BNZ Materials, Inc.

SAFETY DATA SHEET

Section 1. Identification

GHS product identifier: **Marinite® I, M, P, IL, ML, FD**

Other means Of identification: None

Product type: Calcium Silicate Board

SDS No.: BNZ-20-105

Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: Industrial heat processing and fire protection

Uses advised against: None known

Supplier:

BNZ Materials, Inc.
6901 S. Pierce St., Suite 260
Littleton, CO 80128

Technical Support: 800-955-8650
www.bnzmaterials.com

Emergency telephone Number: CHEMTREC - 800-424-9300 or 703-741-5970 (Outside USA and Canada – collect calls accepted). 24 Hour service.

Section 2. Hazards Identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture: CARCINGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (STOT) SINGLE EXPOSURE – Category 3
SPECIFIC TARGET ORGAN TOXICITY (STOT) REPEATED EXPOSURE – Category 1

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 0%

GHS label elements
Hazard pictograms :

Signal word : Danger

Hazard statements :
May cause cancer.
Causes damage to lungs.
May cause mechanical irritation to skin and lungs.

Precautionary statements

Prevention : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, protective clothing, eye protection, face protection
Avoid breathing dust.
Use only outdoors or in a well-ventilated area.
Wash thoroughly after handling.
Do not eat, drink, or smoke while using this product.

Response : If exposed, concerned, or feel unwell: Get medical advice/attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.

Storage : Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental Label None

Hazards not otherwise Classified None known

Section 3. Composition/Information on Ingredients

Substance or mixture: Mixture

Other means of: identification None

CAS number/other identifiers
CAS number : Mixture
Product code : None

Ingredient name	CAS number	%
Calcium Silicate	1344-95-2	66 – 75
Calcium metasilicate (wollastonite)	13983-17-0	20 – 25
Natural organic fibers	65996-61-4	4 – 8
Fiber glass filament	65997-17-3	0 – 8
Crystalline Silica (quartz)	14808-60-7	0.1 – 2

Any concentration shown as a range it to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First Aid Measures

Description of necessary first aid measures

Inhalation: Remove victim to fresh air.
Drink plenty of water and blow nose to evacuate remaining dust.
If coughing or irritation persist seek medical attention.

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.
Check for and remove any contact lenses.
Rinse for at least 15 minutes.
If irritation persists seek medical attention.

Skin contact: Gently wash with plenty of soap and water after each exposure.
If skin becomes irritated and irritation persists seek medical attention.

Ingestion If prolonged irritation to gastrointestinal tract or mouth persist seek medical attention.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation : Respirable airborne particles may cause temporary irritation to the lungs and upper respiratory system.

Skin contact: Prolonged exposure may cause dryness or irritation to the skin.

Eye contact: Will cause mechanical irritation to the eyes. May cause moderate to severe eye irritation and dryness.

Ingestion: May cause irritation to gastrointestinal tract or mouth.

Over-exposure signs/symptoms

Inhalation: Adverse symptoms may include the following:
Irritation, shortness of breath, chest pain

Eye contact: Adverse symptoms may include the following:
Irritation
Dryness

Skin contact: Adverse symptoms may include the following:
Irritation
Dryness

Ingestion: Adverse symptoms may include the following:
Irritation
Stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Medical conditions which may be aggravated by exposure include dry skin, dermatitis, and pre-existing lung conditions such as bronchitis, emphysema, and asthma. Cigarette smoking may increase the risk of silicosis, bronchitis, pneumoconiosis, and lung cancer in persons exposed to crystalline silica.

Specific treatments: No specific treatment.

Protection of first-aiders:. No action shall be taken involving any personal risk or without suitable training
Wear a suitable NIOSH-approved dust mask.
Wash contaminated clothing before re-use.

Section 5. Firefighting Measures

Specific hazards arising from the chemical: None known other than those represented elsewhere in this SDS.

Hazardous thermal decomposition products Decomposition products may include the following materials:

- Calcium Silicates
- Crystalline Silica

Special protective actions for firefighters Material will not burn.
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.
No action shall be taken involving any personal risk or without suitable training.
No special firefighting equipment is necessary.

Special protective equipment for fire-fighters Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency Personnel No action shall be taken involving any personal risk or without suitable training.
Evacuate surrounding areas.
Keep unnecessary and unprotected personnel from entering.
Do not touch or walk through spilled material.
Provide adequate ventilation.
Wear appropriate respirator when ventilation is inadequate.
Put on appropriate personal protective equipment.

For emergency responders If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersion of material and runoff and contact with soil, waterways, drains and sewers.
This material does not pose a significant threat to the environment

Methods and materials for containment and cleaning up

Small spill

Stop leak if without risk.
Move containers from spill area.
Wet down dust and debris with a fine water spray to minimize dust
Pick up, shovel, or sweep material into waste disposal container.
Any sweeper or vacuum should be equipped with High Efficiency Particulate (HEPA) filter.
Dispose of using a licensed waste disposal contractor.

Large spill

Stop leak if without risk.
Move containers from spill area.
Wet down dust and debris with a fine water spray to minimize dust
Pick up, shovel, or sweep material into waste disposal container.
Any sweeper or vacuum should be equipped with High Efficiency Particulate (HEPA) filter.
Dispose of using a licensed waste disposal contractor.
Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and Storage

Protective measures for safe handling

Protective Measures:

Calcium silicate boards do not present a hazard in their intact state.
Minimize dust generation during cutting, milling, or grinding.
Use appropriate respiratory protection if dust is present above the established exposure limits.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Workers should wash hands and face before eating, drinking and smoking.
Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
During initial exposure to service temperatures, smoke may be emitted which can cause transitory irritation to the lungs and upper respiratory system.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.
Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink.

Section 8. Exposure Controls/Personal Protection

Control parameters

Occupational exposure limits:

US Occupational Safety and Health Administration Permissible Exposure Limit (OSHA PEL):

Irritant (Nuisance) Dust (all components except crystalline silica):	5 mg/m^3
Crystalline Silica (Respirable)	$\frac{10\ mg/m^3}{\%SiO^2 + 2}$
Crystalline Silica (Total Dust)	$\frac{30\ mg/m^3}{\%SiO^2 + 2}$

(See 29 CFR 1910.1000 Table Z-3)

American Conference of Governmental and Industrial Hygienists Threshold Limit Value (ACGIH TLV®):

Calcium silicate	10 mg/m^3
Calcium metasilicate (wollastonite)	3 mg/m^3
Crystalline Silica	0.025 mg/m^3

Note: TLV® and PEL values are for eight hour exposures, unless noted.

Appropriate Engineering controls: If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Power equipment should be fitted with a properly designed dust collection device.

Environmental Exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene Measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing.
Wash contaminated clothing before reusing.

Ensure that eyewash stations and safety showers are close to the workstation location.

Skin Protection

Respiratory Protection: Wear a NIOSH-approved dust mask to limit exposure to product dust.
Higher dust levels may require use of a half or full mask respirator with dust filters.
Use local exhaust if necessary to lower dust levels.
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye/Face Protection: Wear safety glasses with side shields or goggles complying with an approved standard to avoid exposure to dust.

Hand Protection: Protective gloves complying with an approved standard should be worn when handling chemical products if a risk assessment indicates this is necessary.
Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties.
It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.
In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product

Other Skin Protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 9. Physical and Chemical Properties

Appearance	
Physical State	Solid boards
Color	Off-white to gray
Odor	None
Odor Threshold	Not Applicable
pH	Not Applicable
Melting Point	> 2300 °F (1260 °C)
Boiling Point	N/A
Flash Point	None
Burning Time	Not applicable
Specific Gravity	0.7 – 1.0
Burning Rate	Not applicable
Evaporation Rate	0 (butyl acetate = 1)
Flammability (solid, gas)	Not applicable
Lower Explosive (flammable) Limit	Not available
Upper Explosive (flammable) Limit	Not available

Vapor Pressure	Not applicable
Vapor Density	Not applicable
Relative Density	Not available
Solubility	Not available
Solubility in Water	Slight
Partition coefficient: n-octanol/water	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
SADT	Not available
Viscosity	Not available

Section 10. Stability and Reactivity

Reactivity: This product is normally not reactive.

Chemical stability: The product is stable under normal conditions of use.

Possibility of Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to Avoid: Avoid strong acids and ammonium salts. Contact with strong oxidizing agents (such as fluorine, chlorine trifluroride) may present a fire hazard.

Incompatible Materials: Reactive or incompatible with the following materials:
Hydrofluoric acid, fluorine, chlorine trifluoride, oxygen difluoride

Hazardous Decomposition Products Crystalline silica will dissolve in hydrofluoric acid and produce silicon tetrafluoride, a corrosive gas.

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
None Known	--	--	--	--
	--	--	--	--

Irritation/Corrosion: Not available

Sensitization Not available

Mutagenicity Not available

Carcinogenicity: Not available

Reproductive toxicity Not available

Teratogenicity Not available

Specific target organ toxicity (single exposure) Not available

Specific target organ toxicity (repeated exposure) Not available

Aspiration hazard Not available

Information on the likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : Respirable airborne particles may cause temporary irritation to the lungs and upper respiratory system.

Skin contact: Prolonged exposure may cause dryness or irritation to the skin.

Eye contact: Will cause mechanical irritation to the eyes. May cause moderate to severe eye irritation and dryness.

Ingestion: May cause irritation to gastrointestinal tract or mouth.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: Adverse symptoms may include the following:
Irritation

Eye contact: Adverse symptoms may include the following:
Irritation
Dryness

Skin contact: Adverse symptoms may include the following:
Irritation
Dryness

Ingestion: Adverse symptoms may include the following:
Irritation
Stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed effects : Not available.

Potential chronic health effects: Not available

General: No other known significant effects or critical hazards.

Carcinogenicity: Crystalline silica – long term overexposure 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.

IARC (International Agency for Research on Cancer)	014808-60-7 Silica dust, crystalline, in the form of quartz or cristobalite - Group 1 (Sup 7, 68,100C, 2012)
National Toxicology Program (NTP) Report on Carcinogens	Silica, Crystalline (Respirable Size) - Known To Be Human Carcinogen
OSHA:	Crystalline Silica classified as a Category 1A Carcinogen

Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates

Not available.

Section 12. Ecological Information

Toxicity Not available.

Persistence and Degradability: Not available.

Bioaccumulative Potential: Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}): Not available

Other adverse effects: Most of the ingredients in this product are naturally occurring minerals, and, unless contaminated in service, are not hazardous to the environment.

Section 13. Disposal Considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible.
Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.
Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
This material and its container must be disposed of in a safe way.
Care should be taken when handling emptied containers that have not been cleaned or rinsed out.
Empty containers or liners may retain some product residues.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport Information

	DOT Classification	TDG Classification	IMDG	IATA
UN Number	Not Regulated	Not Regulated	Not Regulated	Not Regulated

Special precautions for user:

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage

Section 15. Regulatory Information

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not applicable
United States inventory (TSCA 8b): All components are listed.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not listed

Clean Air Act Section 602 Class I Substances: Not listed

Clean Air Act Section 602 Class II Substances: Not listed

DEA List I Chemicals (Precursor Chemicals): Not listed

DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304
Composition/information on ingredients: No components are listed.

SARA 304 RQ: Not applicable.

SARA 311/312 Classification :

	Immediate (acute) Health Hazard	Delayed (chronic) Health Hazard	Fire Hazard	Reactivity Hazard	Sudden Release of Pressure
	Yes	Yes	No	No	No

Section 313 listed: No
Listed material/compound: Not Applicable

State regulations
New York: Crystalline Silica
New Jersey: Crystalline Silica
Pennsylvania: Crystalline Silica
Massachusetts: Crystalline Silica
Rhode Island: Crystalline Silica
California Prop. 65: This product contains the following substances known to the State of California to cause cancer: Crystalline silica

International Lists

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

Canada inventory (WHMIS): Listed. 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.

Australia inventory (AICS):	Not determined.
China inventory (IECSC):	Not determined.
Japan inventory:	Not determined.
Korea inventory:	Not determined.
Malaysia Inventory (EHS Register):	Not determined.
New Zealand Inventory of Chemicals (NZIoC):	Not determined.
Philippines inventory (PICCS):	Not determined.
Taiwan inventory (CSNN):	Not determined.

Chemical Weapons Convention List Schedule I Chemicals:	Not listed
Chemical Weapons Convention List Schedule II Chemicals:	Not listed
Chemical Weapons Convention List Schedule III Chemicals:	Not listed

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 side effects.
R45: May cause cancer.

Section 16. Other Information

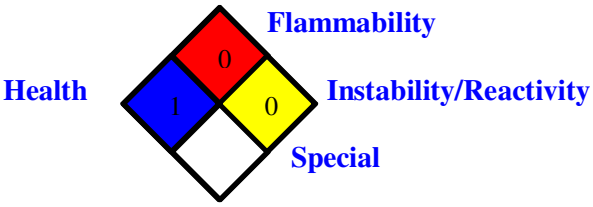
Hazardous Material Information System (U.S.A.)

Health	1
Flammability	0
Physical Hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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History

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Prepared by:	T Square Associates, Inc.
	www.tsquare.us