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

1.1 Product identifier

Trade name **Phosphoric acid, 85% aqueous solution**

Stock number: A18067, L14440

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

Zepplinistr. 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

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

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

2.2 Label elements

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

Hazard pictograms

GHS05

Signal word: Danger

Hazard-determining components of labelling:

Orthophosphoric acid

Hazard statements:

H314 Causes severe skin burns and eye damage.

Precautionary statements:

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.

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.

vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Dangerous components:


Orthophosphoric acid

Skin Corr. 1B, H314 85,0%

Additional information: None known.

Non-Hazardous ingredients


Water 15,0%

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.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns. Causes serious eye damage.

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:

Phosphorus oxides
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.
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
Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure adequate 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 strong bases.
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:
7664-38-2 Orthophosphoric acid (85.0%)
AGW (Germany) Long-term value: 2 E mg/m³
2(I), DFG, EU, AGS, Y
PEL (USA) Long-term value: 1 mg/m³
REL (USA) Short-term value: 3 mg/m³
Long-term value: 1 mg/m³
TLV (USA) Short-term value: 3 mg/m³
Long-term value: 1 mg/m³
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.
Do not inhale dust / smoke / mist.
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 Nitrile rubber, NBR
Penetration time of glove material (in minutes) 480
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)
Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties
General Information
Appearance: Viscous liquid
Odour: Not determined
Odour threshold: Not determined.
PH-value: Not determined.
Change in condition
Melting point/freezing point: Not determined
Initial boiling point and boiling range: Not determined
Trade name **Phosphoric acid, 85% aqueous solution**

(Contd. of page 2)

### 44.0 Sublimation temperature / start:
Not determined.

### 22.0 Inflammability (solid, gaseous):
Not determined.

### 22.0 Ignition temperature:
Not determined.

### 22.0 Decomposition temperature:
Not determined.

### 22.0 Self-inflammability:
Product is not self-igniting.

### Explosive properties:
Not determined.

#### Critical values for explosion:
- **Lower:** Not determined.
- **Upper:** Not determined.
- **Steam pressure:** Not determined.
- **Density at 20 °C:** 1.7 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.

### Solvent content:
- **Organic solvents:** 0.0 %

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:
- Bases
- Oxidising agents

10.6 Hazardous decomposition products:
- Phosphorus oxides (e.g. P2O5)

### SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity:
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 components in this product.

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

<table>
<thead>
<tr>
<th>7664-38-2 Orthophosphoric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Skin irritation or corrosion:**
- Causes severe skin burns.
- Causes severe skin burns and eye damage.
- Causes serious eye damage.
- Respiratory or skin sensitisation:
  - Based on available data, the classification criteria are not met.
- 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.
  - Based on available data, the classification criteria are not met.
- 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:**

<table>
<thead>
<tr>
<th>General notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water hazard class 1 (Self-assessment): slightly hazardous for water.</td>
</tr>
<tr>
<td>Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.</td>
</tr>
<tr>
<td>Avoid transfer into the environment.</td>
</tr>
<tr>
<td>12.5 Results of PBT and vPvB assessment</td>
</tr>
<tr>
<td>PBT: Not applicable.</td>
</tr>
<tr>
<td>vPvB: Not applicable.</td>
</tr>
<tr>
<td>12.6 Other adverse effects:</td>
</tr>
<tr>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### SECTION 13: Disposal considerations

13.1 Waste treatment methods
**Recommendation:**
Hand over to disposers of hazardous waste.

Uncleaned packagings:
**Recommendation:**
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>UN1805</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>ADR: PHOSPHORIC ACID, SOLUTION</td>
</tr>
<tr>
<td>IMDG, IATA</td>
<td>UN1805 PHOSPHORIC ACID, SOLUTION</td>
</tr>
<tr>
<td>ADR</td>
<td>UN1805 PHOSPHORIC ACID, SOLUTION</td>
</tr>
<tr>
<td>IMDG, IATA</td>
<td>UN1805 PHOSPHORIC ACID, SOLUTION</td>
</tr>
</tbody>
</table>

14.3 Transport hazard class(es)

ADR

| Class | 8 (C1) Corrosive substances. |
| Label | 8 |
| IMDG, IATA | 8 |

14.5 Environmental hazards:
Not applicable.

14.6 Special precautions for user

Kemler Number: 80
EMS Number: F-A-S-B
Segregation groups: Acids
Stowage Category: A

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Inventory of Chemical Substances
All ingredients are listed.

Standard for the Uniform Scheduling of Medicines and Poisons

764-38-2 | Orthophosphoric acid | S5, S6 |

Directive 2012/18/EU
Named dangerous substances - ANNEX I None of the ingredients is listed.

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
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.
Other regulations, limitations and prohibitive regulations

ELINCS (European List of Notified Chemical Substances)
None of the ingredients is listed.

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.
None of the ingredients are 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.
None of the ingredients is listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)
None of the ingredients is 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.

Relevant phrases
H314 Causes severe skin burns and eye damage.
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
ELINCS: European List of Notified Chemical Substances
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)
LC50: Lethal concentration, 50 percent
Trade name **Phosphoric acid, 85% aqueous solution**

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 Limit
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1