

Silicon Dioxide safety specifications

Part I Product and enterprise identification

Chinese name: Silicon Dioxide (The common name is “precipitated silica”)

English name: silicon dioxide 7631-86-9

CAS: 7631-86-9

Manufacturer name: Shandong Ruisheng Pharmaceutical Co., LTD

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Effective Date: 2025-01-10

Part II Composition/composition information

Pure √	Mixture ×	
Component	含量	CAS
Silicon Dioxide	99.0%	7631-86-9

This product is obtained by reacting sodium silicate with acids (such as hydrochloric acid, sulfuric acid, phosphoric acid, etc.) or salts (such as ammonium chloride, ammonium sulfate, ammonium bicarbonate, etc.) to produce silicic acid precipitate (i.e., hydrated silica). The precipitate is then washed with water to remove impurities and subsequently dried. On the basis of the ignited product, it contains not less than 99.0% SiO₂.

Structural formula: O=Si=O

Molecular formula: SiO₂·xH₂O

Molecular weight: 60.08.

Part III Hazard Summary

Hazard category: No data.

Invasion route: Inhalation.

Health Hazards: Inhalation of silica dust primarily poses the risk of silicosis to the human body. Currently, there are no specific therapeutic drugs for silicosis, making dust prevention the critical measure.

Environmental Hazards: No data available.

Fire and Explosion Hazards: This product is non-flammable.

Part IV Emergency rescue measures

Skin Contact: Remove contaminated clothing and rinse thoroughly with flowing water.

Eye Contact: Lift eyelids and rinse cautiously with flowing water or normal saline for several minutes. Seek medical attention.

Inhalation: Move to fresh air immediately.

Ingestion: Drink plenty of warm water and induce vomiting if instructed by medical personnel. Seek medical help promptly.

Part V Preventive measures

Hazardous Properties: Reacts violently with chlorine trifluoride, manganese trifluoride, and oxygen trifluoride.

Products of Combustion: Natural decomposition products unknown.

Fire Fighting Measures: If safe to do so, move containers from fire area to an open space. Extinguishing media: Water spray, foam, dry chemical powder, carbon dioxide, or sand.

Part VI Leakage emergency treatment

Leak Emergency Handling: Isolate the contaminated area and restrict access. Emergency personnel should wear dust-proof masks and general work clothing. Avoid direct contact with the spilled material.

For Small Spills: Prevent dust generation. Carefully sweep up and transfer to sealed bags for removal to a safe area.

For Large Spills: Collect for recovery or dispose of at a designated waste treatment facility.

Part VII Operational handling and storage

Precautions: The production process is sealed. Prevent powder from being released into the workshop air. Operators must receive special training and strictly abide by the operating procedures. It is recommended that operators wear self-priming filter dust mask, chemical safety goggles and

latex gloves. Avoid dust generation. Avoid contact with chlorine trifluoride. Emergency treatment equipment for leakage shall be provided. Empty containers may remain harmful. Storage precautions: Store in cool and ventilated warehouse. Keep away from fire and heat sources. Protect from direct sunlight. Packaging is sealed. It shall be stored separately with chlorine trifluoride, and shall not be stored together. The storage area shall be provided with suitable materials to contain the leakage.

Storage precautions: Store in cool and ventilated warehouse. Keep away from fire and heat sources. It shall be stored separately from oxidizing agent and shall not be stored together. Fire fighting equipment of corresponding variety and quantity shall be provided.

Part VIII Contact control/Personal protection

China MAC (mg/m³):

Former Soviet MAC (mg/m³): 1

TLVTN: 0.05mg/m³(Respirable Dust)

TLVWN: No standards have been developed.

Monitoring method: pyrophosphoric acid quality method.

Engineering control: the production process is sealed. Ensure good spontaneous combustion ventilation. Respiratory system protection: When the dust concentration in the air exceeds the standard, it is recommended to wear self-suction filter dust mask. An air respirator should be worn during emergency rescue or evacuation.

Eye Protection: Wear chemical safety goggles.

Body protection: Generally no special protection is required.

Hand protection: Wear latex gloves.

Other protection: After work, shower and change clothes. Maintain good hygiene habits.

Part IX Rationalization of characteristics

Appearance and properties: White powder; soluble in hot sodium hydroxide solution, insoluble in water or dilute hydrochloric acid.	
Melting point (°C): 1710	PH:4.0-8.0
Boiling point (°C): 2230	Flash point: Meaningless.
Combustion heat (kJ/mol): Meaningless.	Ignition temperature (°C): Meaningless.

Explosion ceiling [% (V/V)]: Meaningless.	Lower explosive limit [% (V/V)]: Meaningless.
Critical pressure (MPa): Meaningless.	Critical temperature (°C): Meaningless.
Main applications: Fluidizing aid, anti-caking agent in pharmaceutical preparations, antireflection film, cold light film, filter film, etc., as well as raw materials for electronic industry and semiconductor industry.	

Part X Stability and reactivity

Stability: Stable.

Prohibited substance: Chlorine trifluoride.

Conditions for avoidance of contact: None.

Agglomeration hazard: No agglomeration.

Decomposition products: No decomposition products.

Part XI Toxicological data

Acute toxicity:LD50 Non-avaible. LC50:Non-avaible.

Stimulation: None.

Allergenic: No data.

Subacute and chronic toxicity: No data.

Mutation test: N

Teratogenicity: No data.

Carcinogenicity: No data.

Part XII Ecological data

Ecological toxicity: No data.

Biodegradability: No data.

Non-biodegradability: No data.

Bioenrichment or bioaccumulation: No data.

Other harmful effects: No data.

Part XIII disposal site

Property of waste: No data.

Disposal method: Dispose of it by safe burial.

Precautions for waste disposal: No data.

Part XIV Transport information

Dangerous goods number:No data.

UN number:Not available.

Packaging mark:Pharmaceutical excipient.

Packaging category: In line with the requirements of the current edition of Chinese Pharmacopoeia.

Part XV laws regulate information

Regulatory information: The current edition of the Chinese Pharmacopoeia is used for reference.

Part XVI Other information

Information release: Shandong Ruisheng Pharmaceutical Co., LTD. Technical Department.

Release date: 2025-01-10

