



BNZ Materials, Inc.

# Material Safety Data Sheet

**BNZ<sup>®</sup> Aggregates 2337, 2500, 2645, 2653, 2855, and 2861**

## Section 1 Product and Company Identification

<b>Trade Name</b>	<b>BNZ<sup>®</sup> Aggregates 2337, 2500, 2645, 2653, 2855, and 2861</b>	<b>MSDS No.</b>	BNZ 50-101
<b>Product</b>	Milled insulating fire brick	<b>Revision No.</b>	01
<b>Manufacturer</b>	BNZ Materials, Inc.	<b>Issue Date</b>	July 15, 2009
<b>Address</b>	6901 S. Pierce St, Suite 260 Littleton, Colorado 80128 U.S.A.	<b>Technical Support</b>	800-688-8677
		<b>CHEMTREC</b>	800-424-9300
		<i>Outside the US Call</i>	703-741-5500

## Section 2 Composition / Information on Ingredients

Chemical Name	CAS No.	Weight (%)	TLV (ACGIH)	PEL (OSHA)
Ceramic matrix	Proprietary	60 – 98	3 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Product dust contains:				
Crystalline silica (quartz)	14808-60-7	0.3 – 31	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
Crystalline silica (cristobalite)	14464-46-1	0.1 – 9	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>

*Note: (1) TLV and PEL values are 8-hour time-weighted averages for respirable dust, unless otherwise specified. (2) The TLV values are for particulate matter containing no asbestos and <1% crystalline silica. (3) \* = Total Dust.*

## Section 3 Hazards Identification

### EMERGENCY OVERVIEW

This product contains crystalline silica, a chronic health hazard by inhalation. Prolonged exposure to crystalline silica may cause permanent and irreversible lung damage, including silicosis, and increase the risk of lung cancer, kidney and liver damage. Silicosis is a rapidly progressive, non-cancerous lung disease that is often fatal. Symptoms include shortness of breath, cough, fever, weight-loss and chest pain. Cigarette smoking may increase the risk of silicosis, bronchitis, pneumoconiosis, and lung cancer in persons also exposed to crystalline silica.

Crystalline silica, inhaled in the form of quartz and/or cristobalite, has been classified by the International Agency for Research on Cancer (IARC) as a Group 1 - known human carcinogen, and by the Association of Governmental Industrial Hygienists (ACGIH) as a Group A2 - suspected human carcinogen.

**NFPA Rating**      **Health** 1      **Fire** 0      **Reactivity** 0      **Special Hazard** 0

**HMIS Rating**      **Health** 2      **Fire** 0      **Reactivity** 0      **PPE Code** E

**Hazard Category**      Acute (Immediate) Health Hazard; Chronic (Delayed) Health Hazard

**Routes of Entry**      Lungs and respiratory system via respirable dust (inhalation), and eyes via coarse dust and particulates.

**Target Organs**      Lungs, respiratory system, and eyes.

**Section 3 Hazards Identification****Signs and Symptoms of Overexposure**

<b>Inhalation</b>	Respirable airborne particulates may cause transitory irritation to the lungs and upper respiratory system. Symptoms of overexposure may include shortness of breath, coughing and chest pain.
<b>Skin Contact</b>	Long-term exposure to product dust may cause dryness and/or irritation.
<b>Eye Contact</b>	Product dust is a mechanical irritant which may cause moderate to severe eye irritation and dryness.
<b>Ingestion</b>	Non-hazardous when ingested. May cause mild irritation to the gastro-intestinal (GI) tract and mouth if excessive quantities are ingested.
<b>Medical Conditions Aggravated by Exposure</b>	Medical conditions which may be aggravated by exposure to this product include, dry skin and/or dermatitis, and pre-existing chronic upper respiratory and lung diseases such as bronchitis, emphysema and asthma.
<b>Carcinogenicity</b>	Crystalline silica, inhaled in the form of quarts and/or cristobalite, has been classified by the International Agency for Research on Cancer (IARC) as a Group 1 - known human carcinogen, and by the Association of Governmental Industrial Hygienists (ACGIH) as a Group A2 - suspected human carcinogen.

**Section 4 First Aid Measures**

<b>Inhalation</b>	Remove to fresh air. Drink plenty of water, and blow nose to evacuate remaining dust. If coughing and irritation develop seek medical attention.
<b>Eye Contact</b>	Flush with large amounts of water until irritation subsides, at least 15 minutes. Seek medical attention if irritation persists.
<b>Skin Contact</b>	Perform normal, good hygiene practices. Wash with mild soap and warm water after each exposure.
<b>Ingestion</b>	Emergency first-aid procedures are not normally required following ingestion. However, this product may cause temporary irritation to the gastro-intestinal (GI) tract and mouth if excessive quantities are ingested.

**Section 5 Fire Fighting Measures**

**NFPA Classification** Not classified by the National Fire Protection Agency (NFPA).

**Flammable Properties and Explosive Limits**

<b>Flash Point</b>	Non-flammable.
<b>Autoignition</b>	N/A
<b>UFL / UEL</b>	N/A
<b>LFL / LEL</b>	N/A
<b>Extinguishing Media</b>	Dry chemical, carbon dioxide (CO <sub>2</sub> ), water fog, or foam.
<b>Fire and Explosion Hazard</b>	This product is non-flammable and does not pose a significant fire or explosion hazard.

**Section 5 Fire Fighting Measures**

**Special Firefighting Equipment** No special firefighting equipment is necessary. Use extinguishing media appropriate for the surrounding fire. Firefighters should wear protective clothing and use a self-contained breathing apparatus (SCBA).

**Hazardous Products of Combustion** None known.

**Section 6 Accidental Release Measures**

**Personal Precautions** If dusty conditions exist (i.e., during mixing or clean-up), wear a NIOSH-approved dust mask, such as the 3M 8511 N-95 or equivalent.

**Environmental Precautions** Environmental precautions are not normally required. This product does not pose a significant threat to the environment.

**Clean-Up Procedures** Before clean-up, wet down dust and debris with a fine water spray to suppress airborne particulates. Pick up, shovel or sweep material into an approved waste disposal container. Use equipment fitted with a high-efficiency particulate (HEPA) filter to vacuum clean dust.

**Section 7 Handling and Storage**

**Handling Precautions** Bricks do not present a hazard in their intact state. Assure proper respiratory protection during cutting, milling or sanding, or if the dust potential exceeds the established TLV/PEL. Refer to *Exposure Controls and Personal Protection* in *Section 8* for further information.

**Storage Requirements** Store in a cool, dry, well ventilated area away from food and beverages. Keep away from reactive materials and always separate materials by hazard class. Refer to *Stability and Reactivity* in *Section 10* for incompatibility information and conditions to avoid.

**Section 8 Exposure Controls and Personal Protection**

**Engineering Controls** Maintain sufficient mechanical or natural ventilation to assure dust concentrations remain below the established TLV / PEL. Use local exhaust if necessary. Power equipment should be fitted with a properly designed dust collection device.

**Respiratory Protection** Wear a NIOSH-approved dust mask (i.e., 3M 8511 N-95 or equivalent) to limit exposure to product dust. Respiratory selection should be based on the level of exposure as measured by dust sampling. Concentrations that exceed the recommended dust mask limits may require a higher level of protection, such as a half-mask respirator with appropriate dust filters.



**Eye Protection** Wear safety glasses with side shields or goggles or face-shield to protect eyes from dust and airborne particulates when mixing product. Selection and use of eye protection should comply with ANSI Z87.1-1-1989 and applicable OSHA standards.



**Section 8 Exposure Controls and Personal Protection**

**Skin Protection** Under normal conditions, protective gloves and a clean body covering are sufficient. Direct skin contact with dry product can be further minimized by wearing long-sleeved shirts and long trousers.

**Section 9 Physical and Chemical Properties**

<b>Physical Form</b>	Milled aggregate	<b>Odor</b>	No characteristic odor
<b>Color</b>	Off-white to tan	<b>Odor Threshold</b>	N/A
<b>Specific Gravity</b>	0.5 – 1.17	<b>pH</b>	N/A
<b>Boiling Point</b>	N/A	<b>Density @ 68° F (20° C)</b>	N/A
<b>Melting Point</b>	> 2300° F (1260° C)	<b>Vapor Pressure</b>	N/A
<b>Evaporation Rate</b>	N/A	<b>% Volatile by Vol. / Wt.</b>	N/A
<b>Solubility in Water</b>	Slight	<b>Viscosity</b>	N/A

**Section 10 Stability and Reactivity**

<b>Stability</b>	This product is stable under normal conditions of use.
<b>Incompatibility</b>	Crystalline silica (quartz) is incompatible with hydrofluoric acid, fluorine, chloride trifluoride and oxygen difluoride.
<b>Conditions to Avoid</b>	Avoid strong acids and ammonium salts. Contact with powerful oxidizing agents (i.e., fluorine, chlorine trifluoride) may present a fire hazard.
<b>Hazardous Polymerization</b>	Will not occur.
<b>Hazardous Products of Decomposition</b>	Crystalline silica will dissolve in hydrofluoric acid and produce silicon tetrafluoride, a corrosive gas.

**Section 11 Toxicological Information**

<b>Toxicological Hazards</b>	Crystalline silica: Long-term overexposure to respirable crystalline silica may cause permanent and irreversible lung damage, including silicosis, and increase the risk of lung cancer, kidney and liver damage. Silicosis is a rapidly progressive, non-cancerous lung disease that is often fatal.
<b>Teratogenic Effects</b>	No additional information is available.
<b>Mutagenic Effects</b>	No additional information is available.

**Section 12 Ecological Information**

<b>Ecotoxicity</b>	Most ingredients in this product are naturally occurring minerals and, unless contaminated in service, are not hazardous to the environment.
<b>BOD5 / COD</b>	No additional information is available.

**Section 12 Ecological Information**

**Products of Biodegradation** No additional information is available.

**Section 13 Disposal Considerations**

**Disposal Method** May be disposed in an approved landfill in accordance with local, state and federal regulations. If this product has become contaminated in service, place in an approved hazardous waste container. Seal and properly label the container, and send to a Transportation, Storage and Disposal (TSD) facility via an approved waste hauler.

**Section 14 Transportation Information****U.S. Department of Transportation (DOT)**

<b>Shipping Name</b>	Not a U.S. Department of Transportation (DOT) controlled substance.		
<b>Hazard Class</b>	N/A	<b>UN / NA Number</b>	N/A
<b>Label / Placard</b>	N/A	<b>Packing Group</b>	N/A

**International Dangerous Goods Information**

<b>ICAO</b>	Not regulated as a dangerous code according to the International Civil Aviation Organization (ICAO) technical instructions.
<b>IMO / IMDG</b>	Not regulated as a dangerous code according to the International Maritime Organization's (IMO) dangerous goods code.
<b>TDG / TDGA</b>	Not regulated as a dangerous code according to the Canadian Transportation of Dangerous Goods (TDG) Act.

**Special Provisions** This product does not require special transport provisions.

**Section 15 Regulatory Information**

<b>TSCA Inventory</b>	All ingredients are listed on the Toxic Substances Control Act (TSCA) inventory.
<b>DSL (Canada)</b>	All ingredients are listed, or exempt from inclusion, on the Canadian Domestic Substances List (DSL).
<b>CERCLA Reportable Quantity (RQ)</b>	Does not contain any hazardous substances in excess of the CERCLA de minimis reportable quantity.

**Superfund Amendments and Reauthorization Act (SARA) Title III**

**Section 302 / 304** This product contains the following Extremely Hazardous Substances (EHS) as defined and listed under SARA Title III, Sections 302 and 304:

<u>Chemical Name</u>	<u>Sec. 302 TPQ</u>	<u>Section 304 RQ</u>
None		

**Section 15 Regulatory Information**

**Section 311 / 312** This product meets the following EPA Hazard Categories as defined and listed under SARA Title III, Sections 311 and 312:

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No
Pressure Hazard	No

**Section 313** This product contains the following substances subject to the reporting requirements of SARA Title III, Section 313:

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Weight (%)</u>
None		

**Other Regulatory Classifications**

**California Proposition 65** This product contains the following substances known to the State of California to cause cancer: Crystalline silica

**State RTK Lists** Crystalline silica (quartz), (CAS No.: 14808-60-7): MA, MN, NJ, PA, RI

**WHMIS (Canada)** Class D-2A: Material causing other toxic effects. Very Toxic – Chronic



**DSCL (Europe)** R48/20: Harmful – Danger of serious damage to health by prolonged exposure through inhalation  
 R36: Irritating to the eyes  
 R39: Danger of serious irreversible effects  
 R45: May cause cancer

**Section 16 Other Information**

<b>Reason for Issue</b>	WHMIS update and format revision	<b>Issue Date</b>	July 15, 2009
<b>Prepared By</b>	CCG, Inc.	<b>Supersedes Date</b>	All previous
<b>Revision History</b>	None		

**DISCLAIMER**

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