KUNAL EXIM

Material Safety Data Sheet

Section 1 – Product Identification & Company Identification

Product Name: Quartz Silica Sand, Silica Flour
Synonyms: Silica Sand, Quartz Flour, Crystalline Silica, Silica Dioxide, Ground Silica
Product Uses: Thermal Cement
Manufacturer: Kunal Exim
31-36 Palika Bazaar,
Mehsana 384001
Gujarat, India.
Phone Numbers: 02762 245166
Emergency Telephone Number: 02762 245166

Section 2 – Hazard Identification

This Material is considered as non-hazardous under the OSHA Hazard Communications Standards (29 CFR 1910.1200)

Potential Health Effects:

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

b) Lung Cancer — Crystalline silica (quartz) inhaled from occupational sources is classified as carcinogenic to humans.

c) Tuberculosis — Silicosis increases the risk of tuberculosis.

d) Autoimmune — There is evidence that exposure to respirable crystalline silica (without silicosis) or that may be associated with the increased incidence of several autoimmune disorders, such as Systemic Lupus Erythematosus, rheumatoid arthritis, and diseases affecting the kidneys.

e) Nephrotoxicity: There is evidence that exposure to respirable crystalline silica (without silicosis) or that is associated with the increased incidence of kidney disease, including end stage renal disease.

Eye Contact — Crystalline silica (quartz) may cause abrasions to the cornea.

Skin Contact: — May cause abrasion to the skin.

Ingestion: — No known health effect.

Acute Effects: — One form of silicosis, Acute Silicosis, can occur with exposures to very concentrations of respirable crystalline silica over a short period of time, sometimes as short as a few months. The symptoms of acute silicosis includes progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

Chronic Effects: — The various forms of chronic effects of silicosis include lung cancer, autoimmune and chronic kidney diseases, tuberculosis and non-malignant respiratory disease.

Signs and Symptoms: Generally, there are no signs or symptoms of exposure to crystalline silica (quartz).

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Medical Conditions : The condition of individuals with lung disease (e.g., bronchitis, emphysema, chronic obstructive pulmonary

Aggravation: Diseases can be aggravated by exposure.

Section 3 – Product Composition

PARAMETERS	VALUE
SiO2	99.71%
Al2O3	0.09 %
Fe2O3	Tr.
TiO2	Tr.
CaO	0.04%
MgO	0.02 %
K2O	0.06
Na2O	0.04%
Loss on Ignition	0.08 %

Section 4 – First Aid Measures

Inhalation There is no specific treatment because the health effects associated with crystalline silica are chronic. If gross inhalation of crystalline silica occurs, remove the person to fresh air, perform artificial respiration as needed, and obtain medical attention as needed

Eye Do not allow the victim to rub eye(s). Let the eye(s) water naturally for a few minutes. Have victim look right and left, and then up and down. If particle/dust does not dislodge, flush with lukewarm, gently flowing water for 5 minutes or until the particle/dust is removed, while holding the eyelid(s) open. If irritation persists, obtain medical attention. DO NOT attempt to manually remove anything stuck to the eye(s).

Skin: Wash affected area thoroughly. If irritation persists, seek medical attention.

Ingestion: If large amounts are ingested, seek medical attention immediately.

Good personal hygiene is essential. Always wash your hands after handling crystalline silica, prior to handling food and/or drinkable liquids.

Section 5 – Fire Fighting Measures

Flammability: None

Flashpoint: Not Combustible

Auto ignition Temperature: None

Lower Explosive Limit: None

Upper Explosive Limit: None

Explosion Habits: None

Extinguishing Media: Compatible with all media, use the medium appropriate to the surrounding fire.

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Special Fire Fighting Procedures: At extreme temperatures, calcium oxide fumes may evolve. Fire fighters must wear self-contained breathing apparatus (scba) and full protective clothing.

Hazardous Combustion Products: None

Section 6 – Accidental Release Measures

Wear the appropriate personal protective equipment as described in Section 8 of this document. Collect the material using a method which does not produce dust [High-Efficiency Particulate Air (HEPA) vacuum or thoroughly wetting down the silica]. Place the silica in a covered container appropriately designed for disposal. Dispose of the silica according to federal, state, provincial, and local regulations.

Extreme caution should be taken to avoid accidental release into waterways and/or sewer systems.

Section 7 – Handling and Storage

Handle material in such a manner as to reduce and/or minimize the dust, which can be created when handling crystalline silica. Use adequate ventilation and dust collection equipment. The proper personal protection equipment as described in Section 8 of this document. Do not breathe the dust, which may be created during the handling of this product. Do not rely on vision to determine whether respirable silica is in the air, as it may be present without a visible dust cloud.

Use good housekeeping procedures to prevent the accumulation of silica dust in the workplace.

Avoid breakage of bagged material or the accidental release of bulk material. Use dustless methods (vacuum) during clean up. Do not dry sweep. Wet down spilled material if sweeping is the most feasible method of clean up.

The OSHA Hazard Communication Standard, 29 CFR Sections 1910.1200, 1915.1200, 1917.28, 1918.90, 1926.59, and 1928.21, as well as state, provincial, and local worker "right-to-know" laws and regulations should be strictly adhered to. WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS IN CASE OF RESALE) OF THE HAZARDS AND THE REQUIRED OSHA PRECAUTIONS. Provide the proper training to your employees in the safe handle and storage practices.

Section 8 – Exposure Controls/Personal Protection

Ventilation: Use local exhaust as required to maintain exposures below the occupational exposure limits; refer to the governing. The Occupational Health & Safety Regulations for the recommended practices.

Respiratory Protection: Use only NIOSH approved respiratory protection equipment with a minimum N95 rating. Avoid breathing dust produced during the use of this and handling of this material. If the workplace airborne crystalline silica concentration is unknown for a given task, Air Quality Monitoring should be conducted in order to determine the appropriate level of respiratory protection. Ensure the appropriate respirators are worn during, and following the task, including clean up or whenever airborne dust is present, to insure ambient dust levels are below occupational exposure limits. Provisions should be made for a respiratory protection-training program. **Also see ANSI standard Z88.2*"American National***

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Standard for Respiratory Protection"*, or the CSA Standard Z94.4-02 *"Selection, Use, And Care of Respirators."

Gloves: Recommended in situations where skin abrasions for sand may occur.
Eye: Recommended in order to prevent any particulate from entering the eye.
Clothing: Use protective clothing as appropriate for the work environment.

Section 9 – Physical and Chemical Properties

Appearance:	White	**pH:**	7.0
Physical State:	Powder	**Oil Distribution:**	Not Applicable
Odour Threshold:	Not Applicable	**Vapour Density:**	Not Applicable
Vapour Pressure:	Not Applicable	**Specific Gravity:**	2.6 (Approximate)
Evaporation Rate:	Not Applicable	**Melting Point:**	1220°F (Approx. 2,200°C)

Section 10 – Stability and Reactivity

Stability: Stable
Materials to Avoid: Contact with powerful oxidizing agents, such as fluorine, chlorine trifluoride, and oxygen difluoride, may cause fires.
Hazardous Decomposition: Silica will dissolve in hydrofluoric acid and produce a corrosive gas– silicon tetrafuoride.
Hazardous Polymerization: Will not occur.

Section 11 – Toxicological Information

The method of exposure to crystalline silica that can lead to the adverse health effects described below is inhalation.

- **Silicosis**

The major concern is silicosis, caused by the inhalation and retention of respirable crystalline silica dust. Silicosis can exist in several forms, chronic (ordinary), accelerated, or acute.

Chronic or Ordinary Silicosis (often referred to as Simple Silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis

Simple Silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability.

Simple Silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present are shortness of breath, wheezing, cough, and sputum production. Complicated silicosis of PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pumonale).

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Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; lung lesions can appear within 5 to 10 years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and progression is more rapid. The disease continues to develop even after exposure stops, and is often associated with autoimmune disease, for example, scleroderma (a skin disease involving thickening of the skin.

Acute Silicosis can occur with exposures to very high concentrations of respiable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

- **Cancer**

IARC – The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz and cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans (Group 1)*." The IARC evaluation noted, "Carcinogenicity was not detected in all industrial circumstances studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs. "For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates…" (1997)

OSHA – Crystalline silica (quartz) is not regulated by the U.S. Occupational Safety and Health Administration as a carcinogen.

- **Autoimmune Diseases**

Several studies have reported excess cases of several autoimmune disorders, --scleroderma, systemic lupus erythematous, and rheumatoid arthritis—among silica exposed workers.

- **Tuberculosis**

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to person with tuberculosis.

- **Kidney Disease**

Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silica-exposed workers.

- **Non-Malignant Respiratory Diseases**

There are studies that disclose an association between dusts found in various mining occupations and non-malignant respiratory diseases, particularly among smokers. It is unclear whether the observed associations exist only with underlying silicosis, only among smokers, or result from exposure to mineral dust generally (independent of the presence or absence of crystalline silica, or the level of crystalline silica in the dust).

Section 12 – Ecological Information

Crystalline silica (quartz) is not known to be eco toxic. There is no evidence to suggest that crystalline silica is toxic to birds, fish, invertebrates, microorganisms, or plant life.

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Section 13 – Disposal Considerations

Crystalline silica may be landfilled. Material should be placed in covered containers to minimize generation of airborne dust.
In the event the crystalline silica becomes contaminated, the material may require testing before it can be safely landfilled. Review all Federal, provincial, state, and local government requirements prior to disposal.

Section 14 – Transportation Information

International Air Transport Association (IATA): Not Regulated
International Maritime Organization (IMO): Not Regulated

Section 15 – Regulatory Information

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:
WHMIS: Not controlled under WHMIS

DSCL (EEC):
Not available5 24125- Avoid contact with skin and eyes.

Health Hazard: 1
Fire Hazard:0
Reactivity: 1
Personal Protection: E
Health:1
Flammability:0
Reactivity: 1
Specific hazard:

Protective Equipment:
Glove Lab coat. Dust respirator Be sure to use an approved/certified respirator equivalent Safety glasses

OTHER

Federal, provincial, state or local emergency planning, community right to know or other laws, regulations or ordinances may be applicable--consult applicable federal, provincial, state, or local laws.

Section 16 – Other Information

For further information on health effects, see Sections 3 and 11 of this MSDS

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