

# SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

## BENTONITE

Revision Date: 04-Sep-2015

Revision Number: 35

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product Identifier

Product Name BENTONITE  
Internal ID Code HM000126  
Contains Crystalline silica, quartz

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Weight Additive  
Sector of use SU2 - Mining, (including offshore industries)  
Product category PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific  
Process categories PROC 26 - Handling of solid inorganic substances at ambient temperature

#### 1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services  
Halliburton House, Howemoss Place  
Kirkhill Industrial Estate  
Dyce  
Aberdeen, AB21 0GN  
United Kingdom

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

#### 1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

| Emergency telephone - §45 - (EC)1272/2008 |                                                                                                                                               |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Europe                                    | 112                                                                                                                                           |
| Croatia                                   | Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health) |
| Cyprus                                    | +210 7793777                                                                                                                                  |
| Denmark                                   | Poison Control Hotline (DK): +45 82 12 12 12                                                                                                  |
| France                                    | ORFILA (FR): + 01 45 42 59 59                                                                                                                 |
| Germany                                   | Poison Center Berlin (DE): +49 030 30686 790                                                                                                  |
| Italy                                     | Poison Center, Milan (IT): +39 02 6610 1029                                                                                                   |
| Netherlands                               | National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)                       |
| Norway                                    | Poisons Information (NO): + 47 22 591300                                                                                                      |
| Poland                                    | Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97                                                        |
| Romania                                   | +40 21 318 36 06                                                                                                                              |
| Spain                                     | Poison Information Service (ES): +34 91 562 04 20                                                                                             |
| United Kingdom                            | NHS Direct (UK): +44 0845 46 47                                                                                                               |

### SECTION 2: Hazards Identification

#### 2.1. Classification of the substance or mixture

##### REGULATION (EC) No 1272/2008

|                                                      |                   |
|------------------------------------------------------|-------------------|
| Carcinogenicity                                      | Category 2 - H351 |
| Specific Target Organ Toxicity - (Repeated Exposure) | Category 2 - H373 |

**2.2. Label Elements****Hazard Pictograms****Signal Word****Warning****Hazard Statements**

H351 - Suspected of causing cancer if inhaled

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Precautionary Statements - EU (§28, 1272/2008)**

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

P270 - Do not eat, drink or smoke when using this product

P281 - Use personal protective equipment as required

P308 + P313 - IF exposed or concerned: Get medical advice/attention

**Contains****Substances**

Crystalline silica, quartz

Crystalline silica, cristobalite

Crystalline silica, tridymite

**CAS Number**

14808-60-7

14464-46-1

15468-32-3

**2.3. Other Hazards**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

**SECTION 3: Composition/information on Ingredients****3.1. Substances****Substance**

| Substances                       | EINECS    | CAS Number | PERCENT (w/w) | EU - CLP Substance Classification  | REACH No.         |
|----------------------------------|-----------|------------|---------------|------------------------------------|-------------------|
| Crystalline silica, quartz       | 238-878-4 | 14808-60-7 | 1 - 5%        | Carc. 2 (H351)<br>STOT RE 1 (H372) | No data available |
| Crystalline silica, cristobalite | 238-455-4 | 14464-46-1 | 0.1 - 1%      | Carc. 2 (H351)<br>STOT RE 1 (H372) | No data available |
| Crystalline silica, tridymite    | 239-487-1 | 15468-32-3 | 0.1 - 1%      | Carc. 2 (H351)<br>STOT RE 1 (H372) | No data available |

**For the full text of the H-phrases mentioned in this Section, see Section 16****SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin**

Wash with soap and water. Get medical attention if irritation persists.

**Ingestion**

Under normal conditions, first aid procedures are not required.

**4.2. Most important symptoms and effects, both acute and delayed**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease. Carcinogen. May cause damage to internal organs.

**4.3. Indication of any immediate medical attention and special treatment needed**

Notes to Physician

Treat symptomatically

**SECTION 5: Firefighting Measures****5.1. Extinguishing media****Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**5.2. Special hazards arising from the substance or mixture****Special Exposure Hazards**

None anticipated

**5.3. Advice for firefighters****Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust.

See Section 8 for additional information

**6.2. Environmental precautions**

None known.

**6.3. Methods and material for containment and cleaning up**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

**6.4. Reference to other sections**

See Section 8 and 13 for additional information.

**SECTION 7: Handling and Storage****7.1. Precautions for Safe Handling**

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

**7.3. Specific End Use(s)****Exposure Scenario**

No information available

**Other Guidelines**

No information available

**SECTION 8: Exposure Controls/Personal Protection****8.1. Control parameters****Exposure Limits**

| Substances                       | CAS Number | EU             | UK                         | Netherlands                  | France                      |
|----------------------------------|------------|----------------|----------------------------|------------------------------|-----------------------------|
| Crystalline silica, quartz       | 14808-60-7 | Not applicable | TWA: 0.1 mg/m <sup>3</sup> | TWA: 0.075 mg/m <sup>3</sup> | TWA: 0.1 mg/m <sup>3</sup>  |
| Crystalline silica, cristobalite | 14464-46-1 | Not applicable | Not applicable             | TWA: 0.075 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> |
| Crystalline silica, tridymite    | 15468-32-3 | Not applicable | Not applicable             | TWA: 0.075 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> |

| Substances                       | CAS Number | Germany        | Spain                       | Portugal                     | Finland                     |
|----------------------------------|------------|----------------|-----------------------------|------------------------------|-----------------------------|
| Crystalline silica, quartz       | 14808-60-7 | Not applicable | TWA: 0.1 mg/m <sup>3</sup>  | TWA: 0.025 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> |
| Crystalline silica, cristobalite | 14464-46-1 | Not applicable | TWA: 0.05 mg/m <sup>3</sup> | TWA: 0.025 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> |
| Crystalline silica, tridymite    | 15468-32-3 | Not applicable | Not applicable              | Not applicable               | TWA: 0.05 mg/m <sup>3</sup> |

| Substances                       | CAS Number | Austria                     | Ireland                                                                                                 | Switzerland                 | Norway                                                                                                                     |
|----------------------------------|------------|-----------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Crystalline silica, quartz       | 14808-60-7 | TWA: 0.15 mg/m <sup>3</sup> | 0.1 mg/m <sup>3</sup> TWA (respirable dust)<br>0.3 mg/m <sup>3</sup> STEL (calculated, respirable dust) | TWA: 0.15 mg/m <sup>3</sup> | TWA: 0.3 mg/m <sup>3</sup><br>TWA: 0.1 mg/m <sup>3</sup><br>STEL: 0.9 mg/m <sup>3</sup><br>STEL: 0.3 mg/m <sup>3</sup>     |
| Crystalline silica, cristobalite | 14464-46-1 | TWA: 0.15 mg/m <sup>3</sup> | 0.1 mg/m <sup>3</sup> TWA (respirable dust)<br>0.3 mg/m <sup>3</sup> STEL (calculated, respirable dust) | TWA: 0.15 mg/m <sup>3</sup> | TWA: 0.15 mg/m <sup>3</sup><br>TWA: 0.05 mg/m <sup>3</sup><br>STEL: 0.45 mg/m <sup>3</sup><br>STEL: 0.15 mg/m <sup>3</sup> |
| Crystalline silica, tridymite    | 15468-32-3 | TWA: 0.15 mg/m <sup>3</sup> | 0.1 mg/m <sup>3</sup> TWA (respirable dust)<br>0.3 mg/m <sup>3</sup> STEL (calculated, respirable dust) | TWA: 0.15 mg/m <sup>3</sup> | TWA: 0.15 mg/m <sup>3</sup><br>TWA: 0.05 mg/m <sup>3</sup><br>STEL: 0.45 mg/m <sup>3</sup><br>STEL: 0.15 mg/m <sup>3</sup> |

| Substances                       | CAS Number | Italy          | Poland                                                                                                             | Hungary                     | Czech Republic             |
|----------------------------------|------------|----------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------|
| Crystalline silica, quartz       | 14808-60-7 | Not applicable | TWA: 2 mg/m <sup>3</sup><br>TWA: 0.3 mg/m <sup>3</sup><br>TWA: 4.0 mg/m <sup>3</sup><br>TWA: 1.0 mg/m <sup>3</sup> | TWA: 0.15 mg/m <sup>3</sup> | TWA: 0.1 mg/m <sup>3</sup> |
| Crystalline silica, cristobalite | 14464-46-1 | Not applicable | TWA: 2 mg/m <sup>3</sup><br>TWA: 0.3 mg/m <sup>3</sup><br>TWA: 4.0 mg/m <sup>3</sup><br>TWA: 1.0 mg/m <sup>3</sup> | TWA: 0.15 mg/m <sup>3</sup> | TWA: 0.1 mg/m <sup>3</sup> |
| Crystalline silica, tridymite    | 15468-32-3 | Not applicable | TWA: 2 mg/m <sup>3</sup><br>TWA: 0.3 mg/m <sup>3</sup><br>TWA: 4.0 mg/m <sup>3</sup><br>TWA: 1.0 mg/m <sup>3</sup> | TWA: 0.15 mg/m <sup>3</sup> | TWA: 0.1 mg/m <sup>3</sup> |

| Substances                       | CAS Number | Denmark                                                    | Romania                     | Croatia                     | Cyprus         |
|----------------------------------|------------|------------------------------------------------------------|-----------------------------|-----------------------------|----------------|
| Crystalline silica, quartz       | 14808-60-7 | TWA: 0.3 mg/m <sup>3</sup><br>TWA: 0.1 mg/m <sup>3</sup>   | TWA: 0.1 mg/m <sup>3</sup>  | TWA: 0.1 mg/m <sup>3</sup>  | Not applicable |
| Crystalline silica, cristobalite | 14464-46-1 | TWA: 0.15 mg/m <sup>3</sup><br>TWA: 0.05 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> | Not applicable |
| Crystalline silica, tridymite    | 15468-32-3 | TWA: 0.15 mg/m <sup>3</sup><br>TWA: 0.05 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> | Not applicable |

#### Derived No Effect Level (DNEL) Worker

No information available.

#### General Population

#### Predicted No Effect Concentration (PNEC)

No information available.

### 8.2. Exposure controls

#### Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

#### Personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

#### Respiratory Protection

Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

#### Hand Protection Skin Protection

Normal work gloves.

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

#### Eye Protection Other Precautions

Wear safety glasses or goggles to protect against exposure.

None known.

**Environmental Exposure Controls** No information available

## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

**Physical State:** Solid  
**Color:** Various  
**Odor:** Odorless  
**Odor Threshold:** No information available

| <u>Property</u>                               | <u>Values</u>            |
|-----------------------------------------------|--------------------------|
| <u>Remarks/ - Method</u>                      |                          |
| <b>pH:</b>                                    | 9.9                      |
| <b>Freezing Point/Range</b>                   | No data available        |
| <b>Melting Point/Range</b>                    | No data available        |
| <b>Boiling Point/Range</b>                    | No data available        |
| <b>Flash Point</b>                            | No data available        |
| <b>Flammability (solid, gas)</b>              | No data available        |
| upper flammability limit                      | No data available        |
| lower flammability limit                      | No data available        |
| <b>Evaporation rate</b>                       | No data available        |
| <b>Vapor Pressure</b>                         | No data available        |
| <b>Vapor Density</b>                          | No data available        |
| <b>Specific Gravity</b>                       | 2.65                     |
| <b>Water Solubility</b>                       | Insoluble in water       |
| <b>Solubility in other solvents</b>           | No data available        |
| <b>Partition coefficient: n-octanol/water</b> | No data available        |
| <b>Autoignition Temperature</b>               | No data available        |
| <b>Decomposition Temperature</b>              | No data available        |
| <b>Viscosity</b>                              | No data available        |
| <b>Explosive Properties</b>                   | No information available |
| <b>Oxidizing Properties</b>                   | No information available |

### 9.2. Other information

**VOC Content (%)** No data available

## SECTION 10: Stability and Reactivity

### 10.1. Reactivity

Not expected to be reactive.

### 10.2. Chemical Stability

Stable

### 10.3. Possibility of Hazardous Reactions

Will Not Occur

### 10.4. Conditions to Avoid

None anticipated

### 10.5. Incompatible Materials

Hydrofluoric acid.

### 10.6. Hazardous Decomposition Products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

## SECTION 11: Toxicological Information

### 11.1. Information on Toxicological Effects

#### Acute Toxicity

##### Inhalation

Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

##### Eye Contact

May cause mechanical irritation to eye.

##### Skin Contact

May cause mechanical skin irritation.

##### Ingestion

None known.

**Chronic Effects/Carcinogenicity**

**Silicosis:** Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

**Cancer Status:** The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2). There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Toxicology data for the components**

| Substances                       | CAS Number | LD50 Oral             | LD50 Dermal       | LC50 Inhalation   |
|----------------------------------|------------|-----------------------|-------------------|-------------------|
| Crystalline silica, quartz       | 14808-60-7 | >15,000 mg/kg (Human) | No data available | No data available |
| Crystalline silica, cristobalite | 14464-46-1 | >15,000 mg/kg (Human) | No data available | No data available |
| Crystalline silica, tridymite    | 15468-32-3 | >15,000 mg/kg (Human) | No data available | No data available |

| Substances                       | CAS Number | Skin corrosion/irritation  |
|----------------------------------|------------|----------------------------|
| Crystalline silica, quartz       | 14808-60-7 | Non-irritating to the skin |
| Crystalline silica, cristobalite | 14464-46-1 | Non-irritating to the skin |
| Crystalline silica, tridymite    | 15468-32-3 | Non-irritating to the skin |

| Substances                       | CAS Number | Eye damage/irritation                          |
|----------------------------------|------------|------------------------------------------------|
| Crystalline silica, quartz       | 14808-60-7 | Mechanical irritation of the eyes is possible. |
| Crystalline silica, cristobalite | 14464-46-1 | Mechanical irritation of the eyes is possible. |
| Crystalline silica, tridymite    | 15468-32-3 | Mechanical irritation of the eyes is possible. |

| Substances                       | CAS Number | Skin Sensitization        |
|----------------------------------|------------|---------------------------|
| Crystalline silica, quartz       | 14808-60-7 | No information available. |
| Crystalline silica, cristobalite | 14464-46-1 | No information available  |
| Crystalline silica, tridymite    | 15468-32-3 | No information available  |

| Substances                       | CAS Number | Respiratory Sensitization |
|----------------------------------|------------|---------------------------|
| Crystalline silica, quartz       | 14808-60-7 | No information available  |
| Crystalline silica, cristobalite | 14464-46-1 | No information available  |
| Crystalline silica, tridymite    | 15468-32-3 | No information available  |

| Substances                       | CAS Number | Mutagenic Effects          |
|----------------------------------|------------|----------------------------|
| Crystalline silica, quartz       | 14808-60-7 | Not regarded as mutagenic. |
| Crystalline silica, cristobalite | 14464-46-1 | Not regarded as mutagenic. |
| Crystalline silica, tridymite    | 15468-32-3 | Not regarded as mutagenic. |

| Substances | CAS Number | Carcinogenic Effects |
|------------|------------|----------------------|
|------------|------------|----------------------|

|                                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Crystalline silica, quartz       | 14808-60-7 | Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury. |
| Crystalline silica, cristobalite | 14464-46-1 | Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury. |
| Crystalline silica, tridymite    | 15468-32-3 | Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury. |

| Substances                       | CAS Number | Reproductive toxicity    |
|----------------------------------|------------|--------------------------|
| Crystalline silica, quartz       | 14808-60-7 | No information available |
| Crystalline silica, cristobalite | 14464-46-1 | No information available |
| Crystalline silica, tridymite    | 15468-32-3 | No information available |

| Substances                       | CAS Number | STOT - single exposure                                                                        |
|----------------------------------|------------|-----------------------------------------------------------------------------------------------|
| Crystalline silica, quartz       | 14808-60-7 | No significant toxicity observed in animal studies at concentration requiring classification. |
| Crystalline silica, cristobalite | 14464-46-1 | No significant toxicity observed in animal studies at concentration requiring classification. |
| Crystalline silica, tridymite    | 15468-32-3 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances                       | CAS Number | STOT - repeated exposure                                                           |
|----------------------------------|------------|------------------------------------------------------------------------------------|
| Crystalline silica, quartz       | 14808-60-7 | Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs) |
| Crystalline silica, cristobalite | 14464-46-1 | Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs) |
| Crystalline silica, tridymite    | 15468-32-3 | Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs) |

| Substances                       | CAS Number | Aspiration hazard |
|----------------------------------|------------|-------------------|
| Crystalline silica, quartz       | 14808-60-7 | Not applicable    |
| Crystalline silica, cristobalite | 14464-46-1 | Not applicable    |
| Crystalline silica, tridymite    | 15468-32-3 | Not applicable    |

## SECTION 12: Ecological Information

### 12.1. Toxicity Ecotoxicity Effects

| Substances                       | CAS Number | Toxicity to Algae        | Toxicity to Fish                                        | Toxicity to Microorganisms | Toxicity to Invertebrates                                    |
|----------------------------------|------------|--------------------------|---------------------------------------------------------|----------------------------|--------------------------------------------------------------|
| Crystalline silica, quartz       | 14808-60-7 | No information available | LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance) | No information available   | LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance) |
| Crystalline silica, cristobalite | 14464-46-1 | No information available | LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance) | No information available   | LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance) |
| Crystalline silica, tridymite    | 15468-32-3 | No information available | LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance) | No information available   | LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance) |

### 12.2. Persistence and degradability

| Substances                       | CAS Number | Persistence and Degradability                                                            |
|----------------------------------|------------|------------------------------------------------------------------------------------------|
| Crystalline silica, quartz       | 14808-60-7 | No information available                                                                 |
| Crystalline silica, cristobalite | 14464-46-1 | The methods for determining biodegradability are not applicable to inorganic substances. |
| Crystalline silica, tridymite    | 15468-32-3 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances                       | CAS Number | Log Pow                  |
|----------------------------------|------------|--------------------------|
| Crystalline silica, quartz       | 14808-60-7 | No information available |
| Crystalline silica, cristobalite | 14464-46-1 | No information available |
| Crystalline silica, tridymite    | 15468-32-3 | No information available |

**12.4. Mobility in soil**

| Substances                       | CAS Number | Mobility                 |
|----------------------------------|------------|--------------------------|
| Crystalline silica, quartz       | 14808-60-7 | No information available |
| Crystalline silica, cristobalite | 14464-46-1 | No information available |
| Crystalline silica, tridymite    | 15468-32-3 | No information available |

**12.5. Results of PBT and vPvB assessment**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

| Substances                       | PBT and vPvB assessment |
|----------------------------------|-------------------------|
| Crystalline silica, quartz       | Not PBT/vPvB            |
| Crystalline silica, cristobalite | Not PBT/vPvB            |
| Crystalline silica, tridymite    | Not PBT/vPvB            |

**12.6. Other adverse effects****Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

|                                            |
|--------------------------------------------|
| <b>SECTION 13: Disposal Considerations</b> |
|--------------------------------------------|

**13.1. Waste treatment methods****Disposal Method**

Bury in a licensed landfill according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

**Contaminated Packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

|                                          |
|------------------------------------------|
| <b>SECTION 14: Transport Information</b> |
|------------------------------------------|

**IMDG/IMO**

|                             |                |
|-----------------------------|----------------|
| UN Number:                  | Not restricted |
| UN Proper Shipping Name:    | Not restricted |
| Transport Hazard Class(es): | Not applicable |
| Packing Group:              | Not applicable |
| Environmental Hazards:      | Not applicable |

**RID**

|                             |                |
|-----------------------------|----------------|
| UN Number:                  | Not restricted |
| UN Proper Shipping Name:    | Not restricted |
| Transport Hazard Class(es): | Not applicable |
| Packing Group:              | Not applicable |
| Environmental Hazards:      | Not applicable |

**ADR**

|                             |                |
|-----------------------------|----------------|
| UN Number:                  | Not restricted |
| UN Proper Shipping Name:    | Not restricted |
| Transport Hazard Class(es): | Not applicable |
| Packing Group:              | Not applicable |
| Environmental Hazards:      | Not applicable |

**IATA/ICAO**

|                          |                |
|--------------------------|----------------|
| UN Number:               | Not restricted |
| UN Proper Shipping Name: | Not restricted |

|                                    |                |
|------------------------------------|----------------|
| <b>Transport Hazard Class(es):</b> | Not applicable |
| <b>Packing Group:</b>              | Not applicable |
| <b>Environmental Hazards:</b>      | Not applicable |

**14.1. UN Number:** Not restricted

**14.2. UN Proper Shipping Name:** Not restricted

**14.3. Transport Hazard Class(es):** Not applicable

**14.4. Packing Group:** Not applicable

**14.5. Environmental Hazards:** Not applicable

**14.6. Special Precautions for User:** None

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

## SECTION 15: Regulatory Information

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

#### International Inventories

|                               |                                                            |
|-------------------------------|------------------------------------------------------------|
| <b>EINECS Inventory</b>       | This product, and all its components, complies with EINECS |
| <b>US TSCA Inventory</b>      | All components listed on inventory or are exempt.          |
| <b>Canadian DSL Inventory</b> | All components listed on inventory or are exempt.          |

#### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**Germany, Water Endangering Classes (WGK)** WGK 0: Generally not water endangering.

#### List of the carcinogenic, mutagenic and toxic for reproduction substances SZW

Crystalline silica, quartz  
Crystalline silica, cristobillite  
Crystalline silica, trydimite

### 15.2. Chemical Safety Assessment

No information available

## SECTION 16: Other Information

### Full text of H-Statements referred to under sections 2 and 3

H351 - Suspected of causing cancer if inhaled  
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled  
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

### Key or legend to abbreviations and acronyms

bw – body weight  
CAS – Chemical Abstracts Service  
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures  
EC – European Commission  
EC10 – Effective Concentration 10%  
EC50 – Effective Concentration 50%  
EEC – European Economic Community  
ErC50 – Effective Concentration growth rate 50%  
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
LC50 – Lethal Concentration 50%  
LD50 – Lethal Dose 50%  
LL0 – Lethal Loading 0%  
LL50 – Lethal Loading 50%  
MARPOL – International Convention for the Prevention of Pollution from Ships  
mg/kg – milligram/kilogram  
mg/L – milligram/liter  
NIOSH – National Institute for Occupational Safety and Health

NOEC – No Observed Effect Concentration

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PBT – Persistent Bioaccumulative and Toxic

PC – Chemical Product category

PEL – Permissible Exposure Limit

ppm – parts per million

PROC – Process category

REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

STEL – Short Term Exposure Limit

SU – Sector of Use category

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

NZ CCID

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**Revision Note**

SDS sections updated: 1

**This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010**

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**End of Safety Data Sheet**