

Safety Data Sheet

according to WHS Regulations

Printing date 05.05.2020

Revision: 05.05.2020

1 Identification

- **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)
Website: ems.proscitech.com
- 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 Hazard(s) Identification

- **Classification of the substance or mixture**



GHS02 flame

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

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

- **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**

Self-heating: may catch fire.

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

- **Precautionary statements**

Keep away from any possible contact with water, because of violent reaction and possible flash fire.

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

Keep cool. Protect from sunlight.

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

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

In case of fire: Use for extinction: CO2, sand, extinguishing powder.

Store in a dry place. Store in a closed container.

Maintain air gap between stacks/pallets.

Store bulk masses greater than 20 kg at temperatures not exceeding 70°C.

Store away from other materials.

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

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

3 Composition and 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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5 Fire Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, sand, extinguishing powder. Do not use water.
Use fire extinguishing methods suitable to surrounding conditions.
- **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 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 and 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.

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- **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

9 Physical and Chemical Properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Solid
Colour:	Silver grey
Odour:	Odourless
Odour threshold:	Not determined.

· **pH-value:** Not applicable.

· Change in condition

Melting point/freezing point:	1,668 °C
Initial boiling point and boiling range:	3,280 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Contact with water liberates extremely flammable gases.

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Spontaneously flammable in air.

· **Explosive properties:** Not determined.

· Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· **Vapour pressure:** Not applicable.

· **Density at 20 °C:** 4.506 g/cm³

· **Bulk density:** ~1,260 kg/m³

· **Relative density:** Not determined.

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· 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.
· Solids content:	99.9 %
· Other information	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** Contact with water releases flammable gases.
- **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.
- **Other adverse effects** No further relevant information available.

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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

· UN-Number	
· ADG, IMDG, IATA	not regulated
· UN proper shipping name	
· ADG, IMDG, IATA	not regulated
· Transport hazard class(es)	
· ADG, ADN, IMDG, IATA	
· Class	not regulated
· Packing group	
· ADG, IMDG, IATA	not regulated
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· UN "Model Regulation":	not regulated

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.
· Australia: Priority Existing Chemicals	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

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- **Hazard statements**

Self-heating: may catch fire.

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

- **Precautionary statements**

Keep away from any possible contact with water, because of violent reaction and possible flash fire.

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

Keep cool. Protect from sunlight.

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

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

In case of fire: Use for extinction: CO₂, sand, extinguishing powder.

Store in a dry place. Store in a closed container.

Maintain air gap between stacks/pallets.

Store bulk masses greater than 20 kg at temperatures not exceeding 70°C.

Store away from other materials.

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

- **Directive 2012/18/EU**

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

- **Seveso category**

P7 PYROPHORIC LIQUIDS AND SOLIDS

O2 Substances and mixtures which in contact with water emit flammable gases

- **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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Self-heat. 1: Self-heating substances and mixtures – Category 1

Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1

Safety Data Sheet

according to HPR, Schedule 1

Printing date 05/05/2020

Reviewed on 05/05/2020

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 identification

- **Classification of the substance or mixture**



GHS02 Flame

Self-heating Substances and Mixtures - Category 1

H251 Self-heating; may catch fire.

Substances and Mixtures Which, in Contact with Water, Emit Flammable Gases - Category 1

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

- **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**

Self-heating; may catch fire.

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

- **Precautionary statements**

Do not allow contact with water.

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

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

IF ON SKIN: Brush off loose particles from skin. Immerse in cool water.

In case of fire: Use for extinction: CO2, sand, extinguishing powder.

Store in a dry place. Store in a closed container.

Maintain air gap between stacks or pallets.

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Store bulk masses greater than 20 kg at temperatures not exceeding 70°C.

Store separately.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 2

The substance demonstrates unusual reactivity with water.

· **HMIS-ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 2

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:**

CO₂, sand, extinguishing powder. Do not use water.

Use fire fighting measures that suit the environment.

· **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.

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Trade name: Titanium

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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 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
- **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.

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Trade name: Titanium

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- **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:	Solid
Color:	Silver grey
Odor:	Odorless
Odor threshold:	Not determined.

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

- **Change in condition**

Melting point/Melting range:	1,668 °C
Boiling point/Boiling range:	3,280 °C

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Contact with water liberates extremely flammable gases.

- **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:** 4.506 g/cm³

Bulk density:	~1,260 kg/m ³
Relative density	Not determined.
Vapor 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.

Solids content: 99.9 %

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Trade name: Titanium

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· **Other information** 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** Contact with water releases flammable gases.
- **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.

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
- 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.

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Trade name: Titanium

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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

· UN-Number · DOT/TDG, ADR, IMDG, IATA	Void
· UN proper shipping name · DOT/TDG, ADR, IMDG, IATA	Void
· Transport hazard class(es) · DOT, ADR, ADN, IMDG, IATA · Class	Void
· Packing group · DOT/TDG, ADR, IMDG, IATA	Void
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	Void

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

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· Hazard pictograms

GHS02

· Signal word Danger**· Hazard statements***Self-heating; may catch fire.**In contact with water releases flammable gases which may ignite spontaneously.***· Precautionary statements***Do not allow contact with water.**Handle and store contents under inert gas. Protect from moisture.**Wear protective gloves/protective clothing/eye protection/face protection.**IF ON SKIN: Brush off loose particles from skin. Immerse in cool water.**In case of fire: Use for extinction: CO2, sand, extinguishing powder.**Store in a dry place. Store in a closed container.**Maintain air gap between stacks or pallets.**Store bulk masses greater than 20 kg at temperatures not exceeding 70°C.**Store separately.**Dispose of contents/container in accordance with local/regional/national/international regulations.***· 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 the latest revision of the safety data sheet 05/05/2020 / -**· Abbreviations and acronyms:***IMDG: International Maritime Code for Dangerous Goods**DOT: US Department of Transportation**IATA: International Air Transport Association**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)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative*

Sicherheitsdatenblatt

gemäß 1907/2006/EG, Artikel 31

Druckdatum: 05.05.2020

überarbeitet am: 05.05.2020

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

Deutschland: +49 (0)89 19240, 24h Giftnotruf Munchen, www.toxinfo.org

Osterreich: +43 1406 43 43, Gesundheit Osterreich GmbH, 24 h

· **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

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

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

Water-react. 1 H260 In Berührung mit Wasser entstehen entzündbare Gase, die sich spontan entzünden können.

· **2.2 Kennzeichnungselemente**

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

Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

(Fortsetzung auf Seite 2)

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· Gefahrenpiktogramme

GHS02

· Signalwort Gefahr**· Gefahrenhinweise**

H250 Entzündet sich in Berührung mit Luft von selbst.

H251 Selbsterhitzungsfähig; kann in Brand geraten.

H260 In Berührung mit Wasser entstehen entzündbare Gase, die sich spontan entzünden können.

· Sicherheitshinweise

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

P222 Keinen Kontakt mit Luft zulassen.

P223 Keinen Kontakt mit Wasser zulassen.

P231+P232 Inhalt unter inertem Gas handhaben und aufbewahren. Vor Feuchtigkeit schützen.

P413 Schüttgut in Mengen von mehr als 20 kg bei Temperaturen nicht über 70 °C aufbewahren.

P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.

· 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:**CO₂, Sand, Löschpulver. Kein Wasser verwenden.

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- Feuerlöschaßnahmen auf die Umgebung abstimmen.
- **Aus Sicherheitsgründen ungeeignete Löschmittel:** Wasser im Vollstrahl
- **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.
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:	Fest
Farbe:	Silbergrau
Geruch:	Geruchlos
Geruchsschwelle:	Nicht bestimmt.

· pH-Wert: Nicht anwendbar.

· Zustandsänderung

Schmelzpunkt/Gefrierpunkt:	1.668 °C
Siedebeginn und Siedebereich:	3.280 °C

· Flammpunkt: Nicht anwendbar.

· Entzündbarkeit (fest, gasförmig): Reagiert mit Wasser unter Bildung hochentzündlicher Gase.

· Zersetzungstemperatur: Nicht bestimmt.

· Selbstentzündungstemperatur: Selbstentzündlich an der Luft.

· Explosive Eigenschaften: Nicht bestimmt.

· Explosionsgrenzen:

Untere:	Nicht bestimmt.
Obere:	Nicht bestimmt.

· Dampfdruck: Nicht anwendbar.

· Dichte bei 20 °C: 4,506 g/cm³

· Schüttdichte:	~1.260 kg/m ³
· Relative Dichte	Nicht bestimmt.
· Dampfichte	Nicht anwendbar.
· Verdampfungsgeschwindigkeit	Nicht anwendbar.

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· Löslichkeit in / Mischbarkeit mit Wasser:	Unlöslich.
· Verteilungskoeffizient: n-Octanol/Wasser:	Nicht bestimmt.
· Viskosität:	
Dynamisch:	Nicht anwendbar.
Kinematisch:	Nicht anwendbar.
· Festkörpergehalt:	99,9 %
· 9.2 Sonstige Angaben	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** Kontakt mit Wasser setzt brennbare Gase frei.
- **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

- | | |
|---|------------------|
| · 14.1 UN-Nummer | |
| · ADR, IMDG, IATA | entfällt |
| · 14.2 Ordnungsgemäße UN-Versandbezeichnung | |
| · ADR, IMDG, IATA | entfällt |
| · 14.3 Transportgefahrenklassen | |
| · ADR, ADN, IMDG, IATA | |
| · Klasse | entfällt |
| · 14.4 Verpackungsgruppe | |
| · ADR, IMDG, IATA | entfällt |
| · 14.5 Umweltgefahren: | Nicht anwendbar. |
| · 14.6 Besondere Vorsichtsmaßnahmen für den Verwender | Nicht anwendbar. |
| · 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code | Nicht anwendbar. |
| · UN "Model Regulation": | entfällt |

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
O2 Stoffe und Gemische, die bei Berührung mit Wasser entzündbare Gase entwickeln
- **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse 50 t**

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- **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse 200 t**
- **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII Beschränkungsbedingungen: 40**
- **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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Pyr. Sol. 1: Pyrophore Feststoffe – Kategorie 1

Self-heat. 1: Selbsterhitzungsfähige Stoffe und Gemische – Kategorie 1

Water-react. 1: Stoffe und Gemische, die in Berührung mit Wasser entzündbare Gase entwickeln – Kategorie 1

DE

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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

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

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

Water-react. 1 H260 En contacto con el agua desprende gases inflamables que pueden inflamarse espontáneamente.

· 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.

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· Pictogramas de peligro



GHS02

· Palabra de advertencia Peligro

· Indicaciones de peligro

H250 Se inflama espontáneamente en contacto con el aire.

H251 Se calienta espontáneamente; puede inflamarse.

H260 En contacto con el agua desprende gases inflamables que pueden inflamarse espontáneamente.

· 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.

P223 Evitar el contacto con el agua.

P231+P232 Manipular y almacenar el contenido en un medio de gas inerte. Proteger de la humedad.

P413 Almacenar las cantidades a granel superiores a 20 kg a temperaturas no superiores a 70 °C.

P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

· 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:

CO₂, arena, polvo extintor. No utilizar agua.

Combatir los incendios con medidas adaptados al ambiente circundante.

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- **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.
- **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.
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.

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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.

· **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: Sólido
Color: Gris plateado

· **Olor:** Inodoro

· **Umbral olfativo:** No determinado.

· **valor pH:** No aplicable.

· **Cambio de estado**

Punto de fusión/punto de congelación: 1.668 °C

Punto inicial de ebullición e intervalo de ebullición: 3.280 °C

· **Punto de inflamación:** No aplicable.

· **Inflamabilidad (sólido, gas):** Reacciona con el agua liberando gases extremadamente inflamables.

· **Temperatura de descomposición:** No determinado.

· **Temperatura de auto-inflamación:** Se inflama espontáneamente en contacto con el aire.

· **Propiedades explosivas:** No determinado.

· **Límites de explosión:**

Inferior: No determinado.

Superior: No determinado.

· **Presión de vapor:** No aplicable.

· **Densidad a 20 °C:** 4,506 g/cm³

· **Densidad a granel:** ~1.260 kg/m³

· **Densidad relativa:** No determinado.

· **Densidad de vapor:** No aplicable.

· **Tasa de evaporación:** No aplicable.

· **Solubilidad en / miscibilidad con agua:** Insoluble.

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· Coefficiente de reparto: n-octanol/agua:	No determinado.
· Viscosidad:	
Dinámica:	No aplicable.
Cinemática:	No aplicable.
· Contenido de cuerpos sólidos:	99,9 %
· 9.2 Otros datos	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** Al entrar en contacto con agua se liberan gases inflamables.
- **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

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En estado no 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.

· **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, IMDG, IATA** *suprimido*

· 14.2 Designación oficial de transporte de las Naciones Unidas

· **ADR, IMDG, IATA** *suprimido*

· 14.3 Clase(s) de peligro para el transporte

· **ADR, ADN, IMDG, IATA**

· **Clase** *suprimido*

· 14.4 Grupo de embalaje

· **ADR, IMDG, IATA** *suprimido*

· **14.5 Peligros para el medio ambiente:** *No aplicable.*

· **14.6 Precauciones particulares para los usuarios** *No aplicable.*

· **14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC** *No aplicable.*

· **"Reglamentación Modelo" de la UNECE:** *suprimido*

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

O2 Sustancias y mezclas que, en contacto con el agua, desprenden gases inflamables

· **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**

· **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII Restricciones: 40**

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· 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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Pyr. Sol. 1: Sólidos pirofóricos – Categoría 1

Self-heat. 1: Sustancias y mezclas que experimentan calentamiento espontáneo – Categoría 1

Water-react. 1: Sustancias y mezclas que, en contacto con el agua, desprenden gases inflamables – Categoría 1

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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

- Pyr. Sol. 1 H250 S'enflamme spontanément au contact de l'air.
- Self-heat. 1 H251 Matière auto-échauffante; peut s'enflammer.
- Water-react. 1 H260 Dégage au contact de l'eau des gaz inflammables qui peuvent s'enflammer spontanément.

- **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**
H250 S'enflamme spontanément au contact de l'air.
H251 Matière auto-échauffante; peut s'enflammer.
H260 Dégage au contact de l'eau des gaz inflammables qui peuvent s'enflammer spontanément.
- **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.

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P223 Éviter tout contact avec l'eau.

P231+P232 Manipuler et stocker le contenu sous gaz inerte. Protéger de l'humidité.

P413 Stocker les quantités en vrac de plus de 20 kg à une température ne dépassant pas 70°C.

P501 Éliminer le contenu/réceptacle conformément à la réglementation locale/régionale/nationale/internationale.

- **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:**
CO2, sable, poudre d'extinction. Ne pas utiliser d'eau.
Adapter les mesures d'extinction d'incendie à l'environnement.
- **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.

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· 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.

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.

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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· 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:	Solide
· Couleur:	Gris argent
· Odeur:	Inodore
· Seuil olfactif:	Non déterminé.

· valeur du pH: Non applicable.

· Changement d'état

· Point de fusion/point de congélation:	1.668 °C
· Point initial d'ébullition et intervalle d'ébullition:	3.280 °C

· Point d'éclair Non applicable.

· **Inflammabilité (solide, gaz):** Au contact de l'eau, dégage des gaz extrêmement inflammables.· **Température de décomposition:** Non déterminé.· **Température d'auto-inflammabilité:** Spontanément inflammable à l'air.· **Propriétés explosives:** Non déterminé.· **Limites d'explosion:**

· Inférieure:	Non déterminé.
· Supérieure:	Non déterminé.

· **Pression de vapeur:** Non applicable.· **Densité à 20 °C:** 4,506 g/cm³· **Masse volumique:** ~1.260 kg/m³· **Densité relative:** Non déterminé.· **Densité de vapeur:** Non applicable.· **Taux 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 substances solides:** 99,9 %

· 9.2 Autres informations Pas d'autres informations importantes disponibles.

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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** Un contact avec l'eau provoque la libération de gaz combustibles.
- **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.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

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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

· 14.1 Numéro ONU · ADR, IMDG, IATA	néant
· 14.2 Désignation officielle de transport de l'ONU · ADR, IMDG, IATA	néant
· 14.3 Classe(s) de danger pour le transport · ADR, ADN, IMDG, IATA · Classe	néant
· 14.4 Groupe d'emballage · ADR, IMDG, IATA	néant
· 14.5 Dangers pour l'environnement:	Non applicable.
· 14.6 Précautions particulières à prendre par l'utilisateur	Non applicable.
· 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC	Non applicable.
· "Règlement type" de l'ONU:	néant

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
O2 Substances et mélanges qui, au contact de l'eau, dégagent des gaz inflammables
- **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**
- **RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII** Conditions de limitation: 40
- **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

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*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)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Pyr. Sol. 1: Matières solides pyrophoriques – Catégorie 1**Self-heat. 1: Substances et mélanges auto-échauffants – Catégorie 1**Water-react. 1: Substances et mélanges qui, au contact de l'eau, dégagent des gaz inflammables – Catégorie 1*

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according to 1907/2006/EC, Article 31

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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

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

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

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

- **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**
H250 Catches fire spontaneously if exposed to air.
H251 Self-heating; may catch fire.
H260 In contact with water releases flammable gases which may ignite spontaneously.
- **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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- P223 Do not allow contact with water.
- P231+P232 Handle and store contents under inert gas. Protect from moisture.
- P413 Store bulk masses greater than 20 kg at temperatures not exceeding 70°C.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

SECTION 3: Composition/information on ingredients

- **3.1 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:**
CO₂, sand, extinguishing powder. Do not use water.
Use fire extinguishing methods suitable to surrounding conditions.
- **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 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

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

· Form:	Solid
· Colour:	Silver grey
· Odour:	Odourless
· Odour threshold:	Not determined.

· pH-value: Not applicable.

· Change in condition

· Melting point/freezing point:	1,668 °C
· Initial boiling point and boiling range:	3,280 °C

· Flash point: Not applicable.

· Flammability (solid, gas): Contact with water liberates extremely flammable gases.

· Decomposition temperature: Not determined.

· Auto-ignition temperature: Spontaneously flammable in air.

· Explosive properties: Not determined.

· Explosion limits:

· Lower:	Not determined.
· Upper:	Not determined.

· Vapour pressure: Not applicable.

· Density at 20 °C: 4.506 g/cm³

· Bulk density:	~1,260 kg/m ³
· 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.

· 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.

· 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions: Contact with water releases flammable gases.

· 10.4 Conditions to avoid: No further relevant information available.

· 10.5 Incompatible materials: No further relevant information available.

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- **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.

SECTION 14: Transport information

- | | |
|---------------------------------------|---------------|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | not regulated |
| · 14.2 UN proper shipping name | |
| · ADR, IMDG, IATA | not regulated |

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· 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	
· Class	<i>not regulated</i>
· 14.4 Packing group	
· ADR, IMDG, IATA	<i>not regulated</i>
· 14.5 Environmental hazards:	<i>Not applicable.</i>
· 14.6 Special precautions for user	<i>Not applicable.</i>
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	<i>Not applicable.</i>
· UN "Model Regulation":	<i>not regulated</i>

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*
- *O2 Substances and mixtures which in contact with water emit flammable gases*
- *Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t*
- *Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t*
- *REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 40*
- **15.2 Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Pyr. Sol. 1: Pyrophoric solids – Category 1

Self-heat. 1: Self-heating substances and mixtures – Category 1

Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1

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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

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

Self-heat. 1 H251 Autoriscaldante; può infiammarsi.

Water-react. 1 H260 A contatto con l'acqua libera gas infiammabili che possono infiammarsi spontaneamente.

· **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*H250 Spontaneamente infiammabile all'aria.**H251 Autoriscaldante; può infiammarsi.**H260 A contatto con l'acqua libera gas infiammabili che possono infiammarsi spontaneamente.***· Consigli di prudenza***P210 Tenere lontano da fonti di calore, superfici calde, scintille, fiamme libere o altre fonti di accensione. Non fumare.**P222 Evitare il contatto con l'aria.**P223 Evitare qualunque contatto con l'acqua.**P231+P232 Manipolare e conservare in atmosfera di gas inerte. Tenere al riparo dall'umidità.**P413 Conservare le rinfuse di peso superiore a 20 kg a temperature non superiori a 70°C.**P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.***· 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

· Numeroli 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:**CO₂, sabbia, polvere. Non usare acqua.

Adottare provvedimenti antiincendio nei dintorni della zona colpita.

· 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.

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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.
- **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.
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.

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- **Tempo di permeazione del materiale dei guanti**
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
- **Occhiali protettivi:**



Occhiali protettivi a tenuta

SEZIONE 9: Proprietà fisiche e chimiche

· 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

· Indicazioni generali

· Aspetto:

Forma: Solido
Colore: Grigio argento

· **Odore:** Inodore

· **Soglia olfattiva:** Non definito.

· **valori di pH:** Non applicabile.

· Cambiamento di stato

Punto di fusione/punto di congelamento: 1.668 °C

Punto di ebollizione iniziale e intervallo di ebollizione: 3.280 °C

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

· **Infiammabilità (solidi, gas):** A contatto con l'acqua libera gas estremamente infiammabili.

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

· **Temperatura di autoaccensione:** Spontaneamente infiammabile all'aria.

· **Proprietà esplosive:** Non definito.

· Limiti di infiammabilità:

Inferiore: Non definito.

Superiore: Non definito.

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

· **Densità a 20 °C:** 4,506 g/cm³

· **Densità apparente:** ~1.260 kg/m³

· **Densità relativa:** Non definito.

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

· **Velocità di evaporazione:** Non applicabile.

· Solubilità in/Miscibilità con acqua:

Insolubile.

· **Coefficiente di ripartizione: n-ottanolo/acqua:** Non definito.

· Viscosità:

Dinamica: Non applicabile.

Cinematica: Non applicabile.

Contenuto solido: 99,9 %

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· 9.2 Altre informazioni

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 Il contatto con acqua libera gas infiammabili.
- 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.
- 12.6 Altri effetti avversi Non sono disponibili altre informazioni.

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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, IMDG, IATA	non applicabile
· 14.2 Nome di spedizione dell'ONU · ADR, IMDG, IATA	non applicabile
· 14.3 Classi di pericolo connesso al trasporto · ADR, ADN, IMDG, IATA · Classe	non applicabile
· 14.4 Gruppo di imballaggio · ADR, IMDG, IATA	non applicabile
· 14.5 Pericoli per l'ambiente:	Non applicabile.
· 14.6 Precauzioni speciali per gli utilizzatori	Non applicabile.
· 14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL ed il codice IBC	Non applicabile.
· UN "Model Regulation":	non applicabile

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**
O2 Sostanze e miscele che, a contatto con l'acqua, liberano gas infiammabili, categoria 1
- **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**
- **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 40
- **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

(continua a pagina 7)

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

Stampato il: 05.05.2020

Revisione: 05.05.2020

Denominazione commerciale: Titanium

(Segue da pagina 6)

*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)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Pyr. Sol. 1: Solidi piroforici – Categoria 1**Self-heat. 1: Sostanze e miscele autoriscaldanti– Categoria 1**Water-react. 1: Sostanze e miscele che, a contatto con l'acqua, sviluppano gas infiammabili – Categoria 1*

IT

물질안전보건자료 GHS에 따라

인쇄일자: 2020.05.05

개정: 2020.05.05

1 화학제품과 회사에 관한 정보

- **제품 식별자**
 - **제품명: Titanium**
 - **상품번호:** 80074-TI, 80075-TI
 - **CAS-번호**
7440-32-6
 - **EC 의번호:**
231-142-3
 - **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 추가적인 정보가 존재하지 않습니다.
 - **제품의 권고 용도와 사용상의 제한:** 실험실 화학품
 - **안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보**
 - **제조사/수입자/유통업자 정보:**
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
 - **Samchang Commercial Co., Ltd.**
Yeo Eui Do
PO Box 1110
Seoul, Korea
Tel: 82 2 703 3040
Fax: 82 2 717 3298
-
- **Daedok Science, Co. Ltd.**
34141 E10 Korea Advanced Institute of Science
Guseong-Dong, Yuseong-gu, Daejeon,
Korea
Phone: 82 42 710 2091
Fax: 82 42 367 0005
Website: www.labsmro.com
 - **추가적인 정보 획득 가능:** Product safety department
 - **비상연락 전화번호:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 유해성·위험성

- **순물질 또는 혼합물의 분류**



화염

자기발열성 물질 및 혼합물 – 구분 1 H251 자기발열성; 화재를 일으킬 수 있음
 물반응성 물질 및 혼합물 – 구분 1 H260 물과 접촉시 자연 발화하는 인화성 가스를 발생시킴

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

(2 쪽에 계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2020.05.05

개정: 2020.05.05

제품명: Titanium

(1 쪽부터계속)

· 그림문자



GHS02

· 신호어 위험

· 유해.위험 문구

자기발열성; 화재를 일으킬 수 있음
물과 접촉시 자연 발화하는 인화성 가스를 발생시킴

· 예방조치 문구

격렬한 반응 및 화재의 가능성이 있으므로 물과 접촉하지 않게 하시오.
불활성 기체 하에서 취급하고, 습기를 방지하십시오.
보호장갑, 보호의, 보안경, 안면보호구를 착용하십시오.
반응성이 높은 물질이므로 20kg 이상으로 보관중일 때는 70°C를 넘지 않도록 유의하십시오.
다른 물질과 격리하여 보관하십시오.
(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.

· 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

- 화학적 특성: 화학물질
- CAS-번호표시
7440-32-6 titanium
- 식별 번호
- EC 의번호: 231-142-3

4 응급조치 요령

- 응급조치요령 내용
- 흡입했을 때: 신선한 공기를 쐬고, 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, 석회 가루를 사용하고, 물을 사용하지 않는다.
주변 환경에 맞는 화재진화방법을 사용한다.
- 부적절한 소화제: 플레트용 물
- 본 화학물질이나 혼합물에서 발생하는 특별 유해성 추가적인 정보가 존재하지 않습니다.

(3 쪽에계속)

물질안전보건자료

GHS에 따라

인쇄일자: 2020.05.05

개정: 2020.05.05

제품명: Titanium

- 소방관에 대한 권고사항
- 화재 진압 시 착용할 보호구 및 예방조치: 특별한 조치가 필요없음.

(2 쪽부터 계속)

6 누출 사고 시 대처방법

- 개인적 예방조치, 보호장비 및 응급처치 절차 안 전 장 비 착 용 하고, 무 방 비 의 사 람 은 격 리 시 킨다.
- 환경 관련 예방조치: 하수도망/해수면위의물/지하수로도달하지않게한다.
- 밀폐 및 정화 방법과 소재:
 - 충분한 환기가 되도록 한다.
 - 물이나 묽은 세척제로 씻어 내지 마십시오
- 타 섹션 참조
 - 안전 관리에 대한 정보는 제7 장 을 참고하시오.
 - 개인 보호 장 비에 대한 정보는 제8 장 을 참고하시오.
 - 쓰레기 처리에 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 요 소 는 멀 리 둔 다. 급 연.
 - 정 전 기 의 충 전 으로부터 보호한다.
- 혼합위험성 등 안전 저장 조건
- 보관:
 - 안전한 저장 방법: 차 가 운 장 소 에 보 관 한다.
 - 하나의 공동 보관 시설에 대한 보관 관련 정보: 필 요 없 음
 - 보관 조 건 에 관 한 추 가 적 인 정 보:
 - 용기를 새지 않게 밀폐한 채 보관한다.
 - 용기를 가스가 새지 않게 밀폐시킨다.
 - 밀폐된 용기속에서 늘 하고 건조 하게 보 관 한 다.
 - 열이나 직사광선으로부터 보호한다.
 - 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.
 - 테스트를 하지 않았기 때문에 제품 / 조제 / 화 학 혼 합 물 에 적 합 한 장 갑 재 질 에 대 한 추 천 이 없 다.
 - 투과 시간, 침투율 과 저하를 고 려 해 서 장 갑 재 료 를 선택한다.
- 장갑의재료
 - 적합한장갑의선택은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다 르 게 선택 되어야 한다.

(4 쪽에 계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2020.05.05

개정: 2020.05.05

제품명: Titanium

- 장갑 재료의 투과시간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다. (3 쪽부터계속)
- 눈 보호:



팍조이는보안경

9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보

· 일반정보

· 외형

- 물리적 상태: 고체
- 색: 은회색
- 냄새: 무취의
- 후각역치: 알맞지않다.

· pH: 해당사항 없음.

· 상태변화

- 녹는점/어는점: 1,668 °C
- 초기 끓는점과 끓는점 범위: 3,280 °C

· 인화점: 해당사항 없음.

· 인화성(고체, 기체): 발화성이높은가스가만들어진상태에서물에반응한다.

· 분해 온도: 알맞지않다.

· 자기점화: 공기중에서자연발화하는

· 폭발위험: 알맞지않다.

· 인화 또는 폭발 범위의 상한/하한

- 아래로: 알맞지않다.
- 위로: 알맞지않다.

· 증기압: 해당사항 없음.

· 밀도 의경우 20 °C: 4.506 g/cm³

· 용 적 밀도: ~1,260 kg/m³

· 비중: 알맞지않다.

· 증기밀도: 해당사항 없음.

· 증발 속도: 해당사항 없음.

· 용해도:

· 물: 불용해성의

· n 옥탄올/물 분배계수: 알맞지않다.

· 점도:

· 역학성: 해당사항 없음.

· 동점성: 해당사항 없음.

· 고체의 함량: 99.9 %

· 기타 정보: 추가적인 정보가 존재하지 않습니다.

KR

(5 쪽에계속)

물질안전보건자료

GHS에 따라

인쇄일자: 2020.05.05

개정: 2020.05.05

제품명: Titanium

(4 쪽부터계속)

10 안정성 및 반응성

- 반응성 추가적인 정보가 존재하지 않습니다.
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라사용할경우해체는없다
- 유해반응 가능성 물과접촉시인화성가스가방출된다.
- 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

- 유엔 번호
- ADR, IMDG, IATA 누락되다

(6 쪽에계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2020.05.05

개정: 2020.05.05

제품명: Titanium

(5 쪽부터계속)

· UN 적정 선적명 · ADR, IMDG, IATA	누락되다
· 교통 위험 클래스 · ADR, ADN, IMDG, IATA · 등급	누락되다
· 용기등급 · ADR, IMDG, IATA	누락되다
· 환경적 유해물질:	해당사항 없음.
· 이용자 특별 예방조치	해당사항 없음.
· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송	해당사항 없음.
· UN "모범 규제":	누락되다

15 법적 규제현황

· 산업안전보건법에 의한 규제:

· 제조 등 금지물질:

성분이포함되어있지않다

· 허가대상물질:

성분이포함되어있지않다

· 관리대상유해물질:

성분이포함되어있지않다

· 작업환경측정 대상 유해인자

성분이포함되어있지않다

· 특수건강진단 대상 유해인자

성분이포함되어있지않다

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory

KE-33881

· 화학물질관리법

· 사고대비물질

성분이포함되어있지않다

· 금지물질

성분이포함되어있지않다

· 제한물질

성분이포함되어있지않다

· 유독물질

성분이포함되어있지않다

· 허가물질

성분이포함되어있지않다

· 위험물안전관리법 (위험물 및 지정수량) False

(7 쪽에계속)

물질안전보건자료

GHS에 따라

인쇄일자: 2020.05.05

개정: 2020.05.05

제품명: Titanium

(6 쪽부터계속)

· 등록 또는 신고 면제대상 화학물질

성분이포함되어있지않다

· ‘21년까지 등록하여야 할 암, 돌연변이, 생식능력 이상을 일으키거나 일으킬 우려가 있는 기존화학물질

성분이포함되어있지않다

· 중점관리물질의 지정

· 표1 중점관리물질(제2조 관련)

성분이포함되어있지않다

· 표2 중점관리물질(제2조 관련)

성분이포함되어있지않다

· GHS 라벨 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· 그림문자



GHS02

· 신호어 위험

· 유해 위험 문구

자기발열성; 화재를 일으킬 수 있음
물과 접촉시 자연 발화하는 인화성 가스를 발생시킴

· 예방조치 문구

격렬한 반응 및 화재의 가능성이 있으므로 물과 접촉하지 않게 하시오.
불활성 기체 하에서 취급하고, 습기를 방지하십시오.
보호장갑, 보호의, 보안경, 안면보호구를 착용하십시오.
반응성이 높은 물질이므로 20kg 이상으로 보관중일 때는 70°C를넘지 않도록 유의하십시오.
다른 물질과 격리하여 보관하십시오.
(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.

· 화학물질 안전성 평가: 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항

이보고는우리지식에대한 오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

· 최초 작성일자: 2020.05.05

· 개정 횟수 및 최종 개정일자: 1 / 2020.05.05

· 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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

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Herziening van: 05.05.2020

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**



- Pyr. Sol. 1 H250 Vat spontaan vlam bij blootstelling aan lucht.
Self-heat. 1 H251 Vatbaar voor zelfverhitting: kan vlam vatten.
Water-react. 1 H260 In contact met water komen ontvlambare gassen vrij die spontaan kunnen ontbranden.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



(Vervolg op blz. 2)

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(Vervolg van blz. 1)

- **Signaalwoord** Gevaar
- **Gevarenaanduidingen**
 - H250 Vat spontaan vlam bij blootstelling aan lucht.
 - H251 Vatbaar voor zelfverhitting: kan vlam vatten.
 - H260 In contact met water komen ontvlambare gassen vrij die spontaan kunnen ontbranden.
- **Veiligheidsaanbevelingen**
 - P210 Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken.
 - P222 Contact met de lucht vermijden.
 - P223 Contact met water vermijden.
 - P231+P232 Inhoud onder inert gas gebruiken en bewaren. Tegen vocht beschermen.
 - P413 Bulkmateriaal, indien meer dan 20 kg, bij temperaturen van maximaal 70°C bewaren.
 - P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.
- **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:**
CO₂, zand, bluspoeder. Geen water gebruiken.
Brandblusmaatregelen op omgeving afstemmen.
- **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.

NL

(Vervolg op blz. 3)

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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.
- **6.2 Milieuvorzorgsmaatregelen:** Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.
- **6.3 Insluifings- 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.
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 zonnestrallen 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.

(Vervolg op blz. 4)

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- **Doordringingstijd van het handschoenmateriaal**
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.
- **Oogbescherming:**



Nauw aansluitende veiligheidsbril

RUBRIEK 9: Fysische en chemische eigenschappen

· 9.1 Informatie over fysische en chemische basiseigenschappen

· Algemene gegevens

· Voorkomen:

Vorm:	Vast
Kleur:	Zilvergrijs
Geur:	Reukloos
Geurdrempelwaarde:	Niet bepaald.

· **pH-waarde:** Niet bruikbaar.

· Toestandsverandering

Smelt-/vriespunt:	1.668 °C
Beginkookpunt en kooktraject:	3.280 °C

· **Vlampunt:** Niet bruikbaar.

· **Ontvlambaarheid (vast, gas):** Vormt zeer licht ontvlambaar gas in contact met water.

· **Ontledingstemperatuur:** Niet bepaald.

· **Zelfontbrandingstemperatuur:** Spontaan ontvlambaar in lucht.

· **Ontploffingseigenschappen:** Niet bepaald.

· Ontploffingsgrenzen:

Onderste:	Niet bepaald.
Bovenste:	Niet bepaald.

· **Dampspanning:** Niet bruikbaar.

Dichtheid bij 20 °C: 4,506 g/cm³

Stortgewicht:	~1.260 kg/m ³
Relatieve dichtheid	Niet bepaald.
Dampdichtheid	Niet bruikbaar.
Verdampingssnelheid	Niet bruikbaar.

· Oplosbaarheid in/mengbaarheid met

Water: Niet oplosbaar.

· **Verdelingscoëfficiënt: n-octanol/water:** Niet bepaald.

· Viscositeit

Dynamisch:	Niet bruikbaar.
Kinematisch:	Niet bruikbaar.

Gehalte aan vaste bestanddelen: 99,9 %

(Vervolg op blz. 5)

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(Vervolg van blz. 4)

- **9.2 Overige informatie** *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** *Contact met water maakt brandbare gassen vrij.*
- **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): A(4) Weinig schadelijk voor in water levende organismen kan in het aquatische 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.*

(Vervolg op blz. 6)

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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

- | | |
|--|---------------------|
| · 14.1 VN-nummer
· ADR, IMDG, IATA | Niet van toepassing |
| · 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN
· ADR, IMDG, IATA | Niet van toepassing |
| · 14.3 Transportgevarenklasse(n)
· ADR, ADN, IMDG, IATA
· klasse | Niet van toepassing |
| · 14.4 Verpakkingsgroep:
· ADR, IMDG, IATA | Niet van toepassing |
| · 14.5 Milieugevaren: | Niet bruikbaar. |
| · 14.6 Bijzondere voorzorgen voor de gebruiker | Niet bruikbaar. |
| · 14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code | Niet bruikbaar. |
| · VN "Model Regulation": | Niet van toepassing |

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.

- **Lijst Zeer Zorgwekkende Stoffen (ZZS)**

De stof is niet aanwezig.

- **Lijst van Potentieel Zeer Zorgwekkende Stoffen**

De stof is niet aanwezig.

(Vervolg op blz. 7)

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(Vervolg van blz. 6)

- **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
O2 Stoffen en mengsels die in contact met water ontvlambare gassen ontwikkelen
- **Drempelwaarde (ton) voor toepassing van voorschriften voor lagedrempelinrichtingen 50 t**
- **Drempelwaarde (ton) voor toepassing van voorschriften voor hogedrempelinrichtingen 200 t**
- **Verordening (EG) nr. 1907/2006 BIJLAGE XVII** Beperkingsvoorwaarden: 40
- **Nationale voorschriften:**
- **Gevaarklasse v. water:**
Waterbezwaarlijkheid (NL): A(4) Weinig schadelijk voor in water levende organismen kan in het aquatische milieu op lange termijn schadelijke effecten veroorzaken
- **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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Pyr. Sol. 1: Pyrofore vaste stoffen – Categorie 1
Self-heat. 1: Voor zelfverhitting vatbare stoffen en mengsels – Categorie 1
Water-react. 1: Stoffen en mengsels die in contact met water ontvlambare gassen ontwikkelen – Categorie 1

-NL-

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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

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

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

- **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**
Self-heating: may catch fire.
In contact with water releases flammable gases, which may ignite spontaneously.
- **Precautionary statements**
Do not allow contact with water.
Handle under inert gas. Protect from moisture.
Keep cool. Protect from sunlight.
Wear protective gloves/protective clothing/eye protection/face protection.
Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
In case of fire: Use for extinction: CO2, sand, extinguishing powder.
Store in a dry place. Store in a closed container.
Maintain air gap between stacks/pallets.

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Store bulk masses greater than 20 lbs at temperatures not exceeding 70°F.
 Store away from other materials.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
 Fire = 4
 Reactivity = 2

The substance demonstrates unusual reactivity with water.

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



Health = 0
 Fire = 4
 Reactivity = 2

- **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:**
CO₂, sand, extinguishing powder. Do not use water.
Use fire fighting measures that suit the environment.
- **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.
- **Protective Action Criteria for Chemicals**

· PAC-1:

30 mg/m³

· PAC-2:

330 mg/m³

· PAC-3:

2,000 mg/m³

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 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.

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- **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
- **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:	Solid
Color:	Silver grey
- **Odor:** Odorless
- **Odor threshold:** Not determined.
- **pH-value:** Not applicable.
- **Change in condition**

Melting point/Melting range:	1,668 °C (3568 °F)
Boiling point/Boiling range:	3,280 °C (37.980 °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Contact with water liberates extremely flammable gases.
- **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 (68 °F):** 4.506 g/cm³ (37.60257 lbs/gal)
- **Bulk density:** ~1,260 kg/m³
- **Relative density** Not determined.

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· Vapor 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.
VOC content:	0.00 %
Solids content:	99.9 %
· Other information	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** Contact with water releases flammable gases.
- **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.

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

· UN-Number	Void
· DOT, ADR, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADR, IMDG, IATA	Void
· Transport hazard class(es)	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	Void

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.

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

ACTIVE

· **Hazardous Air Pollutants**

Substance is not 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**

Self-heating: may catch fire.

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

· **Precautionary statements**

Do not allow contact with water.

Handle under inert gas. Protect from moisture.

Keep cool. Protect from sunlight.

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

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

In case of fire: Use for extinction: CO₂, sand, extinguishing powder.

Store in a dry place. Store in a closed container.

Maintain air gap between stacks/pallets.

Store bulk masses greater than 20 lbs at temperatures not exceeding 70°F.

Store away from other materials.

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

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

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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** 05/05/2020 / -

· **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

Self-heat. 1: Self-heating substances and mixtures – Category 1

Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1

US