

Silica sand

1. Identification of the substance/mixture and of the company/undertaking

Product identification

High grade silica sand is a fine sand that has been processed by washing and cleaning of the grains, sizing to remove coarse and very fine fractions, and physical and chemical processes to remove iron, chromium and other deleterious minerals. After processing, the sand may be dried and some applications require it to be ground in ball mills to produce very fine material.

Identified uses of the substance or mixture

Uses in a variety of construction and non-construction applications such as:

- a raw material for glass and ceramic production, for use in foundry casting and
- water filtration and drainage media
- a range of specialist building applications.

Company Identification

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2. Hazards identification

Classification of the substance or mixture

Not classified as hazardous according to Regulation (EC) No. 1272/2008.

This product gives the potential for generation of respirable dust during handling and use. Dust may contain respirable crystalline silica. Prolonged inhalation of respirable dust can constitute a long term health hazard such as lung fibrosis. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. Repeated inhalation of excessive amounts of respirable silica may cause silicosis.

Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

3. Composition/information on ingredients

Mixtures

Silica sands are typically composed of a minimum of 97% quartz and due to their durability and resistance to heat and chemical attack they are a valuable raw ingredient for a range of industrial products. However, respirable crystalline silica (RCS) or free silica has been associated with the lung disease silicosis (see Hazards Identification).

Crystalline Silica has the following hazard information:

	Respirable crystalline silica (quartz)
CAS No	14808-60-7
EC No	238-878-4
Index No	[-]
Classification	STOT RE 2; H373i
Concentration	Variable dependent on source

For the full text of the H-Statements mentioned in this section, see section 16.

4. First aid measures

Description of first aid measures

Inhalation

Remove to fresh air and allow person to rest. If recovery is not rapid obtain prompt medical attention.

Skin contact

Remove any contaminated clothing. Wash with soap/cleanser and rinse with plenty of water. If irritation persists, obtain prompt medical attention.

Eye contact

Do not rub eyes, as the material is abrasive and may scratch the surface of the eye. Immediately and thoroughly irrigate with water. Seek medical attention if irritation persists.

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Ingestion

Ingestion of significant quantities of sand that could cause harm is very unlikely. If material enters the mouth, do not induce vomiting. Give plenty of water to drink. Seek medical attention if feeling unwell.

5. Firefighting measures

Suitable/unsuitable extinguishing media

Material is not flammable or combustible. Use media suitable for other any other materials present that may be involved in a fire. There is no unsuitable fire extinguishing media.

Special hazards arising in a fire

None.

Special advice for fire fighters

None.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid breathing dusts and excessive physical contamination.

Environmental precautions

Entry into watercourses should be avoided so far as is possible.

Methods and materials for containment and cleaning up

Spray with water to prevent the generation of dust. Do not dry sweep residues. Contain so as to avoid the generation of dust (i.e. cover or enclose).

7. Handling and storage

Precautions for safe handling

- Handle with care so as to prevent the generation of dust
- Use gloves to prevent mechanical irritation
- Consider manual handling when handling bagged product.

Safe storage

- Materials should be stored to minimise the generation of airborne dust from wind whipping and material movement
- Very fine dry product in bulk should be stored in enclosed silos
- Bulk aggregate containing fine material (<3mm) should not be stored in the open unless conditioned with water to avoid dust generation.

8. Exposure controls/personal protection

Control parameters

Components with workplace exposure limits (WELs)

Component	WEL (8Hr TWA)
Total inhalable dust	10mg/m ³
Respirable dust	4mg/m ³
Respirable crystalline silica	0.1mg/m ³

It is recommended that occupational monitoring be completed to determine exposure.

Exposure controls

Appropriate engineering controls

Use in well ventilated areas. Use mechanical ventilation in poorly ventilated areas.

Eye/face protection

Eye Protection in the form of safety glasses and/or goggles is required.

Hand protection

Handle with gloves. Recommend use of impervious heavy duty gloves. Gloves should be removed and hands thoroughly washed before handling or eating any food or drink.

Skin protection

Overalls/impervious clothing, selected according to the workplace conditions.

Respiratory protection

Suitable dust masks should be worn in enclosed spaces where adequate ventilation is not provided. The Chemical Agents Directive shows a requirement for respirators as a means of control should use a particulate filter type P3 or equivalent.

9. Physical and chemical properties

Physical and chemical properties will vary dependent source, but generic properties are as follows:

Appearance	Fine free flowing sand
Odour	None
pH	Various
Boiling point/range	Not determined
Melting point/range	Not determined
Flash point	Not applicable
Flammability	Not applicable
Auto Flammability	Not applicable
Explosive properties	Not applicable
Oxidizing properties	Not determined
Vapour pressure	Not applicable
Relative density	Above 2.65
Water solubility	Dependent on rock type
Fat solubility	Not determined

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10. Stability and reactivity

Reactivity and chemical stability

Stable at normal temperatures and under recommended storage conditions.

Conditions to avoid

None.

Incompatible materials

Strong acids (limestone based aggregates).

Hazardous decomposition products

None.

11. Toxicological information

Information on toxicological effects

Acute toxicity

None.

Eye damage

Long term contact with eyes can cause eye irritation and damage.

Skin corrosion/irritation

Long term contact with skin may cause mechanical skin irritation and possible dermatitis.

Respiratory sensitisation

Chronic exposure by inhalation may cause cough, breathlessness and lung fibrosis.

Specific target organ toxicity - repeated exposure

Prolonged exposure of Respirable Crystalline Silica fraction by inhalation may lead to silicosis in lungs.

Carcinogenicity

IARC classified respirable crystalline silica as a Group 1 carcinogen, therefore long term exposure may cause cancer.

Ingestion

Not likely to cause long term problems.

12. Ecological information

Environmental assessment

When used and disposed of as intended, no adverse environmental effects are foreseen. Sand is a naturally occurring, inert mineral and does not pose a significant ecological hazard.

Mobility

Sand is non volatile, inert materials that will sink in water and form a layer on the surface of the ground. Dust may become airborne, leading to deposition on vegetation and subsequent damage.

Persistence and degradability

Sand is resistant to degradation and will persist in the environment.

Ecotoxicity

Not expected to be toxic to aquatic organisms.

Bioaccumulative potential

Not applicable.

Results of PBT and vPvB assessment

Will not meet PBT or vPvB criteria.

13. Disposal considerations

Waste treatment methods

Product

Sand is an inert waste and can be disposed of as normal industrial waste in accordance with waste regulation.

It is recommended that it be disposed of via recycling or reuse.

Contaminated packaging

Dispose of as industrial waste.

14. Transport information

Special carriage information

None. This product is **NOT** classified as dangerous for transport.

Dry bulk silica sand should be transported via tanker to avoid the generation of dust.

Open bulk vehicles used to carry the product should be sheeted to avoid the generation of dust.

15. Regulatory information

Classification: **Not classified as dangerous.**

However, consideration of the following Hazard & Precautionary Statements is recommended:

Text of H-code(s) and R-phrase(s) mentioned in Section 3

H373i May cause damage to organs through prolonged or repeated exposure by inhalation.

Safety, health and environmental regulations/legislation specific for the substance or mixture

Health & Safety at Work etc. Act 1974.
Control of Substances Hazardous to Health Regulations 2002 (as amended).
Classification, Labelling and Packaging of Substances and Mixtures Regulations 2008 (as amended).
EH40/2005 Workplace Exposure Limits (as amended).
HSE Crystalline Silica EH59.

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16. Other information

Training and advice

Wear and use appropriate PPE.

Recommended restrictions on use

Use in accordance with manufacturer's technical instructions.

The Company does **NOT** recommend the use of silica sand for 'dry' blasting.

Further information

Contact the Aggregate Industries Health & Safety Team.

Key data used to compile data sheet

Classification, Labelling and Packaging of Substances and Mixtures Regulations 2008 (as amended).

EH40/2005 Workplace Exposure Limits (as amended).

HSE Crystalline Silica EH59.

Legal notice: The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. This information herein represents the best information currently available at the Revision Date. However, no warranty is expressed or implied with respect to such information and its use. Users should make their own investigations to determine the suitability of the information for their particular purposes and against all applicable legislation.