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

1.1 Product identifier
Trade name 3-Chloropropionyl chloride

Stock number: B25698
CAS Number: 625-36-5
EC number: 210-890-4

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:
Carechef 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. 3 H226 Flammable liquid and vapour.

GHS05 corrosion
Skin Corr. 1A H314 Causes severe skin burns and eye damage.

GHS07
Acute Tox. 4 H302 Harmful if swallowed.

Other hazards that do not result in classification
Lachrymator

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
H226 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+P338 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: 625-36-5 3-Chloropropionyl chloride
Concentration: ≤100%
Identification number(s):
EC number: 210-890-4

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.
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.

(Contd. on page 2)
Trade name 3-Chloropropionyl chloride

(Contd. of page 1)

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.

4.2 Most important symptoms and effects, both acute and delayed
Causes severe skin burns. Harmful if swallowed. Fatal if inhaled.

This product is a lacrymator.

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
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.

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:
No special measures required.

6.4 Reference to other sections
See Section 7 for information on safe handling.
See section 6 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.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.
Open and handle container with care.

Information about storage in one common storage facility:
Store away from water.
Store away from strong bases.
Store away from oxidising agents.
Store away from alcohols.
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.
Store in cool, dry conditions in well sealed containers.
Store in a locked cabinet or with access restricted to technical experts or their assistants.

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.
Maintain an ergonomically appropriate working environment.

Breathing equipment:
Use self-contained respiratory protective device in emergency situations.
Recommended filter device for short term use:
Use a respirator with multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

Protection of hands:
Check protective gloves prior to each use for their proper condition.

(Contd. on page 3)
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. Suitable gloves for 3-Chloropropionyl chloride are:

**Material of gloves** Butyl rubber, BR
**Penetration time of glove material (in minutes)** 480
**Glove thickness:** 0.3 mm
**Eye protection:** Tightly sealed safety glasses.
**Body protection:** Protective work clothing.

### SECTION 9: Physical and chemical properties

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

**General Information**

- **Appearance:** Liquid
- **Odour:** Unpleasant
- **Odour threshold:** Not determined.
- **pH-value:** Not determined.

**Change in condition**

- **Melting point/freezing point:** -32 °C
- **Initial boiling point and boiling range:** 143-145 °C
- **Sublimation temperature / start:** Not determined

- **Flash point:** 59 °C
- **Inflammability (solid, gaseous):** Not determined.
- **Ignition temperature:** 490 °C
- **Decomposition temperature:** Not determined
- **Self-inflammability:** Not determined

**Explosive properties:** Not determined.

**Critical values for explosion**

- **Lower:** 8.8 Vol %
- **Upper:** 20.2 Vol %

**Steam pressure at 20 °C:** 5.2 hPa

**Density at 20 °C**

- **1,325 g/cm³**

**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

Reacts violently with water

#### 10.4 Conditions to avoid

No further relevant information available.

#### 10.5 Incompatible materials:

- Bases
- Oxidising agents
- Alcohols
- Amines
- Water/moisture

#### 10.6 Hazardous decomposition products:

- Carbon monoxide and carbon dioxide
- Hydrogen chloride (HCl)

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

**Acute toxicity**

- Harmful if swallowed.
- Fatal if ingested.

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

Harmful if swallowed.

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

- Oral LD50: 1200 mg/kg (rat)
- Inhalative LC50/4H: <1 mg/l/4H (rat)

#### Skin irritation or corrosion:

- Causes severe skin burns.
- Causes severe skin burns and eye damage.

#### Eye irritation or corrosion:

- Causes serious eye damage.

This product is a lachrymator.

Causes severe skin burns and eye damage.

#### Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

#### Germin cell mutagenicity:

No effects known.

#### 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:
Water hazard class 1 (Self-assessment): slightly hazardous for water.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
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.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

UN-Number
ADR, IMDG, IATA UN3389

14.2 UN proper shipping name
ADR 3389 TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. (3-Chloropropionyl chloride)
IMDG TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. (3-Chloropropionyl chloride)
IATA Not permitted for transport TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S.

14.3 Transport hazard class(es)
ADR
Class 6.1 (TC1) Toxic substances.
Label 6.1+8

IMDG
Class 6.1 Toxic substances.
Label 6.1/8

IATA
Class 6.1 Toxic substances.

Packing group
ADR, IMDG I

14.5 Environmental hazards:
Not applicable.

14.6 Special precautions for user
Warning: Toxic substances.
Kemler Number: 668
EMS Number: F-A,S-B
Stowage Category D
Stowage Code SW2 Clear of living quarters.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable.

Transport/Additional information:

ADR
Excepted quantities (EQ): E5
Limited quantities (LQ) 0
Excepted quantities (EQ) Code: E0
Not permitted as Excepted Quantity
Transport category 1
Tunnel restriction code C/D

IMDG
Limited quantities (LQ) 0
Excepted quantities (EQ) Code: E0
Not permitted as Excepted Quantity

IATA
Forbidden

UN "Model Regulation": UN 3389 TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. (3-CHLOROPROPIONYL CHLORIDE), 6.1 (8), I

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.

Australian Dangerous Substances - ANNEX I Substance is not listed.
Trade name 3-Chloropropionyl chloride

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 II
Technical instructions (air):
Water hazard class: Water hazard class 1 (Self-assessment): slightly 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)
HDS: Hazardous Domestic Substance
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)
LD50: Lethal concentration, 50 percent
LDLO: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
NOSHA: 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. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 1: Acute toxicity – Category 1
Skin Corr. 1A: Skin corrosion/irritation – Category 1A