

Post Apple Scientific, inc.
Safety Data Sheet - Aluminum Potassium Sulfate

SDS #: C1400-C1411

Revision Date: April 10, 2015

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Aluminum Potassium Sulfate**

Post Apple Scientific, inc., 8893 Gulf Rd., North East, PA 16428 814-725-3330

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word N/A

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

This chemical is considered nonhazardous according to GHS classifications for the Hazard Communication Standard. Treat all laboratory chemicals with caution.

Although this material is considered to be nonhazardous, unpredictable reactions among chemicals are always possible. Prudent laboratory practices should be observed.

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Aluminum potassium sulfate	7784-24-9	AlK(SO ₄) ₂ •12H ₂ O	474.39	
Synonym: Alum				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

If on skin: Wash with plenty of water.

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solid.

When heated to decomposition, may emit toxic fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Ventilate area. Wipe up the spill, place in a sealed bag or container, and dispose. Wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Store with acetates, halides, sulfates, sulfites, thiosulfates and phosphates. Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

White, crystalline powder. Odorless.
Soluble: Water. Insoluble in alcohol.

Melting point: 92.5 °C
Specific gravity: 1.7

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers, bases, steel, aluminum, copper, and zinc. When heated to decomposition (200 °C), emits toxic sulfur trioxide fumes.

Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Irritant, gastrointestinal disturbances.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD₅₀: N.A.
IHL-RAT LC₅₀: N.A.
SKN-RBT LD₅₀: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (233-141-3).

SECTION 16 — OTHER INFORMATION

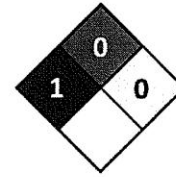
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Revision Date: April 10, 2015



Date Prepared: 04-Nov-2013
 Revised: New Issue
 No. 6 Tile_GHS_001

HMIS Ratings	
Health Hazard	1
Fire Hazard	0
Reactivity Hazard	0
Max. Personal Protection	E



SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product trade name(s): **No. 6 Tile**
Common Name(s): **Kaolin, China Clay, Hydrous Aluminum Silicate**
Chemical Formula: $Al_2Si_2O_5(OH)_4$
CAS Number: 1332-58-7
Physical Form: Light gray to white solid

Recommended Uses: Non-exhaustive list: Ceramics, ceramic glazes, refractories, fiberglass compositions, industrial filler, extender, for paper, rubber, plastics, caulks/adhesives, pesticides, sorbents, catalyst supports

Restrictions on Use: Food ingredient, cosmetic ingredient

Manufacturer's Name & Address: Kentucky-Tennessee Clay Company
 100 Mansell Court East
 Suite 300
 Roswell, GA 30076

Telephone: 770-594-0660
Fax: 770-645-3460
Customer Service: 800-814-4538

Emergency Telephone: **For Chemical Emergency Call CHEMTREC (24 hours): 1-800-424-9300**
 (US, Canada, Puerto Rico, Virgin Islands)
 1-703-527-3887 (Outside Above Area) collect calls accepted

SECTION 2: HAZARDS IDENTIFICATION

Contains Crystalline Silica - <1% Respirable

Classification:

Eye Damage/Irritation	Category 2
Skin Corrosion/Irritation	Category 2
Specific Target Organ Toxicity - Single Exposure	Category 3 - Respiratory
Specific Target Organ Toxicity - Repeated Exposure	Category 1 - Respiratory
Carcinogenicity	Category 1a

Label Elements:



Signal Word:
WARNING

Hazard Statements: **H373:** May cause damage to lung through prolonged or repeated 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 regulation.

SAFETY DATA SHEETProduct Name: **No. 6 Tile**
SDS ID: No. 6 Tile_GHS_001**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

Ingredient	Weight % (Approx.)	CAS N°	EINECS N°
Kaolin	60% - 100%	1332-58-7	310-194-1
Quartz - Crystalline Silica	0.1% - 2%	14808-60-7	238-878-4
Titanium Dioxide	1% - 5%	13463-67-7	136-675-5
Water	1% - 20%	7732-18-5	215-185-5

SECTION 4: FIRST AID MEASURES**Inhalation**

If adverse effects occur, get immediate medical attention. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Give artificial

Skin

Wash immediately with soap and water. Get medical attention if irritation develops or persists.

Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion

DO NOT induce vomiting. If swallowed, drink plenty of water, do NOT induce vomiting. Never make an unconscious person vomit or drink fluids. Get medical attention.

Symptoms: Immediate

eye irritation, skin irritation, respiratory tract irritation

Symptoms: Delayed

gastrointestinal effects

SECTION 5: FIREFIGHTING MEASURES**Flammable Properties**

Product is non-flammable.
Use extinguishing agents appropriate for surrounding fire.

Unsuitable Extinguishing Media

None known.

Protective Equipment and Precautions for Firefighters

No hazard is expected from the normal use of this product.

Fire Fighting Measures

No hazard expected

NFPA 704M Hazard Classification: Health: 1 Flammable: 0 Reactivity: 0

SECTION 6: ACCIDENTAL RELEASE MEASURES**Personal Precautions**

Keep unnecessary people away, isolate hazard area and deny entry. Wet material is slippery under foot.
Wear personal protective clothing and equipment, see Section 8.

Environmental Precautions

Avoid release to the environment.

Cleanup Methods

Collect spilled material in appropriate container for reuse or disposal.

SECTION 7: HANDLING AND STORAGE**Precautions for Safe Handling**

Avoid dust generation and accumulation. Do not use in poorly ventilated or confined spaces. Do not taste or swallow.
Avoid inhalation or contact. Wash thoroughly after handling.

Conditions for Safe Storage

Store in a cool, dry place. Store in a well-ventilated area.

SAFETY DATA SHEETProduct Name: **No. 6 Tile**
SDS ID: No. 6 Tile_GHS_001**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION****Exposure Guidelines:**

Follow standard occupational hygiene control methods and procedures. Use an approved respirator if exposure limits are exceeded or if irritation develops or persists.

Component Exposure Limits:

Hazardous Ingredient	Weight % (Approx.)	CAS N°	OSHA PEL*	ACGIH TLV*
Kaolin	60% - 100%	1332-58-7	15 mg/m ³ (Total Dust) 5 mg/m ³ (Respirable Fraction)	2 mg/m ³ (Respirable Fraction)
Quartz - Crystalline Silica (Respirable Fraction < 1%)	0.1% - 2%	14808-60-7	0.1mg/m ³ (Respirable Fraction)	0.025 mg/m ³ (Respirable Fraction)
Titanium Dioxide (Naturally Occurring)	1% - 5%	13463-67-7	15 mg/m ³ (Total Dust)	10 mg/m ³ (Total Dust)

* Unless otherwise noted, all PEL and TLV are reported as 8 hour time weighted average (TWA).

Component Analysis

There are no biological limit values for any of this product's components.

Engineering Controls

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

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Where there is potential for airborne exposure, use of a MSHA/NIOSH or OSHA/NIOSH approved respirator is recommended.

Eyes/Face: Wear side shield safety glasses or chemical resistant safety goggles.

Glove Recommendation: Rubber gloves are recommended for prolonged exposure.

Protective Clothing: Wear appropriate chemical resistant clothing. Contaminated clothing should be removed and laundered before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid	Appearance: white to gray solid
Color: white to gray	Physical Form: powder to lump
Odor: earthy odor	Odor Threshold: Not applicable
pH: 4-6 (aqueous solution)	Melting Point: > 1500°C
Boiling Point: Not applicable	Flash Point: Will not ignite
Decomposition: loses crystalline water at > 500°C (930°F)	Evaporation Rate: Not applicable
LEL: Not applicable	UEL: Not applicable
Vapor Pressure: Not applicable	Vapor Density (air = 1): Not applicable
Density: Not applicable	Specific Gravity (water = 1): ~2.6 gm/cc
Water Solubility: None	Coeff> Water/Oil Dist: Not applicable
Auto Ignition: Will not ignite	Viscosity: Not applicable
Flow Point: Not applicable	Sublimation Point: Not applicable
VOC: None	

SAFETY DATA SHEETProduct Name: **No. 6 Tile**
SDS ID: No. 6 Tile_GHS_001**SECTION 10: STABILITY AND REACTIVITY****Reactivity:**

No reactive hazard is expected.

Chemical Stability:

Stable at normal temperatures and pressure

Possibility of Hazardous Reactions:

Will not oxidize or polymerize.

Conditions to avoid:

None known.

Materials to Avoid (Incompatibilities):

None known.

Decomposition Products:

When exposed to high temperatures, free quartz can change crystal structure to form tridymite (above 870°C) or cristobalite (above 1470°C) which have greater health hazards than quartz. (Tridymite and cristobalite (TWA-TLV) =0.025 mg/m³.)

SECTION 11: TOXICOLOGICAL INFORMATION**Primary Route of Exposure:** Skin, Eye Contact, Inhalation and Ingestion**Acute Health Hazards:**

Eye contact may cause mechanical irritation.

Skin contact may aggravate existing dermatitis.

Inhalation from prolonged and continuous exposure to excessive quantities of dust may aggravate existing asthmatic or respiratory conditions.

Acute and Chronic Toxicity

May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. May cause damage to respiratory tract through prolonged or repeated exposure.

Occupationally inhaled kaolin produced pulmonary fibrosis with sites of action being the lung, the lymph nodes and the hilus. Kaolin when taken orally over a long period of time can cause granulomas of the stomach.

Exposure to quartz (the most stable and common form of crystalline silica) is responsible for the majority of clinically diagnosed silicosis. Silicosis is a fibronodular lung disease that occurs after occupational exposure to crystalline silica for 5 years or longer. Inhalation of quartz dusts may cause shortness of breath, limitation of chest expansion, dry cough, and a lessened capacity for work. Individuals with a pre-existing disease in, or a history of ailments involving the skin or respiratory tract, are at greater risk for developing adverse health effects when exposed to this material.

In humans, chronic intermittent exposure to quartz caused pulmonary fibrosis, cough, and difficulty breathing. Overexposure to crystalline silica may cause silicosis, a form of disabling, progressive, and sometimes fatal pulmonary fibrosis characterized by the presence of typical nodulation in the lungs. Tuberculosis frequently complicates silicosis and the risk for tuberculosis is also increased in workers exposed to silica who have no radiographic evidence of silicosis. Crystalline silica can cause silicotic lesions in such organs as the liver, spleen and bone marrow. In humans, a causal relationship exists between exposure to crystalline silica and the development of autoimmune diseases. In multi-dose studies with animals, long term inhalation of quartz affected the lungs, endocrine system, immune system and blood.

This product contains quartz (respirable) as an impurity. Prolonged and/or massive exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica. In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However it pointed out that not all industrial circumstances, nor all crystalline silica types, were to be incriminated. (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibers, 1997, Vol. 68, IARC, Lyon, France.)

SAFETY DATA SHEETProduct Name: **No. 6 Tile**
SDS ID: No. 6 Tile_GHS_001**Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Quartz - Crystalline Silica (14808-60-7)

Oral LD50 Rat 500 mg/kg

Titanium dioxide (13463-67-7)

Oral LD50 >10000 mg/kg

Water (7732-18-5)

Oral LD50 Rat >90 mL/kg

Irritation/Corrosivity Data

May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation.

Respiratory Sensitizer

No test data available

Dermal Sensitizer

No test data available

Carcinogenicity**Component Carcinogenicity****Kaolin - CAS N° 1332-58-7**

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Quartz - Crystalline Silica - CAS N° 14808-60-7

ACGIH: A2 - Suspected Human Carcinogen

IARC: Group 1 - Carcinogenic to humans

Titanium dioxide - CAS N° 13463-67-7

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Group 2B - Possibly carcinogenic to humans

Mutagenic Data

No information available

Reproductive Effects Data

No information available

Specific Organ Toxicity - Single Exposure

Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure

Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Aspiration Hazard

No data available

Medical Conditions Aggravated by Exposure

Individuals with pre-existing eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased

SAFETY DATA SHEET

Product Name: **No. 6 Tile**
SDS ID: No. 6 Tile_GHS_001

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

No information available for the product

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components

No information available for the product

Bioaccumulation

No information available for the product

Bioconcentration

This material is not believed to bioconcentrate

Biodegradation

This product is made from a naturally occurring, abundant, innocuous mineral

Persistence

This product is made from a naturally occurring, abundant, innocuous mineral

Mobility in Soil:

This product is insoluble in water

Results of PBT and vPvB Assessment

Not relevant

Other Toxicity

May affect turbidity if discharged in large quantities to lakes, streams or sewers.

SECTION 13: DISPOSAL CONSIDERATIONS

Non-hazardous waste - RCRA (40 CFR 261)

Dispose of waste materials in accordance with all local, state, and Federal requirements.

This product may not be disposed of in waterways or sewers.

SECTION 14: TRANSPORT INFORMATION

EPA Waste Number: Not regulated.

DOT Classification: Not regulated.

IMO Classification: Not regulated.

Internal UN: Not regulated.

IMDG Code: This product is not considered to be a marine pollutant.

SAFETY DATA SHEETProduct Name: **No. 6 Tile**
SDS ID: No. 6 Tile_GHS_001**SECTION 15: REGULATORY INFORMATION**

SARA Title III Section 302 Extremely Hazardous Substances: This product does not contain extremely hazardous subject to the reporting requirements of Section 302 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 355.

SARA Title III Section 311 and 312 Health and Physical Hazard Categories per 40 CFR 370.2:

Immediate	Delayed	Fire	Pressure	Reactivity
Yes	Yes	No	No	No

SARA Section 313 Notification: This product does not contain toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

TSCA: Product is listed in Initial Inventory, Vol. 1, Appendix A, CAS No. 1332-58-7

FDA: Kaolin is generally recognized as safe (GRAS) under the FDA in accordance with 21 CFR 186.1256. Additionally, kaolin is established as a component of the uncoated or coated food contact surface of paper and paperboard in accordance with 21 CFR 176.170 (aqueous and fatty foods) and CFR 176.180 (dry foods).

CERCLA: Kaolin is not a CERCLA listed hazardous substance.

California Proposition 65: WARNING: This product may also contain extremely small amounts of one or more naturally-occurring materials known to the State of California to cause cancer, birth defects, or other reproductive harm.

NJ Special Health Hazardous Substances List [4]: RTK Hazardous Substance List; Substance number 4016.

PA Special Hazardous Substances List: Regulated under PA Code Chapter 323.

Stockholm Convention: This product is not subject to the Stockholm Convention.

Montreal Protocol: This product is not subject to the Montreal Protocol.

Rotterdam Convention: This product is not subject to the Rotterdam Convention.

National Inventories:

DSL (Canada): Listed
NDSL (Canada): Not Listed
PICCS (Philippines): Listed
KECL (Korea): Listed
ENCS (MITI) (Japan): Listed
AICS (Australia): Listed
IECSC (China): Listed
EINECS (Europe): Listed

REACH Status: Exempt (Annex v.7). Product is a naturally occurring mineral.

SAFETY DATA SHEETProduct Name: **No. 6 Tile**
SDS ID: No. 6 Tile_GHS_001**SECTION 16: OTHER INFORMATION****Training**

Workers must be informed of the presence of crystalline silica and trained in the proper use and handling of this product as required under applicable regulations.

Summary of Changes

New SDS 04-Nov-2013

Key / Legend

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
DOT	Department of Transportation
DSL	Canadian Domestic Substances List
EINECS	European Inventory of New and Existing Chemical Substances
ENCS	Existing and New Substances Inventory
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
KECI	Korean Existing Chemicals Inventory
LEL	Lower Explosive Limit
LOLI	List Of Lists
MITI	Japanese Ministry of International Trade and Industry
MSHA	Mine Safety and Health Administration
NDSL	Canadian Non-Domestic Substance List
NIOSH	National Institute of Occupational Safety and Health
NFPA	National Fire Protection Agency
OSHA	Occupational Health and Safety Administration
PBT	Persistent Bioaccumulative Toxic Chemical
PEL	Permissible Exposure Limit
PICCS	Philippine Inventory of Chemicals and Chemical Substances
RCRA	Resource Conservation and Recovery Act
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
RTK	Right to Know
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UEL	Upper Explosive Limit
UN	United Nations
VOC	Volatile Organic Content
vPvB	Very Powerful Very Bioaccumulative

SAFETY DATA SHEET

Product Name: **No. 6 Tile**
SDS ID: No. 6 Tile_GHS_001

Disclaimer

Such information is to the best of IMERY'S knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. IMERY'S NORTH AMERICA CERAMICS MAKES NO WARRANTY WITH RESPECT HERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

IMERY'S is a business name that includes Imerys North America Ceramics of which Kentucky-Tennessee Clay Company is a member. Registered in the USA. Registered office: 100 Mansell Court East, Suite 300, Roswell, GA 30076

Prepared By: Imerys North America Ceramics Technical Group.

END OF SHEET

No. 6 Tile_GHS_001

SAFETY DATA SHEET

5/25/2015

MATERIAL NAME: SANDTASTIK PLAY SAND

SECTION I - IDENTIFICATION

Material Name

SANDTASTIK PLAY SAND

Product Number

PLAY SAND

Manufacturer Information

Sandtastik Products Ltd
58 Prosperity Avenue
Port Colborne, ON L3K 5X9
P: (800) 845-3845
F: (800) 831-6111
E: office@sandtastik.com

Emergency Phone Number: 800-845-3845

Poison Control Center: 1-888-516-2502

SECTION II - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

There are no GHS label elements.

PRIMARY ROUTES OF ENTRY: EYE, SKIN, INGESTION

EFFECTS AND SYMPTOMS OF ACUTE EXPOSURE: NONE EXPECTED

EFFECTS AND SYMPTOMS OF CHRONIC EXPOSURE: NONE EXPECTED

CARCINOGEN LISTING: NTP: **NO** IARC: **NO** OSHA: **NO**

SEE SECTION III FOR COMPONENTS AFFECTED

MEDICAL CONDITIONS USUALLY AGGRAVATED BY OVER EXPOSURE TO THIS PRODUCT: NONE

SECTION III - COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS #</u>	<u>PEL/TLV (MG/M#)</u>	<u>Max % Weight</u>	<u>NTP</u>	<u>IARC</u>
None					

SECTION IV - FIRST AID MEASURES

FIRST AID MEASURES: NONE REQUIRED. NO ACUTE HEALTH EFFECTS EXPECTED.

SECTION V - FIRE FIGHTING MEASURES

FLASH POINT (METHOD): N/A
EXPLOSION LIMITS IN AIR (% BY VOLUME): NOT EXPLOSIVE
EXTINGUISHING MEDIA: NO SPECIAL MEDIA REQUIRED
FIRE FIGHTING PROCEDURES: NO SPECIAL FIRE FIGHTING PROCEDURES REQUIRED
UNUSUAL FIRE & EXPLOSION HAZARDS: NOT COMBUSTIBLE
AUTOIGNITION TEMPERATURE: N/A

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE A MATERIAL IS SPILLED: Clean up in accordance with all applicable regulations. Absorb spillage with non-combustible, absorbent material. For waste disposal, see Section XIII

SECTION VII - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING STORAGE AND HANDLING: Good industrial hygiene practice requires that exposure be maintained below the TLV. This is preferably achieved through the provision of adequate ventilation. When exposure cannot be adequately controlled in this way, personal respiratory protection should be employed.

SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION AND SPECIAL VENTILATION REQUIREMENTS: NONE REQUIRED
OTHER PROTECTIVE EQUIPMENT (GLOVES, GOGGLES, ETC): NONE REQUIRED
WORK/HYGIENE PRACTICES: NONE REQUIRED
ENGINEERING CONTROLS: NONE REQUIRED

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
VAPOR PRESSURE: N/A
SPECIFIC VAPOR DENSITY (AIR=1): N/A
SOLUBILITY IN WATER: N/A
MELTING POINT: N/A
SPECIFIC GRAVITY: N/A
REACTIVITY IN WATER: NON-REACTIVE

SECTION X - STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION PRODUCTS: NONE
STABILITY: STABLE CONDITIONS TO AVOID: NONE
INCOMPATIBILITY (MATERIALS TO AVOID): NONE
HAZARDOUS DECOMPOSITION PRODUCTS: NONE

SECTION XI - TOXICOLOGICAL INFORMATION

ACUTE EFFECTS ASSOCIATED WITH USE OF THIS MATERIAL: NONE EXPECTED
The summated LD50 is >50000 mg/kg.
The summated LC50 is 99999 mg/cubic meter.
This product is not considered to be a known or suspected human carcinogen by NTP, IARC or OSHA (see section III)

SECTION XII - ECOLOGICAL INFORMATION

NO HARMFUL EFFECTS KNOWN OTHER THAN THOSE ASSOCIATED WITH SUSPENDED INERT SOLIDS IN WATER.

SECTION XIII - DISPOSAL CONSIDERATIONS

RCRA HAZARD CLASS (40 CFR 261): THIS PRODUCT IS NOT CLASSIFIED AS A HAZARDOUS WASTE.
WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION XIV - TRANSPORTATION INFORMATION

U.S. DOT (49 CFR 172.101): THIS IS NOT A HAZARDOUS MATERIAL AS CLASSIFIED BY CFR 172.101.

SECTION XV - REGULATORY INFORMATION

CONTENTS OF THIS SDS COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200
EPA SARA TITLE III CHEMICAL LISTINGS
NONE

SECTION 302.4 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
NONE

SECTION 313 TOXIC CHEMICALS (40 CFR 372):
NONE

INTERNATIONAL REGULATIONS

CANADIAN WHMIS: THIS PRODUCT IS A CONTROLLED PRODUCT UNDER CANADA'S WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. IT CONTAINS THE FOLLOWING TOXIC OR HIGHLY TOXIC MATERIALS:
COPPER PHTHALOCYANINE
IRON OXIDE

SUPPLEMENTAL STATE COMPLIANCE INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED UNDER NEW JERSEY'S RIGHT TO KNOW PROGRAM:
IRON OXIDE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) REQUIRING NOTIFICATION TO THE STATE OF WASHINGTON UNDER THEIR CHILDREN'S SAFE PRODUCTS ACT:
NONE

Under CPSC's consumer product regulations (16CFR1500.3 and 150014), this product has the following required acute and chronic hazard labeling:

NONE

SECTION XVI - OTHER INFORMATION

LAST REVISION DATE: 05/22/2015

Prepared by Duke OEM Toxicology

COLOR INFORMATION

THIS SDS APPLIES TO THE FOLLOWING COLORS WHICH ARE ASSOCIATED WITH HAZARDOUS AND/OR NON-HAZARDOUS INGREDIENTS

Product Color	SKU	Hazardous Ingredient
NATURAL WHITE		(NONE)

SAFETY DATA SHEET – JANUARY 3, 2018



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:

<i>Shortness of breath</i>	<i>Severe Cough</i>	<i>Weakness</i>
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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.

<i>Chest Pains</i>	<i>Weight Loss</i>	<i>Night Sweats</i>
<i>Respiratory Failure</i>	<i>Fever</i>	

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:
<ul style="list-style-type: none"> • Canada Labour Code: 0.025 mg/m³ (respirable) • Alberta, British Columbia: 0.025 mg/m³ (respirable quartz and cristobalite) • Saskatchewan: 2 mg/m³ (respirable, amorphous: silica fume); 0.1 mg/m³ (respirable, amorphous: silica fused); 0.05 mg/m³ (respirable, cristobalite); 0.05 mg/m³ (respirable tridymite); 0.1 mg/m³ (respirable, quartz); 0.1 mg/m³ (respirable, tripoli) • Manitoba, Newfoundland, Prince Edward Island: 0.025 mg/m³ (respirable) • Ontario: 0.05 mg/m³ (respirable cristobalite, tridymite); 0.1 mg/m³ (quartz, tripoli); 0.1 mg/m³ (silica fused); 2 mg/m³ (silica fume) • Quebec: 0.05 mg/m³ (respirable, cristobalite, tridymite); 0.1 mg/m³ (quartz, tripoli) • New Brunswick: 0.1 mg/m³ (quartz); 0.05 mg/m³ (cristobalite) • Nova Scotia: 0.025 mg/m³ (quartz, cristobalite) • Yukon: 2 mg/m³ (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/m³ (respirable, amorphous); 0.05 mg/m³ (respirable, cristobalite, tridymite, silica flour); 0.1 mg/m³ (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);
<ul style="list-style-type: none"> • 0.3 mg/m³ (respirable dust, containing >50% free crystalline silica); • 4.0 mg/m³ (total inhalable dust, containing 2% to 50% free crystalline silica); • 1.0 mg/m³ (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)
<ul style="list-style-type: none"> • 0.05 mg/m³ (cristobalite, inhalable) • 0.05 mg/m³ (tridymite, inhalable) • 0.1 mg/m³ (tripoli containing respirable quartz powder, inhalable) • (Also refer to ACGIH)
Argentina – 0.05 mg/m ³ (quartz, respirable)
<ul style="list-style-type: none"> • 0.05 mg/m³ (cristobalite, respirable) • 0.05 mg/m³ (tridymite, respirable) • 0.1 mg/m³ (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°C (1598°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 known 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 / ACO / IATA, crystalline silica is not a dangerous product in the sense of transport regulations.

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>.

