Safety Data Sheet Ready Mix Concrete

Section 1. Identification

GHS product identifier: Ready Mix Concrete
Other means of identification: Concrete, Colored Concrete, Freshly Mixed Concrete
Relevant identified uses of the substance or mixture and uses advised against: Ready Mix Concrete is used in the construction of various structures and objects.

Supplier's details:
Lehigh Hanson
300 E. John Carpenter Freeway, Suite 1645
Irving, TX 75062
(972) 653-5500

Emergency telephone number (24 hours): **CHEMTREC: (800) 424-9300**

Section 2. Hazards Identification

GHS Classification:
SKIN SENSITIZATION – Category 1; H314
CARCINOGENICITY – Category 1A; H350
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) – Category 2; H335
SKIN CORROSION/IRRITATION – Category 1C; H314
SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1; H318

GHS label elements

Hazard pictograms:

Signal word: Danger
Hazard statements:
May cause cancer (inhalation)
May cause damage to organs (lung) through prolonged or repeated exposure
Causes severe skin burns and eye damage
Causes serious eye irritation
May cause an allergic skin reaction

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash any exposed body parts thoroughly after handling. Avoid breathing dust. Contaminated clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response: If exposed or concerned: Get medical advice/attention if irritation or rash occurs. If on skin: Take off immediately all contaminated clothing. Rinse/wash skin with plenty of water/shower. Wash contaminated clothing before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.

Storage: Restrict or control access to ready mix concrete (store locked up).

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazards not otherwise classified (HNOC): None known

Supplemental Information: Respirable Crystalline Silica (RCS) may cause cancer. Wet, freshly mixed concrete is not expected to pose respiratory concern. Ready Mix Concrete is comprised of cement, additives and a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). When set/cured Ready Mix Concrete is subjected to various natural or mechanical forces it may produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (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 3. Composition/information on ingredients

Substance/mixture: Ready Mix Concrete

CAS number/other identifiers

Ingredient name	%	CAS number
Aggregates/Crushed Stone	35 - 60	Varies
Portland Cement	25 - 30	65997-15-1
Ashes	0 – 25	68131-74-8
Water	5 - 10	7732-18-5
Crystalline Silica (Quartz)	0 - 2	14808-60-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Any concentration shown as a range is to protect confidentiality or is due to process variation. Portland Cement may contain trace (< 0.05%) amounts of chromium salts or compounds (including hexavalent chromium) or other metals (including nickel compounds) found to be dangerous, hazardous or toxic in some chemical forms. These metals are present mostly as trace substitutions within the principal minerals. Other trace constituents may include potassium and sodium sulfate compounds.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye Contact: If exposed or concerned: get medical attention. Do not allow individual to rub eyes. Flush eyes gently under running water for 15 minutes or longer, making sure that the eyelids are held open. Other than washing with water, do not attempt to remove material from eyes. Remove contact lenses, if present and easy to do. Obtain medical attention for eye contact with wet concrete.

Inhalation: Move exposed individual to fresh air. Dust in throat and nasal passages should clear naturally by coughing, sneezing and nasal discharge. Obtain medical attention if symptoms persist or develop later.

Skin Contact: Wash affected areas with water and soap. Remove contaminated clothing and wash before reuse. If irritation persists or develops later, obtain medical attention.

Ingestion: Ingestion is not a common route of occupational exposure. If swallowed and irritation or discomfort occurs, obtain medical attention.

Most important symptoms/effects, acute and delayed potential acute health effects

Eye contact: Exposure to dust from dry ingredients or hardened cement can cause irritation and tearing of the eyes. Exposure to wet concrete may result in irritation or burns.

Inhalation: Symptoms of exposure may include upper respiratory discomfort with coughing and sneezing. Inhalation may cause upper respiratory tract infection. A "rare" acute form of silicosis may develop from inhalation of extremely high concentrations of crystalline silica over a period of several months to five years.

Skin contact: Ready Mix Concrete contains Portland Cement, which may contain trace amounts of hexavalent chromium and is linked with allergic sensitization reactions in some individuals. These reactions may lead to contact dermatitis and skin ulceration. Exposure to dust from dry ingredients or hardened cement can cause skin irritation, dermatitis and/or redness to the exposed skin. Wet concrete exhibits caustic, abrasive and dehydrating properties. Irritation or pain may be delayed for several hours and cannot be relied upon as an indication of exposure.

Ingestion: Ingestion is not a common route of occupational exposure. If swallowed and irritation or discomfort occurs, obtain medical attention.

Over-exposure signs/symptoms

Notes to physician:	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
Specific treatments:	Not Applicable
Protection of first-aiders:	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
General information:	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 toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media:	Not combustible. Use extinguishing agent appropriate for surrounding flammable materials
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	Not combustible. Nonflammable. Spalling of hardened concrete may occur under conditions of intense heat.
Hazardous thermal decomposition Products:	Material is not combustible.
Special protective actions for fire-fighters:	Material is nonflammable. Use appropriate procedures for surrounding flammable materials.
Special protective equipment for fire-fighters:	Use protective equipment appropriate for surrounding materials. No specific precautions.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For response personnel:	Keep unprotected personnel out of the area. Do not dry sweep dusty material. All local and national laws governing waste disposal must be followed.
Environmental precautions:	Clean spilled material immediately. Contain spills and wash water to prevent run-off into public waterways. Remove wet concrete from roadways immediately. Do not dry sweep spilled dusty material.

Methods and materials for containment and cleaning up

Small spill:	Alkali resistant gloves, long sleeves, long pants and safety glasses should be used by clean up personnel for wet concrete releases.
Large spill:	Waterproof boots and goggles should be used. Eye protection and appropriate respirator protection should be used to protect clean up personnel against dust.

Section 7. Handling and storage

Precautions for safe handling

Protective measures:	Use personnel protective equipment to avoid direct contact with concrete. Remove contaminated clothes as soon as possible. Dust may be generated during handling or mixing dry powder or from cutting, breaking or crushing hardened material. Use wet cutting methods when possible.
Advice on general occupational hygiene:	Observe good industrial hygiene practices. Promptly remove dusty clothing and launder before reuse.

Control parameters

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Particulates not otherwise classified (CAS SEQ250)	**ACGIH TLV (United States, Canada)** TWA: 3 mg/m³. Form: Respirable particles TWA: 10 mg/m³. Form: Inhalable particles **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Portland Cement	**ACGIH TLV (United States and Canada)** TWA: 1 mg/m³. Form: Respirable dust **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Crystalline Silica (Quartz) (CAS 14808-60-7)	**ACGIH TLV (United States)** TWA: 0.025 mg/m³. Form: Respirable fraction **OSHA PEL (United States)** TWA: 0.05 mg/m³. Form: Respirable **MSHA PEL (United States)** TWA: 10/(%SiO2 + 2) in mg/m³ **Provincial Exposure Limits (Canada, various)** ▪ **Alberta (OHS Code)** 0.025 mg/m³ 8 hour TWA ▪ **British Columbia (WorkSafeBC OHS Regulation)** 0.025 mg/m³ 8 hour TWA ▪ **British Columbia (Health, Safety & Reclamation Code, Mines Act)** 0.1 mg/m³ 8 hour TWA ▪ **Manitoba (Workplace Safety and Health Regulation)** 0.025 mg/m³ 8 hour TWA ▪ **New Brunswick** 0.025 mg/m³ 8 hour TWA ▪ **Newfoundland** 0.025 mg/m³ 8 hour TWA ▪ **Nova Scotia** 0.025 mg/m³ 8 hour TWA ▪ **Ontario (O. Reg 490/09; and O. Reg. 833)** 0.1 mg/m³ 8 hour TWA ▪ **Prince Edward Island** 0.025 mg/m³ 8 hour TWA ▪ **Quebec (Regulation Respecting OHS, Chapter S-2.1, r. 13)** 0.1 mg/m³ 8 hour TWA ▪ **Saskatchewan (OHS Regulations)** 0.05 mg/m³ 8 hour TWA

Appropriate engineering controls: The use of ventilation or other engineering controls may be necessary to maintain airborne levels below any applicable limits. Under normal operations general ventilation should suffice.

Environmental exposure controls: Use general ventilation, local exhaust and/or wet suppression methods to maintain exposures below allowable exposure limits.

Exposure guidelines: OSHA PELs, MSHA PELs, Canadian Provincial OELs, and ACGIH TLVs are 8-hr TWA values. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including "Particulates Not Otherwise Classified," "Particulates Not Otherwise Regulated," Particulates Not Otherwise Specified," and "Inert or Nuisance Due" are often used interchangeably; however, the user should review each agency's terminology for differences in meanings.

Individual protection measures

Hygiene measures:	Use good personal hygiene practices. Do not consume or store food in the work area. Wash hands thoroughly before eating, drinking, or smoking.
Eye/face protection:	Safety glasses with side shields should be worn as minimum protection from dust. Dust goggles or full face protection should be worn when very dusty conditions are present or are anticipated.

Skin protection

Hand protection:	Use alkali resistant gloves to provide hand protection from concrete.
Body protection:	Clothing with long sleeves will provide protection. Waterproof boots high enough to prevent cement from entering should be worn when workers will be standing in wet concrete. Contaminated work clothing should be washed after use.
Other skin protection:	Clothing with long sleeves and long pants should be used to prevent contact with wet concrete.
Respiratory protection:	The need for respiratory protection should be evaluated by a qualified professional. The use of respirators for controlling exposures in excess of the occupational exposure limit must comply with regulatory requirements for medical surveillance, respiratory fit testing, repair and cleaning, and user training. In dusty areas, air monitoring for dust and quartz should be conducted regularly. Dust and quartz levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls, including but not limited to, wet suppression, ventilation, process enclosure, and enclosed employee work stations.

Section 9. Physical and chemical properties

Appearance

Physical State:	Flowable, granular mud-like material	**Lower and Upper explosive flammable limits**	No test data available
Color:	Gray	**Vapor pressure:**	No test data available
Odor:	None	**Vapor density:**	Not applicable
Odor threshold:	Not applicable	**Relative density:**	1.5-3.0
pH:	12-13 in water	**Solubility:**	Not applicable
Melting point:	Not applicable	**Solubility in water:**	Negligible
Boiling point:	Not applicable	**Partition coefficient: n-octanol/water:**	Not applicable
Flash point:	Not applicable	**Auto-ignition temperature:**	No test data available
Burning time:	Not applicable	**Decomposition temperature:**	No test data available
Burning rate:	Not applicable	**SADT:**	Not applicable
Evaporation Rate:	Not applicable	**Viscosity:**	Not applicable
Flammability (solid, gas):	No		

Section 10. Stability and reactivity

Reactivity:	Stable
Chemical Stability:	This material is considered stable under recommended handling and storage conditions.
Possibility of hazardous reactions:	Polymerization will not occur.
Conditions to avoid:	Keep dry until used. Avoid contact with incompatible compounds.
Incompatible materials:	Wet cement may react with acids, aluminum, ammonium salts, alkali and alkaline earth compounds.
Hazardous decomposition products:	None

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity:	Not reported to be acutely toxic.

Irritation/Corrosion: **Skin:** May cause skin burns or skin ulcers.
Eyes: May cause eye irritation or serious eye damage.
Respiratory: Studies indicate an increased risk of lung cancer from chronic exposure to respirable crystalline silica. This effect was more pronounced in those with silicosis. Studies have also linked crystalline silica exposure with autoimmune diseases and kidney disorders.

Sensitization: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.

Mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity: See chart below.

Product/ingredient name	IARC	ACGIH	NTP
Portland Cement	-	A4	-
Crystalline Silica (Quartz) CAS 14808-60-7	1	A2	Known to be a human carcinogen

Reproductive toxicity: Not expected to be a reproductive hazard.

Teratogenicity: Not expected to be a teratogenic hazard.

Specific target organ toxicity (single exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	-	Inhalation	Not reported to have effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	-	Inhalation	May cause damage to organs (lung) through prolonged or repeated exposure.

Potential chronic health effects: General: 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 the 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.

Aspiration hazard: Due to the physical form of the product it is not an aspiration hazard.

Section 12. Ecological Information

Persistence and degradability: Not readily biodegradable.

Bioaccumulative potential: No available data.

Mobility in soil: No available data.

Other adverse effects: Harmful to aquatic life. Contact with water forms an alkaline solution. Avoid release to the environment. Data for Calcium oxide: 96 hour LC50 freshwater fish Cyprinus carpio = 1 070 mg/L (static). Chronic 46 day NOEC freshwater fish Oreochromis niloticus juvenile(fledgling, hatchling, weanling)= 100 mg/L.

Section 13. Disposal considerations

Disposal methods: Dispose of waste product and unused product in compliance with national, state/provincial and local requirements. Used material which has become contaminated, may have significantly different characteristics based on the contaminant and should be evaluated accordingly. The product may be contaminated during use and it is the responsibility of the user to assess the appropriate disposal method in that situation.

Section 14. Transportation information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	-	-	-
Special precautions for user	-	-	-
US DOT 49 CFR	-	-	-
Canada TDG	-	-	-
Additional information	-	-	-

Special precautions for user: It is the responsibility of the transporting entity to follow all applicable laws, regulations, and rules regarding the transport of this material.

Section 15. Regulatory Information

U.S. Federal regulations:

OSHA Hazard Communication Standard, 29 CFR 1910.1200: 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, Subpart. D): Not regulated

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Listed

CERCLA Hazardous Substance List (40 CFR 302.4): Not listed

Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs): Not regulated

Clean Air Act Section 112 (r) Accidental Release Prevention (40 CFR 68.130): Not regulated

Safe Drinking Water Act (SDWA): Not regulated

Canada Federal regulations: Listed on DSL or exempt

NSNR Status:

SARA 311/312

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Crystalline Silica (Quartz)	>1	No	No	No	No	Yes

SARA 313

	Product name	CAS number	%
Form R-Report requirements	Crystalline Silica (Quartz)	14808-60-7	Not regulated

State regulations

Massachusetts RTK:	Listed
New Jersey RTK:	Listed
Pennsylvania RTK:	Listed
Rhode Island RTK:	Listed

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Crystalline Silica (Quartz) CAS 14808-60-7	Yes	No	No	No

International regulations

Ingredient name	CAS #	TSCA	Canada	WHMIS	EEC
Portland Cement	65997-15-1	Yes	DSL	D2A	EINECS
Water	7732-18-5	Yes	DSL	-	EINECS
Crystalline Silica (Quartz)	14808-60-7	Yes	DSL	-	EINECS

WHMIS Classification:

D2A "Materials Causing Other Toxic Effects"

Section 16. Other Information

Date of issue: 01/01/2022
Replaces: 07/012018
Revised Section(s): Section 8, 11, 14, 15

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of ready mix concrete as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with ready mix concrete to produce ready mix concrete products. Users should review other relevant material safety data sheets before working with this ready mix concrete or working on ready mix concrete products.

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Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation

GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NRNS – New Substances Notification Regulations
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TDG – Transportation of Dangerous Goods
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations