HOLLISTON SAND COMPANY - SAFETY DATA SHEET

Section 1 – Identification

Product Identifier:	Silica Sand
Trade Names:	Holliston Sand Products, Slater Farms Products
Product Uses:	Filtration Media, Foundry Sand, Industrial Fillers, Bio-retention and Agricultural Sand, Sports Turf, Recreational Products, Commercial Products, Traction Sand Not recommended for sand-blasting.
Manufacturer's Name:	Holliston Sand Company, Inc.
Manufacturer's Address	PO Box 1168, Slatersville, RI 02876
Manufacturer's Telephone	401.766.5010, Monday – Friday, 7:00am to 5:00pm
Manufacturer's Facsimile:	401.762.4976
Emergency Telephone	401.766.5010, Monday – Friday, 7:00am to 5:00pm

Section 2 – Hazards Identification

GHS – US Classification and Label Elements:

Health:

Category 1A – Carcinogen		
Category 1 - Specific Target Organ Toxicity (STOT) following repeated exposures		
Category 2B - Eye Irritation		
Signal Word (GHS-US) - DANGER		
GHS-US Labeling / Hazard Pictograms	 GHS08	 GHS07

Hazard Statements (GHS-US)

H335	May cause eye and respiratory irritation
H350	May cause cancer by inhalation
H372	Causes damage to organs through prolonged or repeated exposure by inhalation.

Precautionary Statements (GHS-US)

P202 – SDS - Read all safety precautions prior to handling.	P264 – Wash thoroughly after handling.
P308 / P313/P314/P304 – Call for medical attention if not well or uncomfortable. If inhaled, provide fresh air.	
P260 / P280 – Never breathe dust. Wear PPE prior to use.	P271 – Use in a well ventilated area.
P403 – Store properly. Closed container.	P501 – Dispose of according to local / regional regulations.

Section 3 – Composition

Name	Product Identifier	Percentage (%)	GHS-US Classification
Quartz	CAS #: 14808-60-7	85 – 99.9	Carc. 1A, H350, STOT SE 3, H335, STOT RE 1, H372

Section 4 – First Aid Measures

ANY SERIOUS INJURY OR UNCONSCIOUSNESS OBSERVATION SHOULD BE AN AUTOMATIC EMERGENCY CALL TO 911.

Inhalation – Move person to a clear area, provide fresh air. Provide medical or emergency attention.

Eye – Flush eye / eyes with water as needed. Provide medical attention as necessary.

Skin – Simple abrasions should be cleansed with mild soap and water. Provide medical attention as necessary.

Ingestion – Discomfort should be followed up with medical attention.

Signs and Symptoms of Exposure - Symptoms of silicosis may first appear 15 to 20 years after someone's exposure to crystalline silica. As the disease progresses, symptoms may include:

Shortness of breath	*Severe Cough*	*Weakness*

If you have silica in your lungs, your body may not be able to fight infections well. This can lead to other illnesses that can cause.

Chest Pains	*Weight Loss*	*Night Sweats*
Respiratory Failure	*Fever*	

As the disease progresses over time, these symptoms can become worse. 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 six months, are the same as those associated with chronic silicosis. The symptoms of scleroderma, an autoimmune disease, include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

Section 5 – Fire Fighting Measures

Extinguishing Media:	Compatible with all media. Use appropriate media for surrounding fire.
Unusual Fire and Explosion Habits:	None known.
Special Fire Fighting Procedure:	None known. Not flammable. Use normal fire fighting equipment.
Hazardous Combustion Products:	None known.

Section 6 – Accidental Release Measures

- Personal precautions, protective equipment and emergency procedures
    - General measures.
        - Do not breathe dust. Avoid generation of dust during clean-up of spills. Recover the product by vacuuming, shoveling or sweeping. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up. Use water to wet down clean up area to minimize particulate.
    - For non-emergency / emergency personnel.
        - Wear suitable protective clothing, gloves, eye and face protection. Use recommended respiratory protection. Collect as any solid.
- Environmental Precautions – no additional information available
- Methods and Material for Containment and Clean-up
        - Avoid generation of dust during clean-up of spills. Recover the product by vacuuming, shoveling or sweeping. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up. Use water to wet down clean up area to minimize particulate.

Section 7 – Handling and Storage

- This product is not to be used for abrasive blasting without proper equipment and training. Do not breathe dust, which may be created during handling of this product.
- Engineering measures and good housekeeping are essential to preventing accumulation of silica dust in the workplace. Use adequate ventilation and dust collection systems.
- Testing can ensure engineering measures are sufficient. PPE is a solution until verification is established. Refer to Section 8 – Exposure Controls / Personal Protection for further information.
- Silica dust is not always visible in a form of a cloud. Use PPE.
- In accordance with OSHA's Hazard Communication Standard (29CFR 1910.12, 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 PPE and engineering controls, which will reduce their risks of exposure.
- See ASTM International standard practice E1132-06, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."
- Store in a dry, cool place. Keep container tightly closed.

Section 8: Exposure Controls / Personal Protection

Control Parameters

Quartz (14808-60-7) – Occupational exposure limits (respirable fraction) in air for dust containing crystalline silica.		
USA ACGIH	ACGIH TWA (mg/m^3) (8 hour weighted average)	0.025 mg/m^3
USA IDLH	US IDLH (mg/m^3)	50 mg/m^3
USA NIOSH	NIOSH REL (TWA) (mg/m^3) (10 hour weighted average)	0.05 mg/m^3
USA MSHA/OSHA	MSHA/OSHA PEL (TWA) (mg/m^3) (8 hour weighted average) (Mineral Dust)	(30)/(%SiO_2 +2) mg/m^3 – total dust (10)/(% SiO_2 +2) mg/m^3 – respirable fraction

Occupational exposure limits in air for inert / nuisance dust.			
USA ACGIH	ACGIH TLV	3 mg/m^3	10mg/m^3
USA MSHA/OSHA	MSHA/OSHA PEL (As Inert or Nuisance Dust)	5 mg/m^3	15 mg/m^3

Exposure Controls

Engineering controls	Ensure adequate ventilation, especially in confined areas. Avoid dust production.
Personal protection equipment (PPE)	Use dust suits, protective goggles and respiratory protection in dusty areas. Self contained breathing apparatus is also a good option during dust production. Get training on the use of all PPE equipment. Respirator fit testing is mandatory. Contact NIOSH at 800.35.NIOSH, WWW.CDC.GOV/NIOSH
	Use impermeable gloves for hand protection.
	Use protective goggles for eye protection
	Use NIOSH approved respirators in areas containing airborne dust.
Hygiene	Always wash your hands after handling
Do not breathe dust. Use PPE. Research and engineer a solution for each application.	

California Inhalation Reference Exposure Limit (REL) as of 12/08: Crystalline silica (quartz, cristobalite, tridymite) is 3 ug/m^3.
Canadian OEL:
• Canada Labour Code: 0.025 mg/m^3 (respirable)
• Alberta, British Columbia: 0.025 mg/m^3 (respirable quartz and cristobalite)
• Saskatchewen: 2 mg/m3 (respirable, amorphous: silica fume); 0.1 mg/m^3 (respirable, amorphous: silica fused); 0.05 mg/m^3 (respirable, cristobalite); 0.05 mg/m^3 (respirable tridymite); 0.1 mg/m^3 (respirable, quartz); 0.1 mg/m^3 (respirable, tripoli)
• Manitoba, Newfoundland, Prince Edward Island: 0.025 mg/m3 (respirable)
• Ontario: 0.05 mg/m^3 (respirable cristobalite, tridymite); 0.1 mg/m^3 (quartz, tripoli); 0.1 mg/m^3 (silica fused); 2 mg/m^3 (silica fume)
• Quebec: 0.05 mg/m^3 (respirable, cristobalite, tridymite); 0.1 mg/m^3 (quartz, tripoli)
• New Brunswick: 0.1 mg/m^3 (quartz); 0.05 mg/m^3 (cristobalite)
• Nova Scotia: 0.025 mg/m^3 (quartz, cristobalite)
• Yukon: 2 mg/m^3 (respirable, amorphous); 300 particles/ml measured with a konimeter (quartz, and tripoli); 150 particles/ML measured with a konimeter (cristobalite and tridymite)
• Northwest Territories, Nunavut: 2 mg/m^3 (respirable, amorphous); 0.05 mg/m^3 (respirable, cristobalite, tridymite, silica flour); 0.1 mg/m^3 (respirable, fused silica, quartz, tripoli)
Austria OEL - Maximum concentration 0.15 mg/m^3
Japan OEL - Japan Society of Occupational Health Respirable crystalline silica 0.03 mg/m^3
Poland OEL TWA -2 mg/m^3 (total inhalable dust, containing >50% free crystalline silica);
• 0.3 mg/ mg/m^3 m^3 (respirable dust, containing >50% free crystalline silica);
• 4.0 mg/m^3 (total inhalable dust, containing 2% to 50% free crystalline silica);
• 1.0 mg/m^3 (respirable dust, containing 2% to 50% free crystalline silica)
United Kingdom OEL – 0.1 mg/m^3
Mexico – 0.1 mg/m^3 (quartz, inhalable)
• 0.05 mg/m^3 (cristobalite, inhalable)
• 0.05 mg/m^3 (tridymite, inhalable)
• 0.1 mg/m^3 (tripoli containing respirable quartz powder, inhalable)
• (Also refer to ACGIH)
Argentina – 0.05 mg/m^3 (quartz, respirable)
• 0.05 mg/m^3 (cristobalite, respirable)
• 0.05 mg/m^3 (tridymite, respirable)
• 0.1 mg/m^3 (tripoli, respirable)

Section 9: Physical and chemical properties

Physical State / Appearance	Solid / Crystalline
Odor	None
Odor Threshold	No data available
Color	Natural
pH	No data available
Evaporation rate	No data available
Melting point	1710°C (3110°F)
Freezing point	No data available
Boiling point	2230°C (4046°F)
Flash point	No data available
Self ignition temperature	No data available

Decomposition temperature	No data available
Flammability (solid, gas)	Non-combustible solid
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	2.65 (approx.)
Solubility	Practically insoluble.
Log Pow	No data available
Log Kow	No data available
Viscosity	No data available
Explosive Limits	None known.
Oxidizing properties	None known.
Explosive limits	No data available

Section 10: Stability and Reactivity

Reactivity	None under normal conditions. Reactive with strong oxidizing agents.
Chemical / Thermal Stability	Chemically stable under normal temperature and pressure. Thermal instability occurs under high temperatures above 870^{o}C (1598^{O}F). It can change to crystalline silica such as tridymite and cristobalite.
Incompatible Materials	Avoid strong oxidizers such as fluorine, chlorine tri-fluoride, hydrogen fluoride, oxygen di-fluoride, hydrogen peroxide, acetylene, ammonia.
Hazardous Decomposition	Quartz (silica) will dissolve in hydrofluoric acid producing a corrosive gas, silicon tetra-fluoride.
Hazardous Polymerization	Not know to polymerize.

Section 11: Toxicological Information

Acute toxicity	Not classified	
Aspiration hazard	Not classified	
Skin Irritation	Not classified	
Eye Irritation	Not classified	
Respiratory or skin sensitization	Not classified	
Reproductive toxicity	Not classified	
Specific target organ toxicity (single exposure)	Not classified	
Specific target organ toxicity (repeated exposure)	Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation)	
Germ cell mutagenicity	Not classified	
Carcinogenicity	May cause cancer - inhalation	
Quartz (14808-60-7)	**IARC Group – Group 1**	**National Toxicity Program (NTP) Status: Known Human Carcinogen**
Silica – All grades (14808-60-7)	Repeated or prolonged exposure to respirable crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss. Acute silicosis can be fatal.	

Section 12: Ecological Information

Crystalline silica is not known to be eco-toxic, not readily biodegradable and not expected to bio-accumulate.

Section 13: Disposal Considerations

AS SOLD, our crystalline silica (quartz) products are not considered hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR 261 et seq. Dispose according to applicable local, state and federal regulations.

Section 14: Transport Information

Crystalline silica (quartz) is not a hazardous material for purposes of transportation under the U. S. Department of Transportation Table of Hazardous Materials, 49 CFR §172.101, and Transportation of Dangerous Goods Regulations in the European Union, Canada, Argentina, Republic of Uzbekistan and Japan. Consult applicable international, national, state, provincial or local laws. In accordance with DOT / TDG / ADR / RID / ADNR / IMDG / ACAO / IATA, crystalline silica is not a dangerous product in the sense of transport requlations.

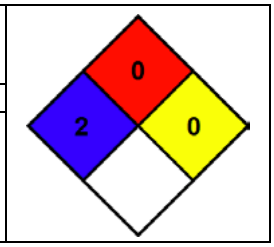
Section 15: Regulatory Information

US Federal Regulations	Silica / Quartz 14808-60-7	Immediate health hazard - acute Delayed health hazard – chronic.	On US TSCA (Toxic Substances Control Act) inventory listing.
Canada Regulations		WHMIS Classification. Class D Division 2 Subdivision A – Very toxic material causing other toxic effects.	
International Info		IARC (international Agency for Research on Cancer) listing.	NTP (National Toxicology Program) specifies as a carcinogen.
U State Regulations		See below.	

U.S. - California - Proposition 65 - Carcinogens List . This product contains Quartz, a substance known to the state of California to cause cancer.
U.S. - Hawaii - Occupational Exposure Limits - TWAs
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Occupational Exposure Limits - Mineral Dusts
U.S. - Illinois - Toxic Air Contaminant Carcinogens
U.S. - Maine - Chemicals of High Concern
U.S. - Massachusetts - Right To Know List
U.S. - Michigan - Occupational Exposure Limits - TWAs U.S. - Minnesota - Chemicals of High Concern
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - Oregon - Permissible Exposure Limits - Mineral Dusts
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs

Section 16 – Other Information

NFPA

Health Hazard	2 – intense or continued exposure could cause temporary or incapacitation or possible residual injury unless prompt medical attention is given	
Fire Hazard	0 – materials that will not burn	
Reactivity	0 – normally stable, even under fire exposure conditions, are not reactive with water	

HMIS III Rating

Health	2 - moderate hazard, temporary injury may occur
Flammability	0 – minimal hazard
Physical	0 – minimal hazard
Personal Protection	All equipment required plus engineering measures.

Definitions

Carc. 1A	Carcinogenicity Category 1A
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3

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. 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, Holliston Sand company, Inc., 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.
More information on the effects of crystalline silica exposure may be obtained from OSHA website: http://www.osha.gov or from NIOSH website: http://www.cdc.gov/niosh).