



SAFETY DATA SHEET

Following Regulation 1910.1200

SDS Number: 128 Date of first issue: 11 March 2015 Date of last revision: 21 February 2022

1 - Identification of product

a - Product identifier used on the label

Tradenames: Firemaster FireBarrier 100, Firemaster FireBarrier 135, Kaocrete A, Kaocrete B, Kaogun PH, Kaolite 20S

b - Other means of identification

Portland Cement Containing Products

c - Recommended use of the chemical and restrictions on use

High Temperature Thermal Insulation ; Spray-on Fire Protection

d - Name, address, and telephone number

Morgan Advanced Materials P. O. Box 923; Dept. 300 Augusta, GA 30903-0923 Telephone: 706-796-4200

e - Emergency Phone Number

For Product Stewardship and Emergency Information:

Hotline - 1-800-722-5681

Fax - 706-560-4054

For additional SDSs and to confirm this is the most current SDS for the product, visit our web page www.morganthermalceramics.com or send a request to MT.NorthAmerica@morganplc.com

2 - Hazard Identification

a - Classification of the chemical in accordance with paragraph (d) of §1910.1200

The classification was based on U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) 2012:

Crystalline silica, inhaled in the form of quartz or cristobalite in occupation sources:

Carcinogenicity - category 1A

Portland cement:

Skin Corrosion/Irritation - 1B

Eye Damage - category 1

Acute Toxicity inhalation - Category 3

Acute Toxicity Dermal - Category 4

Respiratory Sensitization - category 1

Skin sensitization - Category 1

b - Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

Hazard Pictograms



Signal Words

Danger

Hazard Statements

May cause cancer by inhalation.

Causes severe skin burn and eye damage.

May cause allergy or asthma symptoms or breathing difficulty if inhaled.

May cause an allergic skin reaction.

Precaution Statements

Do not handle until all safety instructions have been read and understood.

Use respiratory protection and other PPE as required; see Section 8 of the Safety Data Sheet.

Wear protective gloves, protective clothing, eye protection and face protection.

If concerned about exposure, get medical advice.

Store in a manner to minimize airborne dust.

Dispose of waste in accordance with local, state and federal regulations.

Minimize exposure to airborne dust.

Emergency Overview

c - Describe any hazards not otherwise classified that have been identified during the classification process

d - Mixture Rule

Dust samples from these products have not been tested for their specific toxicity. The hazard classification was based on the corrosive characteristic of Portland cement and the carcinogenicity of respiratory crystalline silica.

3 - Composition / Information On Ingredients

a - Composition table

<u>COMPONENTS</u>	<u>CAS NUMBER</u>	<u>% BY WEIGHT</u>
Clay, Aluminum Silicate	1332-58-7	16 - 48
Calcium Sulfate ⁽¹⁾	13397-24-5	0 to 15
Mullite	1302-93-8	35 - 50
Crystalline Silica	14808-60-7 or 14464-46-1	1 to 15
Portland Cement	65997-16-2	15-35
Aluminum Oxide ⁽¹⁾	1344-28-1	0 to 16
Calcium Carbonate ⁽²⁾	1317-65-3	30-40
Aluminum Trihydrate ⁽²⁾	21645-51-2	5-8

Note: (1) in FireBarrier 135 only; (2) in FireBarrier 100 only

b - Common Name

d - Impurities and Stabilizing Additives

None.

4 - First-Aid measures

a - Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion

Eyes

Immediately flush eyes thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

Skin

Wash skin with cool water and pH-neutral soap or a mild detergent intended for use on skin. Seek medical treatment in all cases of prolonged exposure to wet cement, cement mixtures, liquids from fresh cement products, or prolonged wet skin exposure to the dry cement.

Respiratory Tract

Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. (Inhalation of gross amounts of Portland cement requires immediate medical attention.)

Gastrointestinal

Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

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

If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or doctor/physician. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.

5 - Fire-fighting measures

a - Suitable (and unsuitable) extinguishing media and

c - Special Protective Equipment and Precautions for Firefighters

NFPA Codes: Flammability: 0 Health: 1 Reactivity: 0 Special: 0

b - Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

None

6 - Accidental Release Measures

a - Personal precautions, protective equipment, and emergency procedures

Wear appropriate personal protective equipment as described in Section 8.

b - Methods and materials for containment and cleaning up

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Scrape up wet material and place in an appropriate container. Allow the material to dry before disposal.

Do not attempt to wash Portland cement down sewers or storm drains.

7 - Handling and storage

a - Precautions for safe handling

Limit the use of power tools unless in conjunction with local exhaust. Use hand tools whenever possible. Frequently clean the work area with HEPA filtered vacuum or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up.

b - Conditions for safe storage, including any incompatibilities

Store in a manner to minimize airborne dust.

c - empty containers

Product packaging may contain residue. Do not reuse.

8 - Risk Management Measures / Exposures Controls / Personal Protection

a - OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available

EXPOSURE GUIDELINES			
MAJOR COMPONENT	OSHA PEL	ACGIH TLV	MANUFACTURER'S REG
Crystalline Silica	0.05 mg/m ³ (1)	0.025 mg/m ³ (respirable dust)	NONE
Aluminum Oxide	15 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)	10 mg/m ³	NONE
Silica, Amorphous	(80 mg/m ³ ÷ % SiO ₂) or 20 mppcf	2mg/m ³	NONE
Calcium Sulfate	15 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)	2mg/m ³	NONE
Portland Cement	15 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)	1 mg/m ³ (respirable dust)	NONE
Caicium Carbonate	15 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)	NONE	NONE

(1) OSHA new Permissible Exposure Limit (PEL) for respirable crystalline silica is 0.05 mg/m³ (8-hr TWA), an Action Level (AL) of 0.025 mg/m³ (8-hr TWA), together with associated ancillary requirements listed under General Industry and Maritime Standard (29 CFR 1910.1053) and Construction Standards (29 CFR 1910.1153).

OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL)

Ontario Canada OEL - Silica, Crystalline: Quartz/Tripoli = 0.1 mg/m³ (R); Cristobalite = 0.05 mg/m³ (R). Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility and comply with local regulations. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection.

b - Appropriate Engineering Controls

Use engineering controls, such as ventilation and dust collection devices, to reduce airborne particulate concentrations to the lowest attainable level.

c - Individual protection measures, such as personal protective equipment

PPE - Skin

Where prolonged exposure to unhardened concrete products might occur, wear impervious clothing to eliminate skin contact. Where required, wear boots that are impervious to water to eliminate foot and ankle exposure. If clothing becomes saturated with wet concrete, it should be removed and replaced with clean dry clothing.

PPE - Eye

When engaged in activities where wet concrete or its dry ingredients could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with Portland cement or fresh cement products.

PPE – Respiratory

When it is not possible or feasible to reduce airborne crystalline silica or particulate levels below the appropriate PEL/OEL through engineering controls, or until they are installed, employees are encouraged to use good work practices together with respiratory protection. Before providing respirators to employees (especially negative pressure type), employers should 1) monitor for airborne crystalline silica and/or dust concentrations using appropriate NIOSH analytical methods and select respiratory protection based upon the results of that monitoring, 2) have the workers evaluated by a physician to determine the workers' ability to wear respirators, and 3) implement respiratory protection training programs. Use NIOSH-certified particulate respirators (42 CFR 84), in compliance with OSHA Respiratory Protection Standard 29 CFR 1910.134 and 29 CFR 1926.103, for the particular hazard or airborne concentrations to be encountered in the work environment. For the most current information on respirator selection, contact your supplier.

9 - Physical and chemical properties

a - Appearance	Coarse or fine aggregate with powder matrix in various colors
b - Odor	Not applicable
c - Odor Threshold	Not applicable
e- pH	Not Determined.
d - Melting Point	Up to 3400°F (refer to specific data sheet)
f- Initial Boiling Point/Range	Not applicable
g- Flashpoint	Not applicable
h - Evaporation Rate	Not applicable
i - Flammability	Product is not flammable.
j - Upper/Lower Flammability or Explosive Limits	Not applicable
k - VAPOR PRESSURE	Not applicable
l - VAPOR DENSITY	Not applicable
m - Solubility	Miscible
n - Relative Density	0.9 - 3.1 (check on specific product data sheet)
o - Partition Coefficient: n-Octanol/water	Not determined
p - Auto-ignition temperature	Not combustible.
q - Decomposition Temperature	Not applicable
r - Viscosity	Not applicable

10 - Stability and Reactivity

a - Reactivity

Stable under conditions of normal use.

b - Chemical Stability

This is a stable material.

c - Possibility of Hazardous Reaction

Will not occur.

d - Conditions to Avoid

Unintentional contact with water.

e - Incompatible Materials

Wet Portland cement is alkaline. As such it is incompatible with acids, ammonium salts and aluminum metal.

f - Hazardous decomposition products

Will not spontaneously occur. Adding water results in hydration and produces (caustic) calcium hydroxide.

11 - Toxicological information

a - TOXICOKINETICS, METABOLISM AND DISTRIBUTION

b - Acute Toxicity

Portland Cement

Potential Health Effects - Skin Corrosion Property/Stimulativeness

Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing skin contact, particularly contact with wet cement. Exposed persons may not feel discomfort until hours after the exposure has ended and significant injury has occurred. Exposure during the handling or mixing of the dry ingredients in Portland cement may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Exposure to wet concrete may cause more severe skin effects including thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (caustic) chemical burns.

Potential Health Effects - Eye Critical Damage/ Stimulativeness

Exposure to airborne dust during the handling or mixing of the dry ingredients in Portland cement may cause immediate or delayed irritation or inflammation. Eye contact by splashes of wet concrete may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid (see Section 4) and medical attention to prevent significant damage to the eye.

Potential Health Effects - Ingestion

Although inadvertent ingestion of small quantities of wet concrete or its dry ingredients are not known to be harmful, accidental ingestion of larger quantities can be harmful and requires immediate medical attention.

Potential Health Effects - Inhalation

Exposure to Portland cement in excess of the applicable TLV or PEL may cause or aggravate other lung conditions. Exposure to Portland cement may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

Respiratory Organs Sensitization/Skin Sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Some individuals may exhibit an allergic response upon exposure to wet concrete. The response may appear in a variety of forms ranging from a mild rash to severe skin ulcers. Persons already sensitized may react to their first contact with the product. Other persons may first experience this effect after years of contact with Portland cement products.

c - Epidemiology

No studies have been undertaken on humans exposed to these products in occupational environments.

Crystalline silica

Exposure to crystalline silica can cause silicosis, and exacerbate pulmonary tuberculosis and bronchitis. IARC (Monograph vol. 68, 1997) concluded that "crystalline silica from occupational sources inhaled in the form of quartz or cristobalite is carcinogenic to humans (Group 1)", and noted that "carcinogenicity in humans was not detected in all industrial circumstances studied" and "may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity".

d - Toxicology

Dust samples from these products have not been tested. The following health effects are provided for reference to key ingredient in these products:

Crystalline silica:

There is sufficient evidence of carcinogenicity of respirable silica in experimental animals (IARC Monograph; Vol. 42; 1987 and IARC Monograph; Vol. 68; 1997). Inhalation and intratracheal installation of crystalline silica in rats caused lung cancer; however, studies in other species such as mice and hamsters caused no lung cancer. Crystalline silica also caused fibrosis in rats and hamsters in several inhalation and intratracheal installation studies.

Aluminum Oxide:

Aluminum metal dust has been shown to present a minimal health hazard, according to results from the McIntyre Foundation's 27-year study of aluminum oxide dust (Patty's Industrial Hygiene and Toxicology, 3rd rev. ed.) No deleterious lung or systemic effects were observed as a result of exposure to aluminum metal dust having a particle size of 1.2 µm at calculated concentrations equivalent to 2 mg/m over an 8-hour work shift. Even much higher concentrations (not further specified) over 10 or 20 minute periods produced no adverse effects (ACGIH).

Silica, amorphous:

Toxic effects described in animals from single inhalation exposures of amorphous silica include upper respiratory irritation, lung congestion, bronchitis, and emphysema. Repeated inhalation exposures at concentration of 50 or 150 mg/m³ produced increased lung weights and lung changes. No progressive pulmonary fibrosis was seen and the observed lung changes were reversible. No adverse effects were observed in this study at 10 mg/m³. No animal test reports are available to define the carcinogenic, mutagenic, or reproductive effects.

International Agency for Research on Cancer and National Toxicology Program

IARC, in 1997, Monograph v.68, classified crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to human (group 1).

The Ninth Annual Report on Carcinogens (2000), prepared by the National Toxicology Program (NTP), classified silica, crystalline (respirable size), as a substance known to be a human carcinogen.

12 - Ecological information

These products are not reported to have any ecotoxicity effects.

c - Bioaccumulative potential

No information for the product.

d - Mobility in soil

No information for the product.

e - Other adverse effects (such as hazardous to the ozone layer

No information available for the product.

13 - Disposal Considerations

Waste Management and Disposal

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations. Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information

This product, as manufactured, is not classified as a listed or characteristic hazardous waste according to U. S. Federal regulations (40 CFR 261). Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under U. S. Federal regulations, it is the waste generator's responsibility to properly characterize a waste material, to determine if it is a "hazardous" waste. Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

14 - Transport information

a - UN number.

Hazard Class: Not Regulated United Nations (UN) Number: Not Applicable
Labels: Not Applicable North America (NA) Number: Not Applicable
Placards: Not Applicable Bill of Lading: Product Name

b - UN proper shipping name

Not applicable.

c - Transport hazard class(es)

This material is not regulated hazardous material for transportation.

d - Packing group, if applicable

Not applicable.

e - Environmental hazards (e.g., Marine pollutant (Yes/No))

No.

f - Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

Not regulated.

g - Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Not applicable.

International

INTERNATIONAL
Canadian TDG Hazard Class & PIN: Not regulated
Not classified as dangerous goods under ADR (road), RID (train), IATA (air) or IMDG (ship).

15 - Regulatory information

15.1 - United States Regulations

UNITED STATES REGULATIONS

SARA Title III: This product does not contain any substances reportable under Sections 302, 304, 313 (40 CFR 372). Sections 311 and 312 apply.

OSHA: Comply with Hazard Communication Standards 29 CFR 1910.1200 and 29 CFR 1926.59 and Respiratory Protection Standards 29 CFR 1910.134 and 29 CFR 1926.103.

TSCA: All substances contained in this product are listed, if required, in the TSCA Chemical Inventory.

California: "Silica, crystalline (airborne particles of respirable size)" is listed in Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986 as a chemical known to the State of California to cause cancer.

Other States: Crystalline silica products are not known to be regulated by states other than California; however, state and local OSHA and EPA regulations may apply to these products. Contact your local agency if in doubt.

15.2 - International Regulations

INTERNATIONAL REGULATIONS

Canadian WHMIS: Class D-2A Materials Causing Other Toxic Effects.

Canadian EPA: All substances in this product are listed, as required, on the Domestic Substance List (DSL).

16 - Other Information

initial statement

Devitrification

Product Stewardship Program

HMIS HAZARD RATING

HMIS Acute Health:1

HMIS Flammable: 0

HMIS Reactivity: 0

HMIS Personal Protective: To be supplied by user depending upon use

NFPA Unusual Hazards: None

TECHNICAL DATA SHEETS

Revision Summary

Revision date updated.

MSDS prepared by

SDS Prepared By: MORGAN THERMAL CERAMICS ENVIRONMENTAL, HEALTH & SAFETY DEPARTMENT

Disclaimer

The information presented herein is presented in good faith and believed to be accurate as of the effective date of this Safety Data Sheet. Employers may use this SDS to supplement other information gathered by them in their efforts to assure the health and safety of their employees and the proper use of the product. This summary of the relevant data reflects professional judgment; employers should note that information perceived to be less relevant has not been included in this SDS. Therefore, given the summary nature of this document, Morgan Thermal Ceramics does not extend any warranty (expressed or implied), assume any responsibility, or make any representation regarding the completeness of this information or its suitability for the purposes envisioned by the user.