







SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne OELs for Components of Ready-Mix:

COMPONENT(S) CHEMICAL NAME	MSHA/OSHA PEL	ACGIH TLV-TWA
Limestone	(T) 15 mg/m ³ , (R) 5 mg/m ³	-
Portland Limestone Cement	(T) 15 mg/m ³ , (R) 5 mg/m ³	(R) 1 mg/m ³
Fly Ash*	-	-
Sand	-	-
Silicon Dioxide, SiO ₂	(R) 10 mg/m ³ / (% SiO ₂ + 2) §	(R) 0.025 mg/m ³ #

SECTION IX— PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Normally light grey, (can also be red, blue, black, green, white), viscous semi-solid, with graded sized aggregate.	ODOR AND ODOR THRESHOLD Odorless and not applicable
pH AND VISCOSITY Not applicable	MELTING POINT/FREEZING POINT Not applicable
BOILING POINT AND RANGE Not applicable	FLASH POINT AND FLAMMABILITY Not applicable
FLAMMABILITY/EXPLOSIVE LIMITS AND AUTOIGNITION TEMPERATURE Not applicable	EVAPORATION RATE AND DECOMPOSITION TEMPERATURE Not applicable
VAPOR PRESSURE AND VAPOR DENSITY IN AIR Not applicable	SPECIFIC GRAVITY. 2.28
SOLUBILITY IN WATER Negligible	PARTITION COEFFICIENT: N-OCTANOL/WATER Not applicable

SECTION X – STABILITY AND REACTIVITY

STABILITY Stable	CONDITIONS TO AVOID Contact with incompatible materials (see below).
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THERMAL STABILITY

If crystalline silica (quartz) is heated to more than 870°C (1598°F), it can change to a form of crystalline silica known as tridymite, and if crystalline silica (quartz) is heated to more than 1470°C (2678°F), it can change to a form of crystalline silica known as cristobalite.

SECTION XI - TOXICOLOGICAL INFORMATION, CONTD.

INHALATION: Dust generated from hardened product may irritate nose, throat, mucous membranes and respiratory tract by

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

Silicon Dioxide: It is comprised of amorphous and crystalline forms of silica. In some batches, crystalline silica may represent up to 100% of silicon dioxide.

Exposure route: Eyes, respiratory system.

Target organs: Eyes, skin, respiratory system.

SECTION XI - TOXICOLOGICAL INFORMATION, CONTD.

NTP - In its Eleventh Annual Report on Carcinogens, concluded that respirable crystalline silica is known to be a human

SECTION XI - TOXICOLOGICAL INFORMATION, CONTD.

Aluminum Oxide:

Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Inhalation or ingestion of high concentrations of this substance may cause gastrointestinal and/or upper respiratory tract irritation. Eye and skin irritant.

Chronic effect/carcinogenicity: Aluminum oxide is not classifiable as a human carcinogen. On occasion workers chronically exposed to aluminum-containing dusts or fumes have developed severe pulmonary reactions including fibrosis, emphysema and pneumothorax. Long-term exposure may have effects on the central nervous system.

Iron Oxide: (Ferrous and Ferric Oxides)

Exposure route: Inhalation, ingestion, skin

Target organs: Respiratory system, skin, eyes, neurological system

SECTION XI - TOXICOLOGICAL INFORMATION, CONTD.**Limestone:**

Exposure Route: Eyes, skin, inhalation, ingestion.

Target Organs: Eyes, skin, respiratory system, gastrointestinal system

Acute Effect: Direct eye and skin contact with dust may cause irritation by mechanical abrasion or burning sensations, pain or blisters from corrosive/irritant effects. Dusts may irritate the nose, throat, gastrointestinal region and respiratory tract by mechanical abrasion or corrosive/irritant action. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits. Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury. Ingestion of large amounts may cause gastrointestinal irritation and blockage. Other conditions related to acute exposure to some of the metal oxides in limestone include stupor, shock, acidosis, abdominal pain, hematemesis, bloody diarrhea, coma, vomiting, diarrhea, mild lethargy, benign pneumoconiosis, sore throat, burning sensation, inflammation of the respiratory passages, ulceration, perforation of the nasal septum, pneumonia and conjunctivitis.

Chronic Effect: Repeated exposure to respirable dust in excess of appropriate exposure limits has caused silicosis, a progressive pneumoconiosis (lung disease) and lung cancer. Restrictive and/or obstructive lung function changes may result from chronic exposure. Chronic tobacco smoking may further increase the risk of developing chronic lung problems. On occasion workers chronically exposed to the metal oxides in limestone have developed severe pulmonary reactions, effects on the central nervous system, irritability, nausea or vomiting, normocytic anemia, fibrosis of the pancreas, diabetes mellitus, liver cirrhosis, and "mixed dust pneumoconiosis."

Acute Toxicity Estimates for Ready-Mix – Not Available

SECTION XII - ECOLOGICAL INFORMATION

No data available for this product.

SECTION XV - REGULATORY INFORMATION

OSHA: Crystalline Silica is not listed as a carcinogen.

Ready- mix concrete may contain trace amounts of hexavalent chromium [Cr(VI)] and certain chromium compounds which are

SECTION XVI - OTHER INFORMATION, CONTD.

User's Responsibility: The OSHA Hazard Communication Standard 29 CFR 1910.1200 requires that this SDS be made available