

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

### 1.1 Product identifier

Trade name **Tungsten phosphide**

Stock number: 39641

CAS Number:

12037-70-6

EC number:

234-864-7

### 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 (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

Flam. Sol. 1, H228, Flammable solid.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

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



Xi; Irritant

R36/38: Irritating to eyes and skin.



F; Highly flammable

R11: Highly flammable.

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 GHS07

Signal word Danger

#### Hazard statements

H228 Flammable solid.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

#### Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P362 Take off contaminated clothing.

### 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:

12037-70-6 Tungsten phosphide

#### Identification number(s):

EC number: 234-864-7

## 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 No further relevant information available.

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

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**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

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

**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  
Hydrogen phosphide

**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 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.

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.

**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:** No information known.

**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**

**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:**

Tungsten and compounds (as W)

mg/m<sup>3</sup>

ACGIH TLV 5; 10-STEL (metal)

1; 3-STEL (soluble compounds)

5; 10-STEL (insoluble compounds)

Belgium TWA 1 (soluble compounds)

5; 10-STEL (insoluble compounds)

Finland TWA 5 (metal)

1 (soluble compounds)

5 (insoluble compounds)

Netherlands MAC-TGG 5 (metal)

1 (soluble compounds)

5 (insoluble compounds)

Poland TWA 5 (metal)

1 (soluble compounds)

5 (insoluble compounds)

Sweden NGV 5 (metal)

1 (soluble compounds)

5 (insoluble compounds)

United Kingdom TWA 5; 10-STEL (metal)

1; 3-STEL (soluble compounds)

5; 10-STEL (insoluble compounds)

MSHA TWA 1 (soluble compounds)

5 (insoluble compounds)

**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.

**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

Face protection

**Body protection:** Protective work clothing.

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### SECTION 9: Physical and chemical properties

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

##### General Information

##### Appearance:

**Form:** Powder  
**Colour:** Grey  
**Smell:** Not determined  
**Odour threshold:** Not determined.

**pH-value:** Not applicable.

##### Change in condition

**Melting point/Melting range:** Not determined  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined

**Flash point:** Not applicable  
**Inflammability (solid, gaseous)** Highly flammable.  
**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** 8,5 g/cm<sup>3</sup>

**Relative density** Not determined.

**Vapour density** Not applicable.

**Evaporation rate** Not applicable.

##### Solubility in / Miscibility with

**Water:** Insoluble

**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** 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** No dangerous reactions known

**10.4 Conditions to avoid** No further relevant information available.

##### 10.5 Incompatible materials:

Oxidising agents

No information known.

##### 10.6 Hazardous decomposition products:

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

Hydrogen phosphide

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

**Acute toxicity:** No effects known.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** Causes skin irritation.

**Eye irritation or corrosion:** Causes serious eye irritation.

**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.

##### Additional ecological information:

##### General notes:

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

Generally not hazardous for water.

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.

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### SECTION 14: Transport information

<b>UN-Number</b> ADR, IMDG, IATA	UN3178
<b>14.2 UN proper shipping name</b> ADR IMDG, IATA	3178 FLAMMABLE SOLID, INORGANIC, N.O.S. (Tungsten phosphide) FLAMMABLE SOLID, INORGANIC, N.O.S. (Tungsten phosphide)
<b>14.3 Transport hazard class(es)</b> ADR	
	
<b>Class</b>	4.1 (F3) Flammable solids, self-reactive substances and solid desensitised explosives.
<b>Label</b> IMDG, IATA	4.1
	
<b>Class</b>	4.1 Flammable solids, self-reactive substances and solid desensitised explosives.
<b>Label</b>	4.1
<b>Packing group</b> ADR, IMDG, IATA	II
<b>14.5 Environmental hazards:</b>	Not applicable.
<b>14.6 Special precautions for user</b>	Warning: Flammable solids, self-reactive substances and solid desensitised explosives.
<b>Kemler Number:</b>	40
<b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>ADR</b>	
<b>Excepted quantities (EQ):</b>	E2
<b>Limited quantities (LQ)</b>	1 kg
<b>Transport category</b>	2
<b>Tunnel restriction code</b>	E
<b>UN "Model Regulation":</b>	UN3178, FLAMMABLE SOLID, INORGANIC, N.O.S. (Tungsten phosphide), 4.1, 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 not 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:** Generally not 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)