (Self-assessment): hazardous for water.  
Danger to drinking water if even small quantities leak into soil.  
Avoid transfer into the environment.  
**12.5 Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**  
**Recommendation**  
Hand over to disposers of hazardous waste.  
Must be specially treated under adherence to official regulations.  
Consult state, local or national regulations for proper disposal.  
**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

<b>UN-Number</b> <b>ADR, IMDG, IATA</b>	UN3383
<b>14.2 UN proper shipping name</b> <b>ADR</b> <b>IMDG</b> <b>IATA</b>	3383 TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (Acryloyl chloride) TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (Acryloyl chloride) TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S.
<b>14.3 Transport hazard class(es)</b> <b>ADR</b>  <b>Class</b> <b>Label</b> <b>IMDG</b>  <b>Class</b> <b>Label</b> <b>IATA</b>  <b>Class</b> <b>Label</b>	6.1 (TF1) Toxic substances. 6.1+3  6.1 Toxic substances. 6.1/3  6.1 Toxic substances. 6.1 (3)
<b>Packing group</b> <b>ADR, IMDG, IATA</b>	I
<b>14.5 Environmental hazards:</b>	Not applicable.
<b>14.6 Special precautions for user</b> <b>Kemler Number:</b> <b>EMS Number:</b> <b>Stowage Category</b> <b>Stowage Code</b>	Warning: Toxic substances. 663 F-E,S-D D SW2 Clear of living quarters.
<b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>ADR</b> <b>Excepted quantities (EQ):</b> <b>Limited quantities (LQ)</b> <b>Excepted quantities (EQ)</b> <b>Transport category</b> <b>Tunnel restriction code</b>	E5 0 Code: E0 Not permitted as Excepted Quantity 1 C/D
<b>IMDG</b> <b>Limited quantities (LQ)</b> <b>Excepted quantities (EQ)</b>	0 Code: E0 Not permitted as Excepted Quantity
<b>UN "Model Regulation":</b>	UN 3383 TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (ACRYLOYL CHLORIDE), 6.1 (3), I

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## SECTION 15: Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Australian Inventory of Chemical Substances** Substance is listed.

**Standard for the Uniform Scheduling of Medicines and Poisons** Substance is not listed.

**Directive 2012/18/EU**

**Named dangerous substances - ANNEX I** Substance is not listed.

**Seveso category**

H1 ACUTE TOXIC

O1 Substances or mixtures with hazard statement EUH014

P5c FLAMMABLE LIQUIDS

**Qualifying quantity (tonnes) for the application of lower-tier requirements** 5 t

**Qualifying quantity (tonnes) for the application of upper-tier requirements** 20 t

**REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 40

**National regulations**

**Information about limitation of use:**

Employment restrictions concerning young persons must be observed.

For use only by technically qualified individuals.

**Classification according to VbF:** A I

**Technical instructions (air):**

Class	Share in %
I	100,0

**Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

**Other regulations, limitations and prohibitive regulations**

**ELINCS (European List of Notified Chemical Substances)** Substance is not listed.

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety and Health Administration (USA)

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 1: Acute toxicity – Category 1

Skin Corr. 1B: Skin corrosion/irritation – Category 1B