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

1.1 Product identifier
Trade name **Imidazole**

Stock number: A10221
CAS Number: 288-32-4
EC number: 206-019-2
Index number: 813-319-00-0

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 8407 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

GHS08 health hazard
Repr. 1B H360D May damage the unborn child.

GHS05 corrosion
Skin Corr. 1C 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
GHS05 GHS07 GHS08

Signal word Danger
Hazard statements
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H360D May damage the unborn child.

Precautionary statements
P260 Do not breathe dusts or mists.
P303+P361+P333 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.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
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.
PvPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances
CAS# Designation: 288-32-4 Imidazole
Concentration: ≤ 100%
Identification number(s):
EC number: 206-019-2
Index number: 813-319-00-0

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.
After swallowing Seek medical treatment.
Trade name **Imidazole**

4.2 Most important symptoms and effects, both acute and delayed
Causes severe skin burns.
Harmful if swallowed.
May damage fertility or the unborn child.

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

SECTION 5: Fighting 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.

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:
Use neutralising agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

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.
Open and handle container with care.

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 water.
Do not store together with acids.
Store away from oxidising agents.
Store away from acid chlorides.
Store away from acid anhydrides.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>288-32-4</td>
<td>Imidazole (100.0%)</td>
</tr>
<tr>
<td>MAK (Germany) vgl. Abschn.Iib</td>
<td></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.
Store protective clothing separately.
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 type P100 (USA) or P3 (EN 143) cartridges 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.

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 Nitrile rubber, NBR
Penetration time of glove material [in minutes] 480

Glove thickness: 0.11 mm
Eye protection: Tightly sealed safety glasses.

Glove thickness: 0.11 mm
Eye protection: Tightly sealed safety glasses.
Full face protection
Safety glasses with side shields / NIOSH (US) or EN 166(EU)

(Contd. on page 3)
**Trade name** Imidazole

**Body protection:** Protective work clothing.

### SECTION 9: Physical and chemical properties

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

**General Information**

- **Appearance:** Crystalline powder or flakes
- **Odour:** Amine-like
- **Odour threshold:** Not determined.
- **pH-value:** Not applicable.

**Change in condition**

- **Melting point/freezing point:** 88-92 °C
- **Initial boiling point and boiling range:** 256 °C
- **Sublimation temperature / start:** Not determined
- **Flash point:** 145 °C
- **Inflammability (solid, gaseous):** Not determined.
- **Ignition temperature:** Not determined
- **Decomposition temperature:** Not determined
- **Self-inflammability:** Not determined.

**Explosive properties:** Not determined.

<table>
<thead>
<tr>
<th>Critical values for explosion:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lower:</strong></td>
</tr>
<tr>
<td><strong>Upper:</strong></td>
</tr>
<tr>
<td><strong>Steam pressure:</strong></td>
</tr>
<tr>
<td><strong>Density at 20 °C:</strong></td>
</tr>
<tr>
<td><strong>Relative density:</strong></td>
</tr>
<tr>
<td><strong>Vapour density:</strong></td>
</tr>
<tr>
<td><strong>Evaporation rate:</strong></td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with:</strong></td>
</tr>
<tr>
<td>Water at 20 °C:</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water:</strong></td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
</tr>
<tr>
<td><strong>Dynamic:</strong></td>
</tr>
<tr>
<td><strong>Kinematic:</strong></td>
</tr>
</tbody>
</table>

#### 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:

- Acids
- Oxidising agents
- Acid chlorides
- Acid anhydrides
- Water/moisture

#### 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 swallowed.
- 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.

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

- Oral LD50: 970 mg/kg (rat)

**Skin irritation or corrosion:**

- 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:** No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:**

May damage fertility or the unborn child.

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:** 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.

**Bioaccumulative potential:** No further relevant information available.

**Mobility in soil:** No further relevant information available.

**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.

(Contd. on page 4)
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.
Consult state, local or national regulations for proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

UN-Number
ADR, IMDG, IATA UN3263

14.2 UN proper shipping name
ADR, IMDG, IATA 3263 CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (Imidazole)

14.3 Transport hazard class(es)
ADR

Class 8 (C8) Corrosive substances.
Label 8

IMDG, IATA

Class 8 Corrosive substances.
Label 8

Packing group ADR, IMDG, IATA III

14.5 Environmental hazards: Not applicable.

14.6 Special precautions for user
Kemler Number: 80
EMS Number: F-A,S-B
Alkalis
Segregation groups
Stowage Category A
Segregation Code SG35 Stow "separated from" acids.

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

Transport/Additional information:

ADR

Excepted quantities (EQ): E1
Limited quantities (LQ): 5 kg
Excepted quantities (EQ): Maximum net quantity per inner packaging: 30 g

IMDG

Limited quantities (LQ): 5 kg
Excepted quantities (EQ): Code: E1
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 1000 g

UN "Model Regulation": UN 3263 CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (IMIDAZOLE), 8, III

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 listed.
Directive 2012/18/EU Named dangerous substances - ANNEX I Substance is not listed.
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: Not applicable.
Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
ELINCS (European List of Notified Chemical Substances) 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.
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)
- VFR: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)
- LD50: Lethal dose, 50 percent
- LC50: Lethal concentration, 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
- REL: Permissible Exposure Limit
- BEI: Biological Exposure Limit
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Corr. 1C: Skin corrosion/irritation – Category 1C
- Repr. 1B: Reproductive toxicity – Category 1B