

**SECTION I – IDENTIFICATION**

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

**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 Materials  
 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 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 until the safety information presented in this SDS has been read and understood.  
 Do not breathe dusts or mists. Do not eat, drink or smoke while manually handling this product. Wash skin thoroughly after manually handling.

If on skin: Rinse skin 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 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 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: Get medical attention.

Wear eye protection and respiratory protection following this SDS, 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)
Limestone	1317-65-3	80-99
Silicon Dioxide <sup>(1)</sup> , SiO <sub>2</sub>	7631-86-9	0-10
Aluminum Oxide, Al <sub>2</sub> O <sub>3</sub>	1344-28-1	<1
Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	1309-37-1	<1
Magnesium Oxide, MgO	1309-48-4	0-8
Calcium Oxide, CaO	1305-78-8	0-43
Sodium Oxide, Na <sub>2</sub> O	1313-59-3	<1
Potassium Oxide, K <sub>2</sub> O	12136-45-7	<1
Calcium Carbonate, CaCO <sub>3</sub>	471-34-1	40-100

(1): The composition of SiO<sub>2</sub> may be up to 100% crystalline silica

**SECTION IV – FIRST-AID MEASURES**

**INHALATION:** If excessive inhalation occurs, remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if 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. Contact a physician if irritation persists or develops later.

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

**SIGNS AND SYMPTOMS OF EXPOSURE:** There are generally no signs or symptoms of exposure to respirable crystalline silica. 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 respirable crystalline silica 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.

Direct skin and eye contact with dust may cause irritation by mechanical abrasion. 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. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, 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.

**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 limestone.

**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 respirable crystalline silica-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. Wear appropriate personal protective equipment as specified in Section VIII including appropriate respirators during and following clean up or whenever airborne dust is present to ensure worker exposures remain below occupational exposure limits (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 is 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 respirable crystalline silica 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 and ensure that the dust collection system is adequate to reduce airborne dust levels to 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 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 and train them in the appropriate use of personal protective equipment and engineering controls, which will reduce their risks of exposure.

See also ASTM International standard practice E 1132-06, "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](http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf)

**SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Airborne OELs for Components of Limestone:**

COMPONENT(S) CHEMICAL NAME	MSHA/OSHA PEL	ACGIH TLV-TWA	NIOSH REL
Limestone	(T) 15 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>	-	(T) 10 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>
Silicon Dioxide, SiO <sub>2</sub> §	(R) 0.05 mg/m <sup>3</sup> (R) 0.025 mg/m <sup>3</sup> (AL)	(R) 0.025 mg/m <sup>3</sup> #	(R) 0.05 mg/m <sup>3</sup> #
Aluminum Oxide, Al <sub>2</sub> O <sub>3</sub>	(T) 15 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>	( <sup>1</sup> ) (R) 1 mg/m <sup>3</sup>	-
Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	( <sup>2</sup> ) 10 mg/m <sup>3</sup>	(R) 5 mg/m <sup>3</sup>	( <sup>3</sup> ) 5 mg/m <sup>3</sup>
Magnesium Oxide, MgO	( <sup>4</sup> ) 15 mg/m <sup>3</sup>	(I) 10 mg/m <sup>3</sup>	-
Calcium Oxide, CaO	5 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Sodium Oxide, Na <sub>2</sub> O ( <sup>5</sup> )	2 mg/m <sup>3</sup>	(C) 2 mg/m <sup>3</sup>	(C) 2 mg/m <sup>3</sup>
Potassium Oxide, K <sub>2</sub> O	-	( <sup>6</sup> ) (C) 2 mg/m <sup>3</sup>	( <sup>6</sup> ) (C) 2 mg/m <sup>3</sup>
Calcium Carbonate, CaCO <sub>3</sub>	(T) 15 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>	-	(T) 10 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>

§ The OSHA OELs for respirable crystalline silica are listed in the table. As of June 28, 2018, the MSHA standard for respirable crystalline silica has not been changed but may be revised in the future. The MSHA PEL for dust containing crystalline silica (quartz) is based on the silica content of the respirable dust sample and is calculated as: 10 mg/m<sup>3</sup>/(% SiO<sub>2</sub>+2). The MSHA PEL for crystalline silica as tridymite and cristobalite is one-half the PEL for crystalline silica (quartz). # The ACGIH and NIOSH limits are for crystalline silica (quartz), independent of the dust concentration. The ACGIH TLV for crystalline silica as cristobalite is equal to the TLV for crystalline silica as quartz. In 2005, ACGIH withdrew the TLV for crystalline silica as tridymite. The NIOSH REL for crystalline silica as cristobalite and tridymite is the same as for quartz. Refer to Section X for thermal stability information for crystalline silica (quartz).

AL: Action Level

(1): Limits based on Aluminum Metal and Insoluble Compounds.

(2): As Iron Oxide Fume.

(3): Dust and fume, as Iron

(4): As Magnesium Oxide Fume Total Particulate.

(5): Based on Sodium Hydroxide.

(6): 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
MSHA/OSHA PEL (as Inert or Nuisance Dust)	5 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m <sup>3</sup>	*10 mg/m <sup>3</sup>
NIOSH REL (Particulates Not Otherwise Regulated)	-	-

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 exposure limits.

Other control measures: Respirable dust and crystalline silica levels should be monitored regularly. Dust and crystalline silica levels in excess of appropriate exposure limits 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.

**SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION, CONTD.****RESPIRATORY PROTECTION**

## Respirator Recommendations:

For respirable crystalline silica levels that exceed or are likely to exceed appropriate exposure limits, 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 website: <http://www.cdc.gov/niosh/npg> (search for crystalline silica). 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.

NIOSH recommendations for respiratory protection include:

**Up to 0.5 mg/m<sup>3</sup>:**

(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.

**Up to 1.25 mg/m<sup>3</sup>:**

(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate (100-series) filter.

(APF = 25) Any supplied-air respirator operated in a continuous-flow mode

**Up to 2.5 mg/m<sup>3</sup>:**

(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.

(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter

**Up to 25 mg/m<sup>3</sup>:**

(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions (50 mg/m<sup>3</sup> for crystalline silica-quartz): A self-contained breathing apparatus (SCBA) that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode or any supplied-air respirator that has a full-face piece 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-face piece 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 the OSHA Consultative Services group for detailed information. Ensure appropriate respirators are worn, as needed, during and following the task, including clean up or whenever airborne dust is present, to ensure worker exposures remain below OELs.

**GENERAL HYGIENE CONSIDERATIONS**

There are no known hazards associated with this material when used as recommended. Following the guidelines in this SDS are recognized as good industrial hygiene practices. 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.

**SECTION IX— PHYSICAL AND CHEMICAL PROPERTIES**

<b>APPEARANCE</b> Limestone is a mixture of fine to coarse angular white to gray particles ranging in size from powder to small stones	<b>ODOR AND ODOR THRESHOLD</b> Odorless to musty odor and not applicable
<b>pH AND VISCOSITY</b> Not applicable	<b>MELTING POINT/FREEZING POINT</b> Not applicable
<b>BOILING POINT AND RANGE</b> Not applicable	<b>FLASH POINT AND FLAMMABILITY</b> Not applicable
<b>FLAMMABILITY/EXPLOSIVE LIMITS AND AUTOIGNITION TEMPERATURE</b> Not applicable	<b>EVAPORATION RATE AND DECOMPOSITION TEMPERATURE</b> Not applicable
<b>VAPOR PRESSURE AND VAPOR DENSITY IN AIR</b> Not applicable	<b>SPECIFIC GRAVITY.</b> 2.5-2.75
<b>SOLUBILITY IN WATER</b> Insoluble	<b>PARTITION COEFFICIENT: N-OCTANOL/WATER</b> Not applicable

**SECTION X – STABILITY AND REACTIVITY**

<b>STABILITY</b> Stable	<b>CONDITIONS TO AVOID</b> Contact with incompatible materials (see below).
<b>THERMAL STABILITY</b> 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.	
<b>INCOMPATIBILITY (Materials to avoid)</b> Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Some components of limestone may react vigorously with water.	
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b> Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.	
<b>HAZARDOUS POLYMERIZATION</b> 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.</p> <p>Primary routes(s) of exposure:      ■ Inhalation       Skin      ■ Ingestion</p> <p><b>EYE CONTACT:</b> Direct contact with dust may cause irritation by mechanical abrasion or corrosive action. Conjunctivitis may occur.</p> <p><b>SKIN CONTACT:</b> Direct contact may cause irritation by mechanical abrasion. Some components of material are also known to cause corrosive effects to skin and mucous membranes.</p> <p><b>SKIN ABSORPTION:</b> Not expected to be a significant route of exposure.</p> <p><b>INGESTION:</b> 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><b>INHALATION:</b> Dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits.</p>
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**SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.****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 levels do not exceed the appropriate exposure limits. 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 respirable crystalline silica 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 occupational exposure limits for airborne respirable crystalline silica 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 respirable crystalline silica 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 respirable crystalline silica 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.

**SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.****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 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 respirable crystalline silica is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust.

OSHA - Crystalline silica is not on the OSHA carcinogen list.

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 or reproductive toxicity.

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) "Dose-Response Meta-Analysis of Silica and Lung Cancer", *Cancer Causes Control*, (20):925-33 (2009); (2) "Occupational Silica Exposure and Lung Cancer Risk: A Review of Epidemiological Studies 1996-2005", *Ann Oncol*, (17) 1039-50 (2006); (3) "Lung Cancer Among Industrial Sand Workers Exposed to Crystalline Silica", *Am J Epidemiol*, (153) 695-703 (2001); (4) "Crystalline Silica and The Risk of Lung Cancer in The Potteries", *Occup Environ Med*, (55) 779-785 (1998); (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).

**C. AUTOIMMUNE DISEASES**

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. For a review of the subject, the following may be consulted: (1) "Antinuclear Antibody and Rheumatoid Factor in Silica-Exposed Workers", *Arh Hig Rada Toksikol*, (60) 185-90 (2009); (2) "Occupational Exposure to Crystalline Silica and Autoimmune Disease", *Environmental Health Perspectives*, (107) Supplement 5, 793-802 (1999); (3) "Occupational Scleroderma", *Current Opinion in Rheumatology*, (11) 490-494 (1999); (4) "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) "Tuberculosis and Silicosis: Epidemiology, Diagnosis and Chemoprophylaxis", *J Bras Pneumol*, (34) 959-66 (2008); (2) *Occupational Lung Disorders*, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); (3) "Risk of Pulmonary Tuberculosis Relative to Silicosis and Exposure to Silica Dust in South African Gold Miners," *Occup Environ Med*, (55) 496-502 (1998); (4) "Occupational Risk Factors for Developing Tuberculosis", *Am J Ind Med*, (30) 148-154 (1996).

**E. KIDNEY DISEASE**

There is evidence that exposure to respirable crystalline silica (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) "Mortality from Lung and Kidney Disease in a Cohort of North American Industrial Sand Workers: An Update", *Ann Occup Hyg*, (49) 367-73 (2005); (2) "Kidney Disease and Silicosis", *Nephron*, (85) 14-19 (2000); (3) "End Stage Renal Disease Among Ceramic Workers Exposed to Silica", *Occup Environ Med*, (56) 559-561 (1999); (4) "Kidney Disease and Arthritis in a Cohort Study of Workers Exposed to Silica", *Epidemiology*, (12) 405-412 (2001).

**SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.****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. *NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica*, published in April 2002, available from NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226, or at <https://www.cdc.gov/niosh/docs/2002-129/default.html>.

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.

**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. Eye and skin irritant.

Chronic effect/carcinogenicity: Aluminum oxide 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.

**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.

**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 fume and silica may develop a “mixed dust pneumoconiosis.” Not classifiable as human carcinogen.

**Potassium Oxide:**

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

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

Acute effect: Corrosive – Potassium oxide reacts violently with water to produce potassium hydroxide. If inhaled, 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.

**SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.****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.

**Magnesium Oxide:**

Exposure route: Inhalation, eye/skin contact.

Target organs: Eyes, respiratory system.

Acute effect: Magnesium oxide 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.

**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 limestone containing in excess of 3% quartz. However, it is claimed that pure calcium carbonate does not cause pneumoconiosis. Adverse health effects have generally not been reported in literature among workers using CaCO<sub>3</sub>.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen

Acute Toxicity Estimates for Limestone – 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 Martin Marietta Materials 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

**OSHA:** Crystalline Silica is not listed as a carcinogen.

**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:** Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

**CERCLA:** Crystalline silica (quartz) 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):** Crystalline silica (quartz) 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:** Crystalline silica (quartz) mined and processed by Martin Marietta Materials 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: Respirable** crystalline silica (quartz) is classified as a substance known to the state of California to be a carcinogen.

**Massachusetts Toxic Use Reduction Act:** Respirable crystalline silica is considered toxic per the **Massachusetts Toxic Use Reduction Act when used in abrasive blasting and molding.**

**Pennsylvania Worker and Community Right to Know Act:** Quartz is considered hazardous for purposes of the Act, but it is not a special hazardous substance or an environmental hazardous substance.

## SECTION XVI – OTHER INFORMATION

### DEFINITIONS OF ACRONYMS/ABBREVIATIONS

ACGIH: American Conference of Governmental Industrial Hygienists

AL: Action Level

ANSI: American National Standards Institute

APF: Assigned Protection Factor

California REL: California Inhalation Reference Exposure Limit

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

GHS: Globally Harmonized System

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

NIOSH REL: NIOSH Recommended Exposure Limit

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

RCRA: Resource Conservation and Recovery Act

SARA Title III: Title III of the Superfund Amendments and Reauthorization Act, 1986

SDS: Safety Data Sheet

STOT: Specific Target Organ Toxicity

TLV: Threshold Limit Value

TSCA: Toxic Substance Control Act

TWA: Time-Weighted Average

**SECTION XVI – OTHER INFORMATION, CONTD.**

**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 Materials 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 Materials, 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 requirement. However, 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](http://www.martinmarietta.com). More information on the effects of crystalline silica exposure may be obtained from OSHA (phone number: 1-800-321-OSHA; website: <http://www.osha.gov>) or from NIOSH (phone number: 1-800-35-NIOSH; website: <http://www.cdc.gov/niosh>).

DATE OF PREPARATION 6/2018

REPLACES 3/2015

NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE IS MADE



**MATERIAL SAFETY DATA SHEET (MSDS)  
FOR DOLOMITIC LIMESTONE**

(Complies with OSHA's Hazard Communication Standard, 29 CFR 1910.1200)

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## Section 1 - IDENTIFICATION

### Supplier/Manufacturer

Austinville Limestone Co.  
223 Newtown Church Road  
PO Box 569  
Austinville VA 24312

### Emergency Contact Information

(276) 699-6262  
  
Kevin Mann

### Product name and synonyms

GardenLime, LawnLime, Pro Aglime, Pro Pelletized Lime

### Chemical family

Dolomitic Limestone (CAS #16389-88-1)      CaCO<sub>3</sub> – 50%  
MgCO<sub>3</sub> – 40%

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## Section 2 - COMPONENTS

### Hazardous Ingredients

Respirable quartz (CAS# 14808-60-7) – greater than 0.1% by weight, Less than 1.0%  
ACGIH TLV-TWA (2000) = 0.05 mg respirable quartz dust/m<sup>3</sup>  
OSHA PEL (8-hour TWA) = (10 mg respirable dust/m<sup>3</sup>)/(percent silica + 2)  
NIOSH REL (8-hour TWA) = 0.05 mg respirable dust/m<sup>3</sup>

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## Section 3 - HAZARD IDENTIFICATION

### Potential Health Effects

#### **Relevant Routes of Exposure:**

Eye contact, skin contact, inhalation, and ingestion.

#### **Effects Resulting from Eye Contact:**

Exposure to airborne dust may cause immediate or delayed irritation or inflammation. Eye contact by large amounts of dry powder or splashes of wet limestone dust may cause effects ranging from moderate eye irritation to corneal abrasions. Such exposures may require immediate first aid (see Section 4) and medical attention to prevent damage to the eye.

#### **Effects Resulting from Skin Contact:**

Direct contact may cause irritation by mechanical abrasion.

#### **Effects Resulting from Inhalation:**

Limestone may contain trace amounts of free crystalline silica. Prolonged exposure to respirable free silica can aggravate other lung conditions and cause silicosis, a disabling and potentially fatal lung disease.

Exposure to limestone dust may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

#### **Effects Resulting from Ingestion:**

Although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed.

#### **Carcinogenic potential:**

Limestone is **not** listed as a carcinogen by NTP, OSHA, or IARC. It may however, contain trace amounts of substances listed as carcinogens by these organizations.

Crystalline silica, which is a component of limestone, is now classified by IARC as known human carcinogen (Group I). NTP has characterized respirable silica as "reasonably anticipated to be [a] carcinogen".

#### **Medical conditions which may be aggravated by inhalation or dermal exposure:**

Pre-existing upper respiratory and lung diseases.

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#### **Section 4 - FIRST AID**

##### Eyes

Immediately flush eyes thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician if irritation persists or later develops.

##### Skin

Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation persists or later develops.

##### Inhalation of Airborne Dust

Remove to fresh air. Seek medical help if coughing and other symptoms do not subside.

##### Ingestion

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

---

#### **Section 5 - FIRE AND EXPLOSION DATA**

Flash point .....	None	Lower Explosive Limit.....	None
Upper Explosive Limit.....	None	Auto ignition temperature.....	Not Combustible
Extinguishing media.....	Not Combustible	Special fire fighting Procedures.....	None
Hazardous combustion products..	None	Unusual fire and explosion hazards.....	None

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#### **Section 6 - ACCIDENTAL RELEASE MEASURES**

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin.

None of the components of this product are subject to the reporting requirements of Title III of SARA 1986, and 40 CFR 372.

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#### **Section 7 - HANDLING AND STORAGE**

Follow the personal protection and controls set forth in Section 8 of this MSDS when handling this product. Respirable crystalline silica-containing dust may be generated during processing, handling and storage.

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#### **Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

##### Skin Protection

Wash dust-exposed skin with soap and water before eating, drinking, smoking, and using the toilet facilities. Wash work clothes after each use.

##### Respiratory Protection

Avoid actions that cause dust to become airborne. Use local or general exhaust ventilation to control exposures below applicable exposure limits.

Use NIOSH/MSHA approved (under 30 CFR 11) or NIOSH approved (under 42 CFR 84) respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation. (Advisory: Respirators and filters purchased after June 10, 1998 must be certified under 42 CFR 84.)

##### Ventilation

Use local exhaust or general dilution ventilation to control exposure within applicable limits.

##### Eye Protection

Safety glasses with side shields should be worn as minimum protection. In extremely dusty environments and unpredictable environments wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with products which may generate airborne dust.

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#### **Section 9 - PHYSICAL AND CHEMICAL, PROPERTIES**

Physical state.....Solid	Odor.....No distinct odor
Solubility in water...Negligible	Vapor pressure.....Not applicable
Vapor density.....Not applicable	Boiling point.....Not applicable (i.e., > 1000 C)
Melting point.....Not applicable	Specific gravity (H2O = 1.0).....2.55-2.85
Evaporation rate.....Not applicable	

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**Section 10 - STABILITY AND REACTIVITY****Stability**

Stable.

**Conditions to avoid**

Avoid contact with incompatible materials (see below).

**Incompatibility**

Materials to avoid include; powerful oxidizing agents such as fluoride, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen defluoride. Contact of these materials may cause fire and/or explosions. Silica dissolves in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.

**Hazardous decomposition**

Will not spontaneously occur. Silica-containing respirable dust particles may be generated by handling.

**Hazardous Polymerization**

Will not occur.

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**Section 11 - TOXICOLOGICAL INFORMATION**

For a description of available, more detailed toxicological information contact the supplier or manufacturer.

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**Section 12 - ECOLOGICAL INFORMATION****Ecotoxicity**

No recognized unusual toxicity to plants or animals

**Relevant physical and chemical properties**

(See Sections 9 and 10.)

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**Section 13 - DISPOSAL**

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

Where applicable, dispose of bags in an approved landfill or incinerator.

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**Section 14 - TRANSPORTATION DATA****Hazardous materials description/proper shipping name**

Not hazardous under U.S. Department of Transportation (DOT) regulations.

**Hazard class**

Not applicable.

**Identification number**

Not applicable

**Required label text**

Not applicable.

**Hazardous substances/reportable quantities (RQ)**

Not applicable.

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**Section 15 - OTHER REGULATORY INFORMATION****Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200**

Limestone is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program.

**Status under CERCLA/SUPERFUND 40 CFR 117 and 302**

Not listed.

Hazard Category under SARA(Title III), Sections 311 and 312

Limestone qualifies as a "hazardous substance" with delayed health effects.

Status under SARA (Title III), Section 313

Not subject to reporting requirements under Section 313.

Status under TSCA (as of May 1997)

Some substances in limestone are on the TSCA inventory list.

Status under the Federal Hazardous Substances Act

Limestone is a "hazardous substance" subject to statutes promulgated under the subject act.

Status under California Proposition 65

This product contains up to 0.05 percent of chemicals (trace elements) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove that the defined risks do not exist.

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**Section 16 - OTHER INFORMATION**

Prepared by

Kevin Mann  
V.P. Sales  
Austinville Limestone Co.  
PO Box 569  
Austinville VA 24312

Approval date or Revision date

Revised: April 2007

Other important information

This product should only be used by knowledgeable persons. While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards this product as it is commonly used, the sheet cannot anticipate and provide the all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product.

SELLER MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Austinville Limestone Co. except that the product shall conform to contracted specifications. The information provided herein was believed to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.



# SAFETY DATA SHEET

SDS ID NO.: 0108MAR019

Revision date 02/12/2020

## 1. IDENTIFICATION

<b>Product Name</b>	Marathon Petroleum Asphalt
<b>Synonym</b>	Asphalt Cement (ACs); Asphalt Flux; Penetration Grade Asphalts (Pen); Roofing Flux; Recycling Agents (RAs); Marathon PERFORMAC™ Asphalt Binder; PERFORMAC™ PG82-22PM; PERFORMAC™ 500; PG46-28; Performance Graded Asphalt Binder; PG46-34; PG52-28; PG52-28PM; PG52-34; PG58-22; PG58-28; PG 58S-28; PG58-34; PG58-34PM; PG64-22; PG 64E-22; PG 64H-22; PG 64S-22; PG64-28; PG64-28PM; PG64-28P; PG64-34PM; PG67-22; PG67-22X; PG70-22; PG70-22PM; PG70-22P; PG70-28PM; PG70-28P; PG76-22; PG76-22 PM; PG76-22P; PG76-28PM; PG64-22PM; PG82-22PM; PG76-22ARB; Asphalt; PG58H-28; PG64H-22; PG64H-22P; PG67H-22; PG58V-28; PG64V-22; PG67V-22; PG58E-28; PG64E-22; PG64E-22P; PG67E-22; Asphalt, PG76-22 0.25% Anti-strip Additive; PG76-22HP; PG Binders with WMA; PG Binders with AS-2000 Cross Link; AC-5; AC-7; Marathon 0-10 Pen Asphalt; 10-25 Pen Asphalt; 25-40 Pen Asphalt; 40-55 Pen Emulsion Base; 85-100 Pen; 120-150 Pen; 150-200 Pen; 200-300 Pen; S-180 Hard Pen Asphalt; Marathon SDA Bottoms; Solvent Deasphalted Residuum; 0 Pen Asphalt; 3 Pen Asphalt; 10 Pen Asphalt; AC-20; Vacuum Tower Bottoms; VTB; VB; Residuum Extract; Petroleum Asphaltenes; Residual Oil Solvent Extract; Residuum Extract; Light Saturant Asphalt; PMA Concentrate; HPMA Concentrate; HPMAC Base Asphalt; 0307MAR019; 0316MAR019; 0142MAR019; 0169MAR020
<b>Product code</b>	0108MAR019
<b>Chemical family</b>	Asphalt
<b>Recommended use</b>	Road Building & Other Service.
<b>Restrictions on use</b>	All others.
<b>Manufacturer, Importer, or Responsible Party Name and Address</b>	<b>MARATHON PETROLEUM COMPANY LP</b> <b>539 South Main Street</b> <b>Findlay, OH 45840</b>
<b>SDS Information</b>	1-419-421-3070 (M-F; 8-5 EST)
<b>24 Hour Emergency Telephone</b>	CHEMTREC: 1-800-424-9300 (CCN# 13740)

## 2. HAZARD IDENTIFICATION

### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

### Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1A
Carcinogenicity	Category 2
Acute aquatic toxicity	Category 3

### Hazards Not Otherwise Classified (HNOC)

Hot liquid may cause thermal burns  
May release hydrogen sulfide gas

**Label Elements****Warning**

Contact with product at elevated temperatures can result in thermal burns  
 May release highly toxic hydrogen sulfide gas that quickly fatigues the sense of smell  
 Causes skin irritation  
 Causes serious eye irritation  
 May cause an allergic skin reaction.  
 Suspected of causing cancer (when heated above 200C/392F)  
 Harmful to aquatic life



**Appearance** Black-brown solid or semi-solid at room temperature. Liquid at temperatures >70°C.

**Physical State** Liquid

**Odor** Tar

**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Avoid breathing fume/gas/vapors  
 Wash hands and any possibly exposed skin thoroughly after handling  
 Contaminated work clothing should not be allowed out of the workplace  
 Avoid release to the environment

**Precautionary Statements - Response**

IF exposed or concerned: Get medical attention  
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If eye irritation persists: Get medical attention  
 If on skin: Wash with plenty of soap and water  
 If skin irritation or rash occurs: Get medical attention  
 Take off contaminated clothing and wash before reuse

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container at an approved waste disposal plant

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Composition Information**

Name	CAS Number	% Concentration
Asphalt	8052-42-4	90-100
Ester Bottoms	PROPRIETARY	0-10
Styrene/butadiene Copolymer	9003-55-8	0-9
Sulfur Compounds	Mixture	1-5
Polyphosphoric Acids	8017-16-1	0-1
Polyamine	Proprietary	0-1
Modified Tall Oil Fatty Acid	PROPRIETARY	0-1

Naphthalene	91-20-3	0.01-0.15
Hydrogen sulfide	7783-06-4	<0.1
Polycyclic Aromatic Hydrocarbons	Mixture	<0.01

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume. Can contain minor amounts of sulfur, nitrogen and oxygen compounds as well as trace amounts of heavy metals such as nickel, vanadium and lead. Composition varies depending on source of crude and specifications of final product.

## 4. FIRST AID MEASURES

### First aid measures

#### **General advice**

Immediately address any airway, breathing, or circulation concerns. Contact EMS if the person is having trouble breathing, moving, or staying awake. Perform a quick assessment for other injuries that may be present including falls or from falling objects.

REMEMBER ABCC (AIRWAY, BREATHING, CIRCULATION, COOLING).

#### **Inhalation**

If symptoms of overexposure to asphalt fume develop, move to fresh air in a position comfortable for breathing. If symptoms or irritation occur, call a poison control center or doctor.

#### **Skin contact**

Hot material: DO NOT DELAY. Immediately immerse or place the affected skin under a water stream for at least 15 minutes. Urgent medical attention is required for burns to the face, eyes, hands, feet, genitalia, and for circumferential or large burn areas. GET MEDICAL ATTENTION IMMEDIATELY.  
Do not attempt to remove solidified asphalt if not a physician. Leave burn uncovered. Ice (or "cold packs") may be used in the event that water is unavailable. Only remove clothing if not adhering to the skin. Be aware that although it is very important to cool the burn thoroughly and completely, the overuse of ice may increase the risk of hypothermia.

Cold material: To remove cold asphalt not associated with a burn, wash with soap and water or waterless cleaner. If symptoms or irritation or rash occur, call a poison control center or doctor.

#### **Eye contact**

Hot material: After contact with hot asphalt, lay the person flat on their back, remove contact lenses if easy to do, and flush with water from a continuous stream for at least 15 minutes by allowing the water to flow over the bridge of the nose to the eyes. GET MEDICAL ATTENTION IMMEDIATELY.

Cold material: If irritation develops, flush eyes with water. If irritation or redness persists call a poison control center or a doctor.

#### **Ingestion**

Ingestion not likely. Small amounts of ingested asphalt usually require no treatment. If large amounts are swallowed, call a poison control center or doctor.

### Most important signs and symptoms, both short-term and delayed with overexposure

#### **Adverse effects**

Frequent or prolonged contact with cold material may cause irritation. Additional effects may include skin sensitization. Exposure to hot melted material can cause thermal burns.

### Indication of any immediate medical attention and special treatment needed

#### **Notes to physician**

Immediately address any airway, breathing, or circulation concerns.

SKIN & EYE CONTACT: Prolonged flushing/cooling is necessary if the patient is treated on scene or soon after asphalt contact. Topical antibiotics should be liberally applied to the adhered asphalt-skin interface to aid in asphalt removal. A non-adherent material, such as Adaptic®, can then be applied and covered with sterile gauze. If topical antibiotics are not available, other materials that may be effective include mineral oil, baby oil, petroleum jelly (e.g. Vaseline®), mayonnaise, or butter. Do not use organic solvents such as kerosene, gasoline, or ethanol, as these can result in tissue damage or a fire hazard. Dressings

should be changed every 4 hours until natural separation occurs. Initiate standard burn management at that time. Once cooled, adhered asphalt is not harmful to the skin, and in fact, provides a sterile cover over the affected area. The asphalt will detach itself within a few days as healing occurs. If it is necessary to remove the asphalt, only medically approved solvents or warm paraffin should be used to prevent further skin damage. Circumferential asphalt contact can have a tourniquet effect and impair distal circulation and nerve function. Create a longitudinal split or cut (analogous to an escharotomy) may be required completely across the residual asphalt to relieve pressure in the underlying tissue. For eye exposures with adherent asphalt, consult with an ophthalmologist. If hot material has caused burns to the eye, early ophthalmologic evaluation is recommended.

**INHALATION:** Inhalation exposure can produce toxic effects. Treat intoxications as hydrogen sulfide exposures. At high concentrations hydrogen sulfide may produce pulmonary edema, respiratory depression, and/or respiratory paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis.

## 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media</b>	For small fires, Class B fire extinguishing media such as CO <sub>2</sub> , dry chemical, foam (AFFF/ATC) or water fog can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.			
<b>Unsuitable extinguishing media</b>	Do not use straight streams. Water contact can cause violent eruption of hot asphalt.			
<b>Specific hazards arising from the chemical</b>	This product is not a combustible liquid per the OSHA Hazard Communication Standard, but will ignite and burn at temperatures exceeding the flash point.			
<b>Hazardous combustion products</b>	Smoke, carbon monoxide, and other products of incomplete combustion.			
<b>Explosion data</b>				
<b>Sensitivity to mechanical impact:</b>	No.			
<b>Sensitivity to static discharge:</b>	No.			
<b>Special protective equipment and precautions for firefighters</b>	Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Keep run-off water out of sewers and water sources.			
<b>Additional firefighting tactics</b>	Not applicable			
<b>NFPA</b>	Health 2	Flammability 1	Instability 0	Special Hazard -

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Product may be stored at elevated temperatures.
<b>Protective equipment</b>	Use personal protection measures as recommended in Section 8.
<b>Emergency procedures</b>	Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.
<b>Environmental precautions</b>	Avoid release to the environment. Avoid subsoil penetration.

**Methods and materials for containment** Contain liquid with sand or soil.

**Methods and materials for cleaning up** Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Allow to cool until hardened. Pick up as solid waste. Recover and return free product to proper containers.

## 7. HANDLING AND STORAGE

**Safe handling precautions** Avoid contact with skin, eyes and clothing. Avoid breathing fumes, gas, or vapors. Use only outdoors or with adequate ventilation. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment. Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements.

Harmful concentrations of hydrogen sulfide (H<sub>2</sub>S) gas can accumulate in excavations and low-lying areas as well as the vapor space of storage and bulk transport compartments. Stay upwind and vent open hatches before unloading. Sulfur containing products may cause polysulfide deposits (iron sulfide) to form inside iron storage tanks. These pyrophoric deposits, upon exposure to air, can ignite spontaneously. Keep heating coils and flues in storage tanks, trucks and kettles covered with product (8"). Do not overheat.

If exposure to product fumes generated at temperatures above 200C or 392F is expected, skin and inhalation exposure must be avoided through adequate engineering controls, workplace ventilation, and appropriate personal protective equipment.

**Storage conditions** Store in properly closed containers that are appropriately labeled and in a well-ventilated area.

**Incompatible materials** Strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Name	ACGIH TLV	OSHA PELs	NIOSH IDLH
Asphalt 8052-42-4	0.5 mg/m <sup>3</sup> TWA	-	-
Natural Rubber PROPRIETARY	Inhalable Allergenic Proteins- 0.0001 mg/m <sup>3</sup> TWA Skin - potential significant contribution to overall exposure by the cutaneous route	-	-
Naphthalene 91-20-3	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm TWA: 50 mg/m <sup>3</sup>	250 ppm
Hydrogen sulfide 7783-06-4	1 ppm TWA 5 ppm STEL	Ceiling: 20 ppm Peak: 50 ppm	100 ppm

**Notes:** No further information available.

**Engineering measures** Local or general exhaust required in an enclosed area or when there is inadequate ventilation. Keep operating temperatures as low as possible to minimize fume generation.

### Personal protective equipment

**Eye protection** Wear goggles and faceshield when handling hot material.

**Skin and body protection** Wear insulated gloves when handling hot material. Contact the glove manufacturer for specific advice on glove selection and breakthrough times. Wear the appropriate thermal resistant clothing and footwear when handling and applying hot asphalt. Rubberized suits or coats may be needed for some maintenance operations with hot material.

**Respiratory protection**

Where there is potential for airborne exposure to hydrogen sulfide (H<sub>2</sub>S) above exposure limits, a NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used. When H<sub>2</sub>S vapors exceed permissible limits, i.e., in confined spaces or bulk transport loading/unloading, a positive-pressure atmosphere supplying respirator is recommended. Self-contained breathing apparatus should be used for fire fighting.

Provided hydrogen sulfide (H<sub>2</sub>S) is not detected: if there is potential to exceed the exposure limits for asphalt fumes a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters with R or P95 filters should be used. A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed when conditions warrant the use of a respirator.

Note: Air purifying respirators are not to be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient atmospheres, (less than 19.5 percent oxygen) or under conditions that are immediately dangerous to life and health (IDLH).

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<b>Appearance</b>	Black-brown solid or semi-solid at room temperature. Liquid at temperatures >70°C.
<b>Physical State</b>	Liquid
<b>Color</b>	Dark brown to black
<b>Odor</b>	Tar
<b>Odor Threshold</b>	No data available.

**Property**

<b><u>Property</u></b>	<b><u>Values (method)</u></b>
<b>pH</b>	Not applicable.
<b>Melting Point / Freezing Point</b>	> 15.5 °C / > 60 °F (ASTM D36)
<b>Initial Boiling Point / Boiling Range</b>	176-593 °C / 350-1100 °F (ASTM D2887)
<b>Flash Point</b>	> 232 °C / > 450 °F (ASTM D92)
<b>Evaporation Rate</b>	No data available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Flammability Limit in Air (%):</b>	
<b>Upper Flammability Limit:</b>	No data available.
<b>Lower Flammability Limit:</b>	No data available.
<b>Explosion Limits</b>	No data available.
<b>Vapor Pressure</b>	No data available.
<b>Vapor Density</b>	No data available.
<b>Specific Gravity / Relative Density</b>	0.95-1.13
<b>Water Solubility</b>	No data available.
<b>Partition Coefficient</b>	No data available.
<b>Autoignition Temperature</b>	No data available.
<b>Decomposition Temperature</b>	No data available.
<b>Kinematic Viscosity</b>	No data available. >50 P @ 60°C (ASTM D2171)
<b>VOC Content (%)</b>	No data available.
<b>Pour Point:</b>	16

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	The product is non-reactive under normal conditions.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Will not occur.

<b>Conditions to avoid</b>	Sources of heat or ignition.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	None known under normal conditions of use.

## 11. TOXICOLOGICAL INFORMATION

### Potential short-term adverse effects from overexposures

<b>Inhalation</b>	Fumes or vapors from the heated material may be irritating to the respiratory tract. May release highly toxic hydrogen sulfide gas that quickly fatigues the sense of smell.
<b>Eye contact</b>	Vapors may cause eye irritation and sensitivity to light. Contact with hot material may cause thermal burns.
<b>Skin contact</b>	May cause skin irritation. May cause an allergic skin reaction. Contact with hot material may cause thermal burns.
<b>Ingestion</b>	If swallowed at ambient temperature no significant adverse effects are expected. Ingestion of large amounts may cause gastrointestinal blockage. Swallowing hot material may cause burns to the mouth, throat, and stomach.

### Acute toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
Asphalt 8052-42-4	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	>94.4 mg/m <sup>3</sup> (Rat) 4 h
Sulfur Compounds Mixture	-	-	>5 mg/l (Rat) 4 h
Naphthalene 91-20-3	533 mg/kg (Mouse)	> 2000 mg/kg (Rabbit)	> 340 mg/m <sup>3</sup> (Rat) 1 h
Hydrogen sulfide 7783-06-4	-	-	444 ppm (Rat) 4 h

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

PETROLEUM ASPHALT: Eye and upper respiratory tract irritation has been reported in some asphalt workers (paving and roofing operations) but they are typically mild and transient. Some studies indicate that asphalt paving workers may experience lower respiratory tract symptoms (e.g., coughing, wheezing, and shortness of breath) and pulmonary function changes. Other studies of asphalt workers found no consistent relationship between exposure to asphalt fumes and pulmonary function. Increased levels of 1-hydroxypyrene (a marker for exposure to polycyclic aromatic hydrocarbons) have been observed in the urine of asphalt workers. Genotoxicity studies (e.g., DNA adducts in the urine) of asphalt workers have been largely inconclusive.

A slight increase in lung cancer mortality was reported in a study of European workers exposed to paving and mastic asphalt, but conclusions were equivocal. A follow-up case-control epidemiology study of asphalt paving workers sponsored by the International Association for Research in Cancer (IARC) concluded that there was no evidence that asphalt exposure was linked to lung cancer. An increase in skin tumors was observed in lifetime studies of laboratory rodents exposed to extracts of asphalt (bitumen). The relevance of these studies to humans is not clear. No increase in skin tumors was observed in a lifetime bioassay where laboratory mice were treated with paving fume condensates. No increase in lung or other tumors were observed in a lifetime inhalation study in laboratory rats exposed to fumes from paving asphalt.

For temperatures lower than 200C, the manufacturing process has minimal impact on the qualitative and quantitative emission composition. For temperatures higher than 200C, the presence of flux oil in bitumen drives high molecular weight PACs into the emissions yielding an increase of 4 – 6 ring PACs. No detectable levels of benzo[a]anthracene, benzofluoranthenes, benzo[a]pyrene, or dibenz[a,h]anthracene are expected in emissions associated with temperatures below 200C.

ASPHALTS USED IN ROOFING OPERATIONS: Some asphalts including roofing flux are further processed (oxidized/air-rectified) by the user or customer before use. An increased incidence of skin tumors was observed in a mouse skin carcinogenicity study where animals were exposed to condensed fumes collected from an oxidized roofing asphalt (BURA Type III) at above 450°F. Additional studies where mice were exposed to oxidized roofing asphalt fume condensates both as a tumor initiator and as a tumor promoter indicate that roofing fume condensate caused tumors as a result of initiation.

**HYDROGEN SULFIDE:** Hydrogen sulfide has a strong, unpleasant odor resembling that of rotten eggs. Odor, however, is not a reliable means for detecting potentially dangerous concentration of the gas, as the sense of smell diminishes very rapidly at concentrations of 50 ppm or higher. Eye irritation has been reported at 4 ppm. Irritation of the respiratory tract may occur at 50 ppm. Hydrogen sulfide gas may be fatal if inhaled in sufficient concentrations. Immediate loss of consciousness and death resulting from respiratory paralysis has occurred at concentrations as low as 500 ppm.

#### Adverse effects related to the physical, chemical and toxicological characteristics

<b>Signs and symptoms</b>	Frequent or prolonged contact with cold material may cause irritation. Additional effects may include skin sensitization. Rash. Contact with hot material may cause thermal burns.
<b>Acute toxicity</b>	None known.
<b>Skin corrosion/irritation</b>	None known.
<b>Serious eye damage/eye irritation</b>	None known.
<b>Sensitization</b>	May cause sensitization by skin contact. Not expected to be a respiratory sensitizer.
<b>Mutagenic effects</b>	None known.
<b>Carcinogenicity</b>	Suspected of causing cancer (when heated above 200C/392F)

Cancer designations are listed in the table below

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
Asphalt 8052-42-4	Not classifiable (A4)	Emissions of straight-run asphalt from paving operations - Possible human carcinogen (2B)	Not Listed	Not Listed
Styrene/butadiene Copolymer 9003-55-8	Not Listed	Not classifiable (3)	Not Listed	Not Listed
Naphthalene 91-20-3	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not Listed
Polycyclic Aromatic Hydrocarbons Mixture	Suspected human carcinogen(A2)	Carcinogenic to humans (1)	Reasonably anticipated to be a human carcinogen	Not Listed

<b>Reproductive toxicity</b>	None known.
<b>Specific Target Organ Toxicity (STOT) - single exposure</b>	None known.
<b>Specific Target Organ Toxicity (STOT) - repeated exposure</b>	None known.
<b>Aspiration hazard</b>	None known.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** This product should be considered harmful to aquatic organisms.

Name	Fish	Crustacea	Algae/aquatic plants
Naphthalene 91-20-3	96-hr LC50 = 0.91-2.82 mg/l Rainbow trout (static) 96-hr LC50 = 1.99 mg/l Fathead minnow (static)	48-hr LC50 = 1.6 mg/l Daphnia magna	-
Hydrogen sulfide 7783-06-4	96-hr LC50 = 0.016 mg/l Fathead minnow	-	-

	96-hr LC50 = 0.013 mg/l Rainbow trout		
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<b>Persistence and degradability</b>	Not expected to be readily biodegradable.
<b>Bioaccumulation</b>	Not expected to bioaccumulate in aquatic organisms.
<b>Mobility in soil</b>	Not likely to move rapidly with surface or groundwater flows because of its low water solubility.
<b>Other adverse effects</b>	No information available.

### 13. DISPOSAL CONSIDERATIONS

<b>Description of waste residues</b>	No information available.
<b>Safe handling of wastes</b>	Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required.
<b>Disposal of wastes / methods of disposal</b>	The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.
<b>Contaminated packaging disposal</b>	Empty containers should be completely drained and then discarded or recycled, if possible. Dispose of in accordance with federal, state and local regulations.

### 14. TRANSPORT INFORMATION

#### DOT

<b>UN/Identification No:</b>	UN 3257
<b>UN Proper Shipping Name:</b>	Elevated Temperature Liquid, N.O.S. (Asphalt)
<b>Transport Hazard Class(es):</b>	9
<b>Packing Group:</b>	III

Comments: (Hot Petroleum Asphalt) This material must not be transported when heated at or above its flash point.

#### IATA

<b>UN/Identification No:</b>	Forbidden by passenger air transport
<b>UN Proper Shipping Name:</b>	Not applicable
<b>Transport Hazard Class(es):</b>	Not applicable
<b>Packing Group:</b>	Not applicable

#### IMDG

<b>UN/Identification No:</b>	UN 3257
<b>UN Proper Shipping Name:</b>	Elevated Temperature Liquid, N.O.S. (Asphalt)
<b>Transport Hazard Class(es):</b>	9
<b>Packing Group:</b>	III
<b>EmS No:</b>	F-A, S-P
<b>Marine Pollutant:</b>	No

#### **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

### 15. REGULATORY INFORMATION

#### Regulatory Information

<b>US TSCA Chemical Inventory</b>	This product and/or its components are listed on the TSCA Chemical Inventory or are exempt.
<b>Canada DSL/NDSL Inventory</b>	This product and/or its components are listed either on the Domestic Substances List (DSL)

or are exempt.

### EPA Superfund Amendment & Reauthorization Act (SARA)

**SARA Section 302** This product may contain component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Hydrogen sulfide	500

**SARA Section 304** This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	Hazardous Substances RQs
Naphthalene 91-20-3	100 lb 45.4 kg
Hydrogen sulfide 7783-06-4	100 lb 45.4 kg
Polycyclic Aromatic Hydrocarbons Mixture	1 lb 0.454 kg

**SARA Section 311/312** The following EPA hazard categories apply to this product:

Skin corrosion or irritation  
 Serious eye damage or eye irritation  
 Respiratory or Skin sensitization  
 Carcinogenicity  
 Hazard Not Otherwise Classified (HNOC)-Health

**SARA Section 313** This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

Name	CERCLA/SARA 313 Emission reporting
Naphthalene 91-20-3	0.1 % de minimis concentration
Hydrogen sulfide 7783-06-4	1.0 % de minimis concentration
Polycyclic Aromatic Hydrocarbons Mixture	0.1 % Supplier notification limit

### U.S. State Regulations

**California Proposition 65** This product can expose you to chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Name	California Proposition 65
Naphthalene 91-20-3	Carcinogen, initial date 04/19/02
Polycyclic Aromatic Hydrocarbons Mixture	Carcinogen, initial date 07/01/1987

For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**State Right-To-Know Regulations** The following component(s) of this material are identified on the regulatory lists below:

Name	New Jersey Right-To-Know	Pennsylvania Right-To-Know	Massachusetts Right-To-Know
Asphalt 8052-42-4	Listed	Listed	Listed
Naphthalene	Listed	Listed	Listed

91-20-3			
Hydrogen sulfide 7783-06-4	Listed	Listed	Listed
Polycyclic Aromatic Hydrocarbons Mixture	Listed	Listed	Listed

## 16. OTHER INFORMATION

**Prepared by** Toxicology & Product Safety

### **Revision Notes**

**Revision date** 02/12/2020  
**Previous publish date** 08/31/2016  
**Revised sections** The following sections (§) have been updated:  
1. IDENTIFICATION

### **Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The 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, unless specified in the text.



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# SAFETY DATA SHEET

## Ground Limestone Products

### 1. IDENTIFICATION

**Product Names:**

Bulk Aglime, GardenLime, Pro Aglime, Granular Limestone

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

<b>Ground Limestone (Calcium Carbonate)</b>	<b>&gt;98%</b>
CAS No.: 1317-65-3	EC No.:
GHS Classification:	Not classified.
<b>Quartz</b>	<b>&lt;1.5%</b>
CAS No.: 14808-60-7	EC No.: 238-878-4
GHS Classification:	STOT RE 1 – H372
<b>Water</b>	<b>&lt;0.5%</b>
CAS No.: 7732-18-5	EC No.:
GHS 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 <sup>3</sup>
	ACGIH	2 mg/m <sup>3</sup>
Quartz	PEL	0.1 mg/m <sup>3</sup>
	ACGIH	0.025 mg/m <sup>3</sup>

Component	IDLH
Quartz	25 mg/m <sup>3</sup>

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:	Powder.
Color:	White.
Odor:	Odorless.
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 meet the criteria for WHMIS classification and are thus not included on the disclosure list

Additional regulatory information available on request

## 16. OTHER INFORMATION

<b>HEALTH</b>	<b>1</b>
<b>FLAMMABILITY</b>	<b>0</b>
<b>PHYSICAL</b>	<b>0</b>
<b>PERSONAL PROTECTION</b>	<b>E</b>

## **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: V11