SAFETY DATA SHEET

1. Identification

Product identifier **Floor Hardener**

Other means of identification None

Recommended use Industrial use.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company	New Frontier Materials
Manufacturer	New Frontier Materials
Address	2300 Creve Coeur Mill Road, Maryland Heights MO 63043
Telephone	(314) 473-3434
E-mail	contact@newfrontiermaterials.com
Emergency phone number	(314) 473-3617

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Sensitization, skin	Category 1B
Carcinogenicity	Category 1A
Specific Target Organ Toxicity,	
Single Exposure	Category 3 respiratory tract irritation
Repeated Exposure	Category 2 (Lung)

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

May cause cancer.

May cause respiratory irritation.

Causes damage to organs (lung) through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.

Response If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Remove contaminated clothing and wash before reuse.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing. Immediately call a poison center/doctor.

Storage Store in a well-ventilated, dry location.

Disposal Dispose of in accordance with local/regional/federal/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

Skin contact with wet cement may cause irritation, dermatitis or burns.

Respirable Crystalline Silica (RCS) may cause cancer. Trap rock is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). In its natural bulk state, trap rock is not a known health hazard. Trap rock may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Trap Rock	None	70-80
Crystalline Silica (Quartz)	14808-60-7	> 1
Portland Cement	65997-15-1	20-30

4. First-aid measures

Inhalation Dust: Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact Immediately flush with plenty of water for at least 15 minutes. Hold eyelids apart. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Do not induce vomiting. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Eye contact with cement may cause minor injuries as irritation and pain and potentially irreversible injuries as burns potentially irreversible.

Cement may have an irritating effect on wet skin. After a prolonged exposure may cause dermatitis or severe burns.

Dusts may irritate the respiratory tract, skin and eyes. Inhaling dust may cause discomfort in the chest, shortness of breath, and coughing. Prolonged inhalation may cause chronic health effects. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica liberated from this product can cause silicosis and may cause cancer.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Trap rock and cement are not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical No unusual fire or explosion hazards noted. Not a combustible dust.

Special protective equipment and precautions for firefighters Use protective equipment appropriate for surrounding materials.

Fire-fighting equipment/instructions No specific precautions.

Specific methods Contact with powerful oxidizing agents may cause fire and/or explosions (see Section 10 of SDS).

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Wear appropriate protective equipment and clothing during clean-up of materials that contain or may liberate dust.

Methods and materials for containment and cleaning up Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. This product is miscible in water. Collect dust using a vacuum cleaner equipped with HEPA filter.

Environmental precautions Avoid discharge into drains or water courses.

7. Handling and storage

Precautions for safe handling Respirable crystalline silica-containing dust may be generated during processing, handling, and storage. Use personal protection and controls identified in Section 8 of this SDS as appropriate.

Conditions for safe storage, including any incompatibilities Do not store near food, beverages, or smoking materials.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Portland cement (CAS 65997-15-1)	PEL	5 mg/m³ 15 mg/m³	Respirable fraction Total dust
Particulates not otherwise classified (CAS SEQ250)	PEL	5 mg/m³ 15 mg/m³	Respirable fraction Total dust

U.S. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Portland cement (CAS 65997-15-1)	TWA	50 mppcf	
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m³ 0.1 mg/m³ 2.4 mppcf	Total dust Respirable Respirable
Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)	TWA	0.15 mg/m³ 0.05 mg/m³	Total dust Respirable
Particulates not otherwise classified (CAS SEQ250)	TWA	5 mg/m³ 15 mg/m³	Respirable fraction Total dust

US. ACGIH Threshold Limit Values®

Components	Type	Value	Form
Portland cement (CAS 65997-15-1)	TWA	1 mg/m³	Respirable fraction
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.025 mg/m³	Respirable fraction

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Portland cement (CAS 65997-15-1)	TWA	5 mg/m³	Respirable
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	10 mg/m³ 0.05 mg/m³	Total Respirable dust

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour indoors) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection Use gloves to provide hand protection from abrasion. In dusty conditions, use long-sleeve shirts. Wash work clothes after each use.

Respiratory protection When handling or performing work with hardener that produces dust or respirable crystalline silica in excess of applicable exposure limits, wear a NIOSH-approved respirator that is properly fitted and is in good condition. Respirators must be used in accordance with all applicable workplace regulations.

Thermal hazards Not anticipated.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Angular particles ranging in size from powder to several millimeters.

Color	Charcoal grey.
Odor	None.
Odor threshold	Not applicable.
pH	Not applicable.
Melting point/freezing point	Not applicable.
Initial boiling point and boiling range	Not applicable.
Flash point	Non-combustible.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	Not applicable.
Flammability limit – upper (%)	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	2.6 – 2.65 @ 73.4 ºF (23 ºC).
Solubility	
Solubility (water)	0.1 – 1 % @ 68 ºF (20 ºC) Slightly soluble in water.
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not explosive.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Avoid dust formation.
Incompatible materials	Powerful oxidizers. Fluorine. Acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Likely routes of exposure	Inhalation and contact, leading to mechanical abrasion of the eyes and skin.

Symptoms related to the physical, chemical, and toxicological characteristics

Inhalation

Dust may irritate the nose, throat, and respiratory tract. Discomfort in the chest. Shortness of breath. Coughing. Sneezing.

Symptoms of silicosis may include shortness of breath, difficulty breathing with or without exertion, coughing, diminished work capacity, diminished chest expansion, reduction of lung volume, right heart enlargement and/or failure. Silicosis increases the risk of contracting pulmonary tuberculosis.

Eye contact

Irritation. Tearing. Redness. Stinging or burning feeling. Swelling with blurred vision.

Skin contact

Irritation. Redness. Itching or burning feeling. Swelling. Rash. May cause an allergic reaction.

Ingestion

Not likely, due to the form of the product. However, accidental ingestions of the content may cause discomfort.

Chronic effects

Prolonged or repeated overexposure to high levels of respirable crystalline silica may be harmful by causing a chronic or acute form of silicosis. There are reports in the literature suggesting that excessive respirable crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Acute toxicity

Not classified. No specific data on product.

Skin corrosion/irritation

Not classified.

Serious eye damage/eye irritation

Not classified.

Respiratory or skin sensitization

Respiratory sensitization

Not classified.

Skin sensitization

Not classified.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen and classified by ACGIH as a suspected human carcinogen.

Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, in making the overall evaluation, IARC noted that “carcinogenity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.” (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans, of the inhalation of respirable crystalline silica dust is silicosis. “There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk…” (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits.

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline Silica (Quartz) (CAS 14808-60-7)	1 Carcinogenic to humans.

Respirable Tridymite and Cristobalite (other forms of Crystalline) (CAS Mixture)	1 Carcinogenic to humans.

NTP Report on Carcinogens

Crystalline Silica (Quartz) (CAS 14808-60-7)	Known to be human carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not listed.

Reproductive toxicity Not classified.

Specific target organ toxicity – single exposure Not classified.

Specific target organ toxicity – repeated exposure Respirable crystalline silica: May cause damage to organs (lung) through prolonged or repeated exposure.

Aspiration hazard Not classified.

12. Ecological information

Ecotoxicity This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The addition of large amounts of cement to water may cause a rise in pH and therefore, may be toxic to aquatic life under certain circumstances.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.

13. Disposal considerations

Disposal instructions Collect in appropriate containers and dispose of in accordance with local/regional/federal/international regulations. Prevent from entering drainage, sewer systems, and unintended bodies of water.

14. Transport information

DOT Not regulated as dangerous goods.

IATA Not regulated as dangerous goods.

IMDG Not regulated as dangerous goods.

15. Regulatory information

US federal regulations

OSHA Hazard Communication Standard (29 CFR 1910.1200)
This product is defined as a "Hazardous Chemical".

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes.

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

US California Proposition 65
WARNING: This product contains a chemical known to the State of California to cause cancer.
US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Crystalline Silica (Quartz) (CAS 14808-60-7)

State regulatory lists
Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulation. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

International inventories
Product is listed on the US EPA's Toxic Substances Control Act (TSCA) Inventory.

16. Other information, including date of preparation or last revision

Revision date November 12, 2021

SDS US (GHS HazCom 2012)