


SDS	Silica Sand / Silica Flour	
Issuing Date	29 April 2018	

Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Silica Sand H.S. Code: 281122
Chemical Name	Silicon Dioxide
Synonyms	Silica Sand, Silica Flour, Glass Sand, Ground Silica, Quartz, Flint, Foundry Sand, Filtration Sand, Fracturing Sand, Gravel Sand.
Manufactured By	Adwan Chemical Industries Co. Ltd. Riyadh 2nd Industrial City – Al Kharj Road PO Box 355128 Riyadh 11383 Kingdom of Saudi Arabia
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2. HAZARDS IDENTIFICATION

GHS classification	Eye Irrit. 2B H320, STOT SE 3 H335, Carc. 1A H350, STOT RE 2 H373
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Hazard Pictogram (GHS)



Signal Word (GHS) Danger

Hazard statements (GHS):	H320 - Causes eye irritation H335 - May cause respiratory irritation H350 - May cause cancer H373 - May cause damage to organs through prolonged or repeated exposure
Precautionary statements (GHS):	P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P260 - Do not breathe dust/fume/gas/mist/vapors/spray P261 - Avoid breathing dust/fume/gas/mist/vapors/spray P264 - Wash thoroughly after handling P271 - Use only outdoors or in a well-ventilated area

3. COMPOSITION / INFORMATION INGREDIENTS

Ingredients:	Chemical Formula	Typical % By Weight
Silicon Dioxide	SiO ₂	> 98
CAS-No.	14808-60-7	

4. FIRST AID MEASURES

Inhalation:

No specific first-aid is necessary since the adverse health effects associated with exposure to silica result from chronic exposures. If there is a gross inhalation of silica, remove the person immediately to fresh air, give artificial respiration as needed, seek medical attention as needed.

Eye Contact:

Wash immediately with large amount of water. If irritation persists, seek medical attention.

Skin Contact:

No known effects. However, it is recommended to remove contaminated clothing and shoes. Wash affected area with large amount of water.

Ingestion:

No known effects. Recommended to treat symptomatically and supportively. If vomiting occurs, keep head lower than hips to prevent aspiration.

5. FIRE-FIGHTING MEASURES

Silica is not flammable, combustible or explosive.

6. ACCIDENTAL RELEASE MEASURES

Spills: Use dustless methods (vacuum) and place into closable container for disposal, or flush with water. Do not dry sweep. Wear protective equipment specified (see section 8).

Waste Disposal Method: see section 13

7. HANDLING AND STORAGE

Precautions during Handling and Use: Do not breathe dust. Use adequate ventilation and dust collection. Keep airborne dust concentrations below PEL. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a visible dust cloud. If dust cannot be kept below permissible limits, wear a respirator approved for silica dust when using, handling, storing or disposing of this product or bag. Practice good housekeeping do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Maintain, clean, and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Wash or vacuum clothing that has become dusty. See also control measures in Section 8.

Precautions during Storage: Avoid breakage of bagged material or spills of bulk material. See control measures in Section 8.

In compliance with OSHA precautions, this product is not meant to use for sand blasting.

*Warn your employees (and your customers in case of resale) by posting and other means of the hazards and the required OSHA precautions.
Provide training for your employees about the OSHA precautions.*

See also American Society for Testing and Materials (ASTM) standard practice E1132-99a, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Silica."

Local Exhaust: Use sufficient local exhaust to reduce the level of respirable silica to below the PEL. See ACGIH "Industrial Ventilation, A Manual of Recommended Practice" (Latest Edition).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit:

	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>NIOSH REL</u>
Silica (mg/m ³)	10	0.05	0.05
	%SiO ₂ +2 TWA		

The exposure limits are time weighted average concentrations for an 8-hour workday and a 40- hour workweek.

Silica exists in several forms, the most common of which is quartz. If silica is heated to more than 870°C, it can change to a form of silica known as trydimite, and if silica is heated to more than 1470°C, it can change to a form of silica known as cristobalite. The OSHA PEL for silica as trydimite and cristobalite is one-half of the OSHA PEL for silica.



Respiratory Protection: The following chart specifies the types of respirators which may provide respiratory protection for crystalline silica.

Particulate Concentration	Minimum respiratory protection
5 x PEL or less	Any dust respirator
10 x PEL or less	Any dust respirator, except single-use or quarter-mask respirator. Any fume respirator of high efficiency particulate filter respirator Any supplied-air respirator. Any self-contained breathing apparatus.
50 x PEL or less	A high efficiency particulate filter respirator with a full facepiece. Any supplied-air respirator with a full facepiece, helmet, or hood. Any self-contained breathing apparatus with a full facepiece.
500 x PEL or less	A powered air-purifying respirator with a high efficiency particulate filter. A Type C supplied-air respirator operated in pressure-demand or other positive pressure or continuous-flow mode.
Greater than 500 x PEL or entry and escape from unknown concentrations	Self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode. A combination respirator which includes a Type C supplied-air respirator with a full facepiece operated in pressure-demand or other positive pressure continuous-flow mode and an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.

*Use only NIOSH-approved or MSHA-approved equipment. See 29 CFR §1910.134 and 42 CFR §84. See also ANSI standard Z88.2 (latest revision) "American National Standard for Respiratory Protection".

Eye Protection:

Employee must wear splash-proof or dust-resistant goggles to prevent eye contact with these substances. Contact lenses should not be worn when working with this chemical.



Gloves:

Employee must wear appropriate protective gloves to prevent contact with this substance.



Clothing:

As appropriate for the work environment. Dusty clothing should be laundered before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: White or tan sand; granular, crushed, or ground.
Appr.Boiling Point	: 2230° C
Odor	: None
Vapor Pressure (mm Hg.)	: None
Specific Gravity (Water =1)	: 2.65
Vapor Density (Air =1)	: None
Appr.Melting Point	: 1610° C
Solubility in Water	: Insoluble in water
Evaporation Rate (Butyl Acetate = 1)	: None

10. STABILITY AND REACTIVITY

Stability: Silica is stable.

Incompatibility (Materials to Avoid): Contact with powerful oxidizing agents, such as fluorine, chlorine trifluoride and oxygen difluoride may cause fires.

Hazardous Decomposition or Byproducts: Silica will dissolve in hydrofluoric acid and produce a corrosive gas - silicon tetra fluoride.

Hazardous Polymerization: Inhalation can lead to silicosis.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS:

Inhalation:

A. Silicosis

Respirable silica can cause silicosis, a fibrosis (scarring) of the lungs. Silicosis may be irreversible, progressive; it may lead to disability and death.

B. Carcinogenicity

Silica inhaled from occupational sources is classified as carcinogenic to humans (Potential cause for cancer).

C. Autoimmune Diseases

There are some studies show excess numbers of cases of scleroderma and other connective tissue disorders in workers exposed to respirable silica.

D. Tuberculosis

Silicosis increases the risk of tuberculosis

Eye Contact: Contact may cause mechanical irritation and possible injury.

Ingestion: No adverse effects expected for normal, incidental ingestion.

Acute Toxicity Values: Silica: LD50 oral rat >22,500 mg/kg.

Skin Sensitization: Not a skin sensitizer in animals or humans

12. ECOLOGICAL INFORMATION

Toxicity: Practically non-toxic to aquatic organisms. Silica: LC50 carp >10,000 mg/L/72 hr.

Persistence and Degradability: Silica is not degradable.

Bioaccumulative Potential: Not expected to bioaccumulate.

Mobility in Soil: Not applicable.

13. DISPOSAL CONSIDERATIONS

General: The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust.

Silica is not classified as a hazardous waste under the Resource Conservation and Recovery Act. The above applies to materials as sold by Adwan Chemical Industries Co. Ltd.; The material may be contaminated during use, and it is the responsibility of the user to assess the appropriate disposal of the used material.

14. TRANSPORT INFORMATION

UN Number: Not Applicable

UN Proper Shipping Name: Not Applicable

Marine Transport: Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

Air Transport: Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

15. REGULATORY INFORMATION

Refer to the regulatory exposure limits for workforce enforced in the respective country. Crystalline silica, a component of this product is on the NTP and IARC carcinogen lists, but not on the OSHA carcinogen list. In October 1996, IARC working group re-assessing crystalline silica, a component of this product, designated crystalline silica as a human carcinogen (Group 1 carcinogen).

Every employer shall take all necessary measures and procedures by means of engineering control, work practices and hygiene practices and facilities to ensure that the time weighted average exposure of a worker to silica is reduced to lowest practical level and in any case shall not exceed:

In case of the cristobalite and tridymite, 0.05 milligrams silica per cubic meter of air by volume.

Every worker shall work in compliance with the work practices and hygiene practices in accordance with the provisions of the silica control program.

The employer shall provide and instruct to a worker in proper care and use of personal protective equipment.

The employer shall adopt and implement engineering controls where it is reasonable and practical so to do.

Clean Air Act: Silica (quartz) mined and processed by Adwan Chemical Industries Co. Ltd; was not processed with or does not contain any Class I or Class II ozone depleting substances

NTP: Respirable silica (quartz) is classified as a carcinogen.

OSHA Carcinogen: Silica (quartz) is not listed.

IARC: Silica (quartz) is classified in IARC Group 1.

16. OTHER INFORMATION

Hazardous Material Information System (HMIS):

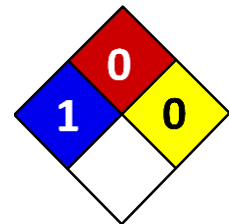
Health * 1
Flammability 0
Physical Hazard 0
Personal Protection E

Health	* 1
Fire	0
Physical Hazard	0
Personal Protection	E

* Warning chronic health effect possible - inhalation of dust may cause lung injury (silicosis). For further information on health effects, see Sections 2, 4, 7 and 8.

National Fire Protection Association (NFPA):

Health 1 Flammability 0 Reactivity 0



Web Sites with Information about Effects of Silica Exposure:

1. <http://www.osha.gov>
The Occupational Safety and Health Administration Home Page, click on "Technical Links", then click on "silica, crystalline".
2. <http://www.cdc.gov/niosh/silicpag.html>
NIOSH Hotlinks to Silicosis Prevention.

Adwan Chemical Industries Company Ltd. Disclaimer

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Abbreviations:

ANSI American National Standard Institute
ASTM American Society for Testing and Materials
ACGIH American Conference of Governmental Industrial Hygienist
CAS Chemical Abstract Service
MSHA Mine Safety & Health Administration
NIOSH National Institute of Occupational Safety & Health
NTP National Toxicology Program
OSHA Occupational Safety & Health Administration
GHS Globally Harmonized System
STOT Specific Target Organ Toxicity
IARC International Agency for Research on Cancer
IATA International Air Transportation Association
IMDG International Maritime Dangerous Goods