

Safety Data Sheet Ready Mix Concrete

Section 1. Identification

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| 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

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| GHS Classification: | CARCINOGENICITY – Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) – Category 2 SKIN CORROSION/IRRITATION – Category 1C SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1 SKIN SENSITIZATION – Category 1 |
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GHS label elements

Hazard pictograms:



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| Signal word: | Danger |
| Hazard statements: | May cause cancer 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:

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| 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 | > 35 | Varies |
| Portland Cement | > 25 | 65997-15-1 |
| Ashes | 0 – 25 | Varies |
| Water | > 5 | 7732-18-5 |
| Crystalline Silica (Quartz) | > 0.1 | 14808-60-7 |

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 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. 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.

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

Section 4. First aid measures

Description of necessary first aid measures

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| 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

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| 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

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| 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

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| 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

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| For response personnel: | Keep unprotected personnel out of the area. Do not dry sweep dusty material. All local and Federal 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

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| 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

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| 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. |
| Conditions for safe storage, including any incompatibilities: | Store away from moisture, acids, and other incompatible materials. Store and use material in such a way as to prevent release to drains or waterways. |

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|--|---|
| Particulates not otherwise classified (CAS SEQ250) | ACGIH TLV (United States, 3/2012) TWA: 3 mg/m ³ . Form: Respirable particles TWA: 10 mg/m ³ . Form: Inhalable particles OSHA PEL (United States, 6/2010) PEL: 5 mg/m ³ . Form: Respirable fraction PEL: 15 mg/m ³ . Form: Total dust TWA: 5 mg/m ³ . Form: Respirable fraction TWA: 15 mg/m ³ . Form: Total dust |
| Portland Cement | ACGIH TLV (United States, 3/2012) TWA: 3 mg/m ³ . Form: Respirable dust TWA: 10 mg/m ³ . Form: Total dust OSHA PEL (United States, 6/2010) PEL: 5 mg/m ³ . Form: Respirable dust PEL: 15 mg/m ³ . Form: Total dust |
| Crystalline Silica (Quartz) (CAS 14808-60-7) | ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m ³ . Form: Respirable dust OSHA PEL (United States, 6/2010) TWA: 10 mg/m ³ . Form: Respirable dust TWA: 30 mg/m ³ . Form: Total dust |

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| 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, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. 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

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| 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

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| 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 PEL must comply with OSHA and MSHA 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

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|-----------------------------------|--------------------------------------|---|------------------------|
| 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

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| 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

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| 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 | OSHA | 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: No available data.
Bioaccumulative potential: No available data.
Mobility in soil: No available data.
Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: Dispose of waste product and unused product in compliance with federal, state 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 | - | - | - |
| 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:

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| 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): | Not 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 |

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: 06/01/2015

Version: 06/01/2015

Revised Section(s): N/Ap

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
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
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations