



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 Blazecrete® 2300 ARG, Blazecrete® 3000 G
Synonym(s) Castable refractory gunning mix
Product Use Castables and gunning mix

MSDS No. BNZ 30-101
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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
Calcium aluminate cement	65997-16-2	10 – 40	3 mg/m ³	5 mg/m ³
Clay	1332-58-7	5 – 15	2 mg/m ³	5 mg/m ³
Amorphous silica (fused silica)	60676-86-0	6 – 12	0.1 mg/m ³	0.1 mg/m ³
Milled aggregate (mullite, anorthite)	Proprietary	0 – 50	10 mg/m ³	Not est.
Calcined kaolin clay	1302-93-8	0 – 40	2 mg/m ³	5 mg/m ³
Aluminum oxide	1344-28-1	0 – 20	1 mg/m ³	5 mg/m ³
Perlite	93763-70-3	0 – 3	3 mg/m ³	5 mg/m ³
Product dust contains:				
Crystalline silica (cristobalite)	14464-46-1	< 6	0.025 mg/m ³	5 mg/m ³ /(%SiO ₂ +2)
Crystalline silica (quartz)	14808-60-7	< 15	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 2 Fire 0 Reactivity 0 PPE Code E

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

SECTION 3 HAZARDS IDENTIFICATION

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.

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 None known.

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).

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 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, 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.



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	Granular powder	Odor	No characteristic odor
Color	Off-white to gray	Odor Threshold	Not available.
Specific Gravity	0.9 – 2.4	pH	Not available.
Boiling Point	Not available.	Density @ 68° F (20° C)	Not available.
Melting Point	> 2000° F (1093° C)	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

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

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.

SECTION 11 TOXICOLOGICAL INFORMATION

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

Ecotoxicity	Unless contaminated in service, this product is not considered hazardous to aquatic life.
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.
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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 Crystalline silica (cristobalite), (CAS No.: 14464-46-1): 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 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:

<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.

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

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	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. July 15, 2008: WHMIS update; format revision; MSDS numbering convention.		

DISCLAIMER

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