

# Material Safety Data Sheet

## Titanium Nanopowder, 60-80 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

### 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY / UNDERTAKING

<b>Product name</b>	Titanium
<b>Product code</b>	NM-0031-HP
<b>Supplier</b>	IoLiTec Ionic Liquids Technologies GmbH Salzstrasse 184 D-74076 Heilbronn Germany
<b>Telephone</b>	+49 (0)7131 – 898390
<b>Fax</b>	+49 (0)7131 – 89839109
<b>Emergency telephone</b>	+49 (0)179 – 5322578
<b>Email</b>	msds@iolitec.de

### 2 HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

##### Classification (67/548/EEC or 1999/45/EC)

Combustible metal powder

##### Classification (REGULATION (EC) No 1272/2008)

Self-heating substances and mixtures, Category 1, H251

Skin corrosion/irritation, Category 2, H315

Serious eye damage/Eye irritation, Category 2, H319

Specific Target Organ Toxicity - Single exposure: Respiratory tract irritation,  
Category 3, H335

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## 2.2 Label elements

### Labelling (67/548/EEC or 1999/45/EC)

#### Hazard description:

#### Label for supply



F Highly flammable



Xi irritant

#### Information pertaining to particular dangers for man and environment

#### Risk phrases

R17: Spontaneously flammable in air.

R36/37/38: Irritating to eyes, respiratory system and skin.

#### Safety phrases

S7/8: Keep container tightly closed and dry.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S43: In case of fire, use fire extinguisher D - Never use water.

S16: Keep away from sources of ignition - No smoking.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

#### Labelling (REGULATION (EC) No 1272/2008, GHS)

#### Hazard statements



**Danger**

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### H-phrases

H251: Self-heating: may catch fire.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

### *Precautionary statements*

### P-phrases

P261: Avoid breathing dust/fume/gas/mist/vapours/spray .

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

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P362: Take off contaminated clothing and wash before reuse.

P405: Store locked up.

## 3 COMPOSITION / INFORMATION ON INGREDIENTS

<b>Ingredient name</b>	Titanium
<b>Empirical Formula</b>	Ti
<b>CAS No.</b>	7440-32-6

## 4 FIRST AID MEASURES

<b>General</b>	Contaminated clothing should be removed and washed before being reused.
<b>Inhalation</b>	Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen.

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<b>Ingestion</b>	Immediately rinse mouth and provide fresh air. Do not induce vomiting. Get medical attention immediately.
<b>Skin</b>	Wash the skin immediately with soap and water. Get medical attention immediately.
<b>Eyes</b>	Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

### 5 FIRE FIGHTING MEASURES

<b>Extinguishing media</b>	Extinguishing powder for metal powders. DO NOT USE WATER.
<b>Unsuitable extinguishing agents</b>	Water, carbon dioxide, halogenated extinguisher, dry chemical.
<b>Special fire fighting procedures</b>	-
<b>Unusual fire &amp; explosion hazards</b>	-
<b>Protective measures in fire</b>	Wear self-contained breathing apparatus as combustion may produce hazardous fumes.

### 6 ACCIDENTAL RELEASE MEASURES

<b>Personal precautions during spill</b>	Wear protective clothing and avoid inhalation as well as skin or eye contact. Keep away from ignition sources.
<b>Precautions to protect environment</b>	Do not wash into water courses. Do not allow this material to be released to the

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**Spill cleanup methods** environment without proper governmental permits.  
Avoid contact with skin or inhalation of spillage, dust or vapor, Avoid dust formation. Collect and reclaim or dispose in sealed containers in license waste. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

### 7 HANDLING AND STORAGE

**Usage precautions** Handle under dry argon.  
Keep away from heat, sparks and open flame.  
Do not use in confined spaces without adequate ventilation.

**Storage precautions** Store in a tightly closed container in a cool, dry, well ventilated area.

**Storage criteria** Store under dry inert gas.  
Do not store together with oxidizing salts, acids, halogens. Store away from air.

### 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Protective equipment** Safety goggles. Chemical resistant gloves.  
Protective clothing. Respirator when high concentrations are present.

**Process control measures** Provide eyewash station and safety shower.

**Ventilation** Provide adequate general and local exhaust ventilation.

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**Exposure Limits** -

### 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Powder
<b>Color</b>	Black gray
<b>Odor/taste</b>	No characteristic odor.
<b>Boiling Point</b>	3260 °C
<b>Melting Point</b>	1668 °C
<b>Flash Point</b>	N/A
<b>Flammability</b>	Highly Flammable
<b>Auto-ignition Temp</b>	Spontaneously flammable in air
<b>Ignition Temperature</b>	250 °C
<b>Oxidizing Properties</b>	N/A
<b>Explosive Properties</b>	N/A
<b>Explosion Limits</b>	N/A
<b>Vapor Pressure</b>	N/A
<b>SG/Density</b>	4.507 g/cm <sup>3</sup> at 20 °C
<b>Partition Coefficient</b>	N/A
<b>Viscosity</b>	N/A
<b>Vapor Density</b>	N/A
<b>Saturated Vapor Conc.</b>	N/A
<b>Evaporation Rate</b>	N/A
<b>Bulk Density</b>	N/A
<b>Decomposition Temp.</b>	N/A
<b>Solvent Content</b>	N/A
<b>Water Content</b>	N/A
<b>Surface Tension</b>	N/A
<b>Conductivity</b>	N/A

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**Solubility in Water** N/A

### 10 STABILITY AND REACTIVITY

**Stability** No particular stability concerns.

**Conditions to avoid** Contact with water releases flammable gases

### 11 TOXICOLOGICAL INFORMATION

**Ingestion** irritating effect

**Skin** irritating effect

**Eyes** irritating effect

**Other information** Tumorigenic effects have been observed on tests with laboratory animals.  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### 12 ECOLOGICAL INFORMATION

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

### 13 DISPOSAL CONSIDERATIONS

**Disposal method** Contact specialist disposal companies.  
Dispose of in accordance with Local Authority

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requirements. Recover and reclaim or recycle, if practical.

#### 14 TRANSPORT INFORMATION

##### Land transport RID/ADR

UN#: 2546

Class: 4.2

Packing group: II

Item: 12 b

Danger Code (Kemler): 40

Proper Shipping Name: Titanium powder, dry

##### Maritime transport IMDG

UN#: 2546

Class: 4.2

Packing group: II

Proper Shipping Name: Titanium powder, dry

##### Air transport IATA

UN#: 2546

Class: 4.2

Packing group: II

Proper Shipping Name: Titanium powder, dry

#### 15 REGULATORY INFORMATION

In accordance with local and national regulations.

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### 16 OTHER INFORMATION

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