C2: Portland Cement Based Concrete Products

SAFETY DATA SHEET
(Complies with OSHA 29 CFR 1910.1200)

SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30305

Emergency Telephone Number
(770) 216-9580

Information Telephone Number
(770) 216-9580

SDS C2
Revision: Jun-15

QUIKRETE® Product Name | Item #(s)
-------------------------|-----
Shotcrete              | 1228
Shotcrete – Coarse Wet Process | 1228-56
Shotcrete – Fine Wet Process | 1228-57
Shotcrete MS – Coarse Wet Process | 1228-58
Shotcrete MS – Fine Wet Process | 1228-59
Shotcrete MS            | 1229
Shotcrete MS Coarse     | 1229-88
Fibercrete              | 1009-00
Supersticke Special Grade I | NR861375

Product Use: Machine-applied Portland cement-based repair material.

SECTION II - HAZARD IDENTIFICATION

Hazard-determining components of labeling: Silica, Portland cement

2.1 Classification of the substance or mixture
Carcinogen – Category 1A
Skin Corrosion – Category 1B
Skin Sensitization – Category 1B
Specific Target Organ Toxicity Repeat Exposure – Category 1
Specific Target Organ Toxicity: Single Exposure – Category 3

2.2a Signal word DANGER!

2.2b Hazard Statements
May cause cancer through chronic inhalation
Causes severe skin burns and serious eye damage  
May cause an allergic skin reaction  
Causes damage to lungs through prolonged or repeated inhalation  
May cause respiratory irritation

2.2c Pictograms

2.2d Precautionary statements

Do not handle until all safety precautions have been read and understood.  
Wear impervious gloves, such as nitrile. Wear eye protection, and protective clothing.  
Do not eat, drink or smoke when using this product.  
Wash thoroughly after handling.  
Use only in a well-ventilated area.  
Do not breathe dust.

If swallowed:  Rinse mouth.  Do NOT induce vomiting.  
If inhaled:  Remove person to fresh air and keep comfortable for breathing.  
If in eyes:  Rinse cautiously with water for several minutes.  Remove contact lenses, if present and easy to do.  Continue rinsing.  
If on skin (or hair):  Remove immediately all contaminated clothing and wash before re-use.  Rinse skin or hair with water.  
If significant skin irritation or rash occurs: get medical advice or attention.

Immediately seek medical advice or attention if symptoms are significant or persist.

Store in a well-ventilated place.  Keep container tightly closed.  
Dispose of contents/containers in accordance with all regulations.

2.3 Additional Information  
Precautions must be observed because burns occur with little warning -- little heat is sensed.

2.3a HNOC – Hazards not otherwise classified:  Not applicable

2.3b Unknown Acute Toxicity:  None

2.3C WHMIS Classification
Class D2B – Skin/Eye Irritant  
Class D2A – Chronic Toxic Effects – Carcinogen 
Class E – Corrosive Material 

2.3d Label Elements According To WHMIS 
Hazard Symbols 

Signal Word 
DANGER! 

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION 

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>CAS No.</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand, Silica, Quartz</td>
<td>14808-60-7</td>
<td>40-70*</td>
</tr>
<tr>
<td>Portland Cement</td>
<td>65997 15 1</td>
<td>10-30*</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>07631-86-9</td>
<td>5-10*</td>
</tr>
</tbody>
</table>

*The concentrations ranges are provided due to batch-to-batch variability. 
None of the constituents of this material are of unknown toxicity. 

SECTION IV – FIRST AID MEASURES 

4.1 Description of the first-aid measures 
General information: 

After inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation. 

After skin contact: Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical advice or attention. Precautions must be observed because burns occur with little warning -- little heat is sensed. 

After eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 

After swallowing: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person. 

4.2 Most important symptoms/effects, acute and delayed
Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

4.3 Indication of immediate medical attention and special treatment needed: Immediately seek medical advice or attention if symptoms are significant or persist.

SECTION V - FIRE FIGHTING MEASURES

5.1 Flammability of the Product: Non-flammable and non-combustible
5.2 Suitable extinguishing agents: Treat for surrounding material
5.3 Special hazards arising from the substance or mixture: None
5.3a Products of Combustion: None
5.3b Explosion Hazards in Presence of Various Substances: Non-explosive in presence of shocks

SECTION VI – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Wear personal protective equipment (See section VIII). Keep unprotected persons away.

6.2 Methods and material for containment and cleaning up:
Do not allow to enter sewers/ surface or ground water. Dispose of unwanted materials and containers properly in accordance with all regulations.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

7.1 Handling
Precautions for safe handling: Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. Wear appropriate PPE (See section 8). Do not
mix with other chemical products, except as indicated by the manufacturer. Do not get in eyes, on skin or clothing. Good housekeeping is important to prevent accumulation of dust.

7.2 Storage
Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Not required. Further information about storage conditions: Keep out of the reach of children. Keep container tightly closed and prevent exposure to humidity. Do not allow water to contact the product until time of use to preserve product utility.

SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

8.1 Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>CAS No.</th>
<th>PEL (OSHA) mg/M³</th>
<th>TLV (ACGIH) mg/M³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica Sand, crystalline</td>
<td>14808-60-7</td>
<td>0.1</td>
<td>0.025 (resp)</td>
</tr>
<tr>
<td>Portland Cement</td>
<td>65997-15-1</td>
<td>5 (resp) 15 (total)</td>
<td>10 (resp)</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>07631-86-9</td>
<td>80 / %SiO₂</td>
<td>6 (TWA)</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls
Use ventilation adequate to keep exposures below recommended exposure limits.

8.3 General protective and hygienic measures
Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

8.3a Personal protective equipment

Protection of hands:
Wear gloves of adequate length to offer appropriate skin protection from splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Precautions must be observed because burns occur with little warning -- little heat is sensed.

Eye protection:
Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses).

Respiratory protection:
A NIOSH-approved dust mask or filtering face piece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used
under the direction of a trained health and safety professional, following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

General Information
Appearance
Form: Granular Solid
Color: Gray to gray-brown colored
Odor: None

pH-value at 20°C (68 °F): 13 (10%)
Boiling point/Boiling range: Not applicable
Flash point: Not applicable
Auto igniting: Product is not self-igniting
Vapor pressure at 21°C (70°F) Not available
Density at 25°C (77 °F): 2.6 to 3.15

Solubility in / Miscibility with
Water: Insoluble
VOC content: 0 g/L VOC

SECTION X – STABILITY AND REACTIVITY

10.1 Reactivity
No dangerous reaction known under conditions of normal use.

10.2 Chemical stability
Stable under normal storage conditions. Keep in dry storage.

10.3 Possibility of hazardous reaction
No dangerous reaction known under conditions of normal use.

10.4 Thermal decomposition / conditions to be avoided
No decomposition if used according to specifications.

10.5 Incompatible materials
Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires

10.6 Hazardous Decomposition or By-products
Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

SECTION XI – TOXICOLOGICAL INFORMATION

11.1 Exposure Routes: Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

11.2 Symptoms related to physical/chemical/toxicological characteristics:
Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: Harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

11.3 Delayed, immediate and chronic effects of short-term and long-term exposure

Short Term
- Skin Corrosion/Irritation: Causes severe skin burns.
- Serious Eye Damage/Irritation: Causes severe eye damage.
- Respiratory Sensitization: Not available
- Skin Sensitization: May cause an allergic skin reaction.
- Specific Target Organ Toxicity-Single Exposure: (Category 3) May cause respiratory irritation.
- Aspiration Hazard: Not available

Long Term
- Carcinogenicity: May cause cancer through chronic inhalation.
- Germ Cell Mutagenicity: Not available
- Reproductive Toxicity: Not available
- Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure
- Synergistic/Antagonistic Effects: Not available.

SECTION XII – ECOLOGICAL INFORMATION

12.1 Ecotoxicity
May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized.

12.2 Persistence and degradability
No further relevant information available.

12.3 Bioaccumulative potential:
No further relevant information available.

12.4 Mobility in soil
No further relevant information available.

12.5 Other Adverse Effects
No further relevant information available.

SECTION XIII – DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Method
The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302). Disposal must be made in accordance with local, state and federal regulations.

13.2 Other disposal considerations
Uncleaned packaging
Recommendation: Disposal must be made in accordance with local, state and federal regulations. Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION XIV – TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th></th>
<th>DOT (U.S.)</th>
<th>TDG (Canada)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-Number</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>Transport Hazard Class(es)</td>
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<td>Not Regulated</td>
</tr>
<tr>
<td>Packing Group (if applicable)</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
</tbody>
</table>

14.1 Environmental hazards:
Not Available

14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code
Not available

14.3 Special precautions for user
Do not handle until all safety precautions have been read and understood.

SECTION XV – OTHER REGULATORY INFORMATION
15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical

**Canada**

**WHMIS Classification:** Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and subject to the requirements of Health Canada’s Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

15.2 US Federal Information

**SARA 302/311/312/313 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.

**RCRA:** Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

**CERCLA:** Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

**Emergency Planning and Community Right to Know Act (SARA Title III):** Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

**FDA:** Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

**NTP:** Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

**OSHA Carcinogen:** Crystalline silica (quartz) is not listed.

15.3 State Right to Know Laws

**California Prop. 65 Components**

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**California Inhalation Reference Exposure Level (REL):** California established a chronic REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

**Massachusetts Toxic Use Reduction Act:** Silica, crystalline (respirable size, <10 microns) is “toxic” for purposes of the Massachusetts Toxic Use Reduction Act.

15.4 Global Inventories

**DSL** All components of this product are on the Canadian DSL list.
TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.

15.5 NFPA Ratings

SECTION XVI – OTHER INFORMATION

Last Updated: June 11, 2015
NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by The QUIKRETE® Companies
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End of SDS