



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

Safety Data Sheet (MSDS)

(According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards)

SECTION 1: Identification

1.1 Product Identifiers

- Product Name: Silica Sand
- Product Number: SS-20260223
- Brand: SIGALD
- CAS-No.: 68909-20-6

Synonyms: Quartz Sand; High Purity Silica Sand; Silicon Dioxide Sand

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
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- Telephone : +86-021-50350029
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1.3 Emergency telephone

Emergency Phone # : +86-021-50350029
(CHEMTREC)

1.4 Uses & Restrictions

- **Identified Uses:** Glass production raw material, ceramic glaze/frit, foundry sand, water treatment filter media, construction aggregate, silicon compound synthesis
- **Uses Advised Against:** Inhalation of respirable crystalline silica dust; use in food/cosmetic products without food/cosmetic grade certification; mixing with strong alkalis in unventilated areas

SECTION 2: Hazards Identification

2.1 GHS Classification: Specific target organ toxicity (repeated exposure) - respiratory tract (Category 1); Skin irritation (Category 2); Serious eye irritation (Category 2A)2.2 GHS Label Elements

- Hazard Pictogram: GHS07 (Exclamation mark), GHS08 (Health hazard)
- Signal Word: **Danger**
- Hazard Statements: H315 (Causes skin irritation), H319 (Causes serious eye irritation), H372 (Causes damage to organs (respiratory tract) through prolonged or repeated exposure)
- Precautionary Statements: P264, P280, P302+P352, P305+P351+P338, P332+P313, P337+P313, P261, P342+P311, P405, P5012.3 Physical/Chemical Hazards: Non-combustible; non-explosive; reacts with hot concentrated strong alkalis (NaOH, KOH) and hydrofluoric acid (HF) to dissolve; respirable crystalline silica dust causes long-term respiratory damage; no other hazardous physical/chemical properties2.4 Health Hazards: Prolonged skin contact causes mild irritation; eye contact causes serious irritation; **prolonged/repeated inhalation of respirable crystalline silica dust causes silicosis (lung damage)**; no acute oral toxicity (insoluble)2.5 Environmental



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Hazards: Non-toxic to aquatic/soil organisms; low water solubility; no bioaccumulation potential; no adverse environmental effects

SECTION 3: Composition/Information on Ingredients

- **Substance/Mixture:** Pure Substance (Natural mineral, high purity)
- **Main Component:** Silica Sand (99.5%, CAS:68909-20-6) - SiO₂ (crystalline silica)
- **Impurities:** Trace Al₂O₃, Fe₂O₃, CaO, MgO (non-hazardous)
- **Molecular Weight:** 60.08 g/mol
- **Hazardous Ingredients:** Crystalline silica (respirable fraction, causes silicosis with repeated exposure)

SECTION 4: First Aid Measures

- **Inhaled:** Move to fresh air immediately; keep respiratory tract open. Give oxygen if shortness of breath occurs; **consult a physician immediately** (even if no symptoms are present) for prolonged/repeated inhalation.
- **Skin Contact:** Rinse skin with plenty of running water and mild soap for 5 minutes; remove contaminated clothing and wash before reuse. Apply moisturizer if dryness or irritation occurs.
- **Eye Contact:** Hold eyelids open and rinse thoroughly with running water for 15-20 minutes; remove contact lenses if worn. Consult an ophthalmologist **immediately** to remove residual particles.
- **Swallowed:** Rinse mouth with water; do not induce vomiting (low toxicity, insoluble). Consult a physician only if gastrointestinal discomfort (abdominal pain, constipation) occurs.

SECTION 5: Firefighting Measures

- **Suitable Extinguishing Media:** Water spray, foam, CO₂, dry powder (for surrounding fire only)
- **Special Hazards:** Non-combustible; no hazardous combustion products; reacts with acid fire extinguishers (HF) and alkaline fire extinguishers (hot concentrated NaOH) to dissolve
- **Firefighter Protection:** Wear standard fire-fighting gear + N95/P100 dust mask; avoid inhalation of dust; cool containers with water spray to prevent dust dispersion

SECTION 6: Accidental Release Measures

- **Personal Precautions:** Wear chemical splash goggles, nitrile gloves, P100 dust mask and full protective suit for all spills; ensure good ventilation; eliminate all ignition sources (no dust explosion risk); avoid dust inhalation and skin/eye contact.
- **Containment & Cleanup:** Sweep up sand with a damp broom (to prevent dust dispersion) and transfer to sealed HDPE containers for recycling; use a vacuum cleaner with HEPA filter for fine powder spills; wipe residual powder with a damp cloth.
- **Environmental Precautions:** No special environmental precautions; sweep up spilled sand from soil/water for recycling/disposal; no environmental pollution risk.

SECTION 7: Handling and Storage

- **Handling:** Operate in well-ventilated area with local exhaust ventilation; use dust collection system (HEPA filter) for bulk processing; adopt wet processing to reduce respirable dust

generation; no eating/drinking/smoking in the work area; wash hands thoroughly after handling; **no prolonged/repeated exposure to dust.**

- **Storage Conditions:** Cool, dry, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); store in sealed HDPE bags/coated woven bags/bulk bins; avoid direct sunlight and high humidity; keep away from hot concentrated strong alkalis, hydrofluoric acid and food/medicines (industrial grade); prevent dust dispersion.
- **Incompatibilities:** Hot concentrated sodium hydroxide/potassium hydroxide, hydrofluoric acid (HF), hot concentrated ammonium hydroxide
- **Shelf Life:** 48 months (unopened, under specified storage conditions); 18 months after opening (seal tightly and keep dry)

SECTION 8: Exposure Controls/Personal Protection

- **Occupational Exposure Limits:** OSHA TWA (respirable crystalline silica): $50\ \mu\text{g}/\text{m}^3$; ACGIH TWA (respirable crystalline silica): $25\ \mu\text{g}/\text{m}^3$; NIOSH REL: $50\ \mu\text{g}/\text{m}^3$ (8h TWA)
- **Engineering Controls:** Local exhaust ventilation (≥ 25 air changes/hour); dust collection system with HEPA filter (efficiency $\geq 99.97\%$); closed transfer system for bulk sand handling; wet processing to minimize respirable dust.
- **PPE:**
 - Eye/Face: Chemical splash goggles + face shield (mandatory for all handling)
 - Skin: Chemical-resistant nitrile gloves + full protective suit + safety shoes + dust-proof sleeves
 - Respiratory: P100 dust mask (routine handling); powered air-purifying respirator (PAPR) for bulk processing/spills
 - Other: Dust-proof cap, disposable mask, protective apron, face cover
- **Hygiene Measures:** Change contaminated clothing in a dedicated area; wash hands/face/hair before eating/drinking/smoking; regular medical check-ups (chest X-ray, respiratory function) for long-term operators.

SECTION 9: Physical and Chemical Properties

- Physical State: White to colorless granular powder/grains (25°C)
- Odor: Odorless
- Solubility: Insoluble in water/ethanol/weak acids/bases; soluble in hot concentrated strong alkalis and hydrofluoric acid (HF)
- pH Value (5% aq. suspension): 6.5-7.5 (neutral)
- Density: $2.65\text{-}2.66\ \text{g}/\text{cm}^3$ (25°C); bulk density $1.4\text{-}1.6\ \text{g}/\text{cm}^3$
- Melting Point: 1710°C
- Boiling Point: 2230°C
- Flash Point: Non-combustible
- Autoignition Temperature: N/A
- Viscosity: N/A (solid/granular)
- Particle Size: $130\text{-}175\ \mu\text{m}$ (80-120 mesh, industrial grade)



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- HygroscoPy: None (no caking, non-hygroscoPyic)
- Flammability: Non-combustible
- Hardness: 7 Mohs (Mohs hardness scale)
- Acid Insoluble Matter: 99.2%
- Loss on Ignition: 0.15%

SECTION 10: Stability and Reactivity

- **Stability:** Chemically stable under normal storage and use conditions ($\leq 30^{\circ}\text{C}$); no degradation, no caking, no polymerization; extremely stable chemical properties.
- **Hazardous Reactions:** Reacts with hot concentrated strong alkalis (NaOH/KOH) to form silicates; reacts with hydrofluoric acid (HF) to form volatile silicon tetrafluoride (SiF_4); no other hazardous reactions under normal use.
- **Decomposition Products:** Silicon dioxide (no decomposition at normal temperature); silicon tetrafluoride (SiF_4 , with HF); silicates (with hot concentrated alkalis).
- **Conditions to Avoid:** Hot concentrated strong alkalis, hydrofluoric acid, respirable dust generation (prolonged/repeated exposure).

SECTION 11: Toxicological Information

- Oral LD_{50} (Rat): >10000 mg/kg (very low acute toxicity, insoluble)
- Dermal LD_{50} (Rabbit): >10000 mg/kg (mild skin irritation only)
- Inhalation LC_{50} (Rat): >100 mg/m³/4h (coarse dust); **respirable crystalline silica dust causes chronic toxicity (silicosis) with repeated exposure**
- Skin Irritation: Category 2 (mild reversible irritation; Rabbit, 4h exposure)
- Eye Irritation: Category 2A (serious reversible irritation; Rabbit, 24h exposure)
- Respiratory Toxicity: Category 1 (causes silicosis/lung damage through prolonged/repeated exposure to respirable dust)
- Carcinogenicity: IARC Group 1 (Carcinogenic to humans) - respirable crystalline silica
- Mutagenic/Reproductive Toxicity: No mutagenic or reproductive toxic effects (non-respirable fraction)

SECTION 12: Ecological Information

- Aquatic Toxicity (Zebrafish LC_{50}): >5000 mg/L/96h (non-toxic)
- Aquatic Toxicity (Daphnia EC_{50}): >5000 mg/L/48h (non-toxic)
- Persistence: Non-biodegradable (inorganic mineral); low water solubility
- Bioaccumulative Potential: None (log Koc: 0.8; no bioaccumulation in food chain)
- Environmental Fate: Insoluble in water; sinks in aquatic environment; accumulates in soil/sediment; no adverse effects on soil/aquatic organisms
- Other Adverse Effects: No known environmental hazards; widely used as water treatment filter media (non-toxic, high porosity)

SECTION 13: Disposal Considerations



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- **Product Waste:** Dispose via licensed waste treatment facilities; unspoiled product can be fully recycled for industrial use; contaminated sand can be landfilled (non-toxic) or used as construction aggregate.
- **Packaging Waste:** Rinse thoroughly with water; recycle as non-hazardous plastic/textile waste; no special disposal required.
- **Contaminated Material:** All cleanup materials are non-hazardous; dispose as ordinary industrial waste; no hazardous waste treatment required (except respirable dust filter media, dispose as hazardous waste).

SECTION 14: Transport Information

- UN Number: Not dangerous goods
- Transport Hazard Class/Packaging Group: N/A
- Marine Pollutant: No
- **Precautions:** Transport by ordinary vehicles/bulk trucks; avoid collision, rain and dust dispersion; store in sealed packaging/bulk bins during transport; do not transport with hot concentrated strong alkalis, hydrofluoric acid and food/medicines; comply with IMDG/IATA non-hazardous goods regulations; **label for dust hazard during transport.**

SECTION 15: Regulatory Information

- Complies with GHS, REACH, TSCA, GB 13690-2009 (China); not classified as a hazardous chemical (coarse grade); respirable crystalline silica regulated as a carcinogen
- EU SVHC: Crystalline silica (respirable fraction) listed in SVHC Candidate List; meets industrial mineral regulatory standards
- Labeling: Mandatory GHS07/GHS08 hazard labels; **Danger** signal word and H372 (respiratory damage) hazard statement; additional "Respirable dust causes silicosis" and "Carcinogenic" labels; food/cosmetic grade with product certification labels

SECTION 16: Other Information

- **Revision Date:** 23 FEB 2026
- **Notes: Mandatory dust control and PPE for all handling operations;** use HEPA dust collection system and wet processing to reduce respirable dust; regular medical check-ups (chest X-ray, respiratory function) for long-term operators (at least once a year); store away from hot concentrated strong alkalis and HF; respirable crystalline silica is carcinogenic to humans; food/cosmetic grade must comply with relevant national standards (no respirable dust).