

# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/16/2015

Reviewed on 12/16/2015

## 1 Identification

- **Product identifier**
- **Trade name:** Titanium
- **Article number:** 80074-TI, 80075-TI
- **CAS Number:**  
7440-32-6
- **EC number:**  
231-142-3
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Sol. 2 H228 Flammable solid.  
 Pyr. Sol. 1 H250 Catches fire spontaneously if exposed to air.  
 Self-heat. 1 H251 Self-heating: may catch fire.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**  
Flammable solid.  
Catches fire spontaneously if exposed to air.  
Self-heating: may catch fire.
- **Precautionary statements**  
Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
Do not allow contact with air.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Wear protective gloves / eye protection / face protection.  
Keep cool. Protect from sunlight.  
Ground/bond container and receiving equipment.

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In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.  
 Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.  
 Store contents under inert gas.  
 Store away from other materials.  
 Maintain air gap between stacks/pallets.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	4	Fire = 4
REACTIVITY	0	Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
7440-32-6 titanium
- **Identification number(s)**
- **EC number:** 231-142-3

### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.

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- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **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 disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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- **Material of gloves**

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.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

<b>Form:</b>	Powder
<b>Color:</b>	Silver grey
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

- **pH-value:** Not applicable.

- **Change in condition**

<b>Melting point/Melting range:</b>	1668 °C (3034 °F)
<b>Boiling point/Boiling range:</b>	3280 °C (5936 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Product is not flammable.

- **Ignition temperature:**

**Decomposition temperature:** Not determined.

- **Auto igniting:** Spontaneously flammable in air.

- **Danger of explosion:** Not determined.

- **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

- **Vapor pressure:** Not applicable.

- **Density at 20 °C (68 °F):** 4.50549 g/cm<sup>3</sup> (37.598 lbs/gal)

<b>Bulk density at 20 °C (68 °F):</b>	ca.126 kg/m <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapor density</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.

- **Solubility in / Miscibility with**

**Water:** Insoluble.

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

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- |                            |  |
|----------------------------|--|
| · <b>Viscosity:</b>        |  |
| <b>Dynamic:</b>            | Not applicable.                            |
| <b>Kinematic:</b>          | Not applicable.                            |
| · <b>Solvent content:</b>  |  |
| <b>Organic solvents:</b>   | 0.0 %                                      |
| <b>VOC content:</b>        | 0.0 g/l / 0.00 lb/gl                       |
| · <b>Solids content:</b>   | 99.9 %                                     |
| · <b>Other information</b> | No further relevant information available. |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>
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Substance is not listed.
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· <b>NTP (National Toxicology Program)</b>
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Substance is not listed.
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· <b>OSHA-Ca (Occupational Safety Health Administration)</b>
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Substance is not listed.
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## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
- Water hazard class 1 (Assessment by list): slightly hazardous for water

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- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |   |  |
|---|--|
| <b>· UN-Number</b>  |  |
| <b>· ADR, IATA</b>  | UN2546   |
| <b>· UN proper shipping name</b>  |  |
| <b>· ADR</b>  | 2546 Titanium powder, dry                            |
| <b>· IATA</b>   | Titanium powder, dry                                 |
| <b>· Transport hazard class(es)</b>   |  |
| <b>· DOT</b>  |  |
|  |  |
| <b>· Class</b>  | 4.2 Substances liable to spontaneous combustion      |
| <b>· Label</b>  | 4.2  |
|   |  |
| <b>· ADR, IMDG, IATA</b>  |  |
|  |  |
| <b>· Class</b>  | 4.2 Substances liable to spontaneous combustion      |
| <b>· Label</b>  | 4.2  |
| <b>· Packing group</b>  |  |
| <b>· DOT, ADR, IMDG, IATA</b>   | II   |
| <b>· Environmental hazards:</b>   | Not applicable.                                      |
| <b>· Special precautions for user</b>   | Warning: Substances liable to spontaneous combustion |
| <b>· Danger code (Kemler):</b>  | 40   |
| <b>· EMS Number:</b>  | 4.2-02   |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>    | Not applicable.                                      |

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· **Transport/Additional information:**

· **ADR**

· **Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 500 g

· **UN "Model Regulation":**

UN 2546 TITANIUM POWDER, DRY, 4.2, II

## 15 Regulatory information

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

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02

· **Signal word** Danger

· **Hazard statements**

Flammable solid.

Catches fire spontaneously if exposed to air.

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**Trade name: Titanium**

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*Self-heating: may catch fire.***· Precautionary statements***Keep away from heat/sparks/open flames/hot surfaces. No smoking.**Do not allow contact with air.**Use explosion-proof electrical/ventilating/lighting/equipment.**Wear protective gloves / eye protection / face protection.**Keep cool. Protect from sunlight.**Ground/bond container and receiving equipment.**In case of fire: Use for extinction: CO2, powder or water spray.**Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.**Store contents under inert gas.**Store away from other materials.**Maintain air gap between stacks/pallets.***· Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

### 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**· Date of preparation / last revision** 12/16/2015 / -**· 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**DOT: US Department of Transportation**IATA: International Air Transport Association**ACGIH: American Conference of Governmental Industrial Hygienists**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**VOC: Volatile Organic Compounds (USA, EU)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety Health***TLV: Threshold Limit Value****PEL: Permissible Exposure Limit****REL: Recommended Exposure Limit****Flam. Sol. 2: Flammable solids, Hazard Category 2****Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1****Self-heat. 1: Self-Heating Substances and Mixtures, Hazard Category 1**



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 16.12.2015

Revision: 16.12.2015

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

- **Product identifier**

- **Trade name:** Titanium

- **Article number:** 80074-TI, 80075-TI

- **CAS Number:**

7440-32-6

- **EC number:**

231-142-3

- **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

ProSciTech Pty Ltd

11 Carlton Street, Kirwan QLD 4817 Australia

Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emgrid Australia Pty. Ltd.

P.O. Box 118

The Patch VIC 3792

Australia

Tel: 03 9752 1785

Fax: 03 9752 1784

Website: www.emgrid.com.au

- **Further information obtainable from:** Product safety department

- **Emergency telephone number:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

## 2 Hazards identification

- **Classification of the substance or mixture**



GHS02 flame

Flam. Sol. 2 H228 Flammable solid.

Pyr. Sol. 1 H250 Catches fire spontaneously if exposed to air.

Self-heat. 1 H251 Self-heating; may catch fire.

- **Label elements**

- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

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**· Hazard pictograms**

GHS02

**· Signal word Danger****· Hazard statements***Flammable solid.**Catches fire spontaneously if exposed to air.**Self-heating: may catch fire.***· Precautionary statements***Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**Do not allow contact with air.**Use explosion-proof electrical/ventilating/lighting/equipment.**Wear protective gloves / eye protection / face protection.**Keep cool. Protect from sunlight.**Ground/bond container and receiving equipment.**In case of fire: Use for extinction: CO2, powder or water spray.**Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.**Store contents under inert gas.**Store away from other materials.**Maintain air gap between stacks/pallets.***· Other hazards****· Results of PBT and vPvB assessment****· PBT:** *Not applicable.***· vPvB:** *Not applicable.*

### 3 Composition/information on ingredients

**· Chemical characterisation: Substances****· CAS No. Description**

7440-32-6 titanium

**· Identification number(s)****· EC number:** 231-142-3

### 4 First aid measures

**· Description of first aid measures****· After inhalation:** *Supply fresh air; consult doctor in case of complaints.***· After skin contact:** *Generally the product does not irritate the skin.***· After eye contact:** *Rinse opened eye for several minutes under running water.***· After swallowing:** *If symptoms persist consult doctor.***· Information for doctor:****· Most important symptoms and effects, both acute and delayed** *No further relevant information available.***· Indication of any immediate medical attention and special treatment needed***No further relevant information available.*

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Trade name: Titanium

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### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **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 disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Do not seal receptacle gas tight.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

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· **Respiratory protection:** Not required.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

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.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Powder

Colour: Silver grey

· **Odour:** Odourless

· **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range: 1668 °C

Boiling point/Boiling range: 3280 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Self-igniting:** Spontaneously flammable in air.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapour pressure:** Not applicable.

· **Density at 20 °C:** 4.50549 g/cm<sup>3</sup>

· **Bulk density at 20 °C:** ca.126 kg/m<sup>3</sup>

· **Relative density** Not determined.

· **Vapour density** Not applicable.

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· <b>Evaporation rate</b>	<i>Not applicable.</i>
· <b>Solubility in / Miscibility with water:</b>	<i>Insoluble.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not applicable.</i>
<b>Kinematic:</b>	<i>Not applicable.</i>
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	<i>0.0 %</i>
<b>VOC (EC)</b>	<i>0.00 %</i>
· <b>Solids content:</b>	<i>99.9 %</i>
· <b>Other information</b>	<i>No further relevant information available.</i>

### 10 Stability and reactivity

- **Reactivity** *No further relevant information available.*
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
- **Possibility of hazardous reactions** *No dangerous reactions known.*
- **Conditions to avoid** *No further relevant information available.*
- **Incompatible materials:** *No further relevant information available.*
- **Hazardous decomposition products:** *No dangerous decomposition products known.*

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**
- **Primary irritant effect:**
- **Skin corrosion/irritation** *No irritant effect.*
- **Serious eye damage/irritation** *No irritating effect.*
- **Respiratory or skin sensitisation** *No sensitising effects known.*

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** *No further relevant information available.*
- **Persistence and degradability** *No further relevant information available.*
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** *No further relevant information available.*
- **Mobility in soil** *No further relevant information available.*
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*

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· **Other adverse effects** No further relevant information available.**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· <b>UN-Number</b> · <b>ADG, IATA</b>	UN2546
· <b>UN proper shipping name</b> · <b>ADG</b> · <b>IATA</b>	2546 TITANIUM POWDER, DRY Titanium powder, dry
· <b>Transport hazard class(es)</b> · <b>ADG, IMDG, IATA</b>	
	
· <b>Class</b> · <b>Label</b>	4.2 Substances liable to spontaneous combustion. 4.2
· <b>Packing group</b> · <b>ADG, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b>	Warning: Substances liable to spontaneous combustion. 40 4.2-02
· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	0 Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· <b>Transport category</b> · <b>Tunnel restriction code</b>	2 D/E
· <b>UN "Model Regulation":</b>	UN 2546 TITANIUM POWDER, DRY, 4.2, II

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# Safety data sheet

according to 1907/2006/EC, Article 31

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## 15 Regulatory information

· **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 not listed.

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS02

· **Signal word** *Danger*

· **Hazard statements**

*Flammable solid.*

*Catches fire spontaneously if exposed to air.*

*Self-heating: may catch fire.*

· **Precautionary statements**

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

*Do not allow contact with air.*

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

*Wear protective gloves / eye protection / face protection.*

*Keep cool. Protect from sunlight.*

*Ground/bond container and receiving equipment.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.*

*Store contents under inert gas.*

*Store away from other materials.*

*Maintain air gap between stacks/pallets.*

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **Seveso category P7 PYROPHORIC LIQUIDS AND SOLIDS**

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **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*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*VOC: Volatile Organic Compounds (USA, EU)*

*PBT: Persistent, Bioaccumulative and Toxic*

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*vPvB: very Persistent and very Bioaccumulative*  
*Flam. Sol. 2: Flammable solids, Hazard Category 2*  
*Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1*  
*Self-heat. 1: Self-Heating Substances and Mixtures, Hazard Category 1*

AU



# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/16/2015

Reviewed on 12/16/2015

## 1 Identification

- **Product identifier**
- **Trade name:** Titanium
- **Article number:** 80074-TI, 80075-TI
- **CAS Number:**  
7440-32-6
- **EC number:**  
231-142-3
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Solids - Category 2

H228 Flammable solid.

Pyrophoric Solids - Category 1

H250 Catches fire spontaneously if exposed to air.

Self-heating Substances and Mixtures - Category 1 H251 Self-heating; may catch fire.

- **Label elements**

- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger

- **Hazard statements**

Flammable solid.

Catches fire spontaneously if exposed to air.

Self-heating; may catch fire.

- **Precautionary statements**

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

Do not allow contact with air.

Handle and store contents under inert gas. Protect from moisture.

Use explosion-proof [electrical/ventilating/lighting] equipment.

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

Keep cool.

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**Trade name: Titanium**

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Ground and bond container and receiving equipment.

Keep container tightly closed.

In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

IF ON SKIN: Brush off loose particles from skin. Immerse in cool water or wrap in wet bandages.

Store separately.

Maintain air gap between stacks or pallets.

· **Hazard description:**

· **WHMIS-symbols:**

B6 - Reactive flammable material



· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

7440-32-6 titanium

· **Identification number(s)**

· **EC number:** 231-142-3

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

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Trade name: Titanium

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### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **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 disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

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· **Breathing equipment:** Not required.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

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.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Powder

Color: Silver grey

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range: 1668 °C

Boiling point/Boiling range: 3280 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Auto igniting:** Spontaneously flammable in air.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapor pressure:** Not applicable.

· **Density at 20 °C:** 4.50549 g/cm<sup>3</sup>

· **Bulk density at 20 °C:** ca.126 kg/m<sup>3</sup>

· **Relative density** Not determined.

· **Vapor density** Not applicable.

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Trade name: Titanium

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· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
<b>Organic solvents:</b>	0.0 %
· <b>Solids content:</b>	99.9 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

### · **IARC (International Agency for Research on Cancer)**

Substance is not listed.

### · **NTP (National Toxicology Program)**

Substance is not listed.

### · **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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Trade name: Titanium



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- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>TDG, IATA</b></li> </ul>  | UN2546   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>TDG</b></li> <li>· <b>IATA</b></li> </ul>                               | 2546 Titanium powder, dry<br>Titanium powder, dry  |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>   | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> <li>· <b>TDG, IMDG, IATA</b></li> </ul>                                    | 4.2 Substances liable to spontaneous combustion<br>4.2   |
| <div style="text-align: center;">  </div>                                  | <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>                                     |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>  | 4.2 Substances liable to spontaneous combustion<br>4.2   |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, TDG, IMDG, IATA</b></li> </ul>   | II   |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>   | Not applicable.  |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Danger code (Kemler):</b></li> <li>· <b>EMS Number:</b></li> </ul> | Warning: Substances liable to spontaneous combustion<br>40<br>4.2-02   |

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- |  |   |
|--|---|
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.   |
| <b>· Transport/Additional information:</b>                                       |   |
| <b>· TDG</b>   |   |
| <b>· Excepted quantities (EQ)</b>  | Code: E2<br>Maximum net quantity per inner packaging: 30 g<br>Maximum net quantity per outer packaging: 500 g |
| <b>· UN "Model Regulation":</b>  | UN 2546 TITANIUM POWDER, DRY, 4.2, II   |

## 15 Regulatory information

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

- **Section 355 (extremely hazardous substances):**

Substance is not listed.

- **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

- **TSCA (Toxic Substances Control Act):**

Substance is listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

- **Chemicals known to cause developmental toxicity:**

Substance is not listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

Substance is not listed.

- **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

Substance is listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

- **Canadian Ingredient Disclosure list (limit 1%)**

Substance is not listed.

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**Trade name: Titanium**

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- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** *Danger*
- **Hazard statements**  
*Flammable solid.*  
*Catches fire spontaneously if exposed to air.*  
*Self-heating; may catch fire.*
- **Precautionary statements**  
*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*  
*Do not allow contact with air.*  
*Handle and store contents under inert gas. Protect from moisture.*  
*Use explosion-proof [electrical/ventilating/lighting] equipment.*  
*Wear protective gloves/protective clothing/eye protection/face protection.*  
*Keep cool.*  
*Ground and bond container and receiving equipment.*  
*Keep container tightly closed.*  
*In case of fire: Use for extinction: CO2, powder or water spray.*  
*IF ON SKIN: Brush off loose particles from skin. Immerse in cool water or wrap in wet bandages.*  
*Store separately.*  
*Maintain air gap between stacks or pallets.*
- **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

### 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Date of preparation / last revision** 12/16/2015 / -
- **Abbreviations and acronyms:**  
*IMDG: International Maritime Code for Dangerous Goods*  
*DOT: US Department of Transportation*  
*IATA: International Air Transport Association*  
*ACGIH: American Conference of Governmental Industrial Hygienists*  
*EINECS: European Inventory of Existing Commercial Chemical Substances*  
*CAS: Chemical Abstracts Service (division of the American Chemical Society)*  
*NFPA: National Fire Protection Association (USA)*  
*HMIS: Hazardous Materials Identification System (USA)*  
*WHMIS: Workplace Hazardous Materials Information System (Canada)*  
*PBT: Persistent, Bioaccumulative and Toxic*  
*vPvB: very Persistent and very Bioaccumulative*  
*NIOSH: National Institute for Occupational Safety*  
*OSHA: Occupational Safety **Health***  
*Flammable Solids - Category 2: Flammable solids, Hazard Category 2*  
*Pyrophoric Solids - Category 1: Pyrophoric Solids, Hazard Category 1*  
*Self-heating Substances and Mixtures - Category 1: Self-Heating Substances and Mixtures, Hazard Category 1*

CA



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 16.12.2015

Revision: 16.12.2015

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

- **1.1 Product identifier**
- **Trade name:** Titanium
- **Article number:** 80074-TI, 80075-TI
- **CAS Number:**  
7440-32-6
- **EC number:**  
231-142-3
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

- Flam. Sol. 2 H228 Flammable solid.
- Pyr. Sol. 1 H250 Catches fire spontaneously if exposed to air.
- Self-heat. 1 H251 Self-heating: may catch fire.

- **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

- **Signal word** *Danger*
- **Hazard statements**  
H228 Flammable solid.  
H250 Catches fire spontaneously if exposed to air.  
H251 Self-heating: may catch fire.
- **Precautionary statements**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P222 Do not allow contact with air.

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**Trade name: Titanium**

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- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P422 Store contents under inert gas.
- P420 Store away from other materials.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**
- 7440-32-6 titanium
- **Identification number(s)**
- **EC number:** 231-142-3

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **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 with full jet
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
- Ensure adequate ventilation.
- Do not flush with water or aqueous cleansing agents
- **6.4 Reference to other sections**
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Open and handle receptacle with care.
- **Information about fire - and explosion protection:**
  - Keep ignition sources away - Do not smoke.
  - Protect from heat.
  - Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
  - Keep container tightly sealed.
  - Do not seal receptacle gas tight.
  - Store in cool, dry conditions in well sealed receptacles.
  - Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.
- **Protection of hands:**
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
  - 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.
- **Penetration time of glove material**
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

GB

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Trade name: Titanium

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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:	Silver grey
· Odour:	Odourless
· Odour threshold:	Not determined.

· pH-value: Not applicable.

##### · Change in condition

Melting point/Melting range:	1668 °C
Boiling point/Boiling range:	3280 °C

· Flash point: Not applicable.

· Flammability (solid, gaseous): Product is not flammable.

##### · Ignition temperature:

Decomposition temperature: Not determined.

· Self-igniting: Spontaneously flammable in air.

· Danger of explosion: Not determined.

##### · Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapour pressure: Not applicable.

· Density at 20 °C: 4.50549 g/cm<sup>3</sup>

· Bulk density at 20 °C:	ca.126 kg/m <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.

##### · Solvent content:

Organic solvents:	0.0 %
VOC (EC)	0.00 %

Solids content: 99.9 %

· 9.2 Other information No further relevant information available.

### SECTION 10: Stability and reactivity

· 10.1 Reactivity No further relevant information available.

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- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used 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:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### **SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

### **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:**  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

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### SECTION 14: Transport information

· 14.1 UN-Number · ADR, IATA	UN2546
· 14.2 UN proper shipping name · ADR · IATA	2546 TITANIUM POWDER, DRY Titanium powder, dry
· 14.3 Transport hazard class(es) · ADR, IMDG, IATA	
	
· Class · Label	4.2 Substances liable to spontaneous combustion. 4.2
· 14.4 Packing group · ADR, IMDG, IATA	II
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user · Danger code (Kemler): · EMS Number:	Warning: Substances liable to spontaneous combustion. 40 4.2-02
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR · Limited quantities (LQ) · Excepted quantities (EQ)	0 Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· Transport category · Tunnel restriction code	2 D/E
· UN "Model Regulation":	UN 2546 TITANIUM POWDER, DRY, 4.2, II

### SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances - ANNEX I Substance is not listed.
- Seveso category P7 PYROPHORIC LIQUIDS AND SOLIDS
- Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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**SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**· 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)*

*VOC: Volatile Organic Compounds (USA, EU)*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*Flam. Sol. 2: Flammable solids, Hazard Category 2*

*Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1*

*Self-heat. 1: Self-Heating Substances and Mixtures, Hazard Category 1*

GB

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## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

### · 1.1 Productidentificatie

· Handelsnaam: Titanium

· Artikelnummer: 80074-TI, 80075-TI

· CAS-nummer:

7440-32-6

· EC-nummer:

231-142-3

### · 1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik

Geen verdere relevante informatie verkrijgbaar.

· Toepassing van de stof / van de bereiding *Laboratoriumchemicaliën*

### · 1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad

#### · Fabrikant/leverancier:

*Electron Microscopy Sciences*

*1560 Industry Road*

*USA-Hatfield, PA 19440*

*Tel: 215-412-8400 Fax: 215-412-8450*

*email: sgkcck@aol.com*

*www.emsdiasum.com*

*Aurion*

*Binnenhaven 5*

*6709 PD Wageningen*

*The Netherlands*

*Tel: 31 317 415094*

*Fax: 31 317 415955*

*email: info@aurion.nl*

· Inlichtingengevende sector: *Product safety department*

### · 1.4 Telefoonnummer voor noodgevallen:

*ChemTrec 1-800-424-9300 Contract CCN7661*

*1-703-527-3887*

## RUBRIEK 2: Identificatie van de gevaren

### · 2.1 Indeling van de stof of het mengsel

· Indeling overeenkomstig Verordening (EG) nr. 1272/2008



GHS02 vlam

*Flam. Sol. 2 H228 Ontvlambare vaste stof.*

*Pyr. Sol. 1 H250 Vat spontaan vlam bij blootstelling aan lucht.*

*Self-heat. 1 H251 Vatbaar voor zelfverhitting: kan vlam vatten.*

### · 2.2 Etiketteringselementen

· Etikettering overeenkomstig Verordening (EG) nr. 1272/2008

*De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.*

· Gevarenpictogrammen



GHS02

(Vervolg op blz. 2)



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- **Signaalwoord** Gevaar
- **Gevarenaanduidingen**
  - H228 Ontvlambare vaste stof.
  - H250 Vat spontaan vlam bij blootstelling aan lucht.
  - H251 Vatbaar voor zelfverhitting: kan vlam vatten.
- **Veiligheidsaanbevelingen**
  - P210 Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken.
  - P222 Contact met de lucht vermijden.
  - P241 Explosieveilige elektrische/ventilatie-/verlichtings- apparatuur gebruiken.
  - P280 Beschermende handschoenen/beschermende kleding/oogbescherming/gelaatsbescherming dragen.
  - P422 Onder inert gas bewaren.
  - P420 Gescheiden van ander materiaal bewaren.
- **2.3 Andere gevaren**
- **Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

### RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**
- **CAS-Nr. omschrijving**
  - 7440-32-6 titaan
- **Identificatienummer(s)**
- **EC-nummer:** 231-142-3

### RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**
- **Na het inademen:** Frisse lucht toedienen; bij klachten arts ontbieden.
- **Na huidcontact:** Over het algemeen is het produkt niet prikkelend voor de huid
- **Na oogcontact:** Ogen bij geopend ooglid meerdere minuten met stromend water spoelen
- **Na inslikken:** Als de klachten niet minderen, een arts raadplegen
- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**
  - Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**
- **Geschikte blusmiddelen:** CO<sub>2</sub>, zand, bluspoeder. Geen water gebruiken.
- **Blusmiddelen die uit veiligheidsoogpunt niet geschikt zijn:** Krachtige waterstraal
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**
  - Geen verdere relevante informatie verkrijgbaar.
- **5.3 Advies voor brandweerlieden**
- **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures**
  - Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.

(Vervolg op blz. 3)

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- **6.2 Milieuvorzorgsmaatregelen:** Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.
- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**  
Voor voldoende ventilatie zorgen.  
Niet met water of waterachtige reinigingsmiddelen wegspoelen.
- **6.4 Verwijzing naar andere rubrieken**  
Informatie inzake veilig gebruik - zie hoofdstuk 7.  
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.  
Informatie inzake berging - zie hoofdstuk 13.

### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
Tanks voorzichtig openen en behandelen.
- **Informatie m.b.t. brand- en ontploffingsgevaar:**  
Onststekingsbronnen op afstand houden - niet roken.  
Beschermen tegen hitte.  
Maatregelen treffen tegen ontlading van statische elektriciteit.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Op een koele plaats bewaren.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:**  
Tanks ondoordringbaar gesloten houden.  
Tanks niet gasdicht afsluiten.  
Koel en droog bewaren in goed gesloten vaten.  
Tegen hitte en directe zonnestralen beschermen.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.
- **8.1 Controleparameters**
- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:** Vervalt.
- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.
- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**  
Vóór de pauze en aan het einde van werktijd handen wassen.
- **Ademhalingsbescherming:** Niet noodzakelijk.
- **Handbescherming:**  
Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.  
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.  
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.
- **Handschoenmateriaal**  
De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.
- **Doordringingstijd van het handschoenmateriaal**  
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

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**· Oogbescherming:**

Nauw aansluitende veiligheidsbril

## RUBRIEK 9: Fysische en chemische eigenschappen

**· 9.1 Informatie over fysische en chemische basiseigenschappen****· Algemene gegevens****· Voorkomen:**

<b>Vorm:</b>	Poeder
<b>Kleur:</b>	Zilvergrijs
<b>Reuk:</b>	Reukloos
<b>Geurdrempelwaarde:</b>	Niet bepaald.

**· pH-waarde:** Niet bruikbaar.**· Toestandsverandering**

<b>Smeltpunt/smeltbereik:</b>	1668 °C
<b>Kookpunt/kookpuntbereik:</b>	3280 °C

**· Vlampunt:** Niet bruikbaar.**· Ontvlambaarheid (vast, gasvormig):** De stof is niet ontvlambaar.**· Ontstekingstemperatuur:****Ontbindingstemperatuur:** Niet bepaald.**· Zelfonsteking:** Spontaan ontvlambaar in lucht.**· Ontploffingsgevaar:** Niet bepaald.**· Ontploffingsgrenzen:**

<b>Onderste:</b>	Niet bepaald.
<b>Bovenste:</b>	Niet bepaald.

**· Dampspanning:** Niet bruikbaar.**Dichtheid bij 20 °C:** 4.50549 g/cm<sup>3</sup>

<b>· Stortgewicht bij 20 °C:</b>	ca.126 kg/m <sup>3</sup>
<b>· Relatieve dichtheid</b>	Niet bepaald.
<b>· Dampdichtheid</b>	Niet bruikbaar.
<b>· Verdampingsnelheid</b>	Niet bruikbaar.

**· Oplosbaarheid in/mengbaarheid met****Water:** Niet oplosbaar.**· Verdelingscoëfficiënt (n-octanol/water):** Niet bepaald.**· Viscositeit**

<b>Dynamisch:</b>	Niet bruikbaar.
<b>Kinematisch:</b>	Niet bruikbaar.

**· Oplosmiddelgehalte:**

<b>Organisch oplosmiddel:</b>	0,0 %
<b>VOC (EG)</b>	0,00 %

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- |  |   |
|--|---|
| <b>Gehalte aan vaste bestanddelen:</b> | 99.9 %  |
| <b>9.2 Overige informatie</b>          | Geen verdere relevante informatie verkrijgbaar. |

### RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit** Geen verdere relevante informatie verkrijgbaar.
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

### RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Ernstig oogletsel/oogirritatie** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Sensibilisatie van de luchtwegen/de huid**  
Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Kankerverwekkendheid** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Giftigheid voor de voortplanting** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **STOT bij eenmalige blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **STOT bij herhaalde blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Gevaar bij inademing** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

### RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**  
Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.  
Gevaar voor water klasse 1 (D) (Lijstclassificatie): gevaar voor water klein  
Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

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## RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

## RUBRIEK 14: Informatie met betrekking tot het vervoer

- |   |   |
|---|---|
| · <b>14.1 VN-nummer</b>   |   |
| · <b>ADR, IATA</b>  | UN2546  |
| · <b>14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN</b>      |   |
| · <b>ADR</b>  | 2546 TITAANPOEDER, DROOG  |
| · <b>IATA</b>   | Titanium powder, dry  |
| · <b>14.3 Transportgevarenklasse(n)</b>   |   |
| · <b>ADR, IMDG, IATA</b>  |   |
|  |   |
| · <b>klasse</b>   | 4.2 Voor zelfontbranding vatbare stoffen  |
| · <b>Etiket</b>   | 4.2   |
| · <b>14.4 Verpakkingsgroep:</b>   |   |
| · <b>ADR, IMDG, IATA</b>  | II  |
| · <b>14.5 Milieugevaren:</b>  | Niet bruikbaar.   |
| · <b>14.6 Bijzondere voorzorgen voor de gebruiker</b>                             | Waarschuwing: Voor zelfontbranding vatbare stoffen  |
| · <b>Kemler-getal:</b>  | 40  |
| · <b>EMS-nummer:</b>  | 4.2-02  |
| · <b>14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code</b> | Niet bruikbaar.   |
| · <b>Transport/verdere gegevens:</b>  |   |
| · <b>ADR</b>  |   |
| · <b>Beperkte hoeveelheden (LQ)</b>   | 0   |
| · <b>Uitgezonderde hoeveelheden (EQ)</b>  | Code: E2<br>Grootste netto hoeveelheid per binnenverpakking: 30 g<br>Grootste netto hoeveelheid per buitenverpakking: 500 g |
| · <b>Vervoerscategorie</b>  | 2   |
| · <b>Tunnelbeperkingscode</b>   | D/E   |
| · <b>VN "Model Regulation":</b>   | UN 2546 TITAANPOEDER, DROOG, 4.2, II  |

NL

(Vervolg op blz. 7)

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## RUBRIEK 15: Regelgeving

### · 15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel

#### · SZW-lijst van kankerverwekkende stoffen

De stof is niet aanwezig.

#### · SZW-lijst van mutagene stoffen

De stof is niet aanwezig.

#### · NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid

De stof is niet aanwezig.

#### · NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling

De stof is niet aanwezig.

#### · NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding

De stof is niet aanwezig.

#### · Richtlijn 2012/18/EU

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.

· **Seveso-categorie P7 PYROFORE VLOEISTOFFEN EN VASTE STOFFEN**

· **Drempelwaarde (ton) voor toepassing van voorschriften voor lagedrempelinrichtingen 50 t**

· **Drempelwaarde (ton) voor toepassing van voorschriften voor hogedrempelinrichtingen 200 t**

#### · Nationale voorschriften:

· **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

## RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

#### · Afkortingen en acroniemen:

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)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Sol. 2: Flammable solids, Hazard Category 2

Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1

Self-heat. 1: Self-Heating Substances and Mixtures, Hazard Category 1

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 16.12.2015

Révision: 16.12.2015

### RUBRIQUE 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** Titanium
- **Code du produit:** 80074-TI, 80075-TI
- **No CAS:**  
7440-32-6
- **Numéro CE:**  
231-142-3
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**  
*Pas d'autres informations importantes disponibles.*
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### RUBRIQUE 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

*Flam. Sol. 2 H228 Matière solide inflammable.*  
*Pyr. Sol. 1 H250 S'enflamme spontanément au contact de l'air.*  
*Self-heat. 1 H251 Matière auto-échauffante; peut s'enflammer.*

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS02

- **Mention d'avertissement** Danger
- **Mentions de danger**  
H228 Matière solide inflammable.  
H250 S'enflamme spontanément au contact de l'air.  
H251 Matière auto-échauffante; peut s'enflammer.
- **Conseils de prudence**  
P210 Tenir à l'écart de la chaleur, des surfaces chaudes, des étincelles, des flammes nues et de toute autre source d'inflammation. Ne pas fumer.  
P222 Ne pas laisser au contact de l'air.

(suite page 2)



# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 16.12.2015

Révision: 16.12.2015

**Nom du produit: Titanium**

(suite de la page 1)

- P241 Utiliser du matériel électrique/de ventilation/d'éclairage/antidéflagrant.
- P280 Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage.
- P422 Stocker le contenu sous gaz inerte.
- P420 Stocker à l'écart des autres matières.
- **2.3 Autres dangers**
- **Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

### RUBRIQUE 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**
- **No CAS Désignation**  
7440-32-6 titane
- **Code(s) d'identification**
- **Numéro CE:** 231-142-3

### RUBRIQUE 4: Premiers secours

- **4.1 Description des premiers secours**
- **Après inhalation:** Donner de l'air frais, consulter un médecin en cas de troubles.
- **Après contact avec la peau:** En règle générale, le produit n'irrite pas la peau.
- **Après contact avec les yeux:**  
Rincer les yeux, sous l'eau courante, pendant plusieurs minutes, en écartant bien les paupières.
- **Après ingestion:** Si les troubles persistent, consulter un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**  
Pas d'autres informations importantes disponibles.

### RUBRIQUE 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:** CO<sub>2</sub>, sable, poudre d'extinction. Ne pas utiliser d'eau.
- **Produits extincteurs déconseillés pour des raisons de sécurité:** Jet d'eau à grand débit
- **5.2 Dangers particuliers résultant de la substance ou du mélange**  
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Aucune mesure particulière n'est requise.

### RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence**  
Porter un équipement de sécurité. Eloigner les personnes non protégées.
- **6.2 Précautions pour la protection de l'environnement:**  
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **6.3 Méthodes et matériel de confinement et de nettoyage:**  
Assurer une aération suffisante.  
Ne pas rincer à l'eau ou aux produits nettoyants aqueux.
- **6.4 Référence à d'autres rubriques**  
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.  
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.

(suite page 3)



# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 16.12.2015

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Nom du produit: **Titanium**

(suite de la page 2)

Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

### RUBRIQUE 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**  
Ouvrir et manipuler les récipients avec précaution.
- **Préventions des incendies et des explosions:**  
Tenir à l'abri des sources d'inflammation - ne pas fumer.  
Tenir à l'abri de la chaleur.  
Prendre des mesures contre les charges électrostatiques.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Stocker dans un endroit frais.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:**  
Tenir les emballages hermétiquement fermés.  
Ne pas fermer les emballages de telle sorte qu'ils soient hermétiques aux gaz.  
Stocker au frais et au sec dans des fûts bien fermés.  
Protéger de la forte chaleur et du rayonnement direct du soleil.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**  
Sans autre indication, voir point 7.
- **8.1 Paramètres de contrôle**
- **Composants présentant des valeurs-seuil à surveiller par poste de travail:** Néant
- **Remarques supplémentaires:**  
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Equipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:** Se laver les mains avant les pauses et en fin de travail.
- **Protection respiratoire:** N'est pas nécessaire.
- **Protection des mains:**  
Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.  
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.  
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.
- **Matériau des gants**  
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
- **Temps de pénétration du matériau des gants**  
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

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# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

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Nom du produit: Titanium

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## · Protection des yeux:



Lunettes de protection hermétiques

### RUBRIQUE 9: Propriétés physiques et chimiques

## · 9.1 Informations sur les propriétés physiques et chimiques essentielles

## · Indications générales

## · Aspect:

Forme:	Poudre
Couleur:	Gris argent
Odeur:	Inodore
Seuil olfactif:	Non déterminé.

· valeur du pH: Non applicable.

## · Changement d'état

Point de fusion:	1668 °C
Point d'ébullition:	3280 °C

· Point d'éclair Non applicable.

· Inflammabilité (solide, gazeux): La substance n'est pas inflammable.

## · Température d'inflammation:

Température de décomposition: Non déterminé.

· Auto-inflammation: Spontanément inflammable à l'air.

· Danger d'explosion: Non déterminé.

## · Limites d'explosion:

Inférieure:	Non déterminé.
Supérieure:	Non déterminé.

· Pression de vapeur: Non applicable.

· Densité à 20 °C: 4.50549 g/cm<sup>3</sup>

Masse volumique à 20 °C:	ca.126 kg/m <sup>3</sup>
Densité relative	Non déterminé.
Densité de vapeur.	Non applicable.
Vitesse d'évaporation	Non applicable.

· Solubilité dans/miscibilité avec l'eau: Insoluble

· Coefficient de partage (n-octanol/eau): Non déterminé.

## · Viscosité:

Dynamique:	Non applicable.
Cinématique:	Non applicable.

## · Teneur en solvants:

Solvants organiques:	0.0 %
VOC (CE)	0,00 %

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# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

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Nom du produit: Titanium

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<b>Teneur en substances solides:</b>	99.9 %
<b>9.2 Autres informations</b>	Pas d'autres informations importantes disponibles.

### RUBRIQUE 10: Stabilité et réactivité

- **10.1 Réactivité** Pas d'autres informations importantes disponibles.
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

### RUBRIQUE 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Lésions oculaires graves/irritation oculaire**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Sensibilisation respiratoire ou cutanée**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
- **Mutagénicité sur les cellules germinales**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Cancérogénicité** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité pour la reproduction**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition unique**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition répétée**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Danger par aspiration** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

### RUBRIQUE 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**  
Catégorie de pollution des eaux 1 (D) (classification selon liste): peu polluant  
Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.

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## selon 1907/2006/CE, Article 31

Date d'impression : 16.12.2015

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Nom du produit: Titanium


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- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### RUBRIQUE 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

### RUBRIQUE 14: Informations relatives au transport

<ul style="list-style-type: none"> <li>· <b>14.1 Numéro ONU</b></li> <li>· <b>ADR, IATA</b></li> </ul>	<p style="margin-left: 20px;">UN2546</p>
<ul style="list-style-type: none"> <li>· <b>14.2 Désignation officielle de transport de l'ONU</b></li> <li>· <b>ADR</b></li> <li>· <b>IATA</b></li> </ul>	<p style="margin-left: 20px;">2546 TITANE EN POUDRE SEC Titanium powder, dry</p>
<ul style="list-style-type: none"> <li>· <b>14.3 Classe(s) de danger pour le transport</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	<div style="text-align: center; margin-bottom: 10px;">  </div> <p style="margin-left: 20px;">4.2 Matières sujettes à l'inflammation spontanée.</p> <p style="margin-left: 20px;">4.2</p>
<ul style="list-style-type: none"> <li>· <b>14.4 Groupe d'emballage</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	<p style="margin-left: 20px;">II</p>
<ul style="list-style-type: none"> <li>· <b>14.5 Dangers pour l'environnement:</b></li> </ul>	<p style="margin-left: 20px;">Non applicable.</p>
<ul style="list-style-type: none"> <li>· <b>14.6 Précautions particulières à prendre par l'utilisateur</b></li> <li>· <b>Indice Kemler:</b></li> <li>· <b>No EMS:</b></li> </ul>	<p style="margin-left: 20px;">Attention: Matières sujettes à l'inflammation spontanée.</p> <p style="margin-left: 20px;">40</p> <p style="margin-left: 20px;">4.2-02</p>
<ul style="list-style-type: none"> <li>· <b>14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC</b></li> </ul>	<p style="margin-left: 20px;">Non applicable.</p>
<ul style="list-style-type: none"> <li>· <b>Indications complémentaires de transport:</b></li> </ul>	
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Quantités limitées (LQ)</b></li> <li>· <b>Quantités exceptées (EQ)</b></li> </ul>	<p style="margin-left: 20px;">0</p> <p style="margin-left: 20px;">Code: E2</p> <p style="margin-left: 20px;">Quantité maximale nette par emballage intérieur: 30 g</p> <p style="margin-left: 20px;">Quantité maximale nette par emballage extérieur: 500 g</p>
<ul style="list-style-type: none"> <li>· <b>Catégorie de transport</b></li> <li>· <b>Code de restriction en tunnels</b></li> </ul>	<p style="margin-left: 20px;">2</p> <p style="margin-left: 20px;">D/E</p>
<ul style="list-style-type: none"> <li>· <b>"Règlement type" de l'ONU:</b></li> </ul>	<p style="margin-left: 20px;">UN 2546 TITANE EN POUDRE SEC, 4.2, II</p>

FR

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# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

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Nom du produit: Titanium

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### RUBRIQUE 15: Informations relatives à la réglementation

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I la substance n'est pas comprise**
- **Catégorie SEVESO P7 LIQUIDES ET SOLIDES PYROPHORIQUES**
- **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil bas 50 t**
- **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil haut 200 t**
- **15.2 Évaluation de la sécurité chimique: Une évaluation de la sécurité chimique n'a pas été réalisée.**

### RUBRIQUE 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

· **Acronymes et abréviations:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route

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

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Flam. Sol. 2: Flammable solids, Hazard Category 2

Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1

Self-heat. 1: Self-Heating Substances and Mixtures, Hazard Category 1

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 16.12.2015

überarbeitet am: 16.12.2015

### ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

· **1.1 Produktidentifikator**

· **Handelsname:** Titanium

· **Artikelnummer:** 80074-TI, 80075-TI

· **CAS-Nummer:**

7440-32-6

· **EG-Nummer:**

231-142-3

· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**

Keine weiteren relevanten Informationen verfügbar.

· **Verwendung des Stoffes / des Gemisches Laborchemikalien**

· **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**

· **Hersteller/Lieferant:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Science Services GmbH

Unterhachinger Str. 75

81737 München Germany

Tel: +49(0)89 18 93 668-0

safety@scienceservices.de

24h Giftnotruf Munchen: +49 (0)89 19240

Toxikologische Abteilung der II. Medizinischen Klinik

rechts der Isar, Munchen. - www.toxinfo.org

· **Auskunftgebender Bereich:** Product safety department

· **1.4 Notrufnummer:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

· **2.1 Einstufung des Stoffs oder Gemischs**

· **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Flam. Sol. 2 H228 Entzündbarer Feststoff.

Pyr. Sol. 1 H250 Entzündet sich in Berührung mit Luft von selbst.

Self-heat. 1 H251 Selbsterhitzungsfähig; kann in Brand geraten.

· **2.2 Kennzeichnungselemente**

· **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**

Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

(Fortsetzung auf Seite 2)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

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**Handelsname: Titanium**

(Fortsetzung von Seite 1)

### · Gefahrenpiktogramme



GHS02

### · Signalwort Gefahr

### · Gefahrenhinweise

H228 Entzündbarer Feststoff.

H250 Entzündet sich in Berührung mit Luft von selbst.

H251 Selbsterhitzungsfähig; kann in Brand geraten.

### · Sicherheitshinweise

P210 Von Hitze, heißen Oberflächen, Funken, offenen Flammen und anderen Zündquellen fernhalten. Nicht rauchen.

P222 Keinen Kontakt mit Luft zulassen.

P241 Explosionsgeschützte elektrische Geräte/Lüftungsanlagen/Beleuchtungsanlagen verwenden.

P280 Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen.

P422 Inhalte unter Inertgas aufbewahren.

P420 Von anderen Materialien entfernt aufbewahren.

### · 2.3 Sonstige Gefahren

#### · Ergebnisse der PBT- und vPvB-Beurteilung

· **PBT:** Nicht anwendbar.

· **vPvB:** Nicht anwendbar.

## ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

### · 3.1 Chemische Charakterisierung: Stoffe

#### · CAS-Nr. Bezeichnung

7440-32-6 Titan

#### · Identifikationsnummer(n)

· **EG-Nummer:** 231-142-3

## ABSCHNITT 4: Erste-Hilfe-Maßnahmen

### · 4.1 Beschreibung der Erste-Hilfe-Maßnahmen

· **Nach Einatmen:** Frischluftzufuhr, bei Beschwerden Arzt aufsuchen.

· **Nach Hautkontakt:** Im allgemeinen ist das Produkt nicht hautreizend.

· **Nach Augenkontakt:** Augen bei geöffnetem Lidspalt mehrere Minuten mit fließendem Wasser spülen.

· **Nach Verschlucken:** Bei anhaltenden Beschwerden Arzt konsultieren.

### · 4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen

Keine weiteren relevanten Informationen verfügbar.

### · 4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung

Keine weiteren relevanten Informationen verfügbar.

## ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

### · 5.1 Löschmittel

· **Geeignete Löschmittel:** CO<sub>2</sub>, Sand, Löschpulver. Kein Wasser verwenden.

· **Aus Sicherheitsgründen ungeeignete Löschmittel:** Wasser im Vollstrahl

(Fortsetzung auf Seite 3)



# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 16.12.2015

überarbeitet am: 16.12.2015

**Handelsname: Titanium**

(Fortsetzung von Seite 2)

- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**  
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.
- **6.2 Umweltschutzmaßnahmen:** Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**  
Für ausreichende Lüftung sorgen.  
Nicht mit Wasser oder wässrigen Reinigungsmitteln wegspülen.
- **6.4 Verweis auf andere Abschnitte**  
Informationen zur sicheren Handhabung siehe Abschnitt 7.  
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.  
Informationen zur Entsorgung siehe Abschnitt 13.

### ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung** Behälter mit Vorsicht öffnen und handhaben.
- **Hinweise zum Brand- und Explosionsschutz:**  
Zündquellen fernhalten - nicht rauchen.  
Vor Hitze schützen.  
Maßnahmen gegen elektrostatische Aufladung treffen.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** An einem kühlen Ort lagern.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:**  
Behälter dicht geschlossen halten.  
Behälter nicht gasdicht verschließen.  
In gut verschlossenen Gebinden kühl und trocken lagern.  
Vor Hitze und direkter Sonnenbestrahlung schützen.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** -
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.
- **8.1 Zu überwachende Parameter**
- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:** Entfällt.
- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:** Vor den Pausen und bei Arbeitsende Hände waschen.
- **Atemschutz:** Nicht erforderlich.

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**· Handschutz:**

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

**· Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

**· Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

**· Augenschutz:**

Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

**· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften****· Allgemeine Angaben****· Aussehen:**

**Form:** Pulver  
**Farbe:** Silbergrau

**· Geruch:** Geruchlos

**· Geruchsschwelle:** Nicht bestimmt.

**· pH-Wert:** Nicht anwendbar.

**· Zustandsänderung**

**Schmelzpunkt/Schmelzbereich:** 1668 °C

**Siedepunkt/Siedebereich:** 3280 °C

**· Flammpunkt:** Nicht anwendbar.

**· Entzündlichkeit (fest, gasförmig):** Der Stoff ist nicht entzündlich.

**· Zündtemperatur:**

**Zersetzungstemperatur:** Nicht bestimmt.

**· Selbstentzündlichkeit:** Selbstentzündlich an der Luft.

**· Explosionsgefahr:** Nicht bestimmt.

**· Explosionsgrenzen:**

**Untere:** Nicht bestimmt.

**Obere:** Nicht bestimmt.

**· Dampfdruck:** Nicht anwendbar.

**· Dichte bei 20 °C:** 4.50549 g/cm<sup>3</sup>

**· Schüttdichte bei 20 °C:** ca.126 kg/m<sup>3</sup>

**· Relative Dichte** Nicht bestimmt.

**· Dampfdichte** Nicht anwendbar.

**· Verdampfungsgeschwindigkeit** Nicht anwendbar.

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· <b>Löslichkeit in / Mischbarkeit mit Wasser:</b>	Unlöslich.
· <b>Verteilungskoeffizient (n-Octanol/Wasser):</b>	Nicht bestimmt.
· <b>Viskosität:</b>	
<b>Dynamisch:</b>	Nicht anwendbar.
<b>Kinematisch:</b>	Nicht anwendbar.
· <b>Lösemittelgehalt:</b>	
<b>Organische Lösemittel:</b>	0,0 %
<b>VOC (EU)</b>	0,00 %
· <b>Festkörpergehalt:</b>	99,9 %
· <b>9.2 Sonstige Angaben</b>	Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Schwere Augenschädigung/-reizung** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Sensibilisierung der Atemwege/Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Karzinogenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Reproduktionstoxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Aspirationsgefahr** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.

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- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**  
Wassergefährdungsklasse 1 (Listeneinstufung): schwach wassergefährdend  
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

### ABSCHNITT 14: Angaben zum Transport

- |   |                                    |
|---|------------------------------------|
| <b>14.1 UN-Nummer</b>   | UN2546                             |
| <b>ADR, IATA</b>  |                                    |
| <b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b>  |                                    |
| <b>ADR</b>  | 2546 TITAN-PULVER, TROCKEN         |
| <b>IATA</b>   | Titanium powder, dry               |
| <b>14.3 Transportgefahrenklassen</b>  |                                    |
| <b>ADR, IMDG, IATA</b>  |                                    |
|            |                                    |
| <b>Klasse</b>   | 4.2 Selbstentzündliche Stoffe      |
| <b>Gefahrzettel</b>   | 4.2                                |
| <b>14.4 Verpackungsgruppe</b>   |                                    |
| <b>ADR, IMDG, IATA</b>  | II                                 |
| <b>14.5 Umweltgefahren:</b>   | Nicht anwendbar.                   |
| <b>14.6 Besondere Vorsichtsmaßnahmen für den Verwender</b>                                    | Achtung: Selbstentzündliche Stoffe |
| <b>Kemler-Zahl:</b>   | 40                                 |
| <b>EMS-Nummer:</b>  | 4.2-02                             |
| <b>14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code</b> | Nicht anwendbar.                   |
| <b>Transport/weitere Angaben:</b>   |                                    |
| <b>ADR</b>  |                                    |
| <b>Begrenzte Menge (LQ)</b>   | 0                                  |

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· <b>Freigestellte Mengen (EQ)</b>	Code: E2 Höchste Nettomenge je Innenverpackung: 30 g Höchste Nettomenge je Außenverpackung: 500 g
· <b>Beförderungskategorie</b>	2
· <b>Tunnelbeschränkungscode</b>	D/E
· <b>UN "Model Regulation":</b>	UN 2546 TITAN-PULVER, TROCKEN, 4.2, II

### ABSCHNITT 15: Rechtsvorschriften

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- Richtlinie 2012/18/EU
- **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.
- **Seveso-Kategorie P7 SELBSTENTZÜNDLICHE (PYROPHORE) FLÜSSIGKEITEN UND FESTSTOFFE**
- **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse 50 t**
- **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse 200 t**
- **Nationale Vorschriften:**
- **Wassergefährdungsklasse: WGK 1 (Listeneinstufung):** schwach wassergefährdend.
- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- **Abkürzungen und Akronyme:**
- 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)
- VOC: Volatile Organic Compounds (USA, EU)
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Flam. Sol. 2: Flammable solids, Hazard Category 2
- Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1
- Self-heat. 1: Self-Heating Substances and Mixtures, Hazard Category 1

DE

**Scheda di dati di sicurezza**  
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### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** Titanium

· **Articolo numero:** 80074-TI, 80075-TI

· **Numero CAS:**

7440-32-6

· **Numeri CE:**

231-142-3

· **1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati**

Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Flam. Sol. 2 H228 Solido infiammabile.

Pyr. Sol. 1 H250 Spontaneamente infiammabile all'aria.

Self-heat. 1 H251 Autoriscaldante; può infiammarsi.

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· **Pittogrammi di pericolo**



GHS02

· **Avvertenza Pericolo**

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**· Indicazioni di pericolo**

- H228 Solido infiammabile.
- H250 Spontaneamente infiammabile all'aria.
- H251 Autoriscaldante; può infiammarsi.

**· Consigli di prudenza**

- P210 Tenere lontano da fonti di calore, superfici riscaldate, scintille, fiamme e altre fonti di innesco. Vietato fumare.
- P222 Evitare il contatto con l'aria.
- P241 Utilizzare impianti elettrici/di ventilazione/d'illuminazione/a prova di esplosione.
- P280 Indossare guanti/indumenti protettivi/Proteggere gli occhi/il viso.
- P422 Conservare sotto gas inerte.
- P420 Conservare lontano da altri materiali.

**· 2.3 Altri pericoli****· Risultati della valutazione PBT e vPvB**

- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.

**SEZIONE 3: Composizione/informazioni sugli ingredienti****· 3.1 Caratteristiche chimiche: Sostanze**

- **Numero CAS**  
7440-32-6 titanio
- **Numerofi di identificazione**
- **Numeri CE:** 231-142-3

**SEZIONE 4: Misure di primo soccorso****· 4.1 Descrizione delle misure di primo soccorso**

- **Inalazione:** Portare in zona ben areata, in caso di disturbi consultare il medico.
- **Contatto con la pelle:** Generalmente il prodotto non è irritante per la pelle.
- **Contatto con gli occhi:** Lavare con acqua corrente per alcuni minuti tenendo le palpebre ben aperte.
- **Ingestione:** Se il dolore persiste consultare il medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**  
Non sono disponibili altre informazioni.

**SEZIONE 5: Misure antincendio****· 5.1 Mezzi di estinzione**

- **Mezzi di estinzione idonei:** CO<sub>2</sub>, sabbia, polvere. Non usare acqua.
- **Mezzi di estinzione inadatti per motivi di sicurezza:** Getti d'acqua
- **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.
- **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

**SEZIONE 6: Misure in caso di rilascio accidentale****· 6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**

Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.

**· 6.2 Precauzioni ambientali:** Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.

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- **6.3 Metodi e materiali per il contenimento e per la bonifica:**  
 Provvedere ad una sufficiente areazione.  
 Non dilavare con acqua o detergenti liquidi.
- **6.4 Riferimento ad altre sezioni**  
 Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.  
 Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.  
 Per informazioni relative allo smaltimento vedere Capitolo 13.

### **SEZIONE 7: Manipolazione e immagazzinamento**

- **7.1 Precauzioni per la manipolazione sicura** Aprire e manipolare i recipienti con cautela.
- **Indicazioni in caso di incendio ed esplosione:**  
 Tenere lontano da fonti di calore, non fumare.  
 Proteggere dal calore.  
 Adottare provvedimenti contro cariche elettrostatiche.
- **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Conservare in ambiente fresco.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**  
 Mantenere i recipienti ermeticamente chiusi.  
 Chiudere i recipienti non a tenuta di gas.  
 Conservare in luogo fresco e asciutto in fusti ben chiusi.  
 Proteggere dal calore e dai raggi diretti del sole.
- **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

### **SEZIONE 8: Controllo dell'esposizione/protezione individuale**

- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.
- **8.1 Parametri di controllo**
- **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:** Non Necessario.
- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.
- **8.2 Controlli dell'esposizione**
- **Mezzi protettivi individuali:**
- **Norme generali protettive e di igiene del lavoro:** Lavarsi le mani prima dell'intervallo o a lavoro terminato.
- **Maschera protettiva:** Non necessario.
- **Guanti protettivi:**  
 Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.  
 A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.  
 Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.
- **Materiale dei guanti**  
 La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.
- **Tempo di permeazione del materiale dei guanti**  
 Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

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· **Occhiali protettivi:**

Occhiali protettivi a tenuta

### SEZIONE 9: Proprietà fisiche e chimiche

#### · 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

##### · Indicazioni generali

##### · Aspetto:

· <b>Forma:</b>	Polvere
· <b>Colore:</b>	Grigio argento
· <b>Odore:</b>	Inodore
· <b>Soglia olfattiva:</b>	Non definito.

· **valori di pH:** Non applicabile.

##### · Cambiamento di stato

· <b>Temperatura di fusione/ambito di fusione:</b>	1668 °C
· <b>Temperatura di ebollizione/ambito di ebollizione:</b>	3280 °C

· **Punto di infiammabilità:** Non applicabile.

· **Infiammabilità (solido, gassoso):** Sostanza non infiammabile.

##### · Temperatura di accensione:

· **Temperatura di decomposizione:** Non definito.

· **Autoaccensione:** Spontaneamente infiammabile all'aria.

· **Pericolo di esplosione:** Non definito.

##### · Limiti di infiammabilità:

· <b>Inferiore:</b>	Non definito.
· <b>Superiore:</b>	Non definito.

· **Tensione di vapore:** Non applicabile.

· **Densità a 20 °C:** 4.50549 g/cm<sup>3</sup>

· <b>Densità apparente a 20 °C:</b>	ca.126 kg/m <sup>3</sup>
· <b>Densità relativa</b>	Non definito.
· <b>Densità del vapore</b>	Non applicabile.
· <b>Velocità di evaporazione</b>	Non applicabile.

##### · Solubilità in/Miscibilità con acqua:

Insolubile.

· **Coefficiente di distribuzione (n-Octanol/acqua):** Non definito.

##### · Viscosità:

· <b>Dinamica:</b>	Non applicabile.
· <b>Cinematica:</b>	Non applicabile.

##### · Tenore del solvente:

· <b>Solventi organici:</b>	0.0 %
· <b>VOC (CE)</b>	0,00 %

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**Denominazione commerciale: Titanium**

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<b>Contenuto solido:</b>	99.9 %
<b>9.2 Altre informazioni</b>	Non sono disponibili altre informazioni.

**SEZIONE 10: Stabilità e reattività**

- **10.1 Reattività** Non sono disponibili altre informazioni.
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

**SEZIONE 11: Informazioni tossicologiche**

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Lesioni oculari gravi/irritazioni oculari gravi**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Sensibilizzazione respiratoria o cutanea**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**
- **Mutagenicità delle cellule germinali**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Cancerogenicità** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità per la riproduzione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione singola**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Pericolo in caso di aspirazione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

**SEZIONE 12: Informazioni ecologiche**

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**  
Pericolosità per le acque classe 1 (D) (Classif. secondo le liste): poco pericoloso  
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.

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**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

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· **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.**SEZIONE 13: Considerazioni sullo smaltimento**

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

**SEZIONE 14: Informazioni sul trasporto**· **14.1 Numero ONU**· **ADR, IATA** UN2546· **14.2 Nome di spedizione dell'ONU**· **ADR** 2546 TITANIO IN POLVERE SECCO· **IATA** Titanium powder, dry· **14.3 Classi di pericolo connesso al trasporto**· **ADR, IMDG, IATA**

- **Classe** 4.2 Materie soggette ad accensione spontanea
- **Etichetta** 4.2

· **14.4 Gruppo di imballaggio**· **ADR, IMDG, IATA** II· **14.5 Pericoli per l'ambiente:**

Non applicabile.

· **14.6 Precauzioni speciali per gli utilizzatori**

Attenzione: Materie soggette ad accensione spontanea

· **Numero Kemler:** 40· **Numero EMS:** 4.2-02· **14.7 Trasporto di rinfuse secondo l'allegato II di****MARPOL ed il codice IBC** Non applicabile.· **Trasporto/ulteriori indicazioni:**· **ADR**· **Quantità limitate (LQ)** 0· **Quantità esenti (EQ)** Codice: E2

Quantità massima netta per imballaggio interno: 30 g

Quantità massima netta per imballaggio esterno: 500 g

· **Categoria di trasporto** 2· **Codice di restrizione in galleria** D/E· **UN "Model Regulation":**

UN 2546 TITANIO IN POLVERE SECCO, 4.2, II

IT

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**Scheda di dati di sicurezza**  
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**SEZIONE 15: Informazioni sulla regolamentazione**

- **15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
- **Direttiva 2012/18/UE**
- **Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta
- **Categoria Seveso P7** **LIQUIDI E SOLIDI PIROFORICI**
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia inferiore** 50 t
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia superiore** 200 t
- **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

**SEZIONE 16: Altre informazioni**

*I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.*

**· Abbreviazioni e acronimi:**

*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)*

*VOC: Volatile Organic Compounds (USA, EU)*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*Flam. Sol. 2: Flammable solids, Hazard Category 2*

*Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1*

*Self-heat. 1: Self-Heating Substances and Mixtures, Hazard Category 1*



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(1 쪽부터계속)

- 공기에 노출되면 스스로 발화함
- 자기발열성: 화재를 일으킬 수 있음
- **예방조치 문구**
- 열·스파크·화염·고열로부터 멀리하시오 – 금연
- 공기에 접촉시키지 마시오.
- 폭발 방지용 전기·환기·조명·장비를 사용하시오.
- (보호장갑·보호의·보안경·안면보호구)를(을) 착용하시오.
- 불활성 가스 환경 하에 보관
- 다른 물질과 격리하여 보관하시오.
- **기타 유해성**
- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

### 3 구성성분의 명칭 및 함유량

- **화 학 적 특 성:** 화학물질
- CAS-번호표시  
7440-32-6 titanium
- 식별 번호
- EC 의번호: 231-142-3

### 4 응급조치 요령

- **응급조치요령 내용**
- **흡입했을 때:** 신선한 공기를 쉼, 통증이 있을 때는 의료진의 도움을 구한다.
- **피부에 접촉했을 때:** 일반적으로 이제품은 피부에 자극적이지 않다.
- **눈에 들어갔을 때:** 흐르는 물에 눈을 몇분동안 씻어낸다.
- **먹었을 때:** 증상이 지속될 경우에는 의사와 상담한다.
- **기타 의사의 주의사항:**
- 가장 중요한 급·만성 증상 및 영향 추가적인 정보가 존재하지 않습니다.
- 즉각적인 의료처치 및 특별치료가 필요함을 시사하는 징후 추가적인 정보가 존재하지 않습니다.

### 5 폭발·화재시 대처방법

- **소화제**
- **적절한 소화제:** 이산화탄소, 모래, 석회가루를 사용하고, 물을 사용하지 않는다.
- **부적절한 소화제:** 플레트용 물
- **본 화학물질이나 혼합물에서 발생하는 특별 유해성** 추가적인 정보가 존재하지 않습니다.
- **소방관에 대한 권고사항**
- **화재 진압 시 착용할 보호구 및 예방조치:** 특별한 조치가 필요없음.

### 6 누출 사고 시 대처방법

- **개인적 예방조치, 보호장비 및 응급처치 절차** 안전장비 착용하고, 무방비의 사람은 격리시킨다.
- **환경 관련 예방조치:** 하수도망/해수면위의물/지하수로도달하지않게한다.
- **밀폐 및 정화 방법과 소재:**  
충분한 환기가 되도록 한다.  
물이나 묽은 세척제로 씻어 내지 마시오

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- **타 섹션 참조**  
 안전 관리에 대한 정보는 제7 장 을 참고하시오.  
 개인 보호 장 비에 대한 정보는 제8 장 을 참고하시오.  
 쓰레기 처 리에 대한 정보는 제13 장 을 참고하시오.

### 7 취급 및 저장방법

- **취급:**
- **안전 취급을 위한 예방조치** 조심스럽게용기를 개봉하거나취급한다.
- **화재 및 폭발 사고 예방대책에 관한 정보:**  
 발 화 요소는 멀 리 둔 다.금 연.  
 열로부터보호한다.  
 정 전 기 의 충 전 으로부터 보호한다.
- **혼합위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 차 가운 장 소에 보관한다.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필 요없음
- **보 관 조 건 에 관 한 추 가 적 인 정보:**  
 용기를새지않게밀폐한채보관한다.  
 요 기 를 가 스 가 새 지 않 게 밀 폐 시 킨 다.  
 밀폐된용기속에서늘 하고건 조 하 게 보 관 한 다.  
 열이나직사광선으로부터보호한다.
- **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

### 8 노출방지 및 개인보호구

- **첨단시설 디자인에 대한 추가정보:** 더 이 상 의 자 료 는 없 음. 항 목 7 을 참 고 하 시 오.
- **통제 변수**
- **화학물질의 노출기준, 생물학적 노출기준 등:** 생략
- **추 가 정 보:** 제 조 할 당 시 에 유 효 한 목 록 을 기 초 로 사 용 했 다.
- **노출 통제**
- **개인 보호구**
- **일반적보호조치및위생조치:** 휴 식 전 이 나 작 업 이 끝 날 때 마 다 손 을 씻 는 다.
- **호흡기 보호:** 필 요 없 음.
- **손 보호:**  
 장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.  
 테 슷 를 하 지 않 았 기 때 문 에 제 품 / 조 제 / 화 학 혼 합 물 에 적 합 한 장 갑 재 질 에 대 한 추 천 이 없 다.  
 투과 시간, 침 투 율 과 저 하 를 고 려 해 서 장 갑 재 료 를 선택한다.
- **장갑의재료**  
 적합한장갑의선정은재질차이뿐아니라품질기준의차이도 고려하여이루어져야하고제조업자에따라서도다  
 르게선정되어야한다.
- **장 갑 재 료 의 투과시 간** 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.
- **눈 보호:**



팍조이는보안경

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### 9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보	
· 일반정보	
· 외형	
· 물리적 상태:	가루
· 색:	은회색
· 냄새:	무취의
· 후각역치	알맞지않다.
· pH:	해당사항 없음.
· 상태변화	
· 녹는점/어는점:	1668 °C
· 초기 끓는점과 끓는점 범위:	3280 °C
· 인화점:	해당사항 없음.
· 인화성(고체, 기체):	이 제품은 가연성이 없다.
· 점화온도:	
· 분해 온도:	알맞지않다.
· 자기점화:	공기중에서자연발화하는
· 폭발위험:	알맞지않다.
· 인화 또는 폭발 범위의 상한/하한	
· 아래로:	알맞지않다.
· 위로:	알맞지않다.
· 증기압:	해당사항 없음.
· 밀도 의경우 20 °C:	4.50549 g/cm <sup>3</sup>
· 용 적 밀도 의경우 20 °C:	ca.126 kg/m <sup>3</sup>
· 비중:	알맞지않다.
· 증기밀도:	해당사항 없음.
· 증발 속도:	해당사항 없음.
· 용해도:	
· 물:	불용해성의
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
· 역학성:	해당사항 없음.
· 동점성:	해당사항 없음.
· 용매내용물	
· 유기용매:	0.0 %
· VOC (EU)	0.00 %
· 고체의 함량:	99.9 %
· 기타 정보	추가적인 정보가 존재하지 않습니다.

### 10 안정성 및 반응성

· 반응성 추가적인 정보가 존재하지 않습니다.

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- **화학적 안정성**
- **화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건:** 규정에따라사용할경우해체는없다
- **유해반응 가능성** 위험한반응으로는알려지지않았다.
- **피해야 할 조건** 추가적인 정보가 존재하지 않습니다.
- **혼합 금지 물질:** 추가적인 정보가 존재하지 않습니다.
- **유해분해물질:** 위험성있는분해물들은알려지지않았다.

### 11 독성에 관한 정보

- **독성학적 영향에 대한 정보**
- **급성 독성:**
- **일차적 자극 효과:**
- **피부 부식성 또는 자극성:** 무자극
- **심한 눈 손상 또는 자극성:** 무자극.
- **감각화:** 민감한영향이없는것으로알려져있다.

### 12 환경에 미치는 영향

- **독성**
- **수생독성:** 추가적인 정보가 존재하지 않습니다.
- **지속성 및 분해성** 추가적인 정보가 존재하지 않습니다.
- **환경 시스템에서의 행동:**
- **생물농축 잠재성** 추가적인 정보가 존재하지 않습니다.
- **토양내 이동성** 추가적인 정보가 존재하지 않습니다.
- **추가적인 생태학 정보:**
- **일반 특징:**  
수질오염등급 1 (목록분류): 약하게수질오염이된  
희석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.
- **PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과**
- **PBT(잔류성, 생물농축성, 독성 물질):** 해당사항 없음.
- **vPvB(고 잔류성, 고 생물농축성 물질):** 해당사항 없음.
- **기타 부작용** 추가적인 정보가 존재하지 않습니다.

### 13 폐기시 주의사항

- **폐기물 처리 방법**
- **권고:** 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- **비위생적 포장:**
- **권고:** 당국의지침에입각한쓰레기처리.

### 14 운송에 필요한 정보

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>· <b>유엔 번호</b></li> <li>· <b>ADR, IATA</b></li> </ul>                      | UN2546  |
| <ul style="list-style-type: none"> <li>· <b>UN 적정 선적명</b></li> <li>· <b>ADR</b></li> <li>· <b>IATA</b></li> </ul> | 2546 TITANIUM POWDER, DRY<br>Titanium powder, dry |

(6 쪽에계속)



# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.12.16

개정: 2015.12.16

**제품명: Titanium**

(5 쪽부터계속)

- 교통 위험 클래스
- ADR, IMDG, IATA



- 등급: 4.2 자연발화성물질
- 위험물 라벨: 4.2

- 용기등급: II
- ADR, IMDG, IATA

- 환경적 유해물질: 해당사항 없음.

- 이용자 특별 예방조치: 경고: 자연발화성물질
- 위험 코드: 40
- EMS-번호: 4.2-02

- MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송: 해당사항 없음.

**· 운 송/추가 정보:**

- ADR
- 한정 수량 (LQ): 0
- Excepted quantities (EQ): Code: E2  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 500 g
- 운송 구분: 2
- 터널 제한 코드: D/E
- UN "모범 규제": UN 2546 TITANIUM POWDER, DRY, 4.2, II

### 15 법적 규제현황

- 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory	
7440-32-6 titanium	KE-33881

- GHS 라벨 요소
- 본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- 그림문자



GHS02

- 신호어 위험
- 유해.위험 문구
- 인화성고체
- 공기에 노출되면 스스로 발화함
- 자기발열성: 화재를 일으킬 수 있음

(7 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.12.16

개정: 2015.12.16

**제품명: Titanium**

(6 쪽부터계속)

**· 예방조치 문구**

- 열: 스파크·화염·고열로부터 멀리하십시오 – 금연
- 공기에 접촉시키지 마시오.
- 폭발 방지용 전기·환기·조명·장비를 사용하십시오.
- (보호장갑·보호의·보안경·안면보호구)를(을) 착용하십시오.
- 불활성 가스 환경 하에 보관
- 다른 물질과 격리하여 보관하십시오.
- **화학물질 안전성 평가: 화학물질 안전성 평가가 수행되지 않음**

**16 그 밖의 참고사항**

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

· **최초 작성일자:** 2015.12.16· **개정 횟수 및 최종 개정일자:** 1 / 2015.12.16· **약어와 두문자어:**

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

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

인화성 고체 구분2: Flammable solids, Hazard Category 2

발화성 고체 구분1: Pyrophoric Solids, Hazard Category 1

자기발열성 물질 및 혼합물 구분1: Self-Heating Substances and Mixtures, Hazard Category 1

KR

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 16.12.2015

Revisión: 16.12.2015

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

#### · 1.1 Identificador del producto

· **Nombre comercial:** Titanium

· **Número del artículo:** 80074-TI, 80075-TI

· **Número CAS:**

7440-32-6

· **Número CE:**

231-142-3

· **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**

No existen más datos relevantes disponibles.

· **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio

#### · 1.3 Datos del proveedor de la ficha de datos de seguridad

· **Fabricante/distribuidor:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Aname

C/ Perez Galdos no. 2

28693 Quijorna

Madrid, Spain

Tel: +34.91.816.89.50

Fax: +34.91.816.85.94

email: ventas@aname.es

· **Área de información:** Product safety department

· **1.4 Teléfono de emergencia:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SECCIÓN 2: Identificación de los peligros

#### · 2.1 Clasificación de la sustancia o de la mezcla

· **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS02 llama

Flam. Sol. 2 H228 Sólido inflamable.

Pyr. Sol. 1 H250 Se inflama espontáneamente en contacto con el aire.

Self-heat. 1 H251 Se calienta espontáneamente; puede inflamarse.

#### · 2.2 Elementos de la etiqueta

· **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**

La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

· **Pictogramas de peligro**



GHS02

( se continua en página 2 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 16.12.2015

Revisión: 16.12.2015

**Nombre comercial: Titanium**

( se continua en página 1 )

- **Palabra de advertencia** Peligro
- **Indicaciones de peligro**
  - H228 Sólido inflamable.
  - H250 Se inflama espontáneamente en contacto con el aire.
  - H251 Se calienta espontáneamente; puede inflamarse.
- **Consejos de prudencia**
  - P210 Mantener alejado del calor, de superficies calientes, de chispas, de llamas abiertas y de cualquier otra fuente de ignición. No fumar.
  - P222 No dejar que entre en contacto con el aire.
  - P241 Utilizar un material eléctrico, de ventilación o de iluminación/antideflagrante.
  - P280 Llevar guantes/prendas/gafas/máscara de protección.
  - P422 Almacenar el contenido en gas inerte.
  - P420 Almacenar alejado de otros materiales.
- **2.3 Otros peligros**
- **Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.

### SECCIÓN 3: Composición/información sobre los componentes

- **3.1 Caracterización química: Sustancias**
- **Denominación N° CAS**
  - 7440-32-6 titanio
- **Número(s) de identificación**
- **Número CE:** 231-142-3

### SECCIÓN 4: Primeros auxilios

- **4.1 Descripción de los primeros auxilios**
- **En caso de inhalación del producto:** Suministrar aire fresco. En caso de trastornos, consultar al médico.
- **En caso de contacto con la piel:** Por regla general, el producto no irrita la piel.
- **En caso de con los ojos:** Limpiar los ojos abiertos durante varios minutos con agua corriente.
- **En caso de ingestión:** Consultar un médico si los trastornos persisten.
- **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente** No existen más datos relevantes disponibles.

### SECCIÓN 5: Medidas de lucha contra incendios

- **5.1 Medios de extinción**
- **Sustancias extintoras apropiadas:** CO<sub>2</sub>, arena, polvo extintor. No utilizar agua.
- **Sustancias extintoras inapropiadas por razones de seguridad:** Agua a pleno chorro
- **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** No se requieren medidas especiales.

### SECCIÓN 6: Medidas en caso de vertido accidental

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia**
  - Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.

( se continua en página 3 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 16.12.2015

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Nombre comercial: Titanium

( se continua en página 2 )

- **6.2 Precauciones relativas al medio ambiente:**  
Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.
- **6.3 Métodos y material de contención y de limpieza:**  
Asegurar suficiente ventilación.  
No enjuagar con agua ni productos de limpieza acuosos.
- **6.4 Referencia a otras secciones**  
Ver capítulo 7 para mayor información sobre una manipulación segura.  
Ver capítulo 8 para mayor información sobre el equipo personal de protección.  
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

### SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura** Abrir y manejar el recipiente con cuidado.
- **Prevención de incendios y explosiones:**  
Mantener alejadas las fuentes de encendido. No fumar.  
Proteger del calor.  
Tomar medidas contra las cargas electrostáticas.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** Almacenar en un lugar fresco.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**  
Mantener el recipiente cerrado herméticamente.  
No cerrar el recipiente estanco al gas.  
Almacenarlo en envases bien cerrados en un lugar fresco y seco.  
Proteger del calor y de la luz directa del sol.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

### SECCIÓN 8: Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**  
Sin datos adicionales, ver punto 7.
- **8.1 Parámetros de control**
- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:** Nulo.
- **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.
- **8.2 Controles de la exposición**
- **Equipo de protección individual:**
- **Medidas generales de protección e higiene:** Lavarse las manos antes de las pausas y al final del trabajo.
- **Protección respiratoria:** No es necesario.
- **Protección de manos:**  
El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.  
Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.  
Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.
- **Material de los guantes**  
La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.
- **Tiempo de penetración del material de los guantes**  
El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

( se continua en página 4 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

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Nombre comercial: Titanium

( se continua en página 3 )

· **Protección de ojos:**

Gafas de protección herméticas

### SECCIÓN 9: Propiedades físicas y químicas

· **9.1 Información sobre propiedades físicas y químicas básicas**· **Datos generales**· **Aspecto:**

Forma:	En polvo
Color:	Gris plateado
Olor:	Inodoro
Umbral olfativo:	No determinado.

· **valor pH:** No aplicable.· **Cambio de estado**

Punto de fusión /campo de fusión:	1668 °C
Punto de ebullición /campo de ebullición:	3280 °C

· **Punto de inflamación:** No aplicable.· **Inflamabilidad (sólido, gaseiforme):** La sustancia no es inflamable.· **Temperatura de ignición:**

Temperatura de descomposición: No determinado.

· **Autoinflamabilidad:** Se inflama espontáneamente en contacto con el aire.· **Peligro de explosión:** No determinado.· **Límites de explosión:**

Inferior:	No determinado.
Superior:	No determinado.

· **Presión de vapor:** No aplicable.· **Densidad a 20 °C:** 4.50549 g/cm<sup>3</sup>

Densidad a granel a 20 °C:	ca.126 kg/m <sup>3</sup>
Densidad relativa	No determinado.
Densidad de vapor	No aplicable.
Velocidad de evaporación	No aplicable.

· **Solubilidad en / miscibilidad con agua:** Insoluble.· **Coefficiente de reparto (n-octanol/agua):** No determinado.· **Viscosidad:**

Dinámica:	No aplicable.
Cinemática:	No aplicable.

· **Concentración del disolvente:**

Disolventes orgánicos:	0.0 %
VOC (CE)	0,00 %

( se continua en página 5 )

# Ficha de datos de seguridad

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<b>Contenido de cuerpos sólidos:</b>	99.9 %
<b>· 9.2 Otros datos</b>	No existen más datos relevantes disponibles.

### SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad** No existen más datos relevantes disponibles.
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

### SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Lesiones o irritación ocular graves**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Sensibilización respiratoria o cutánea**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**
- **Mutagenicidad en células germinales**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Carcinogenicidad** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad para la reproducción** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) – exposición única**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) – exposición repetida**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Peligro de aspiración** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

### SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**  
Nivel de riesgo para el agua 1 (clasificación de listas): escasamente peligroso para el agua  
En estado diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.

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# Ficha de datos de seguridad

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· 12.6 Otros efectos adversos No existen más datos relevantes disponibles.

### SECCIÓN 13: Consideraciones relativas a la eliminación

· 13.1 Métodos para el tratamiento de residuos

· **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.· **Embalajes sin limpiar:**· **Recomendación:** Eliminar conforme a las disposiciones oficiales.

### SECCIÓN 14: Información relativa al transporte

· 14.1 Número ONU

· ADR, IATA

UN2546

· 14.2 Designación oficial de transporte de las Naciones Unidas

· ADR

2546 TITANIO EN POLVO SECO

· IATA

Titanium powder, dry

· 14.3 Clase(s) de peligro para el transporte

· ADR, IMDG, IATA



· Clase

4.2 Materias que pueden experimentar inflamación espontánea

· Etiqueta

4.2

· 14.4 Grupo de embalaje

· ADR, IMDG, IATA

II

· 14.5 Peligros para el medio ambiente:

No aplicable.

· 14.6 Precauciones particulares para los usuarios

Atención: Materias que pueden experimentar inflamación espontánea

· Número Kemler:

40

· Número EMS:

4.2-02

· 14.7 Transporte a granel con arreglo al anexo II del

Convenio MARPOL y el Código IBC

No aplicable.

· Transporte/datos adicionales:

· ADR

· Cantidades limitadas (LQ)

0

· Cantidades exceptuadas (EQ)

Código: E2

Cantidad neta máxima por envase interior: 30 g

Cantidad neta máxima por embalaje exterior: 500 g

· Categoría de transporte

2

· Código de restricción del túnel

D/E

· "Reglamentación Modelo" de la UNECE:

UN 2546 TITANIO EN POLVO SECO, 4.2, II

ES

( se continua en página 7 )



# Ficha de datos de seguridad

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Nombre comercial: Titanium

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### SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** No contiene la sustancia.
- **Categoría Seveso P7 LÍQUIDOS Y SÓLIDOS PIROFÓRICOS**
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel inferior 50 t**
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel superior 200 t**
- **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

### SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

· **Abreviaturas y acrónimos:**

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)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Sol. 2: Flammable solids, Hazard Category 2

Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1

Self-heat. 1: Self-Heating Substances and Mixtures, Hazard Category 1