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

1.1 Product identifier
Trade name **Acrylic acid**

Stock number: L04280
CAS Number: 79-10-7
EC number: 201-177-9
Index number: 807-061-00-8

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

- GHS02 flame
  Flam. Liq. 3  H226  Flammable liquid and vapour.

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

- GHS09 environment
  Aquatic Acute 1  H400  Very toxic to aquatic life.

- GHS07
  Acute Tox. 4  H302  Harmful if swallowed.
  Acute Tox. 4  H312  Harmful in contact with skin.
  Acute Tox. 4  H332  Harmful if inhaled.

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

- GHS02 flame
- GHS05 corrosion
- GHS07
- GHS09 environment

Signal word Danger

Hazard statements:
H226  Flammable liquid and vapour.
H302+H312+H332  Harmful if swallowed, in contact with skin or if inhaled.
H314  Causes severe skin burns and eye damage.
H400  Very toxic to aquatic life.

Precautionary statements
P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260  Do not breathe dusts or mists.
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.
P405  Store locked up.
P501  Dispose of contents/container in accordance with local/regional/national/international regulations.

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: 79-10-7 Acrylic acid
Concentration: ≤100%
Identification number(s):
EC number: 201-177-9
Index number: 807-061-00-8
Additional information: Stabilized with:
Stabilizer: 4-Methoxyphenol (CAS# 150-76-5)
SECTION 4: First aid measures

4.1 Description of first aid measures

General information
Instantly remove any clothing soiled by the product.

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.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns.
Harmful if swallowed.
Harmful if inhaled.
Harmful in contact with skin.

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, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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

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.

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

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:
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: No special requirements.
Information about storage in one common storage facility: Store away from oxidising agents.
Further information about storage conditions:
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:

79-10-7 Acrylic acid (100.0%)

AGW (Germany) Long-term value: 30 mg/m³, 10 ppm
1(I);DFG, Y
REL (USA) Long-term value: 6 mg/m³, 2 ppm
Skin
TLV (USA) Long-term value: 5.9 mg/m³, 2 ppm
Skin

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.
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.  
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: Butyl rubber, BR  
Penetration time of glove material (in minutes) 480

Glove thickness: 0.3 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: Pungent  
Odour threshold: Not determined.  

pH-value: Not determined.

Change in condition  
Melting point/freezing point: ca 13 °C  
Initial boiling point and boiling range: 138-139 °C  
Sublimation temperature / start: Not determined

Flash point: 54 °C  
Inflammability (solid, gaseous) Not determined.  
Ignition temperature: 374 °C  
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: 5.3 Vol %  
Upper: 26 Vol %

Steam pressure at 20 °C: 4.3 hPa  
Density at 20 °C: 1.051 g/cm³  
Relative density Not determined.  
Vapour density Not determined.  
Evaporation rate Not determined.  

Solubility in / Miscibility with  
Water: Fully miscible  
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  
No information known.

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

10.4 Conditions to avoid  
No further relevant information available.

10.5 Incompatible materials:  
Oxidising agents

10.6 Hazardous decomposition products:  
Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects  
Acute toxicity  
Harmful if inhaled,  
Harmful in contact with skin.  
Harmful if swallowed.  
Danger by skin resorption.

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, in contact with skin or if inhaled.

LD/LC50 values that are relevant for classification:  
Oral LD50 33.5 mg/kg (rat)  
Dermal LD50 294 mg/kg (rabbit)

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

Carcinogenicity:  
IARC-3: Not classifiable as to carcinogenicity to humans.  
ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.

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

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

Additonal toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
Trade name **Acrylic acid**

**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: Very toxic for fish
Additional ecological information:

**General notes:**
Water hazard class 1 (Assessment by list): slightly hazardous for water.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.
Avoid transfer into the environment.
Very toxic for 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.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
Recommended cleaning agent: Water, if necessary with cleaning agent.

**SECTION 14: Transport information**

**UN-Number**
ADR, IMDG, IATA UN2218

14.2 UN proper shipping name
ADR IMDG, IATA 2218 ACRYLIC ACID, STABILIZED ACRYLIC ACID, STABILIZED

14.3 Transport hazard class(es)
ADR

Class Label
8 (CF1) Corrosive substances.

ImDG

Class Label
8 Corrosive substances.

IATA

Class Label
8 (3) Corrosive substances.

Packing group
ADR, IMDG, IATA II

14.5 Environmental hazards:
Environmentally hazardous substance, liquid

14.6 Special precautions for user
Kemler Number: 839
EMS Number: F-E, S-C
Segregation groups Acids
Stowage Category E
Stowage Code SW1 Protected from sources of heat.
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): E2
Limited quantities (LQ): 1L
Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml
Transport category 2
Tunnel restriction code D/E

IMDG
Limited quantities (LQ): 1L
Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation": UN 2218 ACRYLIC ACID, STABILIZED, 8 (3), 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 listed.
Standard for the Uniform Scheduling of Medicines and Poisons Substance is not listed.
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name Acrylic acid

(Contd. of page 4)

Directive 2012/18/EU
Named dangerous substances - ANNEX I Substance is not listed.
Seveso category
E1 Hazardous to the Aquatic Environment
P4c FLAMMABLE LIQUIDS
Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t
Qualifying quantity (tonnes) for the application of upper-tier requirements 200 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
Water hazard class: Water hazard class 1 (Assessment by list): 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)
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 Index
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1