GRAND RAPIDS GRAVEL COMPANY

SAFETY DATA SHEET
for
Ready Mixed Concrete (Concrete)

Section 1 – Identification

Material:

Ready Mixed Concrete

Manufacturer:

Grand Rapids Gravel Company
2700 28th Street, SW
P.O. Box 9160
Grand Rapids, MI 49509

Telephone:

(616) 538-9000

Emergency Telephone:

(616) 538-9000

Recommended Use:

Concrete is used in construction applications.

Other Identifications:

Ready Mixed Concrete, Portland cement concrete, grout, permeable concrete, shotcrete, gunite, colored concrete, flowable fill.

Section 2 – Hazard Identification

WARNING
CORROSIVE – Causes severe burns
TOXIC – Harmful by inhalation (May contain crystalline silica)

USE PROPER engineering controls, work practices and protective equipment (PPE) to prevent exposure to concrete either wet or dry.

HAZZARD NOTES:

Unhardened concrete is an odorless semi-fluid, flowable, granular paste of varying color and texture. It is not combustible or explosive. Exposure to wet concrete for sufficient duration can cause serious, potentially irreversible tissue damage (skin, eye, and respiratory tract) due to chemical (caustic) burns up to and including third degree burns.

Hardened concrete can create airborne dust generated by grinding, sawing, drilling or breaking. Concrete contains crystalline silica in concentrations greater than 0.1% from the aggregates. Prolonged exposure to this dust can cause hazardous exposure and subsequently health related problems. Respirable crystalline silica is classified by IARC as a known human carcinogen and by NTP as "reasonably anticipated to be carcinogenic." Appropriate respiratory protection should be worn during these operations.

Section 3 – Composition / Information on Ingredients

HAZARDOUS COMPONENTS (COMMON NAME / CHEMICAL IDENTITY)	CAS Nos	OSHA PEL	ACGIH TLV	MSHA PEL	%
Portland Cement	65997-15-1	5 mg/m^3 (Respirable) 15 mg/m^3 (Total)	10 mg/m^3 (Total)	10 mg/m^3 (Total)	10-30%
Limestone ($CaCo_3$) (Calcium carbonate present if limestone aggregates are used)	1317-65-3	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	10 mg/m^3 %SiO_2+2 (Respirable) 30 mg/m^3 %SiO_2+2 (Total Dust) 250 million part/ft^3 %SiO_2+5	0 05 mg/m^3 (Total) respirable Quartz)	30 mg/m^3 %SiO_2+2 (Total) 10 mg/m^3 %SiO_2+2 (Respirable Particulate)	0 5-80%
Particulates not otherwise Classified		15 mg/m^3 (Total) 5 mg/m^3 (Respirable)	10 mg/m^3 (Inhalable) 3 mg/m^3 (Respirable)	10 mg/m^3 (Total)	0-100%
Aluminum Oxide (Al_2O_3)	1344-28-1	15 mg/m^3 (Total) 5 mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3	0 1-2%
Amorphous Silica	61790-53-2	80 mg/m^3 / %SiO_2	10 mg/m^3 (Total) 3 mg/m^3 (Respirable)	20 mppcf	0 01-3%
Calcium Oxide (CaO)	1305-78-8	5 mg/m^3	2 mg/m^3	5 mg/m^3	0-1%
Iron Oxide (as Fe_2O_3)	1309-37-1	10 mg/m^3	10 mg/m^3	10 mg/m^3	0 1-2%

NOTE Chemical admixtures may be present in quantities less than 1%

TRACE MATERIALS Due to the use of substances from the earth's crust, trace amounts of naturally occurring potentially harmful constituents may be detected during chemical analysis Portland cement may contain trace (0 05%) amounts of chromium salts or compounds (including hexavalent chromium) or other metals (including nickel compounds, lead and mercury) found to be hazardous or toxic in some other forms Other trace constituents may iunclude potassium and sodium sulfate compounds and others

Section 4 – First Aid

Eye Contact – Rinse eyes thoroughly with water for at least 15 minutes to remove all particles. Seek medical attention for abrasions and burns.

Skin Contact – Wash with cool water and a pH neutral soap or mild skin detergent. Seek medical attention for rash, burns, irritation, dermatitis, and prolonged unprotected exposure to wet concrete.

Inhalation – Move to fresh air. Seek medical attention for discomfort or if coughing and other symptoms do not subside.

Ingestion – Do not induce vomiting. If conscious, drink plenty of water. Seek medical attention or contact Poison control center immediately.

Section 5 – Firefighting Measures

Flash Point – Not Combustible **Flammable Limits** – Not Flammable **LEL** – N/A **UEL** – N/A

Extinguishing Media – Noncombustible. Extinguish the surrounding fire.

Unusual Fire and Explosion Hazards – None reported.

Section 6 – Accidental Release Measures

Spills – Personnel cleaning up wet unhardened concrete should take steps to avoid contact. Gloves, safety glasses and suitable clothing should be worn to avoid contact with skin and eyes. Wet unhardened concrete should be recycled or it should be allowed to harden and then disposed of properly. Do not wash concrete down sewage and drainage systems or into bodies of water (lakes, streams, etc.)

Disposal – Wet unhardened concrete should be contained and allowed to harden. Hardened concrete should be disposed of in a landfill as common solid waste. Follow applicable Federal, State and local regulations , Uncontaminated ready mixed concrete is neither a listed nor a characteristic hazardous waste under designations made by USEPA or USDOT.

USDOT Class – Uncontaminated ready mixed concrete does not meet any hazardous material class definition found in Title 49 Code of Federal Regulations Part 173.

Precautions – Wet concrete is a high alkali corrosive and can cause severe burns if handled without the proper protective clothing. Dry concrete can generate silica-containing respirable dust particles when crushed, cut, ground or drilled. Protective clothing and practices should be used as outlined in Section 8 of this SDS.

Section 7 – Handling and Storage

Handling – Follow protective controls set forth in Section 8 of this SDS when handling this product. Contact with concrete in a plastic state can cause caustic burns, allergic reactions and dermatitis. When cutting, grinding, crushing or drilling this product dust containing respirable crystalline silica and other components which may be corrosive or irritant may be generated. Do not breathe dust. Avoid contact with skin and eyes. Do not store near food or beverages. Supplemental engineering controls are not necessary when working with wet unhardened concrete. They may be necessary if working on hardened concrete in confined areas. Use good housekeeping practices to avoid accumulation of dust in the work space.

Section 8 – Exposure Controls / Personal Protection

Respiratory Protection – When exposed to dust from cutting, grinding, crushing or drilling hardened concrete or concrete products with exposure above the recommended limits, (noted in Section 3) wear a suitable NIOSH approved respirator with protection factor appropriate for the level of exposure. For emergency or non-routine, (e.g. confined spaces) additional precautions or equipment may be required. Respirator must comply with applicable MSHA or OSHA standards.

Local Exhaust Ventilation – When cutting, grinding, crushing, or drilling hardened concrete, provide general or local exhaust ventilation systems as needed to maintain airborne dust concentrations below the OSHA PLSs, MSHA PELs and ACGIH TLVs.

Other – Respirable dust and quartz levels from hardened concrete cutting, grinding, crushing or drilling operations should be monitored regularly. Dust and Quartz levels in excess of applicable OSHA PELs, MSHA PELs and ACGIH TLVs should be reduced by all feasible engineering controls.

Gloves – When handling wet unhardened concrete wear water-proof gloves to prevent skin contact. Wash Thoroughly with water and a pH-neutral soap after handling.

Eye Protection – There is a splash hazard working with wet unhardened concrete. Safety glasses with side shields or goggles should be worn. When cutting, grinding, crushing or drilling hardened concrete wear safety glasses with side shields or dust goggles to protect from the dust.

Other Protective Clothing or Equipment – Wear suitable protective clothing to prevent skin contact with unhardened concrete. This includes waterproof boots and NIOSH approved respirators when exposure exceeds applicable limits.

Work / Hygienic Practices – Contact with wet unhardened concrete, mortar, cement or cement mixtures can cause skin irritation, allergic reaction, severe chemical burns or serious eye damage. Avoid contact with skin and eyes. Wear waterproof gloves, a fully buttoned long-sleeved shirt, full-length trousers and tight fitting eye protection when working with these materials. If you have to stand in wet concrete use waterproof boots that are tight at the top ad high enough to keep concrete from flowing into them. If you are finishing concrete wear waterproof knee pads to protect knees. Wash wet concrete from your skin with fresh clean water and a pH neutral soap immediately after contact. Indirect contact through clothing can be as serious as direct contact so promptly rinse wet concrete from clothing. Seek immediate medical attention if you have persistent or severe discomfort. In case of eye contact, flush with plenty of water for at least 15 minutes. Consult a physician immediately. DO NOT ALLOW CHILDREN TO CONTACT FRESH CONCRETE. Avoid dust inhalation and direct contact with skin and eyes. Wash contaminated skin before eating, drinking, smoking, lavatory use and before applying cosmetics.

Section 9 – Physical and Chemical Properties

Boiling Point	Not applicable
Specific Gravity (water=1)	Wet Concrete 1.9 to 2.4
Vapor Pressure	Not applicable
Melting Point	Not applicable
Vapor Density (air =1)	Not Applicable
Evaporation Rate (Butyl Acetate = 1)	Not Applicable
Solubility in Water	Not Soluble
Appearance and Odor	Unhardened wet concrete is an odorless gray plastic to flowable material of varying color and texture. Hardened concrete products are odorless solid materials.

Section 10 – Stability and Reactivity

Stability – Wet unhardened concrete sets and hardens in approximately two to eight hours. Hardened concrete is stable. Care should be taken to keep concrete from hardening on flesh, clothing or tools.

Incompatibility – Concrete is stable under the expected conditions of use. Under unanticipated conditions of use, crystalline silica may react with hydrofluoric acid to produce a corrosive gas. (silicon tetra fluoride) Aluminum powder and other alkali and alkaline earth metals will react in wet mortar or concrete liberating hydrogen gas.

Hazardous Decomposition or Byproducts – Thermal oxidative decomposition of CaCO3 (limestone) can produce lime (CaO) The lime does not add to the hazards associated with the use of the product. HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

Section 11 – Toxicological Information

Information on Toxicological Effects – Fresh concrete is abrasive and alkaline.

If swallowed it can cause burns to the mouth, esophagus, and stomach.

If in contact with the skin it can cause burns and abrasions. Prolonged or frequent contact can cause irritation and dermatitis.

If in contact with the eyes it can cause irritation to the eyelids, cornea (conjunctivitis) and lesions to the eyeball.

Section 12 – Ecological Information

Eco toxicity – (Only relevant in accidental spillages) If unhardened concrete reaches water it can result in A slight rise in pH. Hardened concrete is inert.

Persistence and Degradability – Not applicable.

Bio Accumulative Potential – Not applicable.

Mobility in Soil – Not applicable.

Results of PBT and vPvB Assessment – Not applicable.

Other Adverse Effects – None.

Section 13 – Disposal Considerations

Waste Treatment Methods –

Fresh Concrete – Subject to local regulations.

Hardened Concrete – Can be recycled. Inert. Disposal subject to local regulations.

Section 14 – Transportation Information

USDOT Class – Uncontaminated ready mixed concrete does not meet any hazardous material class Definition found in Title 49 Code of Federal Regulations Part 173.

Section 15 – 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 Re-authorization Act of 1986 and is considered a hazardous and a delayed health risk.

EACRA SARA Section 313 – This product may contain substances subject to the reporting requirements of Section 313 of Tytle III of the Superfund Amendments and Re-authorization Act of 1986 and 40 CFR Part 372.

RCRA – If discarded in its hardened form, this product would not be a hazardous waste. 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 (airborn particulates of respirable size) and Chromium (hexavalent compounds) are substances known by the State of California to cause cancer.

WHIMSI / DSL – Products containing crystalline silica and calcium carbonate are classified as D2A, E and are subject to WHMIS requirements.

Section 16 – Other information

DISCLAIMER – Portland cement concrete and its constituent ingredients vary in composition. This SDS relates to the specific materials designated herein. Further, conditions of use are outside the concrete producer's control. Information set forth is intended for use by persons having the technical skill and who, at their own discretion, are aware of the risks of the material.

SAFETY DATA SHEET – This safety data sheet was created in September of 2015 by Grand Rapids Gravel Company from a draft version produced by NRMCA.