

## Material Safety Data Sheet

### 1. Identification of the Substance

**Natural Aggregates** - Natural Aggregates consists of rock fragments that are used in their natural state, or are used after mechanical processing such as crushing, washing and screening. Sand and gravel is a source of natural aggregate which can be used directly in construction or as a raw material for the construction product industries, such as concrete and bituminous materials.

### 2. Composition

Natural Aggregates which are sourced from sand and gravel deposits are usually composed of a wide degree of rock types which can include Chert, quartz, quartzite, limestone, sandstone and granite. The mineral composition of the naturally derived aggregates can vary considerably.

Some natural aggregates may contain a percentage of respirable crystalline silica. This has the chemical composition  $\text{SiO}_2$  and is most commonly in the form of mineral quartz. RCS has been associated with 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 natural aggregates, 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 rock type and the amount of respirable crystalline silica. The rock composition must either include quartz grains less than 4 microns or the extraction, processing and use of material must generate such particles.

Natural aggregates and dust particles can 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**

No Fire or explosive hazards.

#### **6. Accidental Release Measures**

**Personal Precautions** – Avoid inhaling dust and contact with eyes. Where a dust mask or respirator and goggles.

**Environmental measures** - Natural aggregates are inert but may cause a nuisance from soiling of vegetation and property (see Ecological Information).

**Method of cleaning** - If possible, avoid dry sweeping, which generates dust. Vacuum dust where practical or use water sprays to suppress dust.

#### **7. Handling and Storage**

**Handling** - The product should be handled in a manner that will minimise the generation of airborne dust. 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.

**Storage** - Bagged product should be palletised and kept secure.

## 8. Exposure Controls/Personal Protection

### Work Place Exposure Limits

- Total Inhalable Nuisance Dust : 10.0 mg/m<sup>3</sup> (WEL)
- Total Respirable Nuisance Dust : 4.0 mg/m<sup>3</sup>(WEL)
- Respirable Crystalline Silica : 0.1 mg/m<sup>3</sup> (WEL)

All are given as maximum concentrations and expressed as an 8 Hour Time Weighted Average (8 Hr TWA)

Prevention measures – Use dust extraction, containment suppression where possible. Undertake regular occupational dust surveys where personnel may be exposed to respirable dust and identify and implement further preventative measure as necessary.

Respiratory Protection – Dust masks or respirators should be worn during handling and use of the product to accord with the relevant WEL listed above.

Protection of skin and eyes - Gloves, overalls and goggles should be worn during handling and use of the product.

## 9. Physical & Chemical Properties

**Appearance** - Natural aggregates are produced in a wide range of sizes and colours.

**Other Chemical Properties** - Chemical composition will vary depending on the source of the product.

## 10. Stability and Reactivity

**Conditions and materials to avoid** – Not Applicable

## 11. Toxicological Information

**Description of toxicological properties** - Natural aggregates contain a wide range of particle types and the behaviour, deposition, fate of and response to any particular particle after entry into the human respiratory system depends on their nature and size. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung and is associated with health effects (see Hazards Identification).

## **12. Ecological Information**

**Environmental Assessment** - Fugitive emissions of dust from the handling, use and transportation of natural aggregates can lead to soiling and subsequent damage of sensitive vegetation after prolonged exposure. Natural aggregates are, however, classified as inert and not considered to pose a significant ecological hazard.

## **13. Disposal Considerations**

### **Handling of any residues/waste products**

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.

## **14. Transport Information**

**Special carriage precautions** – Not applicable, however, it is recommended that dry fine material be transported by sealed bulk bags and that aggregates should be sheeted or conditioned with water during transportation to minimise the generation of dust.

## **15. Regulatory Information**

Not Classified – The following risk and safety phrases are, however are recommended:

- R48/20 – harmful: Danger of serious damage to health by prolonged exposure through inhalation
- S22 Do Not Breath Dust

## **16. Other Information**

**Training advice** - Wear and use PPE

**Recommended uses** - As a construction material and a raw material for other construction materials used in infrastructure and public and private construction projects.

### **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

**Legal Notice**

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.