



SAFETY DATA SHEET

UNHARDENED READY-MIX CONCRETE

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION	SYNONYMS	CHEMICAL NAME/CAS NO.
Ready-mix Concrete	Mixed Unhardened Concrete, Flowable fill, Concrete grout, Roller-compacted concrete.	Not Applicable
RECOMMENDED USE OR RESTRICTIONS Ready-mix Concrete is used as a construction material.		
MANUFACTURER	ADDRESS	TELEPHONE NO.
New Enterprise Stone & Lime Co., Inc. or related brands: Buffalo Crushed Stone, Inc. Eastern Industries, Inc. Martin Limestone, Inc. (New Holland Concrete) Valley Quarries, Inc.	PO Box 77, New Enterprise, PA 16664	814.766.2211
SDS PREPARED BY	ADDRESS	TELEPHONE NO.
New Enterprise Stone & Lime Co., Inc.	PO Box 77, New Enterprise, PA 16664	814.766.2211
IN CASE OF EMERGENCY CONTACT		EMERGENCY PHONE NO.
CHEMTREC		800.424.9300

SECTION 2 – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:

Category 1A Carcinogen
Category 1 Specific Target Organ Toxicity (STOT) following repeated exposures
Category 1 Eye Damage
Category 2 Skin Irritant



SIGNAL WORD: DANGER

HAZARDS OVERVIEW: Skin and eye exposure to the wet material may occur without protective clothing and/or personal protective equipment. Extended exposure to skin and eyes must be avoided since it may cause serious caustic, alkaline burns and tissue damage, which is potentially irreversible. Respirable crystalline silica exposure is unlikely when handling the wet, unhardened ready-mix concrete. However, cutting, sawing, grinding, or crushing hardened concrete will likely produce airborne dust containing respirable crystalline silica posing an inhalation hazard. Avoid breathing dust created from the breaking of hardened concrete.

Long-term overexposure to respirable crystalline silica in the workplace may cause lung damage and silicosis. Crystalline silica is listed as a Group 1 carcinogen (carcinogenic to humans) by the IARC and NTP.

PRIMARY ROUTE(S) OF EXPOSURE: Skin and/or eye contact

ADDITIONAL ROUTE(S) OF EXPOSURE: Inhalation

EYE CONTACT: Must be avoided. Eye contact with wet, unhardened ready-mix concrete may cause immediate irritation or alkaline burns and require immediate first aid and possible medical attention to prevent serious damage.

SKIN CONTACT: Contact with wet, unhardened concrete should be avoided. Short-term exposure may cause dry skin, discomfort, and irritation. Longer-term, prolonged exposure may cause serious alkaline burns and dermatitis. Irritant dermatitis may be caused by alkalinity and the abrasiveness of the concrete. Some people may experience more serious skin allergy ranging from a mild rash to more serious scaling, cracking, or ulceration of the skin. Exposed persons may not feel discomfort until hours after the exposure has ended.

SKIN ABSORPTION: Not expected.

INGESTION: Not likely, but should not be ingested. Small amounts may cause temporary irritation. Large amounts could result in more serious caustic, alkaline burns.



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INHALATION: Not likely while handling wet, unhardened material, but should be avoided by using personal protective equipment, if necessary. Dust generated during breaking of hardened concrete may cause irritation of the nose, throat, and lungs and should be avoided due to the dust containing respirable crystalline silica (quartz). Prolonged inhalation to respirable crystalline silica may cause silicosis.

See Section 8 for exposure thresholds.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

CAS No.	COMPONENT / CHEMICAL NAME	Wt.% (Approx.)
1317-65-3	Limestone aggregate	40-50
14808-60-7	Sand, Crystalline Silica (Quartz) *	30-40
65997-15-1	Portland cement	5-10
--	Pozzolans / Other Cementitious Materials	1-10

The exact composition of ready-mix concrete will vary based on mix design. Unhardened ready-mix concrete is typically a light grey, flowable, granular consistency. The product is mixed, transported, and placed while wet. Various colors and textures may be included in the mixing or finishing of the concrete. Concrete may contain pozzolans such as fly ash, slag cement, etc., and various admixtures to improve the workability or finished properties of the product.

* Product contains greater than 0.1% total crystalline silica (quartz) and greater than 0.1% respirable crystalline silica (particle size ≤ 4 μm). Crystalline silica would be bound in the wet, unhardened ready-mix concrete, but may be released upon sawing, cutting, grinding, or crushing, the dry, hardened product. Respirable crystalline silica is considered a hazardous chemical as defined by ACGIH and NIOSH.

SECTION 4 – FIRST-AID MEASURES

EYES: Rinse immediately with plenty of water for at least 15 minutes. If irritation persists, seek medical attention.

SKIN: Wash thoroughly with soap and water. Seek medical attention for rash, burns, irritation, or dermatitis due to prolonged unprotected exposure to wet concrete.

INHALATION: Remove person from exposure area to fresh air. Adverse health effects associated with exposure to respirable crystalline silica (quartz) during cutting or demolition of hardened concrete typically results from chronic (long-term), not acute (short-term) exposure. Seek medical attention if irritation, coughing, or discomfort persists.

INGESTION: Product is considered non-toxic in small amounts. If large amounts are ingested do not induce vomiting. If person is conscious, give large amounts of water. Seek medical attention since gastrointestinal irritation and/or blockage may result.

SECTION 5 – FIRE-FIGHTING MEASURES

EXTINGUISHING AGENTS: Product is not flammable, combustible, or explosive. Use extinguishing media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES: Use self contained breathing apparatus (SCBA) with full face mask.

UNUSUAL FIRE AND EXPLOSION HAZARDS: See Section 10 regarding Stability and Reactivity.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

PERSONAL PRECAUTIONS: The personal protection and control measures identified in Section 8 of this SDS should be used as appropriate.

ENVIRONMENTAL PRECAUTIONS: A spill on the ground is not a hazard. However, prevent unhardened concrete or any run-off in contact with unhardened concrete from entering any waterway, storm drain, or sewer system where it would harden and potentially impede flow. Water runoff which contacts unhardened concrete becomes alkaline. Prevent any water runoff from entering a waterway where it may



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cause an unsightly scum on the water and may raise the pH of the water. This may affect aquatic life depending on the concentration. Discard any product, residue, disposable container or liner in compliance with regulatory requirements.

CLEANUP PROCEDURES: Use normal clean-up methods. It can be disposed of as common waste in a landfill or used as fill after concrete has hardened.

SPECIAL PROCEDURES: No special containment or evacuation procedures are necessary.

SECTION 7 – HANDLING AND STORAGE

Follow the personal protection and control measures set forth in Section 8 of this SDS when handling this product. Respirable crystalline silica may be generated in airborne dust when demolishing, cutting, sawing, grinding, or crushing hardened concrete. Avoid breathing dust during demolition or surface cutting. Always wash skin thoroughly after contact with wet, unhardened concrete.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

CAS No.	COMPONENT / CHEMICAL NAME	Wt.% (Approx.)	IDLH (mg/m ³)	EXPOSURE LIMITS ^{(a),(b)}			
				TYPE	OSHA PEL (8-HR TWA)	NIOSH REL (TWA)	ACGIH (TWA)
1317-65-3	Limestone	40-50	NE	Respirable fraction ^(d)	5 mg/m ³	NA	Use Respirable Silica TLV
				Total dust ^(e)	15 mg/m ³		10 mg/m ³
14808-60-7	Sand, Crystalline Silica (Quartz) ^(c)	30-40	50	Respirable fraction	10 mg/m ³ ÷ (%SiO ₂ + 2)	0.05 mg/m ³	0.025 mg/m ³
				Total dust	30 mg/m ³ ÷ (%SiO ₂ + 2)		NE ^(f)
65997-15-1	Portland Cement	5-10		Respirable fraction	5 mg/m ³	5 mg/m ³	10 mg/m ³
				Total dust	15 mg/m ³	10 mg/m ³	NE
--	Pozzolans / Other Cementitious Materials	1-10		Respirable fraction	5 mg/m ³	NA	NE
				Total dust	15 mg/m ³		NE

Concrete may contain pozzolans such as fly ash, blast furnace slag, etc. and various admixtures to improve the workability or finished properties of the product.

Notes:

- (a) OSHA PEL (permissible exposure limits) taken from 29 CFR 1910.1000, Table Z-1. Proposed MSHA PEL withdrawn in 2002 and 2004; therefore, assume the OSHA PEL to represent any MSHA PEL. NIOSH and IDHL values obtained from the Centers for Disease Control and Prevention (CDC) NIOSH Pocket Guide. ACGIH values obtained from www.acgih.org where available.
- (b) TWA = 8-Hour Time Weighted Average. No ceiling or short-term exposure limits (STEL) have been designated for the above ingredient(s).
- (c) Composition varies naturally – typically contains >99% crystalline silica (quartz). Product contains approximately 28% of respirable crystalline silica (particle size ≤4 μm) based on analytical results of bulk powder samples of this product analyzed using a particle size laser diffraction test method and MicroTrac S-3000 instrumentation. Only respirable crystalline silica is considered a hazardous chemical as defined by ACGIH and NIOSH.
- (d) “Respirable fraction” refers to the amount of airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages; i.e., the amount of dust small enough to be inhaled into the lungs during periods of exposure to a product. Not all dust is respirable.
- (e) “Total dust” refers to the total amount of all airborne particulate generated for a particular component.
- (f) NE = Not Established

ACGIH – American Conference of Governmental Industrial Hygienists
 IDLH – Immediately Dangerous to Life and Health
 MSHA – Mine Safety and Health Administration
 NIOSH – National Institute for Occupational Safety and Health
 OSHA – Occupational Safety and Health Administration
 PEL – Permissible Exposure Limit
 REL – Recommended Exposure Limit



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STEL – Short Term Exposure Limit
TLV – Threshold Limit Value
TWA – Time Weighted Average

- ENGINEERING CONTROLS:** Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits during cutting, sawing, grinding, or demolition of dry, hardened concrete.
- PERSONAL PROTECTIVE EQUIPMENT:**
- RESPIRATORY PROTECTION:** Not typically needed when working with wet product. Recommended while cutting, sawing, grinding, or demolishing dry, hardened concrete. Wear a NIOSH/MSHA approved respirator with N-100 or P-100 filters when adequate ventilation is not available or occupational exposure limits are exceeded. For dusty conditions use an approved dust mask.
- VENTILATION:** Use local exhaust ventilation as well as sufficient general area ventilation.
- SKIN PROTECTION:** Wearing of protective gloves, boots, and clothing is recommended and to prevent skin contact.
- EYE PROTECTION:** Safety glasses with side shields should be worn to prevent splash of wet, unhardened concrete into eyes. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated during cutting, grinding, sawing, or demolition of hardened concrete. The employer should provide an eye-wash station or fountain within the immediate working area for emergency use.
- HYGIENE:** Wash dust-exposed skin with soap and water before eating, drinking, smoking, and using toilet facilities. Wash work clothes after each use.
- OTHER CONTROL MEASURES:** A clean water supply for first aid and cleaning should be available. Engineering controls, including, but not limited to, wet suppression, ventilation, enclosures, etc., should be used as needed to reduce employee exposure to particulates and to maintain exposure levels below allowable limits. Dust exposure should be monitored by a health and safety professional as needed to determine worker exposure levels.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Normally light gray (may be colored at times), flowable, semi-solid, granular mixture with no odor.

pH: 10-14 (Alkaline).

SPECIFIC GRAVITY (H₂O = 1): 2.68-2.85

MELTING POINT/FREEZING POINT: Not Applicable

BOILING POINT (AT 1 ATM): Not Applicable

FLASHPOINT (Method Used): None

FLAMMABLE LIMITS IN AIR: Not flammable LFL - NA UFL – NA

EVAPORATION RATE (ETHER = 1): Not Applicable

VAPOR DENSITY IN AIR (AIR = 1): Not Applicable

VAPOR PRESSURE: Not Applicable

BULK DENSITY: 135-150 lbs/ft³

SOLUBILITY IN WATER: Negligible

DECOMPOSITION TEMPERATURE: Not Available

AUTOIGNITION TEMPERATURE: Not Applicable

VISCOSITY: Not Applicable

PARTITION COEFFICIENT (n-octanol/water): Not applicable. The partition coefficient does not apply to solids.

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

CONDITIONS TO AVOID: Unintentional contact with water

**INCOMPATIBILITY AND REACTIVITIES:
(MATERIALS TO AVOID):** Wet, unhardened concrete is caustic (alkaline) with a pH of approximately 12. It may react with strong acids, ammonium salts, and aluminum metal. Concrete dissolves in



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hydrofluoric acid producing a corrosive gas, silicon tetrafluoride. Silica may react with powerful oxidizing agents such as fluorine, chlorine, trifluorides, and oxygen difluoride.

HAZARDOUS DECOMPOSITION PRODUCTS: No spontaneous decomposition

HAZARDOUS POLYMERIZATION: Not known to polymerize

SECTION 11 – TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE OVEREXPOSURE:

EYE CONTACT: Eye contact with wet, unhardened ready-mix concrete may cause immediate irritation or alkaline burns. Dust created from sawing, cutting, grinding, or demolition of dry, hardened concrete may cause mechanical irritation of the eyes.

SKIN CONTACT: Short-term exposure to wet, unhardened concrete may cause dry skin, discomfort, and irritation.

INGESTION: Small amounts may cause temporary irritation. Large amounts could result in more serious caustic burns.

INHALATION: Not a factor with wet, unhardened material. Dry, hardened concrete is not harmful unless dust is created by sawing, grinding, cutting, or demolishing the concrete. Short-term exposure to that dust is likely to cause mechanical irritation of the mucous membranes and respiratory tract.

EFFECTS OF CHRONIC OVEREXPOSURE:

SKIN CONTACT: Longer-term, prolonged exposure may cause serious alkaline burns and dermatitis. Irritant dermatitis may be caused by alkalinity and the abrasiveness of the concrete. Some people may experience more serious skin allergy ranging from a mild rash to more serious scaling, cracking, or ulceration of the skin.

INGESTION: Not expected to occur.

INHALATION: Not a factor with wet, unhardened material. Dry, hardened concrete is not harmful unless dust is created by sawing, grinding, cutting, or demolishing the concrete. Concrete dust may contain crystalline silica and continued long-term exposure to respirable crystalline silica may affect respiratory function, cause pulmonary fibrosis, or silicosis.

CARCINOGENICITY: Unhardened ready-mix concrete is not listed by the National Toxicology Program (NTP), or the International Agency for Research on Cancer (IARC) as a carcinogen. However, respirable crystalline silica, a trace element in this product, is listed as a Group 1 carcinogen (carcinogenic to humans) by the IARC. The NTP and ACGIH also list respirable crystalline silica as a known or suspected human carcinogen. These classifications are based on sufficient evidence of carcinogenicity in experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

Respirable crystalline silica exposure is not a hazard when handling the wet, unhardened ready-mix concrete or working on or around the dry, hardened concrete. However, cutting, sawing, grinding, or crushing hardened concrete will likely produce airborne dust containing respirable crystalline silica posing an inhalation hazard. Chronic tobacco smoking may further increase the risk of developing chronic lung problems and may exacerbate the effects of overexposure to respirable crystalline silica.

Ready-mix concrete may contain trace amounts (<0.1%) of hexavalent chromium and certain chromium compounds which are listed in the NTP and IARC lists of carcinogens. Overexposure to those compounds is not expected under normal use of this product.

SECTION 12 – ECOLOGICAL INFORMATION

No ecological data available. Product is not expected to be ecotoxic or harmful to aquatic life. Product is a solid, therefore the following parameters are not affected by the components listed in Section 3: persistence and degradability, bioaccumulative potential, and mobility in soil.



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SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Not a RCRA hazardous waste. Collect and reuse clean materials. Dispose of waste material in accordance with applicable federal, state, and local laws and regulations.

SECTION 14 – TRANSPORT INFORMATION

DOT HAZARD CLASS: Not restricted. Not hazardous under U.S. Department of Transportation regulations.

UN NUMBER OR SHIPPING NAME: None

PACKING GROUP: NA

PLACARD REQUIRED: None

LABEL REQUIRED: Label as required by the OSHA Hazard Communication standard [29 CFR 1910.1200(f)] and applicable state and local laws and regulations.

ENVIRONMENTAL HAZARDS: None. Product is not expected to be ecotoxic or harmful to aquatic life

SPECIAL PRECAUTIONS: None

SECTION 15 – REGULATORY INFORMATION

US FEDERAL REGULATIONS:

Occupational Health and Safety Administration (OSHA)

This product should be included in an employer's hazard communication program. OSHA requires carcinogens as defined on the following lists to be reported when present at quantities of 0.1% or greater:

National Toxicology Program (NTP) Annual Report on Carcinogens

Crystalline Silica (Respirable Size) is listed on the NTP 13th Report on Carcinogens (Updated October 2, 2014) and is known to be a human carcinogen. Respirable crystalline silica is expected to be present at levels exceeding 0.1%.

International Agency for Research on Cancer (IARC) Monographs

<i>Chemical</i>	<i>CAS No.</i>	<i>Group</i>	<i>Carcinogenicity Status</i>
Crystalline Silica, Dust	14808-60-7	1	Carcinogenic to humans

Signal word: DANGER

Pictogram(s):



Toxic Substance Control Act (TSCA)

TSCA Status: Some substances in ready-mix concrete are listed Toxic Substances Control Act substances.

Superfund Amendments and Reauthorization Act (SARA) Title III / Emergency Planning and Community Right to Know Act (EPCRA)

Section 302/304: This product is not listed under Section 302/304.

Section 311/312: This product may be subject to SARA Title III (EPCRA) Section 311 requirements and Tier I or II reporting under Section 312 may apply depending on the quantity of product handled, stored, or used. The product is considered a delayed health hazard.

Section 311 requires reporting of safety data sheets (SDS) or a list of covered chemicals to the state emergency response commission (SERC), local emergency planning committee (LEPC), and local fire department. Section 312 requires reporting of the Tier I/Tier II - Emergency and hazardous chemical inventory form. Minimum thresholds for reporting under Sections 311 and 312 are as follows: For Extremely Hazardous Substances (EHS) designated under Section 302 of Title III, (this product is



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not considered an EHS) the reporting threshold is 500 pounds (or 227 kg.) or the threshold planning quantity (TPQ), whichever is lower. For all other hazardous chemicals for which facilities are required to have or prepare an SDS, the minimum reporting threshold is 10,000 pounds (or 4,540 kg.).

Section 313: This product is not subject to the reporting requirements of SARA Title III (EPCRA), Section 313 relating to Toxic Release Inventory (TRI) Reporting.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

This product is not a CERCLA hazardous substance so releases of this product, in quantities equal to or greater than their reportable quantity (RQ), are not subject to reporting to the National Response Center under CERCLA or to state and local emergency planning committees under Section 304 of SARA Title III (EPCRA).

US STATE REGULATIONS:

State Right-to-Know Regulations

Some states within the US that have promulgated State Right-to-Know regulations with chemical listing requirements including the chemicals in this product are provided below. This list is not all-inclusive. Other states may also regulate this product and the user should consult state or local authorities for specific regulations that may apply.

Chemical	CAS No.	State						
		DE	MD	NJ	NY	PA	VA	WV
Limestone	1317-65-3	X		X		X		
Sand, Crystalline Silica (Quartz)	14808-60-7	X		X		X		
Portland Cement	65997-15-1	X		X		X		
Pozzolans / Other Cementitious Materials	--	X						

Other State Listings

California Proposition 65

The Safe Drinking Water and Toxic Enforcement Act of 1986, commonly known as Proposition 65, is a California law which requires any manufacturer, packager, or producer who conducts business in California to comply with the provisions of Proposition 65 by adding specific warnings to products and shipments that are sent to California.

This product contains substances (crystalline silica, chromium, cobalt, nickel) listed on the California Proposition 65 (last updated May 11, 2015) as a carcinogen.

Delaware Air Quality Management List

This product is not listed under Delaware's *Reporting of a Discharge or Air Contaminant* (7 Del. C., Section 6028) regulation for reporting the discharge of a pollutant or air contaminant meeting or exceeding a "Delaware Reportable Quantity" (DRQ).

New Jersey TCPA EHS List

New Jersey's Toxic Catastrophe Prevention Act (TCPA) (N.J.S.A. 13:1K-19 et seq.) verifies compliance with state and federal accidental release prevention (ARP) requirements, including mandates to have a DEP-approved risk management program (RMP) if an extraordinarily hazardous substance (EHS) is handled, used, manufactured, stored, or generated over the specific quantities listed in the Act. This product contains no chemicals currently listed on the TCPA EHS List.

SECTION 16 – OTHER INFORMATION

Date of Preparation: 07/25/14
Updated: 09/22/16
Supersedes: all previous versions

The information in this SDS, including but not limited to product composition, recommended industrial hygiene, and safe handling procedures, was obtained from sources believed to be reliable and is offered in good faith as generally applicable; however, exact compositions may vary. Each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. No warranty, either express or implied, is hereby made. Once this product leaves this facility, the conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. We do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of, or in any way connected with, the handling, storage, use, or disposal of the product. The recipient of this material should be aware of the possible existence of additional local regulations which may be applicable to this material.