



Material Safety Data Sheet

Prepared in compliance with OSHA 29 CFR 1910.1200, ANSI Z400.1 and WHMIS regulations

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade Name 508 Cement
Synonym(s) Insulating and finishing cement
Product Use Refractory cement

MSDS No. BNZ 40-104
Rev. No. 02
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Manufacturer BNZ Materials, Inc.
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For Chemical Spills and
 24-hr. Emergency Information
CHEMTREC 1-800-424-9300
Outside the US Call 1-703-741-5500

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name | CAS No. | Conc. (%) | ACGIH-TLV | OSHA-PEL |
|-----------------------------|------------|-----------|-------------------------|--|
| Vermiculite | 1318-00-9 | 40 – 65 | 3 mg/m ³ | 5 mg/m ³ |
| Clay | Various | 15 – 30 | 2 mg/m ³ | 5 mg/m ³ |
| Pyrophyllite | 12269-78-2 | 5 – 10 | 3 mg/m ³ | 3 mg/m ³ |
| Fibrous glass filament | 65997-17-3 | 2 – 6 | 15 mg/m ³ | 15 mg/m ³ |
| Sodium nitrite | 7632-00-0 | 0 – 2 | None | None |
| Product dust contains: | | | | |
| Crystalline silica (quartz) | 14808-60-7 | 0.1 – 20 | 0.025 mg/m ³ | 10 mg/m ³ /(%SiO ₂ +2) |

Notes: (1) TLV and PEL values are 8-hour time-weighted averages for respirable dust, unless otherwise specified. (2) * = total dust

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Contains crystalline silica, a chronic health hazard by inhalation. Prolonged exposure to crystalline silica dust may cause permanent and irreversible lung damage, including silicosis, and increased 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.

Crystalline silica, inhaled in the form of quartz and/or cristobalite, has been classified as a known human carcinogen (Group 1) by the International Agency for Research on Cancer (IARC), and as a suspected human carcinogen (Group 2A) by the Association of Governmental Industrial Hygienists (ACGIH).

NFPA Rating Health 1 Fire 0 Reactivity 0 Special Hazard 0

HMIS Rating Health 1 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.

SECTION 3 HAZARDS IDENTIFICATION

Target Organs Lungs, respiratory system, and eyes.

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 aggravated by exposure to this product include dry skin, dermatitis, and pre-existing chronic upper respiratory and lung diseases (i.e., bronchitis, emphysema and asthma). Cigarette smoking may increase the risk of silicosis, bronchitis, pneumoconiosis and lung cancer in persons exposed to crystalline silica.

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

Flammable Properties and Explosive Limits

Flash Point Non-flammable. **Upper Flam. Limit** Not applicable.

Autoignition Not applicable. **Lower Flam. Limit** Not applicable.

Extinguishing Media Dry chemical, carbon dioxide (CO₂), water fog, or foam.

Fire and Explosion Hazard This product is non-flammable and does not pose a significant fire or explosion hazard.

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.

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).

SECTION 6 ACCIDENTAL RELEASE MEASURES

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| 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

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| Handling Precautions | 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

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| 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. |



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| Eye Protection | Wear safety glasses with side shields or goggles or face-shield to protect eyes from dust and airborne particulates when mixing dry cement. Selection and use of eye protection should comply with ANSI Z87.1-1-1989 and applicable OSHA standards. |
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| 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. |
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SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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| Physical Form | Powder with small fibrous nodules | Odor | No characteristic odor |
| Color | Off-white to gray | Odor Threshold | Not Available. |
| Specific Gravity | 0.2 – 0.4 | pH | Not Available. |
| Boiling Point | Not Available. | Density @ 68° F (20° C) | Not Available. |
| Melting Point | Not Available. | Vapor Pressure | Not Available. |
| Evaporation Rate | Not Available. | % Volatile by Vol. / Wt. | Not Available. |
| Solubility in Water | Slight | Viscosity | Not Available. |

SECTION 10 STABILITY AND REACTIVITY

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| Stability | This product is stable under normal conditions of use. |
| Incompatibility | Crystalline silica 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 | 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

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| Toxicological Hazards | This product contains 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. |
| Carcinogenicity | Crystalline silica, inhaled in the form of quartz and/or cristobalite, has been classified as a known human carcinogen (Group 1) by the International Agency for Research on Cancer (IARC), and as a suspected human carcinogen (Group 2A) by the Association of Governmental Industrial Hygienists (ACGIH). |
| Sensitization | This product is not considered a sensitization hazard. |
| Teratogenic Effects | This product is not considered a teratogenic hazard. |
| Mutagenic Effects | This product is not considered a mutagenic hazard. |
| Reproductive System Toxicity | This product is not considered hazardous. Reproductive system effects are not expected to occur. |

SECTION 12 ECOLOGICAL INFORMATION

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| Ecotoxicity | Unless contaminated in service, this product is not considered hazardous to aquatic life. |
| BOD5 / COD | 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)**

Shipping Name Not a U.S. Department of Transportation (DOT) controlled substance.
Hazard Class Not applicable. **UN/NA Number** Not applicable.
Label / Placard Not applicable. **Packing Group** Not applicable.

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.

California Prop. 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

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 does not contain any Extremely Hazardous Substances (EHS) as defined and listed under SARA Title III, Sections 302 and 304.

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

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| <u>Acute Hazard</u> | Yes |
| <u>Chronic Hazard</u> | Yes |
| <u>Fire Hazard</u> | No |
| <u>Reactivity Hazard</u> | No |
| <u>Pressure Hazard</u> | No |

Section 313 This product does not contain any substances subject to the reporting requirements of SARA Title III, Section 313.

SECTION 15 REGULATORY INFORMATION**Other Regulatory Classifications**

DSL (Canada) All ingredients are listed, or exempt from inclusion, on the Canadian Domestic Substances List (DSL).

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



This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16 OTHER INFORMATION

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| Reason for Issue | WHMIS update | Issue Date | June 11, 2012 |
| Prepared By | Compliance Consulting Group (CCG) EH&S Services for BNZ Materials, Inc. | Supersedes Date | July 15, 2008 |
| Revision History | <p>June 11, 2012: WHMIS CPR compliance statement added to Section 15; new categories added to Section 11; Emergency overview text modified; ACGIH-TLV for crystalline silica changed to 0.025 mg/m3.</p> <p>July 15, 2008: WHMIS update; format revision; MSDS numbering convention.</p> | | |

DISCLAIMER

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