

MATERIAL SAFETY DATA SHEET
For
CONCRETE/CONCRETE PRODUCTS

(Wet unhardened concrete and dry hardened concrete products such as block, pipe, and precast concrete)



Chandler Concrete Company, Inc.

Section 1: PRODUCT AND COMPANY INFORMATION

Product Name(s):	Ready Mixed Concrete (Concrete)
Product Identifiers:	Ready Mixed Concrete, Concrete Ready Mix, Portland Cement Concrete, Ready Mix Grout, Permeable Concrete, Shotcrete, Gunit, Colored Concrete, Flowable Fill, Roller-Compacted Concrete, Fiber Reinforced Concrete
Manufacturer:	Information Telephone Number:
Chandler Concrete Company, Inc.	336-226-1181 (8am to 5pm EST)
1006 S Church St.	Emergency Telephone Number:
Burlington, NC 27216	336-260-2416
Product Use:	Concrete is widely used as a structural component in construction applications.
Note:	This MSDS covers many types of Concrete. Individual composition of hazardous constituents may vary between types of Concrete.

Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components (Chemical Identity / Common Names)	CAS No.	OSHA PEL	ACGIH TLV	MSHA PEL	%
Portland Cement	65997-15-1	15mg/m ³ (Total) 5mg/m ³ (Respirable)	10mg/m ³ (Total)	10mg/m ³ (Total)	10-30%
Granite <i>North Carolina Product</i>	None	N/A	N/A	N/A	0-65%
Limestone – <i>Virginia Product</i> (CaCO ₃) (Calcium carbonate, present, if limestone aggregates are used)	1317-653	15 mg/m ³ (Total)	10 mg/m ³ (Total)	10 mg/m ³	0-65%
Crystalline Silica (Quartz) (Concrete aggregates may contain silica)	14808-60-7	30 (%SiO ₂ +2)mg/m ³ (Total Particulate) 10/(%SiO ₂ +2)mg/m ³ (Respirable Particulate)	0.1mg/m ³ (Total) (Respirable quartz)	30 (%SiO ₂ +2)mg/m ³ (Total) 10/(%SiO ₂ +2)mg/m ³ (Respirable)	0.5-80%
Water	N/A	N/A	N/A	N/A	15-25%
Fly Ash which contains:	68131-74-8	N/A	N/A	N/A	1-4%
Aluminum Oxide (Al ₂ O ₃)	1344-28-1	15mg/m ³ (Total) 5mg/m ³ (Respirable)	10mg/m ³	10mg/m ³	0.1-2%
Amorphous Silica	61790-53-2	80mg/m ³ /(%SiO ₂)	10mg/m ³ (Total) 3mg/m ³ (Respirable)	20mppcf	0.01-3%
Calcium Oxide (CaO)	1305-78-8	5mg/m ³	2mg/m ³	5mg/m ³	0-1%
Iron Oxide (as Fe ₂ O ₃)	1309-37-1	10mg/m ³	10mg/m ³	10mg/m ³	0.1-2%

Note: Chemical admixtures may be present in quantities less than 1%. Information on specific aggregates, cementitious materials and admixtures will be provided by the supplier upon request.

Section 3: HAZARD IDENTIFICATION

WARNING
Corrosive-Causes severe burns.
Toxic-Harmful by inhalation.
(Contains crystalline silica)

Use proper engineering controls, work practices, and personal protective equipment to prevent exposure to wet or dry product.
Read MSDS for details.

Emergency Overview:	Unhardened concrete is an odorless semi-fluid, flowable, granular paste of varying color and texture. It is not combustible or explosive. Exposure of sufficient duration to wet concrete can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree burns.
Potential Health Effects:	
Eye Contact (acute):	Concrete may cause immediate or delayed irritation or inflammation. Eye contact with wet concrete can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye. Direct contact can cause irritation before mechanical abrasion.
Skin contact (acute):	Wet unhardened concrete and concrete dust may cause dry skin, discomfort, irritation, severe burns, and dermatitis.
Burns:	Exposure of sufficient duration to wet unhardened concrete can cause serious, potential irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort.
Dermatitis:	Wet unhardened concrete is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as redness, itching, rash, scaling, and cracking.
Sensitization:	Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with wet unhardened concrete. Others may develop allergic dermatitis after years of repeated contact with wet concrete.
Ingestion:	Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation and blockage.
Inhalation (general):	May result, depending on the degree of the exposure, from exposure to dust generated from cutting, grinding, crushing, or driving hardened concrete.
Inhalation (acute):	Breathing dust may cause nose, throat lung or mucous membrane irritation, including choking. Inhalation of high levels of dust can cause chemical burns to the nose, throat and lungs.
Inhalation (chronic):	Risk of injury depends on duration and level of exposure.
Silicosis:	This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, and other seriously disabling and fatal diseases.
Carcinogenicity:	Concrete is not listed as a carcinogen by IARC or NTP; however, concrete contains trace amounts of crystalline silica and hexavalent chromium which are classified by IARC and NTP as known human carcinogens.
Autoimmune Disease:	Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.
Medical conditions Aggravated by Exposure:	Individuals with lung disease (e. g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure to concrete dust.

Section 4: FIRST AID MEASURES

Eye Contact:	Rinse eyes thoroughly with water for at least 15 minutes, including under lids, to remove all particles. Seek medical attention for abrasions and burns.
Skin Contact:	Wash with cool water and a pH neutral soap or a mild skin detergent. Seek medical attention for rash, burns, irritation, dermatitis, and prolonged unprotected exposures to wet concrete.
Inhalation:	Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.
Ingestion:	Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center immediately.

Section 5: FIREFIGHTING MEASURES

Flashpoint & Method:	Non-combustible, concrete poses no fire related hazard.
Combustion Products:	None.

Section 6: ACCIDENTAL RELEASE MEASURES

General:	Place spilled material into a contained area and then allow material to dry or solidify before disposal. Avoid contact with skin. Wear appropriate protective equipment as described in Section 8. Do not wash concrete down sewage and drainage systems or into bodies of water (e.g. lakes, streams, wetlands, etc.).
Waste Disposal Method:	Dispose of concrete according to Federal, State, Provincial and Local regulations.

Section 7: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Handling:	When cutting, grinding, crushing or drilling hardened concrete, use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits.
Engineering Controls:	Supplemental controls are not required when working with wet/unhardened concrete.
Personal Protective Equipment (PPE):	
Respiratory Protection:	When working with wet, unhardened concrete under ordinary conditions, no respiratory protection is required. When working with hardened concrete, wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.
Eye Protection:	Wear ANSI approved glasses with side shields or safety goggles when handling concrete to prevent contact with eyes. Wearing contact lenses is not recommended.
Skin Protection:	Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.
Clothing:	Remove clothing and protective equipment that becomes saturated with wet concrete and immediately wash exposed areas.

Section 8: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Semi-fluid, Flowable, granular substance	Evaporation Rate:	NA.
Appearance:	Variety of Color (usually gray)	PH (in water):	12-13
Odor:	Slight to none	Boiling Point:	NA
Vapor Pressure:	NA.	Freezing Point:	<32°F (unhardened)
Vapor Density:	NA.	Viscosity:	Varies.
Specific Gravity:	1.9-2.4	Solubility in Water:	Slightly (0.1-1.0%)

Section 9: STABILITY AND REACTIVITY

Stability:	Hardened concrete is stable. Wet unhardened concrete is alkaline
Incompatibility:	Wet unhardened concrete is alkaline and is incompatible with acids, ammonium salts and aluminum, copper and some other metals (verify compatibility prior to incorporating with product). Concrete dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement in concrete reacts with water to form silicates and calcium hydroxide. These silicates react with powerful oxidizers.
Hazardous Polymerization:	Hazardous Decomposition: None.

Section 10 and 11: TOXICOLOGICAL AND ECOLOGICAL INFORMATION

For questions regarding toxicological and ecological information refer to contact information in Section 1.

Section 12: DISPOSAL CONSIDERATIONS

Dispose of excess material in compliance with applicable Federal, State, Provincial and Local regulations.

Section 13: TRANSPORT INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

Section 14: REGULATORY INFORMATION

OSHA/MSHA Hazard Communication:	This product is considered by OSHA/MSHA to be a hazardous material and should be included in the employer's hazard communication program.
CERCLA/SUPERFUND:	This product is not listed as a CERCLA hazardous substance.
EPCRA SARA Title III:	This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 and is considered a hazardous and a delayed health hazard.
EPCRA SARA Section 313:	This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
RCRA	If discarded in its hardened form, this product would not be a hazardous waste either by listing characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.
TSCA:	Portland Cement and crystalline silica are exempt from reporting under the inventory update rule.
California Proposition 65:	Crystalline silica (airborne particulates of respirable size) and Chromium (hexavalent compounds) are substances known by the State of California to cause cancer.
WHMIS/DSL:	Products containing crystalline silica and calcium carbonate are classified as D2A, E and are subject to WHMIS requirements.

Section 15: OTHER INFORMATION

Abbreviations:

<	Less than	NFPA	National Fire Protection Association
ACGIH	American Conference of Governmental Industrial Hygienists	NIOSH	National Institute for Occupational Safety and Health
CAS no	Chemical Abstract Service number	NTP	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	OSHA	Occupational Safety and Health Administration
CFR	Code for Federal Regulations	PEL	Permissible Exposure Limit
CL	Ceiling Limit	pH	Negative log of hydrogen ion
DOT	US Department of Transportation	PPE	Personal Protective Equipment
EST	Eastern Standard Time	RCRA	Resource Conservation and Recovery Act
HEPA	High-Efficiency Particulate Air	SARA	Superfund Amendments and Reauthorization Act
HMIS	Hazardous Materials Identification System	TDG	Transportation of Dangerous Goods
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
MG/M ³	Milligrams per cubic meter	TWA	Time Weighted Average (8 hour)
MSHA	Mine Safety and Health Administration	WHMIS	Workplace Hazardous Materials Information System
NA	Not Applicable		

This MSDS (Sections 1-15) was revised on June 10, 2008.

An electronic version of this MSDS is available at: www.chandlerconcrete.com under the MSDS Section.

Chandler Concrete Company, Inc. (CCCI) believes the information contained herein is accurate. CCCI makes no guarantees with respect to such accuracy and assumes no liability in connection with the use of the information contained herein which is not intended to be and should not be construed as legal advice or as insuring compliance with any federal, state or local laws or regulations. Any Party using this product should review all such laws, rules, or regulations prior to use. This Material Safety Data Sheet is representative of our Ready Mix Concrete and represents ingredients and values typical for Portland cement concrete, concrete and its constituent ingredients vary in composition.

The information set forth herein is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the concrete/concrete products producer CCCI control, the producer makes no warranties, expressed or implied, and assumes no liability in connection with any use of this information.