SAFETY DATA SHEET (SDS): SAND & GRAVEL

SECTION I –IDENTIFICATION

PRODUCT IDENTIFIER	TRADE NAME	OTHER SYNONYMS
Natural Sand & Gravel, Gravel	Brown Gravel / Sand	Construction Aggregate, River Rock, Pea Gravel, Course Aggregate

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

PRODUCT NAME: Silica Sand, Quartz Sand, Industrial Sand

MANUFACTURER'S NAME: Standard Sand & Silica

Company ADDRESS: P.O. Box 1059, Davenport, Florida 33836
COPERATE OFFICE: 1850 Hwy. 17-92 North, Davenport, Florida 33836
PHONE NUMBER: 863-422-7100 Office
877-444-7263 Toll Free Office FAX NUMBER: 863-421-7349 Office
EMERGENCY PHONE NUMBER: 863-422-7100 Office

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 1 Skin Corrosive

SIGNAL WORD: WARNING

HAZARD STATEMENTS:
May cause cancer by inhalation.
Causes damage to lungs, kidneys and autoimmune system through prolonged or repeated exposure by inhalation. Causes severe skin burns 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 swallowed: Rinse mouth and do not induce vomiting.
If on skin (or hair): Rinse skin after manually handling and wash contaminated clothing if there is potential for direct skin contact before reuse.
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.

SECTION III – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT(S) CHEMICAL NAME	CAS REGISTEY NO	% by weight (approx.)	
Iron Oxide (Fe2O3), %	1309-37-1	Iron Oxide (Fe2O3), %	0.31
Crystalline Silica (Si02), %	7631-86-9	Aluminum Oxide (Al2o3), %	0.04
Aluminum Oxide (Al2o3), %	1344-28-1	Crystalline Dioxide (Si02), %	99.0-99.8
Titanium Dioxide (Ti02), %	13463-67-7	Titanium Dioxide (Ti02), %	< 0.01
Silicon Dioxide, SiO_2	7631-86-9	Silicon Dioxide, SiO_2	98.08
Magnesium Oxide, MgO	1309-48-4	Magnesium Oxide, MgO	0.01
Calcium Oxide, CaO	1305-78-8	Calcium Oxide, CaO	<0.10
Potassium Oxide, K_2O	12136-45-7	Sodium Oxide, Na_2O (5)	0.004
Calcium Carbonate, $CaCO_3$	471-34-1	Potassium Oxide, K_2O	0.009
Silica (Si)	7631-86-9	Calcium Carbonate, $CaCO_3$	<0.10
Magnesium (Mg)	7439-95-4	Silica (Si)	48.85
Magnesium Carbonate (MgCO3)	546-93-0	Magnesium (Mg)	<0.01
Calcium (Ca)	471-34-1	Magnesium Carbonate (MgCO3)	0.03
Sodium Oxide (Na2O)	1313-59-3	Calcium (Ca)	<0.10

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

For additional health, safety or regulatory information and other emergency situations, call Shiloh Safety at (334) 850-0088 (334) 285-1805 OFFICE

(1): The composition of SiO_2 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 swallowed, rinse mouth and do not induce vomiting. If gastrointestinal discomfort occurs, persists or develops later, 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.

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 sand & gravel.

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.

SECTION VII – HANDLING AND STORAGE CONT.

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

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne OELs for Components of Sand & Gravel:

COMPONENT(S) CHEMICAL NAME	MSHA/OSHA PEL	ACGIH TLV-TWA	NIOSH REL
Silicon Dioxide, SiO_2	(R) 10 mg/m^3 /(% SiO_2 +2) § (T) 15 mg/m^3 , (R) 5 mg/m^3	(R) 0.025 mg/m^3 #	(R) 0.05 mg/m^3 #
Aluminum Oxide, Al_2O_3	15 mg/m3 5 mg/m^3	(1) (R) 1 mg/m^3 -(R) 5 mg/m^3 (I) 10 mg/m^3	- (3) 5 mg/m3 -
Magnesium Oxide, MgO	2 mg/m3	2 mg/m3 (C) 2 mg/m^3	- 2 mg/m3 (C) 2 mg/m^3 (6) (C) 2 mg/m3
Calcium Oxide, CaO	-	(6) (C) 2 mg/m3 -	(T) 10 mg/m^3 , (R) 5 mg/m^3 TWA 5 mg/m^3
Sodium Oxide, Na_2O (5)	(T) 15 mg/m^3 , (R) 5 mg/m^3	0.025 (resp.) -	TWA 15 mg/m^3 TWA 10 mg/m 3
Potassium Oxide, K_2O	10 g/m^3 TWA	–	–
Calcium Carbonate, $CaCO_3$	250 mppcf*%SiO_2+5 TWA 15 mg/m^3	10 mg/m3	TWA 10 mg/m^3
Iron Oxide (Fe203)	-	TWA 5 mg/m^3	TWA 10 mg/m^3
Crystalline Silica (Silica)			
Titanium Dioxide (Ti02)			
Magnesium (Mg)			
Magnesium Carbonate ($MgCO_3$			
Calcium (Ca)			

§: Crystalline silica is normally measured as respirable dust. The OSHA/MSHA standard also presents a formula for calculation of the PEL based on total dust: 30 mg/m^3 / (% SiO_2 +2). The OSHA/MSHA PEL listed is for dust containing crystalline silica (quartz) and is based on the silica content of the respirable dust sample.
The OSHA/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. Refer to Section X for thermal stability information for crystalline silica (quartz).
(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^3	15 mg/m^3
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m^3	*10 mg/m^3
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^3:
(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering face pieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.
Up to 1.25 mg/m^3:
(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^3**:
(APF = 50) Any air-purifying, full-face piece respirator with an N100, R100, or P100 filter.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting face piece and a high-efficiency particulate filter **Up to 25 mg/m^3**:
(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^3 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 (100series) 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

APPEARANCE Sand & Gravel is a mixture of angular, round or broken light or multicolored particles.	ODOR AND ODOR THRESHOLD Odorless and not applicable
pH AND VISCOSITY Not applicable	MELTING POINT/FREEZING POINT Not applicable
BOILING POINT AND RANGE Not applicable	FLASH POINT AND FLAMMABILITY Not applicable
FLAMMABILITY/EXPLOSIVE LIMITS AND AUTOIGNITION TEMPERATURE Not applicable	EVAPORATION RATE AND DECOMPOSITION TEMPERATURE Not applicable
VAPOR PRESSURE AND VAPOR DENSITY IN AIR Not applicable	SPECIFIC GRAVITY. 2.3-2.8
SOLUBILITY IN WATER Negligible	PARTITION COEFFICIENT: N-OCTANOL/WATER Not applicable

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 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 sand & gravel may react vigorously with water.

HAZARDOUS DECOMPOSITION PRODUCTS
Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.

HAZARDOUS POLYMERIZATION
Not known to polymerize

SECTION XI – TOXICOLOGICAL INFORMATION

Health Effects: The information below represents an overview of health effects caused by overexposure to one or more components in sand & gravel.

Primary routes(s) of exposure: ■ Inhalation ☐ Skin ■ Ingestion

EYE CONTACT: Direct contact with dust may cause irritation by mechanical abrasion or corrosive action. Conjunctivitis may occur.

SKIN CONTACT: Direct contact may cause irritation by mechanical abrasion. Some components of material are also known to cause corrosive effects to skin and mucous membranes.

SKIN ABSORPTION: Not expected to be a significant route of exposure.

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.

INHALATION: 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.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

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.

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 sand & gravel 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 $CaCO_3$.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen
Acute Toxicity Estimates for Sand & Gravel – Not Available

Titanium Dioxide
Exposure route: Inhalation, skin/eye contact.

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

Acute effect: Titanium Dioxide caused slight irritation of the eyes and nose, cancer, pulmonary disease, conjunctivitis, inflammation of the mucous membrane, and coughing up discolored sputum after industrial exposures amongst workers exposed to an unspecified concentrations.

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 Shiloh Sand & Gravel 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 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
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

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.Shilohsand.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).

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