

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**Trade name **Zinc phosphide**

Stock number: 45459

CAS Number:

1314-84-7

EC number:

215-244-5

Index number:

015-006-00-9

**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 (0) 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

Water-react. 1 H260 In contact with water releases flammable gases which may ignite spontaneously.



GHS06 skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

T+; Very toxic

R28: Very toxic if swallowed.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R15/29-32: Contact with water liberates toxic, extremely flammable gas. Contact with acids liberates very toxic gas.

**Information concerning particular hazards for human and environment:** Not applicable**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**

GHS02 GHS06 GHS09

**Signal word** Danger**Hazard statements**

H260 In contact with water releases flammable gases which may ignite spontaneously.

H300 Fatal if swallowed.

H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

P231+P232 Handle under inert gas. Protect from moisture.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P233 Keep container tightly closed.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Additional information:**

EUH029 Contact with water liberates toxic gas.

EUH032 Contact with acids liberates very toxic gas.

**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:**

1314-84-7 Zinc phosphide

**Identification number(s):**

EC number: 215-244-5

Index number: 015-006-00-9

Trade name **Zinc phosphide**

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#### SECTION 4: First aid measures

##### 4.1 Description of first aid measures

###### General information

Instantly remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

###### 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** Do not induce vomiting; instantly call for medical help.

**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** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

**For safety reasons unsuitable extinguishing agents** Water.

##### 5.2 Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Hydrogen phosphide

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

Put on breathing apparatus.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**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:

Keep away from ignition sources.

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

**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:** 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:

Do not store together with acids.

Store away from water.

###### 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:

###### 1314-84-7 Zinc phosphide (100,0%)

MAK (Germany)	Long-term value: 0,1A* 2E** mg/m <sup>3</sup> *alveolengängig; **einatembar
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**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.

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:

Safety glasses

Full face protection

**Body protection:** Protective work clothing.

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Trade name **Zinc phosphide**

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### SECTION 9: Physical and chemical properties

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

##### General Information

##### Appearance:

Form: Pieces  
Colour: Black  
Smell: Not determined  
Odour threshold: Not determined.

pH-value: Not applicable.

##### Change in condition

Melting point/Melting range: 420 °C  
Boiling point/Boiling range: 1100 °C  
Sublimation temperature / start: Not determined

Flash point: Not applicable  
Inflammability (solid, gaseous): Contact with water liberates extremely flammable gases.  
Ignition temperature: Not determined  
Decomposition temperature: Not determined  
Self-inflammability: Not determined.

Danger of explosion: Not determined.

##### Critical values for explosion:

Lower: Not determined

Upper: Not determined

Steam pressure: Not applicable.

Density at 20 °C: 4,55 g/cm<sup>3</sup>

Relative density: Not determined.

Vapour density: Not applicable.

Evaporation rate: Not applicable.

Solubility in / Miscibility with Water: Contact with water releases flammable gases

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

dynamic: Not applicable.

kinematic: Not applicable.

9.2 Other information: No further relevant information available.

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

In contact with water releases flammable gases which may ignite spontaneously.

Contact with acids liberates very toxic gas.

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

Contact with water releases flammable gases

Contact with water releases toxic gases

Contact with acids releases toxic gases

Contact with acids liberates very toxic gas.

10.4 Conditions to avoid: No further relevant information available.

#### 10.5 Incompatible materials:

Acids

Water/moisture

#### 10.6 Hazardous decomposition products:

Hydrogen phosphide

Phosphorus oxides (e.g. P<sub>2</sub>O<sub>5</sub>)

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

Acute toxicity: Fatal if swallowed.

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

Oral LD50: 12 mg/kg (rat)

Skin irritation or corrosion: Irritant for skin and mucous membranes.

Eye irritation or corrosion: Irritant effect.

Sensitization: No sensitizing effect known.

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: 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.

#### Ecotoxicological effects:

Remark: Very toxic for fish

#### Additional ecological information:

##### General notes:

Do not allow material to be released to the environment without proper governmental permits.

Water danger class 3 (Self-assessment): extremely hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into soil.

Also poisonous for fish and plankton in water bodies.

May cause long lasting harmful effects to aquatic life.

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.

Trade name **Zinc phosphide**

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### 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

UN1714

#### 14.2 UN proper shipping name

ADR

IMDG, IATA

1714 ZINC PHOSPHIDE  
ZINC PHOSPHIDE

#### 14.3 Transport hazard class(es)

ADR



Class

Label

IMDG, IATA

4.3 (WT2) Substances which, in contact with water, emit flammable gases.  
4.3+6.1



Class

Label

4.3 Substances which, in contact with water, emit flammable gases.  
4.3+6.1

#### Packing group

ADR, IMDG, IATA

I

#### 14.5 Environmental hazards:

Environmentally hazardous substance, solid

#### 14.6 Special precautions for user

Kemler Number:

Segregation groups

Warning: Substances which, in contact with water, emit flammable gases.

-  
Heavy metals and their salts (including their organometallic compounds)

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

Code

Not applicable.

#### Transport/Additional information:

ADR

Excepted quantities (EQ):

Limited quantities (LQ)

Transport category

Tunnel restriction code

E0

0

1

E

UN "Model Regulation":

UN1714, ZINC PHOSPHIDE, 4.3 (6.1), I

### 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 Drugs and Poisons** 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.

**Water hazard class:** Water danger class 3 (Self-assessment): extremely 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:

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)