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

1.1 Product identifier
Trade name Pyridine

Stock number: 19378
EC number: 203-809-9
Index number: 813-002-00-7

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. 2 H225 Highly flammable liquid and vapour.

GHS07
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Other hazards that do not result in classification May cause cancer.

2.2 Label elements

GHS02 GHS07
Signal word Danger
Hazard statements
H225 Highly flammable liquid and vapour.
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wear protective gloves/protective clothing/eye protection/face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P361 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

PBT: Not applicable.

vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances

CAS# Designation: 110-86-1 Pyridine

Concentration: ≤100%

EC number: 203-809-9
Index number: 813-002-00-7

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

Harmful if swallowed.
Harmful if inhaled.
Harmful in contact with skin.

(Contd. on page 2)
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
Nitrogen oxides (NOx)

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).
Dispose of contaminated material as waste according to section 13.

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: Store in cool location.
Information about storage in one common storage facility:
Do not store together with acids.
Store away from oxidising agents.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

7.3 Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with critical values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Substance</th>
<th>PEL (USA) Long-term value</th>
<th>REL (USA) Long-term value</th>
<th>TLV (USA) Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-86-1 Pyridine (100.0%)</td>
<td>15 mg/m³, 5 ppm</td>
<td>15 mg/m³, 5 ppm</td>
<td>3.1 mg/m³, 1 ppm</td>
</tr>
</tbody>
</table>

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) Not determined

Eye protection:

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: Liquid
Odour: Unpleasant
Odour threshold: Not determined.
Trade name Pyridine

44.0 pH-value:
Not determined.

Change in condition
Melting point/freezing point: -42 °C
Initial boiling point and boiling range: 115 °C
Sublimation temperature / start:
Not determined.

Flash point:
20 °C
Inflammability (solid, gaseous):
Not determined.
Ignition temperature:
482 °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:
1.8 Vol %
Upper:
12.4 Vol %

Steam pressure at 20 °C:
20 hPa
Density at 20 °C: 0.978 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.

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:
Acids
Oxidising agents

10.6 Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)

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.
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 [1500 mg/kg (mouse)]

Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
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:
ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.
ARC-3: Not classifiable as to carcinogenicity to humans.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.

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

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 (Assessment by list): 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.
Trade name **Pyridine**

Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal. Ungleaned packagings: Disposal must be made according to official regulations. Recommended cleaning agent: Water, if necessary with cleaning agent.

### SECTION 14: Transport information

<table>
<thead>
<tr>
<th>UN Number</th>
<th>UN1282</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR, IMDG, IATA</td>
<td>1282 PYRIDINE</td>
</tr>
<tr>
<td><strong>14.2 UN proper shipping name</strong></td>
<td>1282 PYRIDINE</td>
</tr>
<tr>
<td><strong>14.3 Transport hazard class(es)</strong></td>
<td>3 (F1) Flammable liquids.</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>IMDG, IATA</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td>II</td>
</tr>
</tbody>
</table>

#### Environmental hazards:
- Not applicable.

#### Special precautions for user:
- Warning: Flammable liquids.
- Kemler Number: 33
- EMS Number: F-E,S-D
- Stowage Category: B
- Stowage Code: SW2 Clear of living quarters.

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

| Transport category | 2 |
| Tunnel restriction code | D/E |

### SECTION 15: Regulatory information

#### 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:
- P5c FLAMMABLE LIQUIDS

#### Qualifying quantity (tonnes) for the application of lower-tier requirements:
- 5,000 t

#### Qualifying quantity (tonnes) for the application of upper-tier requirements:
- 50,000 t

#### Conditions of restriction:
- 3, 40

#### 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.
Trade name **Pyridine**

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