

SECTION I – IDENTIFICATION

PRODUCT IDENTIFIER	TRADE NAME	OTHER SYNONYMS
Limestone/Dolomite	Crushed Stone	Sweet Rock, Aggregate, Aglime, Barn Lime, Coverstone, Fluing Agent, Flexible Base, Manufactured Sand, Mineral Filler, Screenings, Limestone CTB, Dolomite

RECOMMENDED USE AND RESTRICTION ON USE

Used for construction purposes.
 This product is not intended or designed for, and should not be used as an abrasive blasting medium or for foundry applications.

MANUFACTURER/SUPPLIER INFORMATION

Martin Marietta
 4123 Parklake Ave
 Raleigh, North Carolina 27612
 Phone: 919-781-4550

For additional health, safety or regulatory information and other emergency situations, call 919-781-4550.

SECTION II – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:

Category 1A Carcinogen
 Category 1 Specific Target Organ Toxicity (STOT) following repeated exposures
 Category 1 Serious Eye Damage
 Category 2 Skin Irritant



SIGNAL WORD: DANGER

HAZARD STATEMENTS:

May cause cancer by inhalation.
 Causes damage to lungs, kidneys and autoimmune system through prolonged or repeated exposure by inhalation.
 Causes skin irritation and serious eye damage.

PRECAUTIONARY STATEMENTS

Do not handle this product until the safety information presented in this SDS has been read and understood.
 Do not breathe dusts or mists generated by this product. Do not eat, drink or smoke while manually handling this product.

If on skin: Rinse skin thoroughly after manually handling and wash contaminated clothing if there is potential for direct skin contact before reuse.

If swallowed: If gastrointestinal discomfort occurs and if the person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit.

If inhaled excessively: Remove the 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.

If exposed, concerned, unwell or irritation of the eyes, skin, mouth or throat/nasal passage persist or develop later: Get medical attention.

Wear eye protection and respiratory protection following this SDS, National Institute for Occupational Safety and Health (NIOSH) guidelines and other applicable regulations. Use protective gloves if manually handling the product.

Avoid creating dust when handling, using or storing. Use with adequate ventilation to keep exposure below recommended exposure limits.

Dispose of product in accordance with local, regional, national or international regulations.

Please refer to Section XI for details of specific health effects of the components.

SECTION III – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO	% By weight (approx) ¹
Calcium Carbonate, CaCO ₃	1317-65-3	30-100
Magnesium Carbonate, MgCO ₃	546-93-0	0.1-60
Calcium Oxide, CaO	1305-78-8	0.1-40
Magnesium Oxide, MgO	1309-48-4	0.1-30
Silicon Dioxide ² , SiO ₂	7631-86-9/14808-60-7	0.1-60
Aluminum Oxide, Al ₂ O ₃	1344-28-1	0.1-1
Ferric Oxide, Fe ₂ O ₃	1309-37-1	0.1-1.5
Sodium Oxide, Na ₂ O	1313-59-3	0.1-1
Potassium Oxide, K ₂ O	12136-45-7	0.1-1

1: The composition varies naturally; 2: The composition of SiO₂ may be up to 100% crystalline silica

SECTION IV – FIRST-AID MEASURES

INHALATION: If excessive inhalation occurs, move the person to fresh air. Dust in the throat and nasal passages should clear spontaneously. Contact a physician if breathing difficulty is experienced, or irritation persists or develops later.

EYES: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Remove contact lenses, if present and easy to do, and continue rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or develops later.

SKIN: Rinse skin with soap and water after manually handling and wash contaminated clothing if there is potential for direct skin contact before reuse. Contact a physician if irritation persists or develops later.

INGESTION: If gastrointestinal discomfort occurs and if the person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. If gastrointestinal discomfort persists or develops later, get medical attention.

SIGNS AND SYMPTOMS OF EXPOSURE: Direct skin and eye contact with dust generated may cause irritation by mechanical abrasion or irritant effect. Some components of the product are also known to cause corrosive effects to skin, eyes and mucous membranes. Ingestion of large amounts may cause gastrointestinal irritation and blockage. Inhalation of dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion or irritant action. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, fibrosis and flu-like fever may occur following exposures in excess of appropriate exposure limits. Repeated excessive exposure may cause pneumoconiosis, such as silicosis and other respiratory effects.

There are generally no signs or symptoms of exposure to respirable crystalline silica (RCS), one of the components of the product. Often, chronic silicosis has no symptoms. The symptoms of chronic silicosis, if present, are shortness of breath, wheezing, cough and sputum production. The symptoms of acute silicosis which can occur with exposures to very high concentrations of RCS over a very short time period, sometimes as short as 6 months, are the same as those associated with chronic silicosis; additionally, weight loss and fever may also occur. The symptoms of scleroderma, an autoimmune disease, include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

SECTION V – FIRE-FIGHTING MEASURES**EXTINGUISHING AGENT**

Not flammable; use extinguishing media compatible with surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARD

Contact with powerful oxidizing agents may cause fire and/or explosions (see Section X of this SDS). While individual components are known to react vigorously with water to produce heat, this is not expected from the product.

SPECIAL FIRE FIGHTING PROCEDURES

None known

HAZARDOUS COMBUSTION PRODUCTS

None known

SECTION VI – ACCIDENTAL RELEASE MEASURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Persons involved in cleaning should first follow the precautions defined in Section VII of the SDS. Spilled materials, where dust can be generated, may overexpose cleanup personnel to RCS-containing dust and other components that may pose inhalation hazards. Do not dry sweep spilled material. Collect the material using a method that does not produce dust such as a High-Efficiency Particulate Air (HEPA) vacuum or thoroughly wetting down the dust before cleaning up, if feasible. Wear appropriate personal protective equipment (PPE) as specified in Section VIII including appropriate respirators during and following clean up or whenever airborne dust concentrations above the occupational exposure limits (OELs) are present, to ensure worker exposures remain below OELs (Refer to Section VIII).

Place the dust in a covered container appropriate for disposal. Dispose of the dust according to federal, state and local regulations.

This product and the components in this product are not subject to the reporting requirements of SARA Title III Section 313, and 40 CFR 372.

SECTION VII – HANDLING AND STORAGE

This product is not intended or designed for, and should not be used as an abrasive blasting medium or for foundry applications.

Follow protective controls set forth in Section VIII of this SDS when handling this product. Dust containing RCS and other components that may be corrosive/irritant may be generated during processing, handling and storage. Use good housekeeping procedures to prevent the accumulation of dust in the workplace.

Do not breathe dust. Avoid contact with skin and eyes. Do not store near food or beverages or smoking materials. Do not stand on piles of materials; it may be unstable.

Use adequate ventilation and dust collection equipment as needed to ensure that the airborne dust levels are below the appropriate OELs. If the airborne dust levels are above the appropriate OELs, use respiratory protection during the establishment of engineering controls. Refer to Section VIII - Exposure Controls/Personal Protection for further information.

In accordance with Occupational Safety and Health Administration's (OSHA's) Hazard Communication Standard (29 CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, 1928.21), state, and/or local right-to-know laws and regulations, familiarize your employees with this SDS and the information contained herein. Warn your employees, your customers and other third parties (in case of resale or distribution to others) of the potential health risks associated with the use of this product. Train your employees in the appropriate use of PPE and engineering controls, which will reduce their risks of exposure.

See also ASTM International standard practice E 1132-13E1, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."

For safe handling and use of this product for Hydraulic Fracturing, please see the OSHA/NIOSH Hazard Alert Worker Exposure to Silica during Hydraulic Fracturing DHHS (NIOSH) Publication No. 2012-166 (2012).

http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne OELs for Components of Limestone/Dolomite:

COMPONENT(S) CHEMICAL NAME	OSHA PEL ¹	MSHA PEL ²	ACGIH TLV-TWA ³	NIOSH REL ⁴
Calcium Carbonate, CaCO ₃	^T 15 mg/m ³ , ^R 5 mg/m ³	^{5,T} 10 mg/m ³	-	^T 10 mg/m ³ , ^R 5 mg/m ³
Magnesium Carbonate, MgCO ₃	^{6,T} 15 mg/m ³ , ^R 5 mg/m ³	-	-	^{6,T} 10 mg/m ³ , ^R 5 mg/m ³
Calcium Oxide, CaO	5 mg/m ³	5 mg/m ³	2 mg/m ³	2 mg/m ³
Magnesium Oxide, MgO	⁷ 15 mg/m ³	⁷ 10 mg/m ³	¹ 10 mg/m ³	-
Silicon Dioxide ⁸ , SiO ₂	^{9,R} 0.05 mg/m ³ ^{10,R} 10 mg/m ³ /(% SiO ₂ +2)	^{R,11} 0.05 mg/m ³	^{R,12} 0.025 mg/m ³	^{R,13} 0.05 mg/m ³
Aluminum Oxide, Al ₂ O ₃	-	¹⁴ 10 mg/m ³	^{15,R} 1 mg/m ³	-
Ferric Oxide, Fe ₂ O ₃	¹⁶ 10 mg/m ³	¹⁶ 10 mg/m ³	^R 5 mg/m ³	¹⁷ 5 mg/m ³
Sodium Oxide ¹⁸ , Na ₂ O	2 mg/m ³	^C 2 mg/m ³	^C 2 mg/m ³	^C 2 mg/m ³
Potassium Oxide ¹⁹ , K ₂ O	-	-	^C 2 mg/m ³	^C 2 mg/m ³

- 1: OSHA’s Permissible Exposure Limits - Annotated Tables Z-1 and Z-3
- 2: MSHA Handbook Series, Handbook Number PH20-V-4, Health Inspection Procedures Handbook, Attachment - Contaminant Index, December 2020
- 3: 2024 ACGIH TLVs and BEIs Based on Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents
- 4: NIOSH Pocket Guide to Chemical Hazards, last reviewed February 18, 2020
- 5: If respirable fraction is >1% quartz, then MSHA PEL is 10 mg/m³/(% SiO₂+2)
- 6: Listed as Magnesite, a naturally occurring form of MgCO₃
- 7: As Magnesium Oxide Fume
- 8: The OELs provided are for crystalline silica. Refer to Section X for thermal stability information.
- 9: OSHA has also established an action level (AL) of 0.025 mg/m³ for RCS.
- 10: This standard applies to any operations or sectors for which the RCS standard, 1910.1053, is stayed or is otherwise not in effect. If the formula is used for PEL calculation, then the PEL for cristobalite and tridymite is half the value of quartz PEL.
- 11: The MSHA Standard for Lowering Miners’ Exposure to Respirable Crystalline Silica and Improving Respiratory Protection was issued on April 18, 2024, was effective from June 17, 2024 and has a compliance date of April 8, 2026 for metal and nonmetal operators. The MSHA PEL for RCS, starting April 8, 2026 is presented in the table and the AL will be 0.025 mg/m³. Until then, the limit for silica-containing dust of 10 mg/m³/(% SiO₂+2) will be applicable.
- 12: The ACGIH TLV for RCS as cristobalite is equal to the TLV for quartz. In 2005, ACGIH withdrew the TLV for tridymite.
- 13: The NIOSH REL for crystalline silica as cristobalite and tridymite is the same as for quartz.
- 14: Dust and Fume
- 15: Limits based on Aluminum Metal and Insoluble Compounds
- 16: As Iron Oxide Fume
- 17: Dust and fume, as Iron
- 18: Based on Sodium Hydroxide
- 19: Based on Potassium Hydroxide
- R: Respirable Fraction
- T: Total Dust
- I: Inhalable Fraction
- C: Ceiling Limit

Airborne OELs for Inert/Nuisance Dust:

Standard	Respirable Dust	Total Dust
OSHA PEL (as Inert or Nuisance Dust or Particulates Not Otherwise Regulated)	5 mg/m ³	15 mg/m ³
MSHA PEL (Dust < 1% quartz)	10 mg/m ³	10 mg/m ³
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m ³	*10 mg/m ³

Note: The limits for Inert Dust are provided as guidelines. Nuisance dust is limited to particulates not known to cause systemic injury or illness.
* The TLV provided is for inhalable particles not otherwise specified.

ENGINEERING CONTROLS

Ventilation: Use local exhaust, general ventilation or natural ventilation adequate to maintain exposures below appropriate OELs.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION, CONT'D.

Other control measures: Respirable dust and crystalline silica levels should be monitored regularly. Dust and crystalline silica levels in excess of appropriate OELs should be reduced by implementing feasible engineering controls, including (but not limited to) dust suppression (wetting), ventilation, process enclosure and enclosed employee work stations.

EYE/FACE PROTECTION

Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated. If irritation persists, get medical attention immediately. There is potential for severe eye irritation if exposed to excessive concentrations of dust for those using contact lenses.

SKIN PROTECTION

Use appropriate protective gloves if manually handling the product.

RESPIRATORY PROTECTION**Respirator Recommendations:**

For concentration of components that exceed or are likely to exceed appropriate OELs, a NIOSH-approved particulate filter respirator must be worn. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements. For additional information contact NIOSH at 1-800-356-4674 or visit the website: <http://www.cdc.gov/niosh/npg> (search for the relevant component). See also ANSI standard Z88.2 (latest revision) "American National Standard for Respiratory Protection," 29 CFR 1910.134 and 1926.103, and 42 CFR 84.

Emergency or planned entry into unknown concentrations or immediately dangerous to life or health (IDLH) conditions: A self-contained breathing apparatus (SCBA) that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode or any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus.

Escape from unknown or IDLH conditions: An air-purifying, full facepiece respirator with a high-efficiency particulate (100-series) filter or any appropriate escape-type, self-contained breathing apparatus.

If the workplace airborne crystalline silica concentration is unknown for a given task, conduct air monitoring to determine the appropriate level of respiratory protection to be worn. Consult with a certified industrial hygienist, your insurance risk manager or MSHA/OSHA for detailed information. Ensure appropriate respirators are worn, as needed, during and following the task, including clean up or whenever airborne dust concentrations exceeding OELs are expected to be present.

GENERAL HYGIENE CONSIDERATIONS

There are no known hazards associated with this material when used as recommended. Following the guidelines in this SDS is recognized as good industrial hygiene practice. Avoid breathing dust. Avoid skin and eye contact. Wash dust-exposed skin with soap and water before eating, drinking, smoking and using toilet facilities. Wash work clothes after each use if there is potential for direct skin contact.

SECTION IX— PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE Mixture of fine to coarse particles	COLOR White to gray
ODOR Odorless to musty odor	MELTING POINT/FREEZING POINT Not applicable
BOILING POINT AND RANGE Not applicable	FLAMMABILITY Not flammable
LOWER AND UPPER EXPLOSION LIMIT/ FLAMMABILITY LIMIT Not applicable	FLASH POINT Not applicable

SECTION IX— PHYSICAL AND CHEMICAL PROPERTIES, CONT'D

AUTOIGNITION TEMPERATURE Not applicable	DECOMPOSITION TEMPERATURE Not applicable
pH Not applicable	KINEMATIC VISCOSITY Not applicable
SOLUBILITY IN WATER Insoluble	PARTITION COEFFICIENT: N-OCTANOL/WATER Not applicable
VAPOR PRESSURE Not applicable	DENSITY/RELATIVE DENSITY 2.5-2.82
RELATIVE VAPOR DENSITY Not applicable	PARTICLE CHARACTERISTICS Angular particles ranging in size from powder to small stones

SECTION X – STABILITY AND REACTIVITY

STABILITY Stable	CONDITIONS TO AVOID Contact with incompatible materials (see below).
THERMAL STABILITY If crystalline silica (quartz) is heated to more than 870°C (1598°F), it can change to a form of crystalline silica known as tridymite, and if crystalline silica (quartz) is heated to more than 1470°C (2678°F), it can change to a form of crystalline silica known as cristobalite.	
INCOMPATIBILITY (Materials to avoid) Contact of quartz with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. One of the components rapidly reacts with hydrochloric acid to form carbon dioxide and magnesium chloride. While individual components are known to react vigorously with water to produce heat, this is not expected from the product.	
HAZARDOUS DECOMPOSITION PRODUCTS Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.	
HAZARDOUS POLYMERIZATION Not known to polymerize	

SECTION XI – TOXICOLOGICAL INFORMATION

<p>Health Effects: The information below represents an overview of health effects caused by overexposure to one or more components in limestone/dolomite.</p> <p>Primary routes(s) of exposure: <input checked="" type="checkbox"/> Inhalation <input type="checkbox"/> Skin <input checked="" type="checkbox"/> Ingestion</p> <p>EYE CONTACT: Direct contact with dust may cause irritation by mechanical abrasion or corrosive action. Conjunctivitis may occur.</p> <p>SKIN CONTACT: Direct contact may cause irritation by mechanical abrasion or irritant action. Some components of material are also known to cause corrosive effects to skin and mucous membranes.</p> <p>SKIN ABSORPTION: Not expected to be a significant route of exposure.</p> <p>INGESTION: Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury. Ingestion of large amounts may cause gastrointestinal irritation and blockage.</p> <p>INHALATION: Dust generated from this product may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion and/or irritant action. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, fibrosis and flu-like fever may occur following exposures in excess of appropriate OELs.</p>
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SECTION XI – TOXICOLOGICAL INFORMATION, CONT'D.**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

Inhaling respirable dust and/or crystalline silica may aggravate existing respiratory system disease(s) (e.g., bronchitis, emphysema, chronic obstructive pulmonary disease) and/or dysfunctions. Exposure to dust may aggravate existing skin and/or eye conditions. Smoking and obstructive/restrictive lung diseases may also exacerbate the effects of excessive exposure to this product.

This product is a mixture of components. The composition percentages are listed in Section III. Toxicological information for each component is listed below:

Silicon Dioxide: It is comprised of amorphous and crystalline forms of silica. In some batches, crystalline silica may represent up to 100% of silicon dioxide.

Exposure route: Eyes, respiratory system.

Target organs: Eyes, skin, respiratory system.

ACGIH, MSHA, and OSHA have determined that adverse effects are not likely to occur in the workplace provided exposure concentrations do not exceed the appropriate OELs. Lower exposure limits may be appropriate for some individuals including persons with pre-existing medical conditions as described under medical conditions aggravated by exposure.

A. SILICOSIS

The major concern is silicosis (lung disease), caused by the inhalation and retention of RCS dust. Silicosis leads to conditions such as lung fibrosis and reduced pulmonary function. The form and severity in which silicosis manifests itself depends in part on the type and extent of exposure to silica dusts: chronic, accelerated and acute forms are recognized. In later stages the critical condition may become disabling and potentially fatal. Restrictive and/or obstructive changes in lung function may occur due to exposure. A risk associated with silicosis is development of pulmonary tuberculosis (silico-tuberculosis). Respiratory insufficiencies due to massive fibrosis and reduced pulmonary function, possibly with accompanying heart failure, are other potential causes of death due to silicosis.

Chronic or Ordinary Silicosis is the most common form of silicosis and can occur after many years of exposure to levels above the OELs for airborne RCS dust. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. Symptoms of silicosis may include (but are not limited to): Shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; heart enlargement and/or failure. It is further defined as either simple or complicated silicosis.

Simple Silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF).

Complicated Silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease (cor pulmonale) secondary to the lung disease.

Accelerated Silicosis can occur with exposure to high concentrations of RCS over a relatively short period; the lung lesions can appear within five (5) years of the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the progression is more rapid.

Acute Silicosis can occur with exposures to very high concentrations of RCS over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is a rapidly progressive, incurable lung disease and is typically fatal.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that there is "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the form of quartz or cristobalite," there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz dust," and that there is "*limited evidence* in experimental animals for the carcinogenicity of tridymite dust

SECTION XI – TOXICOLOGICAL INFORMATION, CONT'D.

and cristobalite dust.” The overall IARC evaluation was that “crystalline silica inhaled in the form of quartz or cristobalite dust is *carcinogenic to humans (Group 1)*.” The IARC evaluation noted that not all industrial circumstances studied evidenced carcinogenicity. The monograph also stated that “Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.” For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, “Silica Dust, Crystalline, in the Form of Quartz or Cristobalite” (2012).

NTP - In its Eleventh Annual Report on Carcinogens, concluded that RCS is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust.

CALIFORNIA PROPOSITION 65 - Crystalline silica in October 1996 was listed on the Safe Drinking Water and Toxic Enforcement Act of 1986 as a chemical known to the state to cause cancer.

There have been many articles published on the carcinogenicity of crystalline silica, which the reader should consult for additional information; the following are examples of recently published articles: (1) “The Effect of Silica Exposure on the Risk of Lung Cancer: A Dose-Response Meta-Analysis”, *Cancer Epidemiology*, (75) 102024 (2021); (2) “Dose-Response Meta-Analysis of Silica and Lung Cancer”, *Cancer Causes Control*, (20):925-33 (2009); (3) “Occupational Silica Exposure and Lung Cancer Risk: A Review of Epidemiological Studies 1996-2005”, *Ann Oncol*, (17) 1039-50 (2006); (4) “Lung Cancer Among Industrial Sand Workers Exposed to Crystalline Silica”, *Am J Epidemiol*, (153) 695-703 (2001); (5) "Is Silicosis Required for Silica-Associated Lung Cancer?", *American Journal of Industrial Medicine*, (37) 252- 259 (2000); (6) " Silica, Silicosis, and Lung Cancer: A Risk Assessment", *American Journal of Industrial Medicine*, (38) 8-18 (2000); (7) "Silica, Silicosis, and Lung Cancer: A Response to a Recent Working Group Report", *Journal of Occupational and Environmental Medicine*, (42) 704-720 (2000); (8) "Crystalline Silica and The Risk of Lung Cancer in The Potteries", *Occup Environ Med*, (55) 779-785 (1998).

C. AUTOIMMUNE DISEASES

There is evidence that exposure to RCS (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders including: scleroderma, systemic lupus erythematosus, rheumatoid arthritis, and diseases affecting the kidneys. For a review of the subject, the following may be consulted: (1) “Systematic Review and Meta-Analysis on the Association of Occupational Exposure to Free Crystalline Silica and Rheumatoid Arthritis”, *Clin Rev Allergy Immunol*, (62) 333-345 (2022); (2) “Systematic review and Meta-Analysis of Epidemiological Studies on the Association of Occupational Exposure to Free Crystalline Silica and Systemic Lupus Erythematosus”, (60) 81-91 (2021); (3) “The Association between Occupational Exposure to Silica and Risk of Developing Rheumatoid Arthritis: A Meta-Analysis”, *Saf Health Work*, (11) 136-142 (2020); (4) “Occupational Silica Exposure as a Risk Factor for Scleroderma: A Meta-Analysis”, *Int Arch Occup Environ Health*, (83) 763-9 (2010); (5) “Antinuclear Antibody and Rheumatoid Factor in Silica-Exposed Workers”, *Arh Hig Rada Toksikol*, (60) 185-90 (2009); (6) "Occupational Exposure to Crystalline Silica and Autoimmune Disease", *Environmental Health Perspectives*, (107) Supplement 5, 793-802 (1999); (7) "Occupational Scleroderma", *Current Opinion in Rheumatology*, (11) 490-494 (1999); (8) “Connective Tissue Disease and Silicosis”, *Am J Ind Med*, (35), 375-381 (1999).

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: (1) “The Association between Silica Exposure, Silicosis and Tuberculosis: A Systematic Review and Meta-Analysis”, *BMC Public Health*, (21) 953 (2021); (2) “Tuberculosis and Silicosis: Epidemiology, Diagnosis and Chemoprophylaxis”, *J Bras Pneumol*, (34) 959-66 (2008); (3) *Occupational Lung Disorders*, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); (4) "Risk of Pulmonary Tuberculosis Relative to Silicosis and Exposure to Silica Dust in South African Gold Miners," *Occup Environ Med*, (55) 496-502 (1998); (5) “Occupational Risk Factors for Developing Tuberculosis”, *Am J Ind Med*, (30) 148-154 (1996).

E. KIDNEY DISEASE

There is evidence that exposure to RCS (without silicosis) or that the disease silicosis is associated with the increased incidence of kidney diseases, including end stage renal disease. For additional information on the subject, the following may be consulted: (1) “Occupational Exposure to Respirable Crystalline Silica and Chronic Non-Malignant Renal Disease: Systematic Review and

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Meta-Analysis”, *Int Arch Occup Environ Health*, (90) 555-574 (2017); (2) “Mortality from Lung and Kidney Disease in a Cohort of North American Industrial Sand Workers: An Update”, *Ann Occup Hyg*, (49) 367-73 (2005); (3) “Kidney Disease and Arthritis in a Cohort Study of Workers Exposed to Silica”, *Epidemiology*, (12) 405-412 (2001); (4) “Kidney Disease and Silicosis”, *Nephron*, (85) 14-19 (2000); (5) “End Stage Renal Disease Among Ceramic Workers Exposed to Silica”, *Occup Environ Med*, (56) 559-561 (1999).

F. NON-MALIGNANT RESPIRATORY DISEASES

NIOSH has cited the results of studies that report an association between dusts found in various mining operations and non-malignant respiratory disease, particularly among smokers, including bronchitis, emphysema, and small airways disease. For additional information on the subject, the following may be consulted: “Respirable Quartz Dust Exposure and Airway Obstruction: A Systematic Review and Meta-Analysis”, *Occup Environ Med*, (71) 583-9 (2014); “NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica”, (2002), available from NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226.

Respirable dust containing newly broken particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken pieces of silica.

More information on the effects of crystalline silica exposure may be obtained from OSHA (website: <http://www.osha.gov>) or from NIOSH (website: <http://www.cdc.gov/niosh>).

Calcium Carbonate:

Exposure route: Inhalation, skin/eye contact.

Target organs: Eyes, skin, respiratory system.

Acute effect: Irritation of the eyes, skin and respiratory system and cough. It has been reported that there may be a silicosis risk when using impure CaCO₃ containing in excess of 3% quartz. However, it is claimed that pure CaCO₃ does not cause pneumoconiosis. Adverse health effects have generally not been reported in literature among workers using CaCO₃.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Magnesium Carbonate:

Exposure route: Inhalation.

Target organs: Respiratory system.

Acute effect: A nuisance-causing concentration of airborne particles can be reached quickly when dispersed.

Chronic effect/carcinogenicity: Lungs may be affected by repeated or prolonged exposure to dust particles. Animal experiments show that MgCO₃ dust may produce a slight fibrosis and after prolonged exposure to high concentrations, pulmonary deposition and retention may occur. Not classifiable as human carcinogen.

Calcium Oxide:

Exposure route: Inhalation, ingestion, skin/eye contact.

Target organs: Eyes, skin, respiratory system.

Acute effect: Direct contact with tissues, can result in burns and severe irritation because of its high reactivity and alkalinity. Major complaints of workers exposed to lime consist of irritation of the skin and eyes, although inflammation of the respiratory passages, ulceration and perforation of the nasal septum, and even pneumonia has been attributed to inhalation of the dust.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

SECTION XI – TOXICOLOGICAL INFORMATION, CONT'D.**Magnesium Oxide:**

Exposure route: Inhalation, eye/skin contact.

Target organs: Eyes, respiratory system.

Acute effect: MgO dust caused slight irritation of the eyes and nose, conjunctivitis, inflammation of the mucous membrane, and coughing up discolored sputum after industrial exposures amongst workers exposed to an unspecified concentration of MgO.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Aluminum Oxide:

Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Inhalation or ingestion of high concentrations of this substance may cause gastrointestinal and/or upper respiratory tract irritation. It is an eye and skin irritant.

Chronic effect/carcinogenicity: Al₂O₃ is not classifiable as a human carcinogen. On occasion, workers chronically exposed to aluminum-containing dusts or fumes have developed severe pulmonary reactions including fibrosis, emphysema and pneumothorax. Long-term exposure may have effects on the central nervous system.

Iron Oxide: (Ferric Oxide)

Exposure route: Inhalation, ingestion, skin.

Target organs: Respiratory system, skin, eyes, neurological system.

Acute effect: Major findings: stupor, shock, acidosis, hematemesis, bloody diarrhea or coma. Minor findings: vomiting, diarrhea, mild lethargy. Benign pneumoconiosis with X-ray shadows indistinguishable from fibrotic pneumoconiosis. Experimental work in animals exposed by intratracheal injection or by inhalation to iron oxide mixed with less than 5% silica has shown no evidence of fibrosis produced in lung tissue.

Chronic effect/carcinogenicity: Irritability, nausea or vomiting, and normocytic anemia. When exposed to levels greater than 50 to 100 milligram per day, it can result in pathological deposition of iron in the body tissues causing fibrosis of the pancreas, diabetes mellitus, and liver cirrhosis. Workers exposed to iron oxide fumes and silica may develop a "mixed dust pneumoconiosis." Not classifiable as human carcinogen.

Sodium Oxide:

Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Corrosive – Sodium oxide reacts violently with water to form sodium hydroxide. Causes burns of skin, eyes, respiratory and gastrointestinal tracts, extremely destructive to mucous membranes.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Potassium Oxide:

Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

SECTION XI – TOXICOLOGICAL INFORMATION, CONT'D.Potassium Oxide, cont'd:

Acute effect: Corrosive – K₂O reacts violently with water to produce potassium hydroxide. If inhaled, it causes sore throat, cough, burning sensation and shortness of breath. Contact with skin produces pain and blisters. Severe deep burns, redness and pain occur with eye contact. Ingestion results in burning sensations, abdominal pain, shock or collapse.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Acute Toxicity Estimates for Limestone/Dolomite – Not Available

SECTION XII – ECOLOGICAL INFORMATION

No data available for this product.

SECTION XIII – DISPOSAL CONSIDERATIONS**WASTE DISPOSAL METHOD**

Collect and reuse clean materials. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

The above information applies to this product only as sold. The product may be contaminated during use and it is the responsibility of the user to assess the appropriate disposal method in that situation.

SECTION XIV – TRANSPORT INFORMATION**DOT HAZARD CLASSIFICATION**

None

PLACARD REQUIRED

None

LABEL REQUIRED

Label as required by the OSHA Hazard Communication standard {29 CFR 1910.1200(f)}, and applicable state and local regulations.

SECTION XV – REGULATORY INFORMATION

SARA Title III: Section 311 and 312: Immediate health hazard and delayed health hazard.

TSCA: All components of the product appear on the EPA TSCA chemical substance inventory.

RCRA: The product is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 *et seq.*

CERCLA: The product is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR §302.4

EPCRA (Emergency Planning and Community Right to Know Act): The product is not an extremely hazardous substance under regulations of the Emergency Planning and Community Right to Know Act, 40 CFR Part 355, Appendices A and B and is not a toxic chemical subject to the requirements of Section 313.

Clean Air Act: This product mined and processed by Martin Marietta was not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3) (The FDA standard primarily applies to products containing silica used in the coatings of food contact surfaces).

California Proposition 65: ⚠️ **WARNING:** This product can expose you to chemicals including crystalline silica, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

SECTION XVI – OTHER INFORMATION**DEFINITIONS OF ACRONYMS/ABBREVIATIONS**

ACGIH: American Conference of Governmental Industrial Hygienists
 ANSI: American National Standards Institute
 ASTM: American Society for Testing and Materials
 BEIs: Biological Exposure Indices
 CAS: Chemical Abstracts Service
 CERCLA: Comprehensive Environmental Response, Compensation and Liability Act
 CFR: US Code of Federal Regulations
 DHHS: Department of Health and Human Services
 EPA: Environmental Protection Agency
 EPCRA: Emergency Planning and Community Right to Know Act
 FDA: Food and Drug Administration
 HEPA: High-Efficiency Particulate Air
 IARC: International Agency for Research on Cancer
 IDLH: Immediately Dangerous to Life and Health
 MSHA: Mine Safety and Health Administration
 NIOSH: National Institute for Occupational Safety and Health, US Department of Health and Human Services
 NTP: National Toxicology Program
 OEL: Occupational Exposure Limit
 OSHA: Occupational Safety and Health Administration, US Department of Labor
 PEL: Permissible Exposure Limit
 PMF: Progressive Massive Fibrosis
 PPE: Personal Protective Equipment
 RCRA: Resource Conservation and Recovery Act
 RCS: Respirable Crystalline Silica
 REL: Recommended Exposure Limit
 SARA Title III: Title III of the Superfund Amendments and Reauthorization Act, 1986
 SCBA: Self-Contained Breathing Apparatus
 SDS: Safety Data Sheet
 STOT: Specific Target Organ Toxicity
 TLV: Threshold Limit Value
 TSCA: Toxic Substance Control Act
 TWA: Time-Weighted Average

User's Responsibility: The OSHA Hazard Communication Standard 29 CFR 1910.1200 requires that this SDS be made available to your employees who handle or may be exposed to this product. Educate and train your employees regarding applicable precautions. Instruct your employees to handle this product properly.

Disclaimer: The information contained in this document applies to this specific material as supplied and Martin Marietta believes that the information contained in this SDS is accurate. The suggested precautions and recommendations are based on recognized good work practices and experience as of the date of publication. They are not necessarily all-inclusive or fully adequate in every circumstance as not all use circumstances can be anticipated. It may not be valid for this material if it is used in combination with other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for one's own particular use. Since the actual use of the product described herein is beyond our control, Martin Marietta assumes no liability arising out of the use of the product by others. Appropriate warnings and safe handling procedures should be provided to handlers and users. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulation, rules or insurance requirements. The product must not be used in a manner which could result in harm.

An electronic version of this SDS is available at www.martinmarietta.com.

DATE OF PREPARATION 8/2024

REPLACES 6/2023

Safety Data Sheet

For compliance with OSHA's 29 CFR 1910.1200 and Bill No. 70 WHMIS Hazard Communication Standards

Section 1: COMPANY AND PRODUCT IDENTIFICATION	
Product Name: Ball Clay CAS# 1332-58-7 EC# 310-194-1	Chemical Name: Hydrous Aluminum Silicate Al ₂ O ₃ ; SiO ₂ + Trace Minerals (Less than 5%)
Company Name and Address: Old Hickory Clay Company Inc. P.O. Box 66, 962 State Route 1241 Hickory, KY 42051-0066	Telephone Number: (270) 247-3042 Facsimile Number: (270) 247-1842 Emergency Contact Number: (270) 247-3042 Hours of Operation: 8:00 am – 4:00 pm Central E-Mail: orders@oldhickoryclay.com Website: http://www.oldhickoryclay.com
Recommended Use: Used in ceramic body and glazes; as a general-purpose filler in adhesives, rubber; refractories; electrode coatings. a. Restrictions for use: NONE	

SECTION 2: HAZARDS IDENTIFICATION
Health Hazard Warning: Ball clays contain crystalline quartz, some of which is respirable, and this element may cause delayed respiratory disease if inhaled over a prolonged period of time. Avoid breathing dust. Use a NIOSH/MSHA approved respirator where TLV for crystalline quartz is exceeded. Ball clays contain titanium dioxide.
Hazard Categories:
Acute Toxicity: <i>This product mixture is classified as an Inhalation Category 4 acutely toxic substance in animals based on mixtures containing silica by OSHA's HCS/HazCom (Hazard Communication Standard) 1910.1200 Appendix A: Health Hazard Criteria.</i>
Specific Organ Toxicity (Repeated Exposure by Inhalation): <i>This product mixture is classified as a Specific Organ Toxicant Category 1 based on mixtures containing silica by OSHA's HCS/HazCom (Hazard Communication Standard) 1910.1200 Appendix A: Health Hazard Criteria.</i>
Respiratory Sensitizer: <i>This product mixture is classified as a Respiratory Sensitizer Category 1B based on mixtures containing silica by OSHA's HCS/HazCom (Hazard Communication Standard) 1910.1200 Appendix A: Health Hazard Criteria.</i>
Carcinogenicity: <i>This product mixture is classified as a Potential Carcinogen Category 1B based on mixtures containing silica and titanium dioxide by OSHA's HCS/HazCom (Hazard Communication Standard) 1910.1200 Appendix A: Health Hazard Criteria.</i>
Labeling Elements for Product as Required using CLP Regulation (EC) No 1272/2008 and Annex 1 of GHS (Globally Harmonized System) Revision 9, 2021.

Hazard Pictograms:

Exclamation Mark



GHS07

Health Hazard



GHS08

Signal Words:

- Warning
- Danger

Hazard Statement:

- H332 - Harmful if inhaled
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H350 - May cause cancer by inhalation
- H372 - Causes damage to organs (lungs) through prolonged or repeated exposure by inhalation

Precautionary Statements:**Prevention:**

- P203 - Obtain, read, and follow all safety instructions before use.
- P260 - Do not breathe dust/fume/gas/mist/vapours/spray
- P264 - Wash hands thoroughly after handling.
- P270 - Do not eat, drink, or smoke when using this product.
- P271 - Use only outdoors or in well-ventilated area
- P280 - Wear protective gloves/protective clothing/eye protection. (Specified in Section 8)
- P384 - In case of Inadequate ventilation wear respiratory protection (Specified in Section 8)

Response:

- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P317 - Get medical help.
- P318 - If exposed or concerned, get medical advice.
- P319 - Get medical help if you feel unwell.
- P342 + P316 - If experiencing respiratory symptoms: Get emergency medical help immediately.

Storage:

- P405 - Store locked up.

Disposal:

- P501 - Dispose of contents in accordance with local/regional regulations

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

<u>Component</u>	<u>Weight Percent (Typical)</u>	<u>CAS Number</u>	<u>EC Number</u>
Kaolinite	> 50	1318-74-7	215-286-4
Crystalline Silica (Non-combined quartz)	< 30	14808-60-7	238-878-4
Titanium Dioxide	< 3	13463-67-7	236-675-5

Section 4: FIRST AID MEASURES

Route of Entry and First Aid

- **Inhalation:** Dust may irritate respiratory system. Move away from contaminated areas and consult a physician if breathing difficulties occur. Individuals with known respiratory disease or difficulties should avoid dust.
- **Eye Contact:** Minor dust quantities may irritate eye tissue. Flush eye(s) thoroughly with water and consult physician if symptoms persist.
- **Skin Contact:** No adverse effects are suspected to exist. Wash contaminated area with water and bath soap (optional).
- **Ingestion:** No negative effects are known to exist for incidental quantities of clay ingested into the stomach. For suspected large quantities, consult physician for advice.

Section 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Use extinguishing media that are suitable for the surrounding combustible materials such as product packaging, as the clay product itself is not combustible.

Hazards from Fire:

Under fire conditions, this product may emit toxic and/or irritating fumes.

Precautions for Fire Fighters:

Fire fighters should wear appropriate PPE to prevent exposure to fumes.

Section 6: ACCIDENTAL RELEASE MEASURES

- If inadvertently spilled or leaked, reclaim product for intended use.
- Increase ventilation and wear sufficient respiratory protection during sweeping / transportation to appropriate container.
- If the spilled product needs disposal, consult regulatory authorities. Under RCRA (40 CFR Part 261), ball clay is not considered a hazardous waste.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling:

Use in well-ventilated areas. Keep containers sealed when not in use to prevent the buildup of dust in the work environment. Avoid inhalation of dust, as well as skin and eye contact. Maintain proper personal hygiene.

Conditions for Safe Storage:

Store in cool, dry, well-ventilated areas away from moisture. Keep containers tightly closed.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

- Use NIOSH/MSHA approved dust masks if exposure exceeds TLV or PEL limits (see below).

<u>Exposure</u>	<u>Limit</u>	
Respirable Crystalline Quartz	ACGIH-TLV:	0.025 mg/m ³
	OSHA-PEL:	0.5 mg/m ³
	NIOSH:	0.05 mg/m ³
Titanium Dioxide	ACGIH-TLV:	10 mg/m ³ (total dust),
	OSHA-PEL:	15 mg/m ³ (total dust),
Kaolin	ACGIH-TLV:	2mg/m ³ (respirable fraction)
	OSHA-PEL:	15 mg/m ³ (total dust), 5mg/m ³ (respirable fraction)
	NIOSH:	10 mg/m ³ (total dust), 5mg/m ³ (respirable fraction)

- Use local exhaust ventilation in areas subject to dust generation.
- Use NIOSH/OSHA approved safety goggles when handling the product in dust generating processes.
- In wet spraying applications, use NIOSH/OSHA approved dust/mist respirator.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid lump or powder form	Melting Point: > 1500° C (Degrees Centigrade)
Color: brown, cream white, or gray coloration.	Boiling Point: N/A
pH: 4.0 – 8.0	Flash Point: N/A
Odor: Earth-like especially when containing appreciable moisture content.	Flammability: Non-combustible solid
Odor Threshold: N/A	Flammable Limits: N/A
Relative Density/Specific Gravity: 2.40 - 2.65	Auto-Ignition Temperature: N/A
Kinematic Viscosity: N/A	Vapor Pressure: N/A
Decomposition Temp: > 600 °C (Degrees Centigrade)	Relative Vapor Density: N/A
Partition coefficient n-octanol/water : N/A	Solubility in Water: Insoluble
	Particle Characteristics: Shape – plate like Size Distribution - More than 90% of clay particles are < 20 microns and 35 to 80% of clay particles are < 1 micron

Section 10: STABILITY AND REACTIVITY

Stability: Stable	Incompatibility: NIOSH lists Crystalline Silica as reacting with the following powerful oxidizers: fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, hydrogen peroxide, acetylene, ammonia.
Hazardous Decomposition: Non-existent	Hazardous Polymerization: Will not occur.
Fire and explosion: Non-flammable	

Section 11: TOXICOLOGICAL INFORMATION**Toxicology Information:**

This material contains crystalline silica.

Inhalation:

Harmful: danger of serious damage to health from prolonged exposure through inhalation. Immediate effects include irritation to nose, throat, and respiratory system.

Ingestion:

Ingestion of large amounts of the product could irritate the gastric tract.

Skin:

Skin contact may cause dryness of skin which could lead to irritation.

Eye:

Eye contact may cause irritation, and could cause minor abrasions.

Chronic Effects: Danger of serious damage to health by prolonged exposure from inhalation. Crystalline Silica can cause silicosis or other lung diseases from prolonged exposure. California Proposition 65: Ball clay contains crystalline quartz, some of which is respirable, and trace amounts of 2,3,7,8 TCDD (a dioxin) on a PPT (parts per trillion) basis have been detected. These trace amounts are not believed to be a health risk, but NIOSH/OSHA approved personal protective equipment (PPE) and exposure controls (Section 8) are recommended.

Carcinogenicity:

These chemicals are recognized by the state of California to be carcinogenic elements. IARC Monograph Volume 69 states that 2,3,7,8 TCDD (a dioxin) is a carcinogen to humans.

1. The National Toxicology Program (NTP), in the 15th Annual Report on Carcinogens, December 2021, has included respirable crystalline silica on its list of substances that are "known to be human carcinogens.
2. NIOSH and OSHA have identified crystalline silica as a Category I potential occupational carcinogen using the OSHA Toxic and Hazardous Substances classification system outlined in Subpart Z of Regulation Standards 29 CFR 1910.1053, 1915.1053, and 1926.1153.
3. IARC Monograph Volume Sup 7, 68, 100C from 2012 concludes that crystalline silica is a Group 1 Carcinogen, carcinogenic to humans.
4. ACGIH identifies Crystalline Silica as an A2 Suspected Human Carcinogen.
5. ACGIH identifies Kaolin as an A4 Not Classified but Suspected as a Human Carcinogen.
6. IARC Monograph Volume 47, 93 from 2010 concludes that Titanium dioxide is a Group 2B Carcinogen, possibly carcinogenic to humans.
7. NIOSH has identified Titanium dioxide as a Category II potential occupational carcinogen using the OSHA Toxic and Hazardous Substances classification system outlined in the Regulation Standard 29 CFR 1910.1200.
8. ACGIH identifies Titanium dioxide as an A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans.

The state of California has determined that crystalline silica is a carcinogen to humans.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available

Persistence and Degradability: Not available

Bioaccumulative Potential: Not available

Mobility: Not available

Section 13: DISPOSAL CONSIDERATIONS

Dispose of this material should be done in accordance with local and national regulations.

Section 14: TRANSPORT INFORMATION

Ball Clay is non-hazardous under DOT regulations.

1. This Product and its components are not regulated for transportation as a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)
2. No Guidance for bulk transport is offered for this product or its components by Annex II of MARPOL 73/78 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code).
3. This product and its components are not listed on the Hazardous Substance List in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI) nor the IATA Dangerous Goods Regulations.

UN Number – Not Applicable

UN Proper Shipping Name – Not Applicable

Transport Hazard Class – Not Applicable

Packing Group – Not Applicable

Environment Hazards – Not Applicable

Special Precautions – NONE

Section 15: REGULATORY INFORMATION

- California Proposition 65: Ball clay contains crystalline quartz, some of which is respirable, and trace amounts of 2,3,7,8 TCDD (a dioxin) on a PPT (parts per trillion) basis have been detected. These trace amounts are not believed to be a health risk, but NIOSH/OSHA approved personal protective equipment (PPE) and exposure controls (Section 8) are recommended.
- These chemicals are recognized by the state of California to be carcinogenic elements. IARC Monograph Volume 69 states that 2,3,7,8 TCDD (a dioxin) is a carcinogen to humans.
- Toxic Substances Control Act: The known and reported components of ball clay are included on the EPA TSCA Inventory.
- This Clay product is non-hazardous under DOT regulations.
- This product and its components are not restricted by the Consumer Product Safety Commission.
- The components of this product are included in the Registration List of the Regulation (EC) 1907/2006 UK/EU Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) of the European Chemical Agency (ECHA) and the Health and Safety Executive (HSE) of Great Britain. None of the components of this product are listed in the Authorization, Restricted Substances, or Substances of Very High Concern (SVHC) Lists of the Regulation (EC) 1907/2006 UK/EU Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) of the European Chemical Agency (ECHA) and the Health and Safety Executive (HSE) of Great Britain.

Section 16: OTHER INFORMATION

This Safety Data Sheet is accurate according to believed reliable sources of information. Old Hickory Clay Company, Inc. assumes no responsibility for warranties expressed or applied and assumes no liability in connection with the use of this information. The information and data herein must be determined by the user to be in accordance with federal, state, and local laws and regulations including regions outside the jurisdiction of the USA, applies only to this product and does not relate in combination with other materials or in any process. The reported information is subject to change without notice.

SDS Preparation issue date: September 5, 2024

Supersedes: August 4, 2022



Austinville Limestone Co. Inc.
223 Newtown Church Rd PO Box 569 Austinville
VA 24312
Tel: +1 276 699-6262
Fax: +1 276 699-6323

SAFETY DATA SHEET

Fast-Acting Limestone Pellets

1. IDENTIFICATION

Product Names:

LimeLite, LimeLite Pro, LimeLite Pro Cal

Identified uses: Acid Soil Treatment
Manufacturer: Austinville Limestone Co.
223 Newtown Church Rd, Austinville VA 24312
Manufacturing Site: Austinville Virginia, USA
Emergency Telephone: +1 (800) 451-8346 3E Company

2. HAZARD(S) IDENTIFICATION

GHS Classification: Physical and Chemical Hazards: Not classified.
Human Health: Quartz: STOT RE 1 – H372.
Environment: Not classified.

GHS Pictogram:



Signal Word: Danger
Hazard Statement: H372 Causes damage to lungs through prolonged or repeated exposure via inhalation.
Precautionary Statements: P260 Do not breathe dust.
P285 In case of inadequate ventilation wear respiratory protection.
P501 Dispose of contents/containers in accordance with local regulations.

Long term exposure to crystalline silica can cause lung injury (silicosis). IARC and NTP have determined that crystalline silica inhaled from occupational sources can cause cancer in humans. Risk of injury is dependent on the duration and level of exposure.

3. COMPOSITION / INGREDIENTS

Ground Limestone (Calcium Carbonate)	>94%
CAS No.: 1317-65-3	EC No.:
GHS Classification:	Not classified.
Quartz	<1%
CAS No.: 14808-60-7	EC No.: 238-878-4
GHS Classification:	STOT RE 1 – H372
Ammonium Lignin Sulfonate	<3%
CAS No.: 8061-53-8	EC No.:
GHS Classification:	Not classified.
Sodium Gluconate (chelating agent)	2%
CAS No.: 527-07-01	EC No.:
Classification:	Not classified.

4. FIRST-AID MEASURES

Description of first aid measures:

Inhalation:	Remove to fresh air.
Ingestion:	Drink plenty of water. Never give liquid to an unconscious person.
Skin Contact:	Wash skin thoroughly with soap and water.
Eye Contact:	Immediately rinse with water for several minutes.

5. FIRE-FIGHTING MEASURES

Auto Ignition Temperature (°C)	Not applicable.
Flammability Limit – Lower (%)	Not applicable.
Flammability Limit – Upper (%)	Not applicable.
Flash point (°C)	Not applicable.
Extinguishing Media	The product is non-combustible.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Use proper respiratory and personal protective equipment. MSHA / NIOSH or OSHA / NIOSH approved respirator recommended. Spilled materials may cause slippery conditions when wet. Care should be exercised when walking on spills on floors or concrete pads.

Spill Clean Up Methods:

Vacuum, pump or scoop spilled material into containers for reclaiming or disposal. Do not discharge into drains, watercourses or onto the ground.

7. HANDLING AND STORAGE

Handling:

Minimize dust generation and accumulation. If excessive dust is generated, provide adequate ventilation and use proper respiratory and personal protective equipment.

Storage:

Store in a cool and well-ventilated place. Store away from acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	Standard	TWA (8-hrs)
Limestone	PEL	15 mg/m ³
	ACGIH	2 mg/m ³
Quartz	PEL	0.1 mg/m ³
	ACGIH	0.025 mg/m ³
Ammonium Lignin Binder	PEL	15 mg/m ³
	ACGIH	

Component	IDLH
Quartz	25 mg/m ³

ACGIH: American Conference of Governmental Industrial Hygienists.

Engineering Measures:

Use exhaust ventilation, if required, to maintain dust concentration below recommended exposure limits.

Respiratory Equipment:

If respirator is required, use of a MSHA / NIOSH or OSHA / NIOSH approved respirator is recommended.

Hand Protection:

Rubber gloves are recommended for prolonged exposure.

Eye Protection:

Wear side shield safety glasses

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Granular.
Color:	Brown.
Odor:	Slightly woody odor.
Solubility:	Slightly soluble in water.
Boiling point and boiling range:	Not applicable.
Melting point:	Decomposes at ~825°C.
Flash point:	Not applicable.
Auto Ignition Temperature (°C):	Not applicable.
Flammability Limit – Lower (%):	Not applicable.
Flammability Limit – Upper (%):	Not applicable.

10. STABILITY AND REACTIVITY

Reaction with: Acids.
Stability: No particular stability concerns. Not applicable.
Conditions to Avoid: Avoid contact with acids.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: Acute Toxicity (Oral LD50) 6450 mg/kg Rat

12. ECOLOGICAL INFORMATION

Ecotoxicity: The product is not expected to be hazardous to the environment.

13. DISPOSAL CONSIDERATIONS

Disposal Methods: Under RCRA (40 CFR 261) ground limestone is a non-hazardous waste. Dispose of waste material in accordance with all local, state and federal requirements.

14. TRANSPORT INFORMATION

Environmentally Hazardous Substance / Marine Pollutant
No

15. REGULATORY INFORMATION

OSHA Hazard Communications Standard, 29 CFR 1910.1200: Material is considered hazardous. See Section 2.

RCRA: Material is not defined as a hazardous waste per 40 CFR 261.

CERCLA: Material is not reportable under CERCLA; local requirements may vary.

SARA: 311/312 Hazard Categories – Immediate and Delayed Health; 313 Reportable Ingredients – none.

California Proposition 65: This product contains chemicals known to the State of California to cause cancer.

EU REACH Regulations: Exempted in accordance with Annex V.7

WHMIS: Limestone products do not meet the criteria for WHMIS classification and are thus not included on the disclosure list

Additional regulatory information available on request

16. OTHER INFORMATION

HEALTH	1
FLAMMABILITY	0
PHYSICAL	0
PERSONAL PROTECTION	E

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

Revision Date

05/17/2018 SDS No: V31