



MATERIAL SAFETY DATA SHEET (MSDS)

Silica Sand

1. Product Identification

Product Name: Silica Sand

Chemical Name: Silicon Dioxide / Crystalline Silica

Chemical Formula: SiO₂

CAS No.: 14808-60-7 (Quartz)

EC No.: 238-878-4

Recommended Uses: Glass manufacturing, construction materials, foundry applications, filtration, ceramics, industrial fillers, and other industrial applications.

2. Hazard Identification

Primary Hazard: Dust generated during handling may contain respirable crystalline silica.

Potential Health Effects:

- **Inhalation:** Prolonged or repeated inhalation of respirable crystalline silica dust may cause serious lung damage, including silicosis. Occupational exposure to respirable crystalline silica is also associated with an increased risk of lung cancer.
- **Eye Contact:** Dust may cause mechanical irritation, redness, or discomfort.
- **Skin Contact:** Prolonged contact may cause dryness or mechanical irritation.
- **Ingestion:** Not expected to present a significant hazard under normal industrial use.

Important: The hazard level depends strongly on the crystalline silica content, particle size, and amount of airborne respirable dust generated during handling or processing.

3. Composition / Information on Ingredients

Component	CAS No.	Typical Content
Silicon Dioxide (SiO ₂), primarily quartz	14808-60-7	Typically 95–99%+
Naturally occurring mineral impurities	Various	Balance

Actual chemical composition should be confirmed by the product's Certificate of Analysis (COA).

4. First-Aid Measures

Inhalation: Move the affected person to fresh air. Seek medical attention if coughing, breathing difficulty, or irritation persists.

Eye Contact: Rinse cautiously with clean water for several minutes. Remove contact lenses if present and easy to do. Seek medical attention if irritation continues.

Skin Contact: Wash with soap and water. Remove contaminated clothing if necessary.

Ingestion: Rinse mouth with water. Seek medical advice if discomfort occurs.

5. Fire-Fighting Measures

Flammability: Non-flammable.

Suitable Extinguishing Media: Use extinguishing media appropriate for the surrounding fire.



Specific Hazards: Silica sand does not normally present a fire or explosion hazard.

Protective Equipment: Firefighters should use protective equipment appropriate to the surrounding materials involved in the fire.

6. Accidental Release Measures

Avoid generating airborne dust.

Use suitable respiratory protection when dust concentrations may exceed applicable occupational exposure limits.

Collect spilled material using methods that minimize dust generation, such as HEPA-filtered vacuum equipment or appropriate wet-cleaning methods where suitable.

Avoid unnecessary dry sweeping or compressed-air cleaning.

7. Handling and Storage

Handling:

- Minimize dust generation.
- Avoid breathing airborne dust.
- Provide adequate local exhaust or general ventilation where dust may be generated.
- Wear appropriate PPE during dusty operations.
- Follow applicable occupational exposure requirements for respirable crystalline silica.

Storage:

Store in a dry, well-ventilated area. Keep the product protected from contamination and unnecessary moisture. Keep bags or bulk storage systems properly closed or contained when not in use.

8. Exposure Controls / Personal Protection

Engineering Controls: Use adequate ventilation, enclosed handling systems, dust extraction, or other engineering controls to maintain airborne respirable crystalline silica below applicable occupational exposure limits.

Respiratory Protection: Use an appropriately selected and approved particulate respirator when engineering controls cannot adequately control exposure.

Eye Protection: Safety glasses or chemical/dust goggles where airborne dust is present.

Hand Protection: Suitable work gloves.

Skin Protection: Normal industrial work clothing.

Hygiene Measures: Wash hands after handling and before eating, drinking, or smoking.

9. Physical and Chemical Properties

Property	Typical Description
Appearance	Granular solid / sand
Color	White, off-white, beige, or light-colored
Odor	Odorless
Chemical Formula	SiO ₂



Property	Typical Description
Molecular Weight	60.08 g/mol
pH	Generally neutral to slightly acidic
Melting Point	Approx. 1,710°C
Boiling Point	Not normally applicable
Solubility in Water	Insoluble
Flammability	Non-flammable
Bulk Density	Depends on particle size and compaction
Particle Size	According to supplied grade

10. Stability and Reactivity

Chemical Stability: Stable under normal storage and handling conditions.

Conditions to Avoid: Excessive generation of airborne dust.

Incompatible Materials: May react with strong acids such as hydrofluoric acid.

Hazardous Decomposition Products: None expected under normal conditions of use.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

The principal health concern is prolonged or repeated inhalation of **respirable crystalline silica**.

Chronic occupational exposure may cause:

- Silicosis
- Reduced lung function
- Other respiratory diseases
- Increased risk of lung cancer

Crystalline silica in the form of quartz or cristobalite is classified by IARC as **carcinogenic to humans (Group 1)** when inhaled from occupational sources.

Normal handling of coarse silica sand presents substantially less inhalation exposure than operations that generate fine respirable dust, such as crushing, grinding, cutting, or aggressive dry handling.

12. Ecological Information

Silica is a naturally occurring mineral and is not generally considered environmentally hazardous in its normal physical form.

Avoid uncontrolled large releases that may create excessive sediment or dust.

13. Disposal Considerations

Dispose of unused material and contaminated packaging in accordance with applicable local and national regulations.

Where uncontaminated and permitted by regulation, silica sand may be suitable for reuse or recycling.



Avoid disposal methods that generate airborne respirable dust.

14. Transport Information

UN Number: Not regulated as dangerous goods

Proper Shipping Name: Not applicable

Transport Hazard Class: Not applicable

Packing Group: Not applicable

Silica sand is generally **not classified as dangerous goods for transport** under standard international transport regulations.

15. Regulatory Information

Crystalline silica exposure is subject to occupational health and safety requirements in many jurisdictions.

Employers and users should comply with applicable regulations concerning:

- Respirable crystalline silica exposure
- Workplace dust control
- Respiratory protection
- Hazard communication
- Occupational exposure limits

Classification and labeling requirements may vary according to the crystalline silica concentration, particle-size distribution, intended use, and jurisdiction.

16. Other Information

This MSDS provides general safety information for industrial silica sand. The final SDS/MSDS should be adapted to the **actual chemical analysis, crystalline silica content, particle-size distribution, supplier information, country of sale, and applicable regulatory requirements.**

Revision Date: August 2026

Document: MSDS – Silica Sand

Disclaimer: The information provided in this document is intended as general guidance for safe handling, storage, transportation, and use. Users should evaluate the product under their specific operating conditions and comply with all applicable occupational health, safety, environmental, and regulatory requirements.