



BNZ Materials, Inc.

Material Safety Data Sheet

BNZ[®] Insulating Fire Brick (All Grades)

Section 1 Product and Company Identification

Trade Name	BNZ[®] Insulating Fire Brick (All Grades)	MSDS No.	BNZ 10-101
Product	Insulating fire brick	Revision No.	01
Manufacturer	BNZ Materials, Inc.	Issue Date	July 15, 2009
Address	6901 S. Pierce St, Suite 260 Littleton, Colorado 80128 U.S.A.	Technical Support	800-688-8677
		CHEMTREC	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 ³	5 mg/m ³
Crystalline silica (quartz)	14808-60-7	0.1 – 20	0.05 mg/m ³	0.05 mg/m ³
Crystalline silica (cristobalite)	14464-46-1	0 – 20	0.05 mg/m ³	0.05 mg/m ³

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**

Inhalation	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.
Skin Contact	Long-term exposure to product dust may cause dryness and/or irritation.
Eye Contact	Product dust is a mechanical irritant which may cause moderate to severe eye irritation and dryness.
Ingestion	Non-hazardous when ingested. May cause mild irritation to the gastro-intestinal (GI) tract and mouth if excessive quantities are ingested.
Medical Conditions Aggravated by Exposure	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.
Carcinogenicity	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

Inhalation	Remove to fresh air. Drink plenty of water, and blow nose to evacuate remaining dust. If coughing and irritation develop seek medical attention.
Eye Contact	Flush with large amounts of water until irritation subsides, at least 15 minutes. Seek medical attention if irritation persists.
Skin Contact	Perform normal, good hygiene practices. Wash with mild soap and warm water after each exposure.
Ingestion	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

Flash Point	Non-flammable.
Autoignition	N/A
UFL / UEL	N/A
LFL / LEL	N/A
Extinguishing Media	Dry chemical, carbon dioxide (CO ₂), water fog, or foam.
Fire and Explosion Hazard	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	During initial exposure to service temperatures, smoke may be emitted which can cause transitory irritation to the lungs and upper respiratory system.

Section 6 Accidental Release Measures

Personal Precautions	If dusty conditions exist (i.e., during cutting, sanding or milling), 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 <i>Exposure Controls and Personal Protection</i> in <i>Section 8</i> 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 <i>Stability and Reactivity</i> in <i>Section 10</i> 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 used during cutting, sanding or milling 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, goggles or face-shield when cutting, milling or sanding to protect eyes from dust and airborne particulates. Selection and use of eye protection should comply with ANSI Z87.1-1-1989 and applicable OSHA standards.
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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 dust and debris can be further minimized by wearing long-sleeved shirts and long trousers.

**Section 9 Physical and Chemical Properties**

Physical Form	Solid blocks of various size	Odor	No characteristic odor
Color	Off-white to gray	Odor Threshold	N/A
Specific Gravity	1.5 – 1.7	pH	N/A
Boiling Point	N/A	Density @ 68° F (20° C)	N/A
Melting Point	> 2300° F (1260° C)	Vapor Pressure	N/A
Evaporation Rate	N/A	% Volatile by Vol. / Wt.	N/A
Solubility in Water	Insoluble	Viscosity	N/A

Section 10 Stability and Reactivity

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

Section 11 Toxicological Information

Toxicological Hazards	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. Cigarette smoking may increase the risk of silicosis, bronchitis, pneumoconiosis, and lung cancer in persons also exposed to crystalline silica.
Teratogenic Effects	No additional information is available.
Mutagenic Effects	No additional information is available.

Section 12 Ecological Information

Ecotoxicity	Most ingredients in this product are naturally occurring minerals and, unless contaminated in service, are not hazardous to the environment.
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Section 12 Ecological Information**BOD5 / COD** No additional information is available.**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)****Shipping Name** Not a U.S. Department of Transportation (DOT) controlled substance.**Hazard Class** N/A **UN / NA Number** N/A**Label / Placard** N/A **Packing Group** N/A**International Dangerous Goods Information****ICAO** Not regulated as a dangerous code according to the International Civil Aviation Organization (ICAO) technical instructions.**IMO / IMDG** Not regulated as a dangerous code according to the International Maritime Organization's (IMO) dangerous goods code.**TDG / TDGA** 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****TSCA Inventory** All ingredients are listed on the Toxic Substances Control Act (TSCA) inventory.**DSL (Canada)** All ingredients are listed, or exempt from inclusion, on the Canadian Domestic Substances List (DSL).**CERCLA Reportable Quantity (RQ)** 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
Crystalline silica (cristobalite), (CAS No.: 14464-46-1): 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

Reason for Issue	WHMIS update and format revision	Issue Date	July 7, 2009
Prepared By	CCG, Inc.	Supersedes Date	All previous
Revision History	None		

DISCLAIMER

As of the date of this document, BNZ Materials, Inc. (BNZ) believes the information contained herein to be accurate and reliable, and is provide in order to comply with applicable Federal and State laws. This document in intended as a guide for the safe handling, storage and use of this material under normal conditions of use. No representation, warranty or guarantee, either express of implied, is intended or given. BNZ does not accept liability for any loss, injury or damage resulting from the use of this product.