

**Aggregate Industries H&S dept  
Hulland Ward, Ashbourne,  
Derbyshire DE6 3ET**

**Safety Data Sheet  
Issue Date: January 2008**

**1. IDENTIFICATION OF THE SUBSTANCE**

**Silica Sand**

Product description

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.

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

Silica (SiO<sub>2</sub>) is formed from the elements silicon and oxygen and is found in three main crystalline forms:

- Quartz
- Tridymite
- Cristobalite

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).

**3. HAZARDS IDENTIFICATION**

There is a potential for respirable dust, including an element of respirable crystalline silica (quartz), to be released during the handling and use of silica sand, which could pose a health hazard.

Short-term exposure to respirable dust produces reversible effects such as an increase in mucus, irritation of the nose and throat and constriction of the airways, whereas long-term exposure can lead to irreversible scarring and fibrosis, exacerbate conditions such as bronchitis and asthma and lead to impaired respiratory performance.

Respirable crystalline silica has been associated with the lung disease silicosis. It should be noted, however, that there is not necessarily a direct relationship between the percentage of quartz within a sand and the amount of respirable crystalline silica. The sand composition must either include quartz grains less than 4 microns or the extraction, processing and use of material must generate such particles.

Silica sand and dust particles can cause also cause abrasion or irritation to skin and eyes and gastrointestinal irritation if ingested. The weight of bagged product could pose a health hazard if inappropriate manual handling techniques are employed.

For further guidance see HSE Publications EH44 Dust: General Principles of Protection and Getting to Grips with Manual Handling: a Short Guide.

**4. FIRST AID MEASURES**

General

Unlikely to be hazardous if handled correctly.

Inhalation

Remove to a dust free area and seek medical attention if breathing difficulties are experienced.

Skin

Wash with soap and water. If prolonged contact causes irritation seek medical attention.

Eyes

Irrigate with plenty of water and seek medical attention if soreness continues.

Ingestion

Give water to drink and seek medical advice.

**5. FIRE FIGHTING MEASURES**

**6. ACCIDENTAL RELEASE MEASURES**

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<p>No fire or explosive hazard.</p>	<p><u>Personal precautions</u></p> <p>Avoid inhaling dust and contact with eyes. Wear a dust mask or respirator and goggles.</p> <p><u>Environmental measures</u></p> <p>Natural aggregates are inert but may cause a nuisance from soiling of vegetation and property (see Ecological Information).</p> <p><u>Method of cleaning</u></p> <p>If possible, avoid dry sweeping, which generates dust. Vacuum dust where practical or use water sprays to suppress dust.</p>
<p><b>7. HANDLING AND STORAGE</b></p>	<p><b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b></p>
<p><u>Handling</u></p> <p>The product should be handled in a manner that will minimise the generation of airborne dust.</p> <p>Manual handling of bagged product should be avoided so far as is reasonably practical. Where this is not possible, an assessment should be made, taking into account the load, environment, task, and individual capability and training. Always employ good lifting techniques.</p> <p><u>Storage</u></p> <p>Bagged product should be palletised and kept in a secure, ventilated area. Dry fine bulk products should be stored in silos fitted with emission control equipment. Silica sand stored in the open should be in bays, sheeted and/or conditioned with water to minimise fugitive emissions of dust.</p>	<p><u>Workplace Exposure limits</u></p> <ul style="list-style-type: none"> <li>▪ Total Inhalable Nuisance Dust: 10.0 mg/m<sup>3</sup> (WEL)</li> <li>▪ Total Respirable Nuisance Dust: 4.0 mg/m<sup>3</sup> (WEL)</li> <li>▪ Respirable Crystalline Silica: 0.1 mg/m<sup>3</sup> (WEL)</li> </ul> <p>All are given as maximum concentrations and expressed as an 8 Hour Time Weighted Average (8 Hr TWA).</p> <p><u>Prevention measures</u></p> <p>Use dust extraction, containment and suppression where possible. Undertake regular occupational dust surveys where personnel may be exposed to respirable dust and identify and implement further preventative measures as necessary.</p> <p><u>Respiratory protection</u></p> <p>Dust masks or respirators should be worn during handling and use of the product to accord with the relevant WEL listed above.</p> <p><u>Protection of skin and eyes</u></p> <p>Gloves, overalls and goggles should be worn during handling and use of the product.</p>
<p><b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b></p>	
<p><u>Appearance</u></p> <p>Fine, free flowing white to pink powder depending on grade.</p> <p><u>Other chemical properties</u></p>	

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Relative density 2.65	
<b>10. STABILITY AND REACTIVITY</b>	<b>11. TOXICOLOGICAL INFORMATION</b>
<u>Conditions and materials to avoid</u>  Not applicable	<u>Description of toxicological properties</u>
<b>12. ECOLOGICAL INFORMATION</b>	<b>13. DISPOSAL CONSIDERATIONS</b>
<u>Environmental Assessment</u>  Fugitive emissions of dust from the handling, use and transportation of silica sand can lead to soiling and subsequent damage of sensitive vegetation after prolonged exposure. Silica sand is, however, classified as inert and not considered to pose a significant ecological hazard.	<u>Handling of any residues/waste products</u>  As an inert material, an approved solid waste disposal or landfill site may be used. Do not burn shrink wrap, bags or other packaging material.
<b>14. TRANSPORT INFORMATION</b>	<b>15. REGULATORY INFORMATION</b>
<u>Special carriage precautions</u>  Not applicable, however, it is recommended that dry fine material be transported by bulk tanker or sealed bags to minimise the generation of dust.	Not classified  The following risk and safety phrases are, however, recommended: <ul style="list-style-type: none"> <li>▪ R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation</li> <li>▪ S22 Do not breathe dust</li> </ul>
<b>16. OTHER INFORMATION</b>	
<u>Training advice</u>  Wear and use PPE  <u>Recommended uses</u>  As a raw material for glass and ceramic production, for use in foundry casting and water filtration and for a range of specialist building applications.  The Company does <b>not</b> recommend the use of silica sand for 'dry' blasting. 'Wet' blasting may be acceptable as long as the user complies with the COSHH Regulations 2002. For further advice it is recommended that the user contacts their HSE area office (Construction Industry Department).	<b>LEGAL NOTICE</b>  The information contained in this Safety Data Sheet was considered the best available at the date of issue. However, no warranty is made or implied that the information is accurate or complete. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

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Users should consider the use of a Silica free blasting agent

**Further information sources**

Aggregate Industries UK Limited  
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DE6 3ET

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**Sources of key data used to compile data sheet**

EH40 2005 Workplace Exposure Limits (supplementary amendment 01 October 2006)  
PPE Regulations 1992  
Manual Handling Regulations 1992 (as amended)  
COSHH Regulations 2002 (as amended)  
COSHH (Amendment) Regulations 2004