



Material Safety Data Sheet

SECTION 1 COMPANY AND PRODUCT IDENTIFICATION	
PRODUCT NAME Natural Sand, Crushed Stone	Revised: 28 June 06
SYNONYMS Aggregate, Manufactured Sand	
MANUFACTURER Hanson Aggregates	EMERGENCY PHONE NUMBER 800-424-9300 CHEMTREC®

SECTION 2 COMPOSITION & INFORMATION ON INGREDIENTS		
OSHA / MSHA REGULATORY STATUS This product contains naturally occurring crystalline silica (quartz) which is considered to be hazardous under the OSHA and MSHA Hazard Communication Standards.		
HAZARDOUS COMPONENTS Crystalline silica (quartz)	CAS NUMBER 14808-60-7	% BY WEIGHT >1 composition varies naturally.

SECTION 3 HAZARDS IDENTIFICATION
EMERGENCY OVERVIEW Odorless; angular; tan, brown and/or gray particles. Nonflammable. May cause skin, eye or respiratory tract irritation from abrasion.
PHYSICAL HAZARDS None.
PRIMARY ROUTES OF EXPOSURE Primary routes of exposure are inhalation and eye/skin contact.
POTENTIAL EFFECTS AND SYMPTOMS OF ACUTE EXPOSURE Contact with dust may cause irritation to the eyes and skin; inhalation may cause upper respiratory tract irritation. Symptoms may include temporary upper respiratory discomfort with coughing, sneezing; tearing and irritation of the eyes; and irritation and redness of exposed skin. An acute form of silicosis may develop from inhalation of extremely high concentrations of crystalline silica over a period of several months to five years. Acute silicosis progresses rapidly and is often fatal. This disease is very rare in humans but has occurred in occupations such as tunneling or sandblasting where exposures were high and controls were minimal.
POTENTIAL EFFECTS AND SYMPTOMS OF CHRONIC EXPOSURE Repeated or prolonged inhalation of high concentrations of very small dust particles (respirable) may cause changes to the fibrous tissue of the lungs. Repeated or prolonged inhalation of high concentrations of respirable particles which contain crystalline silica may cause silicosis, an incurable lung disease. Silicosis is a scarring of the lungs which generally develops gradually over a period of years and may progress even after exposure

has stopped. Early symptoms may be so mild that they are not noticed. In advanced cases, lung capacity is severely reduced and the risk of infectious diseases such as tuberculosis increases. Early symptoms of silicosis include coughing and shortness of breath on exercising; symptoms may progress to pain in the chest, loss of appetite, fatigue, weakness, inability to work. Complications may lead to respiratory or heart failure. Chronic silicosis generally occurs after 10 or more years of overexposure.

Studies indicate that people with silicosis have an increased risk of lung cancer; however, many of the studies do not take into account additive factors such as smoking.

CARCINOGENICITY

Natural Sand is not listed as a carcinogen by the International Agency on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA). Classifications of the crystalline silica component are based on experimental studies with animals and epidemiologic studies of workers exposed to respirable crystalline silica.

- IARC: classified as Group 1, a substance known to cause cancer to humans
- NTP: classified as a known human carcinogen
- OSHA: not classified as a carcinogen
- ACGIH: classified as suspect human carcinogen
- NIOSH: classified as a potential occupational carcinogen

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with respiratory disorders may find these conditions aggravated by exposure to dust.

SECTION 4 FIRST AID MEASURES

INHALATION

Move exposed individual to fresh air. Dust in throat and nasal passages should clear naturally by coughing, sneezing and nasal discharge. Obtain medical attention if symptoms persist or develop later.

EYE CONTACT

Do not allow individual to rub eyes. Flush gently under running water for 15 minutes or longer, making sure that the eyelids are held open. Other than washing with water, do not attempt to remove material from eyes. If pain or irritation persist or develop later, obtain medical attention.

SKIN CONTACT

If irritation occurs, flush gently with water until dust is removed. If irritation persists or develops later, obtain medical attention.

INGESTION

Ingestion is not a common route of occupational exposure. If swallowed and irritation or discomfort occurs, obtain medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT

Not combustible.

FLAMMABLE LIMITS

Not applicable.

EXTINGUISHING AGENTS

Not combustible. Use extinguishing agent appropriate for surrounding flammable materials.

UNUSUAL FIRE AND EXPLOSION HAZARDS

None.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Eye protection and appropriate respiratory protection should be used to protect cleanup personnel against dust.

SPILL AND LEAK PROCEDURES

Keep unprotected personnel out of the area. Do not dry sweep spilled dusty material. Use water spray to minimize dust or vacuum with HEPA filters.

SECTION 7 HANDLING AND STORAGE

HANDLING PRECAUTIONS

Dust containing crystalline silica may be generated during processing and storage. Use in well ventilated areas. Avoid generating dust. Use good housekeeping methods to prevent the accumulation of dust in the workplace.

RECOMMENDED STORAGE CONDITIONS

Store away from strong oxidizers. Local regulations may require water spray or other measures to limit dust in storage areas.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

REGULATORY PERMISSIBLE EXPOSURE LIMITS

COMPONENT	OSHA PEL	MSHA PEL
*Respirable Dust containing 1% or more crystalline silica (quartz)	$\frac{10 \text{ mg/m}^3}{(\% \text{SiO}_2 + 2)}$	$\frac{10 \text{ mg/m}^3}{(\% \text{SiO}_2 + 2)}$
**Total Dust containing 1% or more crystalline silica (quartz)	$\frac{30 \text{ mg/m}^3}{(\% \text{SiO}_2 + 2)}$	$\frac{30 \text{ mg/m}^3}{(\% \text{SiO}_2 + 3)}$

OTHER GUIDELINES

COMPONENT	ACGIH TLV	NIOSH REL
Crystalline silica (quartz) CAS#14808-60-7	0.025 mg/m ³	0.05 mg/m ³

ENGINEERING CONTROLS

Use general ventilation, local exhaust and/or wet suppression methods to maintain exposures below allowable exposure limits.

RESPIRATORY PROTECTION

The need for respiratory protection should be evaluated by a qualified professional. The use of respirators for controlling exposures in excess of PEL must comply with OSHA and MSHA requirements for medical surveillance, respirator fit testing, repair and cleaning and user training.

EYE PROTECTION

Safety glasses with side shields should be worn as minimum protection. Dust goggles or full face protection should be worn when dusty conditions are present or are anticipated.

SKIN PROTECTION

Use gloves to provide hand protection from abrasion. In very dusty conditions, clothing with long sleeves will provide skin protection. Contaminated work clothing should be washed after use.

ADDITIONAL PROTECTIVE MEASURES

Air monitoring for dust and quartz should be conducted regularly. Dust and quartz levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee work stations.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Angular particles.	SPECIFIC GRAVITY 2.55 – 2.80
COLOR Tan, brown and/or gray particles.	EVAPORATION RATE Not applicable.
ODOR None.	VAPOR DENSITY (AIR = 1) Not applicable.
BOILING POINT Not applicable.	pH Not applicable.
VAPOR PRESSURE Not applicable.	SOLUBILITY IN WATER Negligible.

SECTION 10 STABILITY AND REACTIVITY

STABILITY Stable.
INCOMPATIBILITY Crystalline silica may react violently with strong oxidizing agents, causing fire and/or explosions. Silica dissolves in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.
HAZARDOUS DECOMPOSITION PRODUCTS None.
HAZARDOUS POLYMERIZATION Does not polymerize.
CONDITIONS TO AVOID Avoid contact with strong oxidizing agents.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA

Standard animal toxicity data (e.g. LD₅₀, LC₅₀) are not available for quartz. Epidemiologic studies of workers indicate an increased risk of lung cancer from chronic exposure to respirable crystalline silica; this effect was more pronounced in those with silicosis. However, many of the studies did not account for effects of smoking or other confounding exposures.

Epidemiologic studies have linked crystalline silica exposure with autoimmune diseases and kidney disorders. Individuals with silicosis show a higher incidence of scleroderma, a thickening of the skin. Current data have not shown a definite causal effect between these effects and

exposure to respirable crystalline silica.

In laboratory animal tests, dust containing newly broken particles of respirable silica particles caused greater lung injury than equal exposures to particles aged for sixty days or more.

SECTION 12 ECOLOGICAL INFORMATION

ECOLOGICAL DATA

Generally considered chemically inert in the environment.

SECTION 13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Dispose of waste product and unused product in compliance with federal, state and local requirements. Used material which has become contaminated, may have significantly different characteristics based on the contaminant and should be evaluated accordingly.

SECTION 14 TRANSPORT INFORMATION

DOT HAZARD CLASS

None.

DOT PLACARD

None.

SECTION 15 REGULATORY INFORMATION

US FEDERAL REGULATIONS

SARA 313

Not applicable.

CERCLA 103

Not applicable.

RCRA HAZARDOUS WASTE

Waste is not hazardous according to 40 CFR 261.

STATE REGULATIONS

COMPONENT

Crystalline Silica, quartz 14808-60-7

STATE REGULATORY LISTS

CA, FL, MA, MN, NJ, PA

SECTION 16 OTHER INFORMATION

For further information on this product contact the nearest regional Hanson Aggregates office.

NOTICE: Hanson Building Materials America believes that the information contained in this Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of date of publication. They are not necessarily all-inclusive or fully adequate in every circumstance. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules, or insurance requirements.

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