Safety Data Sheet

Readymix Concrete and Flowable Fill

Section 1. Identification

GHS product Identifier: Ready Mix Concrete & Flowable Fill
Other means of identification: 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:
Ingram Ready Mix, Inc. (IRI)
3580 FM 482
New Braunfels, Texas 78130
Telephone: (830) 625-9156
Office hours: 8:00 am to 5:00 pm (CST), M-F

Emergency Telephone Number (24 hours):
Chemtrec: (800) 424-9300
National Response Center: (800) 424-8802
EPA RCRA Hotline: (800) 424-9346
TCEQ: (512) 463-7727

Section 2. Hazards Identification

GHS Classification:
CARCINOGENICITY – Category 1A
SPECIFIC TARGET ORGAN TOXICITY – Category 2
SKIN CORROSION/IRRITATION – Category 1C
SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1
SKIN SENSITATIZATION – Category 1

GHS label elements

Hazard pictograms:

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: Avoid skin contact.

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, immediately take off all clothing. Rinse/wash skin with plenty of water/shower. Wash contaminated clothing before reuse. If in eyes, rinse continuously with water for 15 minutes. Remove contact lenses as soon as practical and continue rinsing.

Storage: Restrict or control access to ready mix concrete.

Disposal: Dispose of contents/container in accordance with local, state, and federal regulatory requirements.

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 RCS particles less than 10 micrometers. Repeated inhalation of RCS (quartz) may cause lung cancer according to IARC and NTP. ACGIH states that it is suspected to cause 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, Flowable Fill Concrete
Common Name: Concrete
Synonyms: None

Ingredients, Per Cent, CAS Numbers

Ingredient Name	%	CAS Number
Limestone Aggregate (calcium carbonate)	47.07	1317-65-3 (CaCO3)
Manufactured Sand (Quartz)	25.00	14808-60-7
Crystalline Silica Sand (Quartz)	10.72	14808-60-7
Water	6.92	7732-18-5
Portland Cement	7.80	65997-15-1
Fly Ash	2.43	68131-74-8
Admixture Solution Tricine	0.05	5704-04-1 (Tricine)
Air Entraining Agent (AEA)	0.01	

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.

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 persist 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 immediately.

Most important acute and delayed symptoms/effects

Eye contact: Exposure to dust from dry ingredients or hardened concrete 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 concrete 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.

Immediate medical care and special treatment recommendations

Notes to physician: Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

Specific treatments: None

Protection of first responders: 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 respiratory disorders). Smoking impairs the ability of the lungs to clear themselves of dust.

Section 5. Fire-fighting Measures

Extinguishing media

Suitable extinguishing media: Not combustible.

Unsuitable extinguishing media: Not applicable.

Specific hazards during fire: Spalling of hardened concrete may occur under conditions of intense heat.

Hazardous thermal decomposition: None

Special protective equipment for fire-fighters: None

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. Alkali resistant gloves (i.e. neoprene rubber or nitrile), waterproof boots, long sleeves, long pants and safety glasses should be used by clean up personnel for wet concrete releases. 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. Do not wash concrete down sewage and drainage systems or into bodies of water (e.g. lakes, streams, wetlands, etc.). Wet concrete is an inert material and is not considered toxic to the environment. However, negative impact can occur due to hardening concrete and disruption of biological processes if spilled in small streams or ponds. Negative impact can also occur if wet concrete is spilled into sewers, where it can harden and clog sewer flow.

Methods and materials for containment and cleaning up

Spills: Report to police and safety officials if concrete is spilled where it impacts traffic flow. Report to regulatory agencies responsible for solid waste disposal, water pollution and environmental impact if spilled into streams or sewers. Spill should be contained and prevented from entering surface water drainage system or sewers. Wet concrete should be removed from roads immediately, where it interfaces with traffic. Do not dry sweep spilled dusty material. Place spilled material into a contained area and allow wet unhardened concrete to harden and recycle material or dispose in any permitted landfill as

common solid waste. Uncontaminated Readymix Concrete does not meet any hazardous material class definition found in Title 49 Code of Federal Regulations Part 173.

Section 7. Handling and Storage

Precautions for safe handling

Protective measures: Use personal protective equipment to avoid direct contact with wet concrete. Remove contaminated clothes as soon as possible. If skin comes in direct contact with wet concrete wash skin immediately. Dust may be generated during handling or mixing dry powder or from cutting, drilling, breaking or crushing hardened material. Use wet cutting methods when possible.

Advice on general Occupational hygiene: Observe good personal hygiene practices to minimize prolonged contact with concrete. Promptly remove dusty or wetted clothing and launder before reuse. Shower with soap and water after working with wet concrete. Additionally, eating, drinking and smoking in the work area are prohibited.

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

Section 8. Exposure Controls and Personal Protection

Control Parameters

Occupational Exposure Limits

Ingredient name	Exposure limits
Particulates not otherwise classified/regulated (CAS SEQ250)	**ACGIH TLV** Not established **OSHA PEL** PEL 8-hr TWA: 5 mg/m3, respirable fraction PEL 8-hr TWA: 15 mg/m3, total dust **NIOSH REL** Not established
Portland Cement (CAS 65997-15-1)	**ACGIH TLV** Not established **OSHA PEL** PEL 8-hr TWA: 5 mg/m3, respirable fraction PEL 8-hr TWA: 15 mg/m3, total dust **NIOSH REL** REL 10-hr TWA: 5 mg/m3, respirable fraction REL 10-hr TWA: 10 mg/m3, total dust
Crystalline Silica (Quartz) (CAS 14808-60-7)	**ACGIH TLV** TLV 8-hr TWA: 0.025 mg/m3, respirable **OSHA PEL** PEL 8-hr TWA: See 29 CFR 1910.1000 Table Z-3 **NIOSH REL** REL 10-hr TWA: 0.05 mg/m3

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 exposure below allowable exposure limits.

Exposure guidelines: Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including “Particulate Not Otherwise Classified,” “Particulates Not Otherwise Regulated,” “Particulates Not Otherwise Specified,” and “Inert or Nuisance Dust” are often used interchangeably; however, the user should review each agency’s terminology for difference in meanings.

Personal protective measures

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 anticipated.

Hand protection: Use water-proof alkali resistant gloves such as neoprene rubber or nitrile. Wash wet concrete, mortar, cement or cement mixtures from your skin with fresh, clean water immediately after contact.

Body protection: Clothing with fully buttoned long sleeves and full length trousers will provide protection. Waterproof boots tight at the top and high enough to prevent concrete from entering should be worn when workers will be standing in wet concrete. When finishing concrete wear kneepads to protect knees. Indirect contact with contaminated work clothing can be as serious as direct contact with concrete; therefore, clothing should be promptly rinsed to remove all residues.

Respiratory protection: The need for respiratory protection should be evaluated by a qualified professional. The use of respirators for controlling exposure in excess of the PEL must comply with the requirements of the Respiratory Protection standard, OSHA 29 CFR 1910.134, for medical surveillance, respiratory fit testing, repair and cleaning, user training, etc. In dusty areas, air monitoring for dust and quartz should be conducted as needed in order to control potential worker exposure. 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	Light gray, viscous semi-solid, with dispersed aggregate	**Upper/lower flammability limits**	Not applicable
Odor	Characteristic wet concrete odor	**Vapor pressure**	Not applicable
Odor threshold	Unknown	**Vapor density**	Not applicable
pH	Approximately 12	**Relative density (H2O=1)**	2.28 calculated
Melting point	Not applicable	**Solubility**	0.1 to 1.0%
Boiling point	Not applicable	**Partition coefficient: n-octanol/water**	Not applicable

Flash point	Non-combustible	**Auto-ignition temperature**	Not applicable
Evaporation rate	Not applicable	**Decomposition temperature**	Not applicable
Flammability	Non-flammable	**Viscosity**	Not measured

Section 10. Stability and Reactivity

Reactivity: Stable

Chemical Stability: This material is considered stable under recommended handling and storage conditions. Reaction with acid will liberate heat. Contact with hydrochloric acid will liberate chlorine gas.

Possibility of hazardous reactions: Polymerization will not occur

Conditions to avoid: Acids and oxidizers.

Incompatible materials: Wet concrete 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: Wet concrete is not known to be toxic. Toxicity related to major components of concrete such as cement, fly ash and crystalline silica are negated in the wet concrete form. The wet matrix precludes the potential for inhalation of these constituents, which could normally be of occupational safety concern. The admixture and air-entraining agent are sulfonate solutions, which are not considered 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.
Ingestion: Direct contact with exposed tissues may result in severe irritation with pain, nausea, vomiting, and/or diarrhea and possibly chemical (alkali) burns.

Sensitization: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium. May cause symptoms of sensitization in those already sensitized to hexavalent chromium due to previous exposures to hexavalent chromium containing compounds.

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

Carcinogenicity: Epidemiology studies on the association between crystalline silica exposure and lung cancer have had both positive and negative results. There is some speculation that the source and type of crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increase with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.

In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). In 2012, an IARC Working Group re-affirmed that inhalation of crystalline silica was a known human carcinogen. The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

Additional Information on toxicological-effects

Acute toxicity, component analysis

Ashes, residues (68131-74-8): Oral LD50 Rat >2000 mg/kg
Water (7732-18-5): Oral LD50 Rat >90 mL/kg
Quartz (14808-60-7): Oral LD50 Rat 500 mg/kg

Skin corrosion/irritation: Causes severe skin burns and eye damage

Serious eye damage/eye irritation: Causes serious eye damage

Respiratory sensitization: Not classified

Skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: May cause cancer (inhalation).

Reproductive toxicity: Not classified

Specific target organ toxicity – single exposure: May cause respiratory irritation

Specific target organ toxicity – repeated exposure: May cause damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Section 12. Ecological Information

Ecotoxicity:	Not determined
Persistence and degradability:	Not determined
Bioaccumulative potential:	Not determined
Mobility in soil:	Not determined
Other adverse effects:	None known

Section 13. Disposal Considerations

Disposal methods: Dispose of waste product and unused product in compliance with federal, state and local requirements. Generally disposal can be accomplished in any permitted landfill. However; used material which has become contaminated may have significantly different characteristics based on the contaminant and should be evaluated accordingly. It is the responsibility of the user to assess the appropriate disposal method in that situation.

Section 14. Transportation Information

Department of Transportation:	Not regulated
International Maritime Dangerous Goods Code:	Not regulated
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class:	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
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

United States 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.

OSHA Specifically Regulated Substances, 29 CFR 1910.1001-1050: Not listed.

DOT, Hazardous Materials Tables & Hazardous Materials Communications, 49 CFR 172:
Not regulated by DOT and not listed in the DOT Emergency Response Guidebook.

Toxic Substances Control Act (TSCA):
The components in this product are listed on the TSCA Inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR 302.4:
Releases of this material to air, land, or water are not reportable to the National response Center under CERCLA or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA).

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III:
Section 302 extremely hazardous substances: None
Section 311/312 hazard categories: Delayed Health
Section 313 reportable ingredients at or above de minimus concentrations: None.

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.

State Regulations

California Proposition 65:
This product contains a chemical (crystalline silica, chromium, cobalt, nickel) known to the State of California to cause cancer.

State Regulatory Lists:
Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

Section 16. Other Information

SDS Sequence Number: No. 1
Date of issue: April 4, 2016
Version: 2.0
Replaces: January 1, 2009
Revised Section(s): All

Notice to Reader

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