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

1.1 Product identifier
Trade name: 2,4-Dichloro-5-fluorobenzoyl chloride

Stock number: B23514, L16050
CAS Number: 86393-34-2
ELINCS Number: 428-390-1
Index number: 607-816-00-4

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:
Carechem 24: +44 (o) 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
- GHS05 corrosion
  - Eye Dam. 1 H318 Causes serious eye damage.
- GHS07
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Skin Sens. 1 H317 May cause an allergic skin reaction.
  - STOT SE 3 H335 May cause respiratory irritation.
- Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects

Classification according to Directive 67/548/EEC or Directive 1999/45/EC
- Xi; Irritant
  - R37/38-41: Irritating to respiratory system and skin. Risk of serious damage to eyes.
- Xi; Sensitising
  - R43: May cause sensitisation by skin contact.
  - R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

2.2 Label elements

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

Hazard pictograms

SECTION 3: Composition/information on ingredients

3.1 Substances
- CAS# Designation: 86393-34-2 2,4-Dichloro-5-fluorobenzoyl chloride
- Identification number(s):
  - ELINCS Number: 428-390-1
  - Index number: 607-816-00-4

(Contd. on page 2)
SECTION 4: First aid measures

4.1 Description of first aid measures

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
No further relevant information available.

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: CO2, sand, extinguishing powder. Do not use water.

5.2 Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Hydrogen fluoride (HF)
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 material to be released to the environment without proper governmental permits.

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.

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.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:
No information known.

7.2 Conditions for safe storage, including any incompatibilities

Storage
Requirements to be met by storerooms and containers:
No special requirements.

Information about storage in one common storage facility:
Store away from oxidising agents.
Store away from strong bases.
Store away from water.

Further information about storage conditions:
Store under dry inert gas.
This product is moisture sensitive.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from humidity and keep away from water.

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

SECTION 8: Exposure controls/personal protection

Additional information about design of technical systems:
Property 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: Not required.

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.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.

Breathing equipment: Use breathing protection with high concentrations.

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:
Impervious gloves

Eye protection:
Tightly sealed safety glasses.

Face protection:

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
Colour: Colourless
### SECTION 10: Stability and reactivity

#### 10.1 Reactivity
No information known.

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

#### 10.3 Possibility of hazardous reactions
No dangerous reactions known.

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

#### 10.5 Incompatible materials:
- Alcohols
- Amines
- Oxidising agents
- Bases
- Active metals
- Water/moisture

#### 10.6 Hazardous decomposition products:
- Carbon monoxide and carbon dioxide
- Hydrogen fluoride
- Hydrogen chloride (HCl)

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

**Acute toxicity:** No effects known.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:**
- May cause corrosive effect.
- Causes skin irritation.
- Eye irritation or corrosion:
- May cause corrosive effect.
- Causes serious eye damage.
- Sensitization:
- May cause an allergic skin reaction.

**Germ 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:** May cause respiratory irritation.

**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.

**Ecotoxicological effects:**
- **Remark:** Harmful to aquatic organisms
- **Additional ecological information:**
- **General notes:**
  - Do not allow material to be released to the environment without proper governmental permits.
  - Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Avoid transfer into the environment.**
- **Harmful to aquatic organisms**

#### 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.
SECTION 14: Transport information

UN-Number
ADR, IMDG, IATA  UN3265

14.2 UN proper shipping name
ADR  3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,4-Dichloro-5-fluorobenzoyl chloride)
IMDG, IATA  CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,4-Dichloro-5-fluorobenzoyl chloride)

14.3 Transport hazard class(es)
ADR

Class  8 (C3) Corrosive substances.
Label  8

IMDG, IATA

Class  8 Corrosive substances.
Label  8

Packing group
ADR, IMDG, IATA  II

14.5 Environmental hazards: Not applicable.

14.6 Special precautions for user

Warning: Corrosive substances.

Kemler Number: 80
EMS Number: F-A,S-B

Segregation groups
Acids

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

Transport/Additional information:
ADR

Exempted quantities (EQ): E2
Limited quantities (LQ): 1L
Transport category 2
Tunnel restriction code E

UN "Model Regulation": UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,4-Dichloro-5-fluorobenzoyl chloride), 8, II

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 not listed.

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

National regulations

Information about limitation of use:
For use only by technically qualified individuals.

Employment restrictions concerning young persons must be observed.

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 Material 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:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA/ADR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
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 Harmonized 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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)