



December 9, 2021

SAFETY DATA SHEET

Sand and Gravel Construction Aggregate Products
(As prescribed by OSHA, 29 CFR 1910.1200(g) and Appendix D)
(Details of the abbreviations are on pages 5 and 10)

Section 1: Identification

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

Sand and Gravel Construction Aggregate Products, Natural Sand, Masonry Sand

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

National Lime & Stone Co.

Corporate Office: 551 Lake Cascade Parkway, PO Box 120, Findlay, OH 45840

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

- **Recommended use of the chemical:** Aggregate for Portland cement and asphalt concrete and other construction applications.
- **Recommended restrictions on use of the chemical:** Very extensive dust control measures required if contemplated for use as abrasive blasting agent.

Section 2: Hazard(s) Identification

Physical Hazards: Not classified.

The hazards below apply to dust generated from handling or processing.

Inhalation: Acute (immediate) - Dusts may irritate the nose, throat and respiratory tract by mechanical abrasion and drying. Coughing, sneezing, shortness of breath may occur.

Inhalation: Chronic - Long term exposure to crystalline silica may cause a chronic lung disease, silicosis. Respirable Crystalline Silica (RCS) may cause cancer. Limestone is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). In its natural bulk state, limestone is not a known health hazard. Limestone may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain RCS (Respirable crystalline silica 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.

Section 2 Hazard(s) Identification Continued

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.

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

Hazard category (Inhalation) for:

- Carcinogen: Category 1A (see 29 CFR 1910.1200 Appendix A.6)
- Specific Target Organ Toxicity – Repeated Exposure (lungs, respiratory system) – Category 2 (see 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 Personal Protection: E

Hazards Not Otherwise Classified (HNOC) – None Known

▪ **Pictograms:**



- **Precautionary statements:** Do not handle until all safety precautions have been read and understood.

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

Ventilation: As required to maintain exposures below PEL's, REL's and 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 sand and gravel aggregates without an effective procedure for assuring safety.

Disposal: Dispose in accordance with any and all applicable federal, state, and local laws, regulations, and practices.

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	>0.1%

Trade Name & Synonyms: Sand and Gravel 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: Get medical attention immediately. 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, and the dust is not a 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 combustion of 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.)

When heated at 1700°F or more for prolonged periods, any limestone present will decompose into quicklime releasing carbon dioxide (decomposition can begin at about 1100°F). Quicklime generates heat (and potentially steam) when exposed to water.

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 in accordance with any and all applicable federal, state, and local laws, regulations, and practices.

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.

Promptly remove dusty clothing and launder before use.

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

Bulk density can exceed 120 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/or gravel. Do not stand on or near stockpiles of sand and / or 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 and is incompatible with acids, ammonium salts, and magnesium metal.

Section 8: Exposure, Controls, Personal Protection

Exposure limits vary with the % quartz dust. Refer to OSHA, NIOSH, ACGIH® and MSHA for current applicable exposure limits.

Selected Occupational Exposure Limits (August 29, 2019).	All values for mg/m ³ for 8 hour TWA (except NIOSH REL is up to 10 hour TWA)				
	REGULATORY			RECOMMENDED	
Substance	OSHA PEL	MSHA PEL	Cal/OSHA PEL	ACGIH® TLV®	NIOSH REL
Airborne OEL's for Inert/Nuisance Dust (PNOS)	15 (T) 5 (R)	10 (T)	10 (T) 5 (R)	**	---
Respirable dust containing crystalline silica.	---	10mg/m ³ ÷ (% RQ + 2) (See Note Below)	---	**	---
Respirable Crystalline Silica (Including Tridymite, Cristobalite and other forms of respirable silica)	0.05 (PEL) 0.025 (Action Level)	---	0.05	**	0.05

NOTE: The MSHA PEL for dust containing respirable silica as tridymite and cristobalite is one-half the MSHA PEL for respirable dust containing silica as quartz.

References: OSHA & Cal-OSHA PEL's, and NIOSH REL's are taken from OSHA Annotated Z-1 and Z-3 (<https://www.osha.gov/dsg/annotated-pels/index.html>) (except OSHA respirable silica PEL is the 2016 updated value (information at https://www.osha.gov/silica/Silica_FAQs_2016-3-22.pdf)).
MSHA data from <https://www.kapa-krmca.org/Resources/Documents/Education/KAPA/LimestoneMSDS.pdf> and <https://www.federalregister.gov/documents/2019/08/29/2019-18478/respirable-silica-quartz>.
** Check for most recent ACGIH® TLVs® and BEIs®

Abbreviations:					
T = Total Dust					
R = Respirable Fraction					
RQ = Respirable Quartz					
ACGIH® = American Conference of Governmental Industrial Hygienists					
ACGIH® TLV® = Threshold Limit Value					
Cal/OSHA - California Division of Occupational Safety and Health					
mg/m ³ = milligrams per cubic meter of air					
NIOSH = National Institute for Occupational Safety and Health					
NIOSH REL = Recommended Exposure Limit					
MSHA = Mine Safety and Health Administration					
OSHA = Occupational Safety and Health Administration					
OSHA PEL = Permissible Exposure Limit					
OEL = Occupational Exposure Limit					
TWA = Time Weighted Average					
PNOS - Particles Not Otherwise Specified (or regulated)					

Section 8 Exposure, Controls, Personal Protection Continued

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. 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

- (a) **Appearance (physical state, color, etc.)** – Rounded and angular solid multicolored particles ranging in size from fines to boulders.
- (b) **Odor** - No Odor
- (c) **Odor threshold** - NA
- (d) **pH** – 7 to 9.4 in saturated water solution
- (e) **Melting point/freezing point** - NA
- (f) **Initial boiling point and boiling range** - NA
- (g) **Flash point** – Not Flammable
- (h) **Evaporation rate** – NA
- (i) **Flammability (solid, gas)** - Not flammable
- (j) **Upper/lower flammability or explosive limits** – Not Flammable.
- (k) **Vapor pressure** - NA
- (l) **Vapor density** - NA
- (m) **Relative density** – Up to 125 pounds per cubic foot (Specific Gravity = 2.5 – 2.9; (Water = 1.0))
- (n) **Solubility(ies)** – Negligible in water.
- (o) **Partition coefficient: n-octanol/water** – NA.
- (p) **Auto-ignition temperature** – Not Flammable.
- (q) **Decomposition temperature** - When heated at 1100 - 1700°F, the limestone component decomposes into quicklime releasing carbon dioxide gas.
- (r) **Viscosity** – NA

Section 10: Stability and Reactivity

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

Chemical Stability: Any limestone component reacts with acids evolving CO₂ gas. Stable if no acids or strong oxidizing agents are present.

Possibility of Hazardous Reactions: Do not expose to acids or strong oxidizing agents.
Silica dissolves in hydrofluoric acid producing a corrosive gas (silicon tetrafluoride).

Conditions to Avoid: Do not expose to acids or strong oxidizing agents.

Incompatible Materials: Ignites on contact with fluorine and other strong oxidizing agents and is incompatible with acids, ammonium salts, and magnesium metal. May cause pitting of aluminum.

Hazardous polymerization: Will not occur.

Hazardous decomposition products: When heated at 1100 - 1700°F, any limestone components will decompose into quicklime releasing carbon dioxide gas.

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 Dust may cause irritation through mechanical abrasion.

Eye contact 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 extreme discomfort.

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

Information on toxicological effects: (See <https://www.osha.gov/dsg/hazcom/ghsguideoct05.pdf>)

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 severe 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.

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 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

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 any and all applicable federal, state, and local laws, regulations, and practices.

Hazardous waste code: Not Regulated

Waste from Residue / Unused Products: Empty containers or liners may retain some product residues. Dispose of in accordance with any and all applicable federal, state, and local laws, regulations, and practices.

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

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

Sand and gravel are 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 (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261): Not Classified

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA Hazardous Substance List (40 CFR 302.4) Not listed

CERCLA Reportable Quantity (RQ): not listed

Super Fund Amendments and Reauthorization Act of 1986 (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

Specifically, Regulated Substance (29 CFR 1910): not listed

MSHA - 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

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

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

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

US. Massachusetts RTK - Substance List

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

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

US. New Jersey Worker and Community Right-to-Know Act

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

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

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

Original Issue Date: May 11, 2015; Revision June 30, 2020; Update ACGIH® December 9, 2021

Abbreviations (See also Section 8 – table of Selected Occupational Exposure Limits)

CAS — Chemical Abstract Service	NTP — National Toxicology Program
CFR — Code of Federal Regulations	RCRA — Resource Conservation and Recovery Act
DOT — Department of Transportation	RQ — Reportable Quantity
GHS — Globally Harmonized System	SDS — Safety Data Sheet
HEPA — High Efficiency Particulate Air	TPQ — Threshold Planning Quantity
IARC — International Agency for Research on Cancer	TSCA — Toxic Substances Control Act
NOEC — No Observed Effect Concentration	UN — United Nations
NA — Not Applicable	

The information reported in this SDS relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of National Lime and Stone Company's knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty, or guarantee is made as 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. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules, or insurance requirements.

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This Product is NOT intended to be used as a food source, component, or ingredient. It is NOT produced in compliance with state or federal regulations governing products consumed or intended for consumption by humans or animals and should not be used for such purposes.

IN THE EVENT OF BREACH OF ANY WARRANTY OF ANY TYPE, THE SOLE REMEDY OF THE PURCHASER AND/OR USER SHALL BE REPLACEMENT OF THE PRODUCT PURCHASED. UNDER NO CIRCUMSTANCES WILL SELLER BE LIABLE FOR DAMAGES INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES, REGARDLESS OF THE LEGAL THEORY UPON WHICH A CLAIM MAY BE BASED.

End of SDS 4921