

**Material Safety Data Sheet**  
acc. to OSHA and ANSI

**1 Identification of substance:**

- **Product details:**
  - **Trade name:** Silicon Dioxide nanopowder
  - **Stock number:** PL-SiOF, PL-SiOF-OS, PL-SiOF-PDMS
  - **Manufacturer/Supplier:**  
Plasmachem GmbH  
Rudower Chaussee, 29  
D-12489, Berlin, Germany
- Ver.1.1.1. from 15.06.2009

**2 Composition/Data on components:**

- **Chemical characterization:**  
Description: (CAS#)  
silica amorphous fumed (CAS# 112945-52-5)

**3 Hazards identification**

- **Hazard description:** Not hazardous according to Directive 67/548/EEC

**4 First aid measures**

- **After inhalation:** Remove to fresh air. Seek medical treatment in case of complaints.
- **After skin contact:** Wash affected area with soap and water.
- **After eye contact:** Rinse opened eye for 15 minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Give plenty of fluids. Seek medical treatment.

**5 Fire fighting measures**

- **Suitable extinguishing agents**  
Carbon dioxide, dry chemical powder, or appropriate foam.  
Unsuitable: Do not use water.
- **Special risks:** Wear Emits toxic fumes under fire conditions

**6 Accidental release measures**

- **Person-related safety precautions:** Wear appropriate protective equipment.
- **Measures for environmental protection:**  
Do not allow material to be released to the environment without proper governmental permits.
- **Measures for cleaning/collecting:** Pick up mechanically.
- **Methods for cleaning up**  
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. ventilate area and wash spill site after material pickup is complete.

**7 Handling and storage**

- **Handling:**  
Hygroscopic
- **Information for safe handling:**

Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
No special precautions are necessary if used correctly.

- **Information about protection against explosions and fires:**  
No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:**  
No special requirements.
- **Information about storage in one common storage facility:** Not required.

#### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:**  
No further data; see item 7.  
**Components with limit values that require monitoring at the workplace:**  
Not required.
- **Additional information:** No data
- **Personal protective equipment**
- **General protective and hygienic measures**  
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Particulate respirator.
- **Protection of hands:** Rubber gloves.
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

#### 9 Physical and chemical properties:

- **Form:** Powder
- **Color:** White
- **Odor:** Odorless

	<u>Value/Range</u>	<u>Unit</u>	<u>Method</u>
• <b>Change in condition</b>			
• <b>Melting point/Melting range</b>	> 1600	°C	
• <b>Boiling point/Boiling range:</b>	2200	°C	
• <b>Sublimation temperature / start:</b>	Not determined		
• <b>Flash point:</b>	Not applicable		
• <b>Flammability (solid, gaseous)</b>	Product is not flammable.		
• <b>Ignition temperature:</b>	Not determined		
• <b>Decomposition temperature:</b>	Not determined		
• <b>Danger of explosion:</b>	Product does not present an explosion hazard.		
• <b>Explosion limits:</b>			
• <b>Lower:</b>	Not determined		
• <b>Upper:</b>	Not determined		
• <b>Vapor pressure:</b>	Not determined		
• <b>Density:</b>	2,2	g/cm <sup>3</sup>	
• <b>Solubility in / Miscibility with</b>			
• <b>Water:</b>	SiOF: Miscible; others not		

#### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
Decomposition will not occur if used and stored according to specifications.
  - **Materials and conditions to be avoided:** Moisture, Strong acids, Exothermic in contact with water, Strong bases, Hydrogen fluoride,

Oxidizing agents, Ammonia, Oxygen difluoride, Chlorine trifluoride.

- **Dangerous products of decomposition:**  
Silicon dioxide

## **11 Toxicological information**

- **Acute toxicity:**

LD50  
Oral  
Rat  
3160 mg/kg

LD50  
Intravenous  
Rat  
15 MG/KG

Remarks: Lungs, Thorax, or Respiration:Acute pulmonary edema.

- **Signes and symptoms of exposure**

Prolonged inhalation of crystalline silica may result in silicosis, a disabling pulmonary fibrosis characterized by fibrotic changes and miliary nodules in the lungs, a dry cough, shortness of breath, emphysema, decreased chest expansion, and increased susceptibility to tuberculosis. In advanced stages, loss of appetite, pleuritic pain, and total incapacity to work. Advanced silicosis may result in death due to cardiac failure or destruction of lung tissue. Crystalline silica is classified as group 1 "known to be carcinogenic to humans" by IARC and "sufficient evidence" of carcinogenicity by the NTP.

- **Route of exposure**

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

- **Target organ information**

Lungs. Eyes.

- **Chronic exposure - carcinogen**

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Rat

Route of Application: Inhalation

Exposure Time: 6H/2Y

Result:

Lungs, Thorax, or Respiration:Tumors.

Tumorigenic:Carcinogenic by RTECS criteria.

- **Chronic exposure - carcinogen IARC carcinogenic list**

Rating: Group 3

- **Chronic exposure - mutagen**

Rat

120 MG/KG

Intratracheal

Unscheduled DNA synthesis

Rat

120 MG/KG

Cell Type: lung

Body fluid assay

## **12 Ecological information:**

- **General notes:**  
Do not allow material to be released to the environment without proper governmental permits.

### 13 Disposal considerations

- **Product:**
- **Recommendation**  
Consult state, local or national regulations for proper disposal.
- **Uncleaned packagings:**
- **Recommendation:**  
Disposal must be made according to official regulations.

### 14 Transport information

Not a hazardous material for transportation.

- **DOT regulations:**
- **Hazard class:** None
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** None
- **Maritime transport IMDG:**
- **IMDG Class:** None
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** None
- **Transport/Additional information:**  
Not dangerous according to the above specifications.

### 15 Regulations

- **Product related hazard informations:**  
S 22-24/25  
Do not breathe dust. Avoid contact with skin and eyes.  
Not hazardous according to Directive 67/548/EEC
- **National regulations**  
Germany: WGK 2
- **Information about limitation of use:**  
For use only by technically qualified individuals.

### 16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Disclaimer:**  
For R&D use only. Not for drug, household or other uses