



SAFETY DATA SHEET
(As prescribed by OSHA, 29 CFR 1910.1200(g) and Appendix D)
Sand and Gravel

Section 1: Identification

- **Product identifier used on the label and any other common names or synonyms by which the substance is known.**

Construction Aggregate

- **Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.**

Manufactured By: National Lime & Stone Co., 551 Lake Cascade Parkway, PO Box 120, Findlay, OH 45840

Phone: 419-422-4341 Emergency Phone: 419-396-7671

- **Recommended use:** Aggregate for Portland cement and asphalt concrete and other construction applications.

Section 2: Hazard(s) Identification

Inhalation: Acute -Dusts may irritate the nose, throat and respiratory tract by mechanical abrasion. Coughing, sneezing, shortness of breath may occur. Long term exposure to crystalline silica can cause a chronic lung disease, silicosis.

Respirable Crystalline Silica (RCS) may cause cancer. Sand and gravel is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). In its natural bulk state, sand and gravel is not a known health hazard. Sand and gravel may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain RCS (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of RCS (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

Eye contact: Acute - Dust particles can scratch the eye causing tearing, redness, a stinging or burning feeling, or swelling of the eyes with blurred vision. Chronic – no known effects.

Skin contact: Acute - Dust particles can scratch and irritate the skin with redness, and itching or burning feeling, swelling or the skin, and / or rash. Chronic – no known effects.

Section 2 Hazard(s) Identification Continued

Ingestion: Expected to be practically non-toxic. Acute - Ingestion of large amounts may cause gastrointestinal irritation including nausea, vomiting, diarrhea, and blockage. Chronic – no known effects.

Hazard category for:

- Carcinogen: Category 1A (according to 29 CFR 1910.1200 Appendix A.6)
- Specific Target Organ Toxicity – Category 2 (according to 29 CFR 1910.1200 Appendix A.9)

- **Signal word:** Danger
- **Hazard statements:**

May cause cancer. May cause damage to organs (lung) through prolonged or repeated exposure.

NFPA Hazard Class Health: 1 Flammability: 0 Reactivity: 0
HMIS Hazard Class Health: 1 Flammability: 0 Reactivity: 0

Hazards Not Otherwise Classified (HNOC) – None Known

- **Pictograms:**



- **Precautionary statements:**

Respiration protection: NIOSH-MSHA approved dust respirators for conditions where dust levels may exceed exposure limits.

Ventilation: As required to maintain exposures below TLV's. Vent dust to collector.

Eye protection: Dust goggles should be worn when visibly dusty conditions exist.

Storage: Restrict or control access to stockpile areas. Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains aggregates without an effective procedure for assuring safety.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3: Composition/Information on Ingredients

Components	Formula	CAS No.	Weight %
Sand and Gravel	(composition varies)	None	>99%
Silicon Dioxide (Quartz)	SiO ₂	14808-60-7	>1%

Trade Name & Synonyms: Construction Aggregate

Section 4: First-Aid Measures

- Necessary first-aid instructions by relevant routes of exposure:**

Inhalation: Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact physician if irritation persists or if breathing is difficult.

Skin: Wash affected areas thoroughly with mild soap and fresh water. Contact physician if irritation persists or later develops.

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. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or later develops.

Ingestion: If person is conscious, do not induce vomiting. Give large quantity of water and get medical attention. Never attempt to make an unconscious person drink.

Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). If addicted to tobacco, smoking will impair the ability of the lungs to clear themselves of dust.

See also Section (2) of this SDS - Hazards(s) Identification

Section 5: Fire-Fighting Measures

Suitable Extinguishing Media – Sand and gravel is not flammable; dust is not combustible.
Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media - None known.

Special protective equipment and precautions for firefighters – Use protective equipment appropriate for surrounding materials

Firefighting equipment/instructions - No specific precautions.

Specific hazards that develop from the material during the fire:

Flash point – Non Flammable; Auto-ignition Temperature – Non-Flammable

Unusual fire and explosion hazards:

Contact with powerful oxidizing agents may cause fire and/or explosions. (See section 10 of this SDS.)

Section 6: Accidental Release Measures

- **Cleanup procedures :**

Spilled materials, where dust is generated, may overexpose clean-up personnel to respirable dust. Use of respiratory protective equipment may be necessary. Do not dry sweep or use compressed air for clean-up. Sand and gravel may be wetted with water to control dusting. Prevent spilled materials from entering streams, drains, or sewers.

Waste disposal method: Pick up and reuse clean materials. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

Section 7: Handling and Storage

- **Precautions for safe handling:**

Do not handle until all safety precautions have been read and understood.

Keep formation of airborne dusts to a minimum. Do not breathe dust.

Provide appropriate exhaust ventilation at places where dust is formed. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Bulk density can exceed 100 pounds per cubic foot. Verify storage structures (bins, silos, etc.) have sufficient strength to contain the material. Stack bagged material in a secure manner to prevent falling.

Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains sand and gravel. Dust can build up or adhere to the walls of a confined space and release, collapse, or fall unexpectedly. Do not stand on or near stockpiles of sand and gravel; they may be unstable.

- **Recommendations on the conditions for safe storage:**

May cause pitting of aluminum. Ignites on contact with fluorine and other strong oxidizing agents. Limestone particles are incompatible with acids, ammonium salts, and magnesium metal.

Section 8: Exposure, Controls, Personal Protection

Exposure limits vary with the % quartz dust. Refer to ACGIH and MSHA for current TLV's and TWA's.

Selected Occupational exposure limits:

- 1 – Value equivalent to OSHA formulas (29 CFR 1910.1000, 29 CFR 1917, 29 CFR 1918).
- 2 – Value also applies to MSHA Metal / Non-Metal (1973 TLVs at 30 CFR 56/57.5001).
- 3 – OSHA enforces 0.250 mg/m³ in construction and shipyards (CPL-03-00-007).
- 4 – Value also applies to OSHA construction (29 CFR 1926.55, Appendix A) and shipyards (29 CFR 1915.1000, Table Z).
- 5 – MSHA limit = 10 mg/m³.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Particulates not otherwise classified (CAS SEQ250)	PEL	5 mg/m ³ 15mg/m ³	Respirable fraction. Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Crystalline Silica (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m ³ 0.1 mg/m ³ 2.4 mppcf	Total dust. 1,2 Respirable. 1,2,3 Respirable. 1,3,4
Particulates not otherwise classified (CAS SEQ250)	TWA	5 mg/m ³ 15 mg/m ³ 50 mppcf 15 mppcf	Respirable fraction. 1 Total dust. 1,4,5 Total dust. 1,4 Respirable fraction. 1
Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)	TWA	0.15 mg/m ³ 0.05 mg/m ³ 1.2 mppcf	Total dust. 1 Respirable. 1,2 Respirable. 1

US. ACGIH Threshold Limit Values®

Components	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.
Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)	TWA	0.025 mg/m ³ 10 mg/m ³	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Crystalline Silica (CAS 14808-60-7)	TWA	0.05 mg/m ³	Respirable dust.

Biological limit values: No biological exposure limits noted for the ingredient(s).

Exposure Guidelines: OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including "Particulates Not Otherwise Classified," "Particulates Not Otherwise Regulated," "Particulates Not Otherwise Specified," and "inert or Nuisance Dust" are often used interchangeably; however, the user should review each agency's terminology for differences in meanings.

Appropriate engineering controls:

Use ventilation and dust collection to control exposure to below applicable limits.

▪ **Recommendations for personal protective measures:**

Respirable dust and quartz levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

▪ **Any special requirements for PPE:**

Eye protection: Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visibly) dusty conditions are present or anticipated.

Skin protection: Use gloves to provide hand protection from abrasion. In dusty conditions wear long sleeve shirt. Wash work clothes after each use.

Respiratory Protection: All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica levels that exceed or are likely to exceed an 8 hr Time Weighted Average (TWA) of 0.5 mg/m³, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica levels exceed or are likely to exceed an 8 hr TWA of 5.0 mg/m³ a positive pressure, full face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

Section 9: Physical and Chemical Properties

- **Appearance (physical state, color, etc.):** Angular to rounded, gray, white, and tan solid particles ranging in size from powder to boulders
- **Odor** – No Odor
- **Vapor pressure:** Not Applicable
- **Odor threshold:** Not Applicable
- **Vapor density:** Not Applicable
- **pH:** 7-9 in saturated water solution
- **Relative density:** Specific Gravity = 2.5 – 2.9
- **Melting point/freezing point:** Not Applicable
- **Solubility:** Negligible in water
- **Initial boiling point and boiling range:** Not Applicable
- **Flash point:** None
- **Evaporation rate:** None
- **Flammability (solid, gas):** Non-Flammable
- **Upper/lower flammability or explosive limits:** Non - Flammable
- **Partition coefficient: n-octanol/water:** Not Applicable
- **Auto-ignition temperature:** Non-Flammable
- **Decomposition temperature:** When heated at 1100 - 1700°F, any limestone present decomposes into quicklime releasing carbon dioxide gas.
- **Viscosity.** Not Applicable.

Section 10: Stability and Reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport

Stability: Any limestone in the product will react with acids evolving CO₂. Stable if no acids or strong oxidizing agents are present.

Incompatibility: Ignites on contact with fluorine and other strong oxidizing agents. Any limestone in the product is incompatible with acids, ammonium salts, and magnesium metal. May cause pitting of aluminum.

Hazardous polymerization: Will not occur.

Section 11: Toxicological Information

Inhalation Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause other adverse health effects including lung and kidney cancer.

Skin contact Sand and gravel dust: May cause irritation through mechanical abrasion.

Eye contact Sand and gravel dust: May cause irritation through mechanical abrasion.

Ingestion Not likely, due to the form of the product. However, accidental ingestion of the content may cause discomfort.

Symptoms related to the physical, chemical, and toxicological characteristics: Sand and gravel dust: Discomfort in the chest. Shortness of breath. Coughing.

Information on toxicological effects:

Acute toxicity Not expected to be acutely toxic.

Skin corrosion/irritation This product is not expected to be a skin hazard.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization:

Respiratory sensitization No respiratory sensitizing effects known.

Skin sensitization Not known to be a dermal irritant or sensitizer.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen, and classified by ACGIH as a suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline Silica(Quartz) (CAS 14808-60-7) 1 Carcinogenic to humans.

Respirable Tridymite and Cristobalite 1 Carcinogenic to humans.
(other forms of Crystalline) (CAS Mixture)

NTP Report on Carcinogens: Crystalline Silica(Quartz) (CAS 14808-60-7)

Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not Listed

Reproductive toxicity Not expected to be a reproductive hazard.

Specific target organ toxicity – single exposure Not classified.

Specific target organ toxicity – repeated exposure Respirable crystalline silica: May cause damage to organs (lung) through repeated exposure prolonged or repeated exposure.

Aspiration hazard Due to the physical form of the product it is not an aspiration hazard.

Chronic effects Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Section 12: Ecological Information

Ecotoxicity	Not expected to be harmful to aquatic organisms. Discharging sand and gravel dust and fines into waters may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.
Persistence and degradability	Not applicable.
Bioaccumulative potential	Not applicable.
Mobility in soil	Not applicable.
Other adverse effects	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, global warming potential) are expected from this component.

Section 13: Disposal Considerations

Disposal Instructions: Do not allow fine particulate matter to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with fine particulates. Dispose of contents in accordance with local/regional/national/international regulations.

Hazardous waste code: Not Regulated

Waste from Residue / Unused Products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues.

Contaminated Packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty packaging materials should be recycled or disposed of in accordance with applicable regulations and practices.

Section 14: Transport Information (Not intended to be all-inclusive)

Sand and gravel is not classified as a hazardous material by US DOT and is not regulated by the Transportation of Dangerous Goods (TDG) when shipped by any mode of transport.

UN number - Not Regulated

UN proper shipping name - Not regulated

DOT Transport hazard class – Not Applicable

DOT Packing group – Not applicable

International Maritime Dangerous Goods Code (IMDG Code) – Not regulated as dangerous goods.

International Air Transport Association (IATA) – Not regulated as dangerous goods

Transport in bulk (according to Annex II of MARPOL 73/78 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code))). Not Applicable

Section 15: Regulatory Information (Not intended to be all-inclusive.)

US Federal Regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) – Not Regulated

U.S. TSCA Inventory List. All Chemical ingredients are listed.

RCRA Hazardous Waste Number: Not Listed

RCRA Hazardous Waste Classification: Not Classified

CERCLA Hazardous Substance List (40 CFR 302.4) Not listed

CERCLA Reportable Quantity (RQ): not listed

SARA Hazard categories

Immediate hazard – No

Delayed hazard – Yes

Fire hazard – No

Pressure hazard – No

Reactivity hazard - No

SARA 311/312 Hazardous Chemical : Yes SARA 313 (TRI Reporting) – Not Regulated

SARA Toxic Chemical (40 CFR 372.65): not listed

SARA 302 (Extremely Hazardous Substance): Not Listed

OSHA - Specifically Regulated Substance (29 CFR 1910.1001-1050): not listed

Clean Air Act (CAA) Section 112 – Hazardous Air Pollutants (HAP's) List – Not Regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) – Not Regulated

Safe Drinking Water Act (SDWA) – Not Regulated

Canadian Regulations. Sand and gravel products containing crystalline silica and calcium carbonate are classified D2A and are subject to WHMIS requirements.

NFPA Hazard Class Health: 1 Flammability: 0 Reactivity: 0

HMIS Hazard Class Health: 1 Flammability: 0 Reactivity: 0 Personal Protection – E

Additional State or Province regulations may be applicable. For Example:

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline Silica(Quartz) (CAS 14808-60-7)

Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Crystalline Silica(Quartz) (CAS 14808-60-7)

Section 16: Other Information

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