



Black Hills Bentonite LLC  
Thermal Grout Select  
Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 03/26/ 2012  
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## SECTION 1: IDENTIFICATION

### Product Identifier

**Product Form:** Mixture

**Product Name:** Thermal Grout Select

**Synonyms:** Grouting bentonite

### Intended Use of the Product

Geothermal well sealant.

### Name, Address, and Telephone of the Responsible Party

#### **Company**

Black Hills Bentonite LLC

PO Box 9

Mills, WY 82644

307-265-3740

blkhlsbent@aol.com

### Emergency Telephone Number

**Emergency Number** : 307-247-8188

## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the Substance or Mixture

#### **Classification (GHS-US)**

Skin Irrit. 2 H315

Eye Dam. 1 H318

Carc. 1A H350

STOT RE 1 H372

Full text of H-phrases: see section 16

### Label Elements

#### **GHS-US Labeling**

#### **Hazard Pictograms (GHS-US)**



#### **Signal Word (GHS-US)**

: Danger

#### **Hazard Statements (GHS-US)**

: H315 - Causes skin irritation.

H318 - Causes serious eye damage.

H350 - May cause cancer.

H372 - Causes damage to organs through prolonged or repeated exposure.

#### **Precautionary Statements (GHS-US)**

: P202 - Do not handle until all safety precautions have been read and understood.

P260 - Do not breathe dust.

P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.

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

P280 - Wear protective gloves, protective clothing, and eye protection.

P302+P352 - IF ON SKIN: Wash with plenty of water.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for 3-10 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

P362 - Take off contaminated clothing and wash before reuse.

P405 - Store locked up.

P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

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### Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. If involved in a fire or other decomposition occurs: corrosive, toxic, and acrid vapors may be released.

**Unknown Acute Toxicity (GHS-US)** Not available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Silica, amorphous	(CAS No) 7631-86-9	38.4 - 66	Not classified
Disodium carbonate	(CAS No) 497-19-8	1 - 5, 5 - 10, 10 - 20	Eye Irrit. 2A, H319
Water	(CAS No) 7732-18-5	8 - 20	Not classified
Diphosphoric acid, disodium salt	(CAS No) 7758-16-9	1 - 5, 5 - 10, 10 - 20	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319
Aluminium oxide (Al <sub>2</sub> O <sub>3</sub> ), hydrate	(CAS No) 1333-84-2	10.56 - 19	Not classified
Quartz	(CAS No) 14808-60-7	1 - 5	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372
Iron oxides	(CAS No) 1332-37-2	1.5 - 4.5	Not classified
Sodium oxide (Na <sub>2</sub> O)	(CAS No) 1313-59-3	0.9 - 1, 1 - 3.5	Skin Corr. 1B, H314 Eye Dam. 1, H318
Calcium oxide	(CAS No) 1305-78-8	0.3 - 1, 1 - 2.5	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335
Magnesium oxide (MgO)	(CAS No) 1309-48-4	0.48 - 2	Not classified
Silica, cristobalite	(CAS No) 14464-46-1	0.1 - 1	Carc. 1A, H350 STOT RE 1, H372
Tridymite	(CAS No) 15468-32-3	0.1 - 1	Carc. 1A, H350 STOT RE 1, H372
Potassium oxide	(CAS No) 12136-45-7	0.12 - 0.7	Skin Corr. 1C, H314 Eye Dam. 1, H318
Titanium dioxide	(CAS No) 13463-67-7	0.06 - 0.1, 0.1 - 0.2	Carc. 2, H351

Full text of H-phrases: see section 16

More than one of the ranges of concentration prescribed by the Controlled Products Regulations has been used where necessary, due to varying composition.

## SECTION 4: FIRST AID MEASURES

### Description of First Aid Measures

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

**Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

**Skin Contact:** Remove contaminated clothing. Flush with plenty of water for at least 3-10 minutes. Seek medical advice if irritation develops or persists. Wash contaminated clothing before reuse.

**Eye Contact:** Rinse cautiously with water for at least 3-10 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.

**Ingestion:** Do not induce vomiting. Rinse mouth. Seek medical attention if any problems arise.

### Most Important Symptoms and Effects Both Acute and Delayed

**General:** Causes serious eye damage. Causes skin irritation. May cause cancer. Repeated or prolonged inhalation may damage lungs.

**Inhalation:** May cause respiratory irritation. Repeated or prolonged exposure to respirable (airborne) crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss.

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**Skin Contact:** Causes skin irritation. Symptoms may include redness, pain, swelling, itching, burning, dryness, and dermatitis.

**Eye Contact:** Causes serious eye damage. Symptoms may include redness, pain, swelling, itching, burning, tearing, and blurred vision.

**Ingestion:** Ingestion is likely to be harmful or have adverse effects.

**Chronic Symptoms:** May cause cancer. May cause damage to organs through prolonged or repeated exposure. Repeated or prolonged exposure to respirable (airborne) crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss.

### **Indication of Any Immediate Medical Attention and Special Treatment Needed**

If you feel unwell, seek medical advice (show the label where possible).

## **SECTION 5: FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

**Suitable Extinguishing Media:** Alcohol-resistant foam. Dry chemical. Carbon dioxide. Use extinguishing media appropriate for surrounding fire.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### **Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Not flammable.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Reacts with water. Hazardous reactions may occur on contact with certain chemicals. Refer to incompatible materials.

### **Advice for Firefighters**

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** May release corrosive vapors. May liberate toxic gases.

### **Reference to Other Sections**

Refer to section 9 for flammability properties.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Avoid all contact with skin, eyes, or clothing. Avoid breathing dust.

#### **For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Use safe, appropriate measures.

#### **For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.

### **Environmental Precautions**

Prevent entry to sewers and public waters.

### **Methods and Material for Containment and Cleaning Up**

**For Containment:** Contain and collect as any solid.

**Methods for Cleaning Up:** Clear up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal.

### **Reference to Other Sections**

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

## **SECTION 7: HANDLING AND STORAGE**

### **Precautions for Safe Handling**

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and when leaving work.

### **Conditions for Safe Storage, Including Any Incompatibilities**

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Store in a dry, cool, and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures, and incompatible materials.

**Incompatible Materials:** Strong acids. Strong oxidizers. Water.

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### Specific End Use(s)

Geothermal well sealant.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government

Silica, amorphous (7631-86-9)		
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	6 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	20 mppcf (80mg/m <sup>3</sup> /%SiO <sub>2</sub> )
Nunavut	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (respirable mass) 5 mg/m <sup>3</sup> (total mass) 0.05 mg/m <sup>3</sup> (regulated under Silica flour-respirable mass) 0.15 mg/m <sup>3</sup> (regulated under Silica flour, total mass)
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (respirable mass) 5 mg/m <sup>3</sup> (total mass) 0.05 mg/m <sup>3</sup> (regulated under Silica flour-respirable mass) 0.15 mg/m <sup>3</sup> (total mass, regulated under Silica flour)
Yukon	OEL TWA (mg/m <sup>3</sup> )	300 particle/mL (as measured by Konimeter instrumentation) 20 mppcf (as measured by Impinger instrumentation) 2 mg/m <sup>3</sup> (respirable mass)
Iron oxides (1332-37-2)		
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> Iron Oxide fume
Nunavut	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
Nunavut	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (fume)
Northwest Territories	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (fume)
Magnesium oxide (MgO) (1309-48-4)		
Mexico	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (inhalable fraction)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (fume, total particulate)
USA IDLH	US IDLH (mg/m <sup>3</sup> )	750 mg/m <sup>3</sup> (fume)
Alberta	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
British Columbia	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (respirable dust and fume)
British Columbia	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume, inhalable) 3 mg/m <sup>3</sup> (respirable dust and fume)
Manitoba	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (inhalable fraction)
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
Newfoundland & Labrador	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (inhalable fraction)
Nova Scotia	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (inhalable fraction)
Nunavut	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (fume)
Nunavut	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
Northwest Territories	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (fume)
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
Ontario	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (inhalable)
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (inhalable fraction)
Québec	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
Saskatchewan	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (inhalable fraction)

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<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (inhalable fraction)
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
<b>Calcium oxide (1305-78-8)</b>		
<b>Mexico</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>USA OSHA</b>	OSHA PEL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	25 mg/m <sup>3</sup>
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Ontario</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Prince Edward Island</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL STEL (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Titanium dioxide (13463-67-7)</b>		
<b>Mexico</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Mexico</b>	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>USA ACGIH</b>	ACGIH chemical category	Not Classifiable as a Human Carcinogen
<b>USA OSHA</b>	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust)
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	5000 mg/m <sup>3</sup>
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust) 3 mg/m <sup>3</sup> (respirable fraction)
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (respirable mass) 10 mg/m <sup>3</sup> (total mass)
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (respirable mass) 10 mg/m <sup>3</sup> (total mass)
<b>Ontario</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Prince Edward Island</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (containing no Asbestos and <1% Crystalline silica-total dust)
<b>Saskatchewan</b>	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>

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<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	30 mppcf 10 mg/m <sup>3</sup>
<b>Silica, cristobalite (14464-46-1)</b>		
<b>Mexico</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable fraction)
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>USA ACGIH</b>	ACGIH chemical category	Suspected Human Carcinogen
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable dust)
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	25 mg/m <sup>3</sup> (respirable dust)
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable particulate)
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable)
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable fraction)
<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable mass) 0.15 mg/m <sup>3</sup> (total mass)
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable mass) 0.15 mg/m <sup>3</sup> (total mass)
<b>Ontario</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (designated substances regulation-respirable)
<b>Prince Edward Island</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable dust)
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable fraction)
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	150 particle/mL
<b>Tridymite (15468-32-3)</b>		
<b>Mexico</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable fraction)
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable dust)
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	25 mg/m <sup>3</sup> (respirable dust)
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable particulate)
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable fraction)
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable mass) 0.15 mg/m <sup>3</sup> (total mass)
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable mass) 0.15 mg/m <sup>3</sup> (total mass)
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable dust)
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	150 particle/mL
<b>Quartz (14808-60-7)</b>		
<b>Mexico</b>	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (respirable fraction)
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>USA ACGIH</b>	ACGIH chemical category	A2 - Suspected Human Carcinogen
<b>USA OSHA</b>	OSHA PEL (STEL) (mg/m <sup>3</sup> )	250 mppcf/%SiO <sub>2</sub> +5, 10mg/m <sup>3</sup> /%SiO <sub>2</sub> +2
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable dust)
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	50 mg/m <sup>3</sup> (respirable dust)
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable particulate)
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable)
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (respirable fraction)
<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (respirable mass) 0.3 mg/m <sup>3</sup> (total mass)
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (respirable mass)

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		0.3 mg/m <sup>3</sup> (total mass)
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.10 mg/m <sup>3</sup> (designated substances regulation-respirable)
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (respirable fraction)
Québec	VEMP (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (respirable dust)
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (respirable fraction)
Yukon	OEL TWA (mg/m <sup>3</sup> )	300 particle/mL

### Exposure Controls

**Appropriate Engineering Controls:** Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

**Personal Protective Equipment:** Protective goggles. Gloves. Protective clothing. Insufficient ventilation: wear respiratory protection.



**Materials for Protective Clothing:** Suitable materials with adequate protection.

**Hand Protection:** Wear protective gloves.

**Eye Protection:** Chemical safety goggles.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** Use a NIOSH-approved respirator whenever exposure may exceed established Occupational Exposure Limits.

**Environmental Exposure Controls:** Do not allow the product to be released into streams, rivers, or local sewer systems.

**Consumer Exposure Controls:** Do not eat, drink, or smoke during use

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Grey Powder
Odor	: Earthy
Odor Threshold	: Not available
pH	: 9 - 11
Evaporation Rate	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: Not available
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: Not available
Specific Gravity	: 2.65
Solubility	: Water: Insoluble
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge

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### SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Reacts with water. Hazardous reactions may occur on contact with certain chemicals. Refer to incompatible materials.

**Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials.

**Incompatible Materials:** Strong acids. Strong oxidizers. Water.

**Hazardous Decomposition Products:** The decomposition products are corrosive and hazardous to health.

### SECTION 11: TOXICOLOGICAL INFORMATION

#### Information on Toxicological Effects - Product

**Acute Toxicity:** Not classified

**LD50 and LC50 Data:** Not available

**Skin Corrosion/Irritation:** Causes skin irritation

**pH:** 9 - 11

**Serious Eye Damage/Irritation:** Causes serious eye damage

**pH:** 9 - 11

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Teratogenicity:** Not classified

**Carcinogenicity:** May cause cancer

**Specific Target Organ Toxicity (Repeated Exposure):** Causes damage to organs through prolonged or repeated exposure

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** May cause respiratory irritation. Repeated or prolonged exposure to respirable (airborne) crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss

**Symptoms/Injuries After Skin Contact:** Causes skin irritation. Symptoms may include redness, pain, swelling, itching, burning, dryness, and dermatitis

**Symptoms/Injuries After Eye Contact:** Causes serious eye damage. Symptoms may include redness, pain, swelling, itching, burning, tearing, and blurred vision

**Symptoms/Injuries After Ingestion:** Ingestion is likely to be harmful or have adverse effects

**Chronic Symptoms:** May cause cancer. May cause damage to organs through prolonged or repeated exposure. Repeated or prolonged exposure to respirable (airborne) crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss

#### Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:**

Silica, amorphous (7631-86-9)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat	> 2.2 mg/l (Exposure time: 1 h)
Calcium oxide (1305-78-8)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 2500 mg/kg
Titanium dioxide (13463-67-7)	
LD50 Oral Rat	> 10000 mg/kg
Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg



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<b>Diphosphoric acid, disodium salt (7758-16-9)</b>	
LD50 Oral Rat	1800 mg/kg
LC50 Inhalation Rat	> 0.58 mg/l/4h
<b>Disodium carbonate (497-19-8)</b>	
LD50 Oral Rat	4090 mg/kg
LC50 Inhalation Rat	2300 mg/m <sup>3</sup> (Exposure time: 2 h)
<b>Silica, amorphous (7631-86-9)</b>	
IARC Group	3
<b>Titanium dioxide (13463-67-7)</b>	
IARC Group	2B
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Silica, cristobalite (14464-46-1)</b>	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Tridymite (15468-32-3)</b>	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Quartz (14808-60-7)</b>	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

## SECTION 12: ECOLOGICAL INFORMATION

**Toxicity** No additional information available

<b>Silica, amorphous (7631-86-9)</b>	
LC50 Fish 1	5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 Daphnia 1	7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)
<b>Calcium oxide (1305-78-8)</b>	
LC50 Fish 1	1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])
<b>Disodium carbonate (497-19-8)</b>	
LC50 Fish 1	300 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC50 Daphnia 1	265 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	310 - 1220 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

**Persistence and Degradability** Not available

### Bioaccumulative Potential

<b>Silica, amorphous (7631-86-9)</b>	
BCF Fish 1	No bioaccumulation expected
<b>Calcium oxide (1305-78-8)</b>	
BCF Fish 1	No bioaccumulation
<b>Disodium carbonate (497-19-8)</b>	
BCF Fish 1	No bioaccumulation

**Mobility in Soil** Not available

### Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, territorial, provincial, and international regulations.

**Ecology – Waste Materials:** Avoid release into rivers, streams, and local sewer systems.

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### SECTION 14: TRANSPORT INFORMATION

<b>In Accordance with DOT</b>	Not regulated for transport
<b>In Accordance with IMDG</b>	Not regulated for transport
<b>In Accordance with IATA</b>	Not regulated for transport
<b>In Accordance with TDG</b>	Not regulated for transport

### SECTION 15: REGULATORY INFORMATION

#### US Federal Regulations

<b>Thermal Grout Select</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Immediate (acute) health hazard Delayed (chronic) health hazard
<b>Silica, amorphous (7631-86-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Iron oxides (1332-37-2)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Magnesium oxide (MgO) (1309-48-4)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Calcium oxide (1305-78-8)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>SARA Section 311/312 Hazard Classes</b>	Immediate (acute) health hazard
<b>Potassium oxide (12136-45-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>SARA Section 311/312 Hazard Classes</b>	Immediate (acute) health hazard
<b>Sodium oxide (Na<sub>2</sub>O) (1313-59-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>SARA Section 311/312 Hazard Classes</b>	Immediate (acute) health hazard
<b>Titanium dioxide (13463-67-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>SARA Section 311/312 Hazard Classes</b>	Delayed (chronic) health hazard
<b>Water (7732-18-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Silica, cristobalite (14464-46-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>SARA Section 311/312 Hazard Classes</b>	Delayed (chronic) health hazard
<b>Tridymite (15468-32-3)</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Delayed (chronic) health hazard
<b>Quartz (14808-60-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>SARA Section 311/312 Hazard Classes</b>	Immediate (acute) health hazard Delayed (chronic) health hazard
<b>Diphosphoric acid, disodium salt (7758-16-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Disodium carbonate (497-19-8)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

#### US State Regulations

<b>Titanium dioxide (13463-67-7)</b>	
<b>U.S. - California - Proposition 65 - Carcinogens List</b>	WARNING: This product contains chemicals known to the State of California to cause cancer.



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<b>Quartz (14808-60-7)</b>	
<b>U.S. - California - Proposition 65 - Carcinogens List</b>	WARNING: This product contains chemicals known to the State of California to cause cancer.
<b>Silica, amorphous (7631-86-9)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
<b>Magnesium oxide (MgO) (1309-48-4)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
<b>Calcium oxide (1305-78-8)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
<b>Potassium oxide (12136-45-7)</b>	
U.S. - New Jersey - Right to Know Hazardous Substance List	
<b>Titanium dioxide (13463-67-7)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
<b>Silica, cristobalite (14464-46-1)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
<b>Tridymite (15468-32-3)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
<b>Quartz (14808-60-7)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

### Canadian Regulations

<b>Thermal Grout Select</b>	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class E - Corrosive Material
 	
<b>Silica, amorphous (7631-86-9)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
<b>Aluminium oxide (Al2O3), hydrate (1333-84-2)</b>	
Listed on the Canadian DSL (Domestic Substances List)	

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WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
<b>Iron oxides (1332-37-2)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
<b>Magnesium oxide (MgO) (1309-48-4)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
<b>Calcium oxide (1305-78-8)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects
<b>Potassium oxide (12136-45-7)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class E - Corrosive Material
<b>Sodium oxide (Na<sub>2</sub>O) (1313-59-3)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class E - Corrosive Material
<b>Titanium dioxide (13463-67-7)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
<b>Water (7732-18-5)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
<b>Silica, cristobalite (14464-46-1)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
<b>Tridymite (15468-32-3)</b>	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
<b>Quartz (14808-60-7)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
<b>Diphosphoric acid, disodium salt (7758-16-9)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
<b>Disodium carbonate (497-19-8)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	

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WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision Date** : 06/27/2019

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

#### GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Carc. 1A	Carcinogenicity Category 1A
Carc. 2	Carcinogenicity Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Skin Corr. 1B	Skin corrosion/irritation Category 1B
Skin Corr. 1C	Skin corrosion/irritation Category 1C
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H350	May cause cancer
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure

#### Party Responsible for the Preparation of This Document

Black Hills Bentonite LLC  
307-265-3740

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

North America GHS US 2012 & WHMIS 2