NEW FRONTIER BLUFF CITY
SAFETY DATA SHEET

1. Identification

Product identifier	**Crushed Limestone**
Other means of identification	Aggregate, Aglime, Man Sand
Recommended use	Limestone is used in the manufacture of bricks, mortar, cement, concrete, plasters, paving materials, other construction materials, steel, consumer products, and other goods.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company	New Frontier Materials
Manufacturer	New Frontier Materials
Address	4007 College Avenue, Alton IL 62002
Telephone	(314) 344-0070
Website	www.newfrontiermaterials.com
E-mail	info@newfrontiermaterials.com
Emergency phone number	(314) 473-3700

2. Hazard(s) identification

Physical hazards	Not classified.	
Health Hazards	Carcinogenicity	Category 1A
	Specific Target Organ Toxicity, Repeated Exposure	Category 2
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	May cause cancer. May cause damage to organs (lung) through prolonged or repeated exposure (inhalation).

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.
Response	If exposed or concerned: Get medical advice/attention.
Storage	Store locked up by restricting or controlling access to stockpile areas. Do not walk on stockpiles. Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains aggregates without an effective procedure for assuring safety.
Disposal	Dispose of in accordance with local/regional/federal/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

Supplemental Information

Respirable Crystalline Silica (RCS) may cause cancer. Limestone is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). In its natural bulk state, limestone is not a known health hazard. Limestone 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	%
Calcium Carbonate	1317-65-3	> 90
Crystalline Silica (Quartz)	14808-60-7	< 10

4. First-aid measures

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

Skin contact
Limestone dust: Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact
Limestone dust: 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 or persists.

Ingestion
Limestone dust: Rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms/effects, acute and delayed
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
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). If addicted to tobacco, smoking will impair the ability of the lungs to clear themselves of dust.

5. Fire-fighting measures

Suitable extinguishing media
Limestone is 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, and emergency procedures
Wear appropriate protective equipment and clothing during clean-up of materials that contain or may liberate limestone 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. Wetting of spilled material and/or use of respiratory protective equipment may be necessary.

Environmental precautions Avoid discharge of fine particulate matter into drains or water courses.

7. Handling and storage

Precautions for safe handling Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Avoid dust formation or accumulation.

8. Exposure controls/personal protection

Occupational exposure limits

(1) Value equivalent to OSHA formulas (29 CFR 1910.1000; 29 CFR 1917; 29 CFR 1918)
(2) Value also applies to MSHA Metal / Non-Metal (1973 TLVs at 30 CFR 56/57.5001)
(3) OSHA enforces 0.250 mg/m³ in construction and shipyards (CPL-03-00-007)
(4) Value also applies to OSHA construction (29 CFR 1926.55 Appendix A) and shipyards (29 CFR 1915.1000, Table Z)
(5) MSHA limit = 10 mg/m³

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

Components	Type	Value	Form
Particulates not otherwise classified (CAS SEQ250)	PEL	5 mg/m³ 15 mg/m³	Respirable fraction Total dust (4)
Calcium Carbonate (CAS 1317-65-3)	TWA	5 mg/m³ 15 mg/m³	Respirable fraction (4) Total dust (5)

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

Components	Type	Value	Form
Crystalline Silica (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m³ 0.1 mg/m³	Total dust (1,2) Respirable (1,2,3)
Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)	TWA	0.15 mg/m³ 0.05 mg/m³	Total dust (1) Respirable
Particulates not otherwise classified (CAS SEQ250)	TWA	5 mg/m³ 15 mg/m³	Respirable fraction (1) Total dust (1,4,5)

US. ACGIH Threshold Limit Values®

Components	Type	Value	Form
Crystalline Silica (all forms; CAS mixture)	TWA	0.025 mg/m³	Respirable fraction
Particulates not otherwise classified (CAS Mixture)	TWA	3 mg/m³ 10 mg/m³	Respirable particles (2) Inhalable particles (2)

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Crystalline Silica (all forms; CAS mixture)	TWA	0.05 mg/m³	Respirable dust
Calcium Carbonate (CAS 1317-65-3)	TWA	5 mg/m³ 10 mg/m³	Respirable fraction Total dust

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

Exposure guidelines OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including “Particulates Not Otherwise Classified,” “Particulates Not Otherwise Regulated,” “Particulates Not Otherwise Specified,” and “Inert or Nuisance Dust” are often used interchangeably; however, the user should review each agency’s terminology for differences in meanings.

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	
Hand protection	Use personal protective equipment as required.
Other	Use personal protective equipment as required.
Respiratory protection	When handling or performing work with limestone 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. Wear appropriate thermal protective clothing, when necessary.
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	Crushed particles ranging in size from sand to boulders
Color	Gray, white or tan
Odor	Not applicable.
Odor threshold	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.
Specific gravity	2.5 – 2.7
pH	7.5 – 8.5
Solubility	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not applicable.

Flammability Not applicable.

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.

11. Toxicological information

Information on likely routes of exposure

Inhalation Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause other adverse health effects including lung and kidney cancer.

Skin contact Limestone dust: May cause irritation through mechanical abrasion.

Eye contact Limestone dust: May cause irritation through mechanical abrasion.

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

Symptoms related to the physical, chemical and toxicological characteristics Limestone dust: Discomfort in the chest. Shortness of breath. Coughing.

Acute toxicity Not classified. Quartz (14808-60-7) LD50 oral rat > 5000 mg/kg.

Skin corrosion/irritation This product is not expected to be a skin hazard.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization No respiratory sensitizing effects known.

Skin sensitization Not known to be a dermal irritant or sensitizer.

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.

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.

Chronic effects

Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive 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.

12. Ecological information

Ecotoxicity

Not expected to be harmful to aquatic organisms. Discharging limestone dust and fines into waters may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.

Persistence and degradability

Not applicable.

Bioaccumulative potential

Not applicable.

Mobility in soil

Not applicable.

Other adverse effects

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

13. Disposal considerations

Disposal instructions

Do not allow fine particulate matter to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with fine particulates. Dispose of contents in accordance with local/regional/federal/international regulations.

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 - No
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 Massachusetts RTK - Substance List
Crystalline Silica (Quartz) (CAS 14808-60-7)
Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

US New Jersey Worker and Community Right-to-Know Act
Crystalline Silica (Quartz) (CAS 14808-60-7)
Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

US Pennsylvania Worker and Community Right-to-Know Law
Crystalline Silica (Quartz) (CAS 14808-60-7)
Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

US Rhode Island RTK
Not regulated.

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)

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

Issue date May 21, 2015

SDS US (GHS HazCom 2012)

To the best of our knowledge the information contained herein is correct. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these will not require responsibility on behalf of the user. Users of any chemical should satisfy themselves that the conditions and method of use assure that the chemical is used safely. No representation or warranties, either express or implied, of merchantability, fitness for a particular purpose or any other nature are made herein or the chemical to which the information refers.