

# Material Safety Data Sheet

## Silicon Nanopowder

Revision Date: 01/12/2010

Date Issued: 11/24/2006

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

|                            |   |
|----------------------------|---|
| <b>Product name</b>        | Silicon Nanopowder, 60 nm   |
| <b>Product code</b>        | NM-0020-HP  |
| <b>Supplier</b>            | IoLiTec<br>Ionic Liquids Technologies GmbH<br>Salzstrasse 184<br>D-74076 Heilbronn<br>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)

Flammable metal powder

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

Flammable solids, Category 2, H228

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

# Material Safety Data Sheet

## Silicon Nanopowder

Revision Date: 01/12/2010

Date Issued: 11/24/2006

---

### 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

R11: Highly flammable.

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

#### Safety phrases

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

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

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

#### *Hazard statements*



Warning

#### H-phrases

H228: Flammable solid.

# Material Safety Data Sheet

## Silicon Nanopowder

Revision Date: 01/12/2010

Date Issued: 11/24/2006

---

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

### *Precautionary statements*

### **P-phrases**

P210: Keep away from heat/sparks/open flames/hot surfaces . - No smoking.

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.

P422: Store contents under nitrogen or argon

## 3 COMPOSITION / INFORMATION ON INGREDIENTS

|                          |               |
|--------------------------|---------------|
| <b>Ingredient name</b>   | Silicon, 99+% |
| <b>CAS No.</b>           | 7440-21-3     |
| <b>Empirical Formula</b> | Si            |
| <b>Molecular weight</b>  | 28.09 amu     |

## 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. |
| <b>Ingestion</b>  | Immediately rinse mouth and provide fresh air. Get medical attention immediately.                     |
| <b>Skin</b>       | Wash the skin immediately with water.   |

# Material Safety Data Sheet

## Silicon Nanopowder

Revision Date: 01/12/2010

Date Issued: 11/24/2006

---

|             |   |
|-------------|---|
| <b>Eyes</b> | Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention immediately. Continue to rinse for at least 15 minutes. |
|-------------|---|

### 5 FIRE FIGHTING MEASURES

|                                    |   |
|------------------------------------|---|
| <b>Extinguishing media</b>         | Use: Dry chemical powder.<br>Do not use water.                            |
| <b>Special risks</b>               | Flammable powder. Emission of toxic fumes under fire conditions possible. |
| <b>Protective measures in fire</b> | Wear self-contained breathing apparatus and protective clothing.          |

### 6 ACCIDENTAL RELEASE MEASURES

|  |  |
|--|--|
| <b>Personal precautions during spill</b> | Evacuate area. Shut off all heat or ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Wear self-contained breathing apparatus, rubber boots and gloves. |
| <b>Spill cleanup methods</b>             | 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.              |

### 7 HANDLING AND STORAGE

|                          |  |
|--------------------------|--|
| <b>Usage precautions</b> | Avoid contact with eyes, skin and clothing.<br>Keep away from heat, sparks and open flame. |
|--------------------------|--|

# Material Safety Data Sheet

## Silicon Nanopowder

Revision Date: 01/12/2010

Date Issued: 11/24/2006

---

|                                 |  |
|---------------------------------|--|
| <b>Storage precautions</b>      | Do not use in confined spaces without adequate ventilation and/or respirator. Store in a closed container at moderate temperatures in dry, well ventilated area. |
| <b>Special storage criteria</b> | Pressure development possible. Store away from oxidizing agents, halogens, acids and water.  |

### 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

|                                 |   |
|---------------------------------|---|
| <b>Protective equipment</b>     | Safety goggles. Chemical resistant gloves. Protective clothing. Protective mask.  |
| <b>Process control measures</b> | Provide eyewash station and safety shower. Use engineering controls to reduce air contamination to permissible exposure levels. |
| <b>Ventilation</b>              | Provide adequate general and local exhaust ventilation.   |
| <b>Respirators</b>              | Use high efficiency particulate respirator with appropriate filter.   |

### 9 PHYSICAL AND CHEMICAL PROPERTIES

|                      |                         |
|----------------------|-------------------------|
| <b>Appearance</b>    | Solid                   |
| <b>Color</b>         | Brown-yellow.           |
| <b>Odor/taste</b>    | No characteristic odor. |
| <b>Melting Point</b> | 1410 °C                 |
| <b>Boiling Point</b> | 2355 °C                 |
| <b>Flammability</b>  | Highly flammable        |
| <b>Density</b>       | N/A                     |

# Material Safety Data Sheet

## Silicon Nanopowder

Revision Date: 01/12/2010

Date Issued: 11/24/2006

### 10 STABILITY AND REACTIVITY

|   |  |
|---|--|
| <b>Stability</b>                        | No particular stability concerns if handled according to specifications.                                 |
| <b>Conditions to avoid</b>              | Reacts violently with: oxidizing agents, acids, bases, halogens, interhalogens, alkali metals and water. |
| <b>Hazardous Decomposition Products</b> | Metal oxide fume.  |

### 11 TOXICOLOGICAL INFORMATION

|                   |                              |
|-------------------|------------------------------|
| <b>Ingestion</b>  | Harmful if swallowed.        |
| <b>Inhalation</b> | Harmful to mucous membranes. |
| <b>Skin</b>       | May cause irritation.        |
| <b>Eyes</b>       | May cause irritation.        |

### 12 ECOLOGICAL INFORMATION

|                              |  |
|------------------------------|--|
| <b>Environmental hazards</b> | Avoid washing into water courses. Avoid contaminating public drains or water supply. |
|------------------------------|--|

### 13 DISPOSAL CONSIDERATIONS

|                        |   |
|------------------------|---|
| <b>Disposal method</b> | Contact specialist disposal companies.<br>Dispose of in accordance with Local Authority |
|------------------------|---|

# Material Safety Data Sheet

## Silicon Nanopowder

Revision Date: 01/12/2010

Date Issued: 11/24/2006

requirements. Recover and reclaim or recycle, if practical.

### 14 TRANSPORT INFORMATION

#### Land transport RID/ADR

UN#: 1346

Class: 4.1

Packing group: III

Proper Shipping Name: Silicon powder

#### Maritime transport IMDG

UN#: 1346

Class: 4.1

Packing group: III

Proper Shipping Name: Silicon powder

#### Air transport IATA

UN#: 1346

Class: 4.1

Packing group: III

Proper Shipping Name: Silicon powder

### 15 REGULATORY INFORMATION

In accordance with local and national regulations.

# Material Safety Data Sheet

## Silicon Nanopowder

Revision Date: 01/12/2010

Date Issued: 11/24/2006

---

### 16 OTHER INFORMATION

#### DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPOSED TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. IOLITEC SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR ANY PROCESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABILITY OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.

IN NO WAY SHALL IOLITEC BE LIABLE FOR ANY CLAIMS, LOSSES OR DAMAGES OF ANY THIRD PARTY OR FOR THE LOST PROFITS OR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, HOWSOEVER ARISING, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.