



# 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

<b>Trade Name</b>	<b>CS85®</b>	<b>MSDS No.</b>	BNZ 20-301
<b>Synonym(s)</b>	Calcium silicate board	<b>Revision No.</b>	02
<b>Product Use</b>	Industrial heat processing and fire protection	<b>Issue Date</b>	June 11, 2012
<b>Manufacturer</b>	BNZ Materials, Inc. 6901 S. Pierce St, Suite 260 Littleton, CO 80128 U.S.A.	<u>For Chemical Spills and 24-hr. Emergency Information</u> <b>CHEMTREC</b> 1-800-424-9300 <b>Outside the US Call</b> 1-703-741-5500	
<b>Telephone No.</b>	1-800-999-0890		

## SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Conc. (%)	ACGIH-TLV	OSHA-PEL
Calcium silicate	1344-95-2	60 – 75	10 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Calcium metasilicate (wollastonite)	13983-17-0	20 – 35	3 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Natural organic fibers	65996-61-4	1 – 3	None	None
Crystalline silica (quartz)	14808-60-7	0.1 – 2	0.025 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> /(%SiO <sub>2</sub> +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.

**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 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

<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

#### Flammable Properties and Explosive Limits

<b>Flash Point</b>	Non-flammable.	<b>Upper Flam. Limit</b>	Not applicable.
<b>Autoignition</b>	Not applicable.	<b>Lower Flam. Limit</b>	Not applicable.
<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.		
<b>Hazardous Products of Combustion</b>	During initial exposure to service temperatures, smoke may be emitted which can cause transitory irritation to the lungs and upper respiratory system.		
<b>Special Firefighting Equipment</b>	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**

<b>Personal Precautions</b>	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.
<b>Environmental Precautions</b>	Environmental precautions are not normally required. This product does not pose a significant threat to the environment.
<b>Clean-Up Procedures</b>	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**

<b>Handling Precautions</b>	Calcium silicate boards 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.
<b>Storage Requirements</b>	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**

<b>Engineering Controls</b>	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.
<b>Respiratory Protection</b>	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.



<b>Eye Protection</b>	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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<b>Skin Protection</b>	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**

<b>Physical Form</b>	Solid board	<b>Odor</b>	Not available.
<b>Color</b>	Gray	<b>Odor Threshold</b>	Not available.
<b>Specific Gravity</b>	Approx 1.4	<b>pH</b>	Not available.
<b>Boiling Point</b>	Not available.	<b>Density @ 68° C 20° C)</b>	Not available.
<b>Melting Point</b>	> 2300° F (1260° C)	<b>Vapor Pressure</b>	Not available.
<b>Evaporation Rate</b>	Not available.	<b>% Volatile by Vol. / Wt.</b>	Not available.
<b>Solubility in Water</b>	Insoluble	<b>Viscosity</b>	Not available.

**SECTION 10 STABILITY AND REACTIVITY**

<b>Stability</b>	This product is stable under normal conditions of use.
<b>Incompatibility</b>	Crystalline silica 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>	Hazardous polymerization 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>	<p><u>Wollastonite</u>: Studies of wollastonite mill and mine workers suggest that long-term cumulative exposure to wollastonite dust may cause decreased pulmonary function and/or mild industrial bronchitis, particularly in workers who smoke.</p> <p><u>Crystalline silica</u>: 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.</p>
<b>Carcinogenicity</b>	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).
<b>Sensitization</b>	This product is not considered a sensitization hazard.
<b>Teratogenic Effects</b>	This product is not considered a teratogenic hazard.
<b>Mutagenic Effects</b>	This product is not considered a mutagenic hazard.
<b>Reproductive System Toxicity</b>	This product is not considered hazardous. Reproductive system effects are not expected to occur.

**SECTION 12 ECOLOGICAL INFORMATION**

<b>Ecotoxicity</b>	Unless contaminated in service, this product is not considered hazardous to aquatic life.
<b>BOD5 / COD</b>	No additional information is available.
<b>Products of Biodegradation</b>	No additional information is available.

**SECTION 13 DISPOSAL CONSIDERATIONS**

<b>Disposal Method</b>	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)**

<b>Shipping Name</b>	Not a U.S. Department of Transportation (DOT) controlled substance.		
<b>Hazard Class</b>	Not applicable.	<b>UN/NA Number</b>	Not applicable.
<b>Label / Placard</b>	Not applicable.	<b>Packing Group</b>	Not applicable.
<b>Special Provisions</b>	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>California Prop. 65</b>	This product contains the following substances known to the State of California to cause cancer: Crystalline silica
<b>State RTK Lists</b>	Crystalline silica (quartz), (CAS No.: 14808-60-7): MA, MN, NJ, PA, RI
<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 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:

<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 15 REGULATORY INFORMATION**

**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**

<b>Reason for Issue</b>	WHMIS update	<b>Issue Date</b>	June 11, 2012
<b>Prepared By</b>	Compliance Consulting Group (CCG) EH&S Services for BNZ Materials, Inc.	<b>Supersedes Date</b>	July 15, 2008
<b>Revision History</b>	<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**

BNZ Materials, Inc. (BNZ) believes the information contained in this Materials Safety Data Sheet (MSDS) to be accurate and reliable as of the date of issue, and is provided in good faith as a service to our customers and to comply with applicable Federal and State laws. This document is 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 or implied, is intended or given. BNZ does not accept liability for any loss, injury or damage resulting from the use of this product.