



MATERIAL SAFETY DATA SHEET (MSDS)

Micro Silica / Silica Fume

Product Name: Micro Silica

Alternative Names: Silica Fume, Microsilica, Condensed Silica Fume

Recommended Use: Concrete and cement additive, construction materials, refractory products

1. Identification

Product: Micro Silica (Silica Fume)

Chemical Name: Silicon Dioxide

Chemical Formula: SiO₂

CAS No.: 69012-64-2

Product Type: Fine mineral powder / supplementary cementitious material

Recommended Uses:

High-performance concrete, ready-mix concrete, precast concrete, shotcrete, mortar, grout, refractory products, and cementitious applications.

2. Hazard Identification

Micro silica is a very fine powder. Airborne dust generated during handling may irritate the respiratory system, eyes, and skin.

Potential Hazards:

- Dust may cause mechanical irritation to eyes.
- Prolonged exposure to airborne dust may irritate the respiratory tract.
- Repeated or excessive inhalation of respirable dust should be avoided.
- Dust may cause dryness or mild skin irritation.

Important: The crystalline silica content can vary depending on the source and manufacturing process. The actual supplier's analytical data should be reviewed when determining occupational exposure requirements.

3. Composition / Information on Ingredients

Component	CAS No.	Typical Content
Amorphous Silicon Dioxide (SiO ₂)	69012-64-2	85–98%
Other mineral/metal oxide impurities	—	Balance

Exact composition varies according to production source and grade.

4. First Aid Measures

Inhalation:

Move the affected person to fresh air. If coughing, irritation, or breathing discomfort continues, seek medical attention.

Eye Contact:

Rinse carefully with clean water for at least 15 minutes. Remove contact lenses if easy to do.



Seek medical attention if irritation persists.

Skin Contact:

Wash exposed skin thoroughly with soap and water.

Ingestion:

Rinse mouth with water. Do not induce vomiting unless instructed by medical personnel. Seek medical advice if discomfort occurs.

5. Fire-Fighting Measures

Flammability: Not flammable.

Suitable Extinguishing Media:

Use extinguishing media suitable for the surrounding fire.

Specific Hazards:

Micro silica does not normally present a fire or explosion hazard under ordinary conditions.

Protective Equipment:

Firefighters should use appropriate protective equipment based on the surrounding fire conditions.

6. Accidental Release Measures

- Avoid generating airborne dust.
- Wear appropriate respiratory and eye protection where dust exposure may occur.
- Collect spilled material using vacuum equipment suitable for fine dust or other methods that minimize dust generation.
- Avoid dry sweeping where it creates excessive airborne dust.
- Place recovered material in suitable containers.
- Prevent unnecessary discharge into drains and waterways.

7. Handling and Storage

Handling

- Minimize dust generation.
- Avoid breathing airborne dust.
- Avoid direct eye contact.
- Use adequate ventilation in enclosed handling areas.
- Use appropriate personal protective equipment when necessary.

Storage

- Store in a cool, dry, and well-ventilated area.
- Protect from moisture and contamination.
- Keep bags or bulk containers securely closed.
- Store separately from incompatible materials where applicable.

8. Exposure Controls / Personal Protection

Engineering Controls:

Provide adequate general or local exhaust ventilation to control airborne dust.

Respiratory Protection:



Use an approved particulate respirator when ventilation cannot adequately control dust exposure.

Eye Protection:

Wear safety glasses or chemical safety goggles in dusty environments.

Hand Protection:

Wear suitable protective gloves during prolonged handling.

Skin Protection:

Wear normal protective work clothing.

Hygiene Measures:

Wash hands thoroughly after handling and before eating, drinking, or smoking.

Occupational exposure limits should follow applicable local regulations and the specific crystalline silica content of the supplied product.

9. Physical and Chemical Properties

Property	Typical Description
Appearance	Very fine powder
Color	Grey to dark grey
Odor	Odorless
Chemical Formula	SiO ₂
Physical State	Solid powder
Bulk Density	Approx. 200–700 kg/m ³ depending on densification
Relative Density	Approx. 2.2
Solubility in Water	Practically insoluble
Flammability	Non-flammable
Explosive Properties	Not normally explosive
Particle Size	Extremely fine; typically sub-micron primary particles

Values are typical and may vary according to grade and supplier.

10. Stability and Reactivity

Chemical Stability: Stable under normal storage and handling conditions.

Conditions to Avoid:

Excessive dust generation and unnecessary exposure to moisture during storage.

Incompatible Materials:

Avoid contact with strong reactive chemicals unless compatibility has been established.

Hazardous Decomposition Products:

None expected under normal conditions of use.

Hazardous Polymerization:

Will not occur.



11. Toxicological Information

Inhalation:

Excessive airborne dust may cause respiratory irritation.

Eye Contact:

Fine particles may cause mechanical irritation.

Skin Contact:

Prolonged exposure may cause dryness or mild irritation.

Ingestion:

Not considered a normal route of occupational exposure.

Long-term health assessment should consider the actual crystalline silica content of the product and applicable occupational exposure regulations.

12. Ecological Information

Micro silica is an inorganic mineral material.

- No significant environmental hazard is expected under normal conditions of use.
- Avoid uncontrolled release of large quantities into waterways.
- The material is not expected to biodegrade because it is inorganic.

13. Disposal Considerations

Dispose of unused material, contaminated packaging, and collected dust according to applicable local, national, and environmental regulations.

Where permitted, uncontaminated material may be recovered or reused.

14. Transport Information

Micro silica is generally **not classified as dangerous goods** for normal transportation.

UN Number: Not applicable

Transport Hazard Class: Not applicable

Packing Group: Not applicable

Marine Pollutant: Generally No

Transportation requirements should be confirmed against current regulations applicable to the shipment and jurisdiction.

15. Regulatory Information

Users should comply with applicable occupational health, workplace dust exposure, environmental, transport, and chemical safety regulations in the country where the product is handled.

Regulatory classification may vary depending on the composition, particularly the concentration of crystalline silica.

16. Other Information

This MSDS provides general safety information for **Micro Silica (Silica Fume)** used in concrete, construction, and industrial applications.

Actual chemical composition and physical properties can vary according to raw material,



manufacturing process, and product grade. For commercial supply, the final SDS/MSDS should be verified against the manufacturer's **Certificate of Analysis (COA)** and the regulatory requirements of the destination country.

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