



AUBURN - 82 Goldthwaite Road
WESTBROOK - 93 Scott Drive
WEST BATH - 50 Arthur Reno Sr Road
AUGUSTA - 2 Hard Rock Road
TOPSHAM - 26 Meadow Road Ext.
DAMARISCOTTA - 72 Biscay Road
BIDDEFORD - 21 Cole Road

Main Office: P.O. Box 1747 • Auburn, Maine 04210 Phone: (207) 777-7100 www.auburnconcrete.com

SAFETY DATA SHEET

READY-MIXED CONCRETE

1. PRODUCT/COMPANY IDENTIFICATION

Manufacturer's Name & Address:

Auburn Concrete
P.O. Box 1747
Auburn, Maine 04211-1747

Trade Name: Ready-Mix Concrete

Telephone Numbers for Information:

Auburn Plant

8 Goldthwaite Road
Auburn, Maine 04210
(207) 777-7100

Westbrook Plant

93 Scott Drive
Westbrook, Maine 04092
(207) 780-0523

West Bath Plant

50 Arthur Reno Road
West Bath, Maine 04530
(207) 376-5100

Augusta Plant

2 Hard Rock Road
Augusta, Maine 04330
(207) 620-7100

Topsham Plant

2 Hard Rock Road
Augusta, Maine 04330
(207) 373-9290

2. HAZARDS IDENTIFICATION

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

GHS label elements

Hazard pictograms:



Health



Corrosion



Irritant

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:

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. 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: 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

Disposal: Dispose of contents/container in accordance with local/regional/national/regional/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 compounds 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 contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

 **3. COMPOSITION INFORMATION**

Major Compounds:

<u>Chemical Name</u>	<u>CAS Registry Number</u>	<u>% in this Cement Product</u>
Aggregate*	Mixture	60-100
Limestone (Calcium Carbonate)	1317-65-3	0-100
Crystalline Silica	14808-60-7	> 1
Portland Cement	65997-15-1	3-40
GGBF Slag	65996-69-2	0-10
“ASHES”	“Varies”	0-20

* Composition varies naturally, typically contains Limestone and Crystalline Silica



4. HEALTH HAZARD DATA AND FIRST AID

Exposure Limits: Unless specified otherwise, limits are expressed as a time-weighted average (TWA) concentration for an 8-hour work shift of a 40-hour week. Limits for cristobalite and tridymite (other forms of crystalline silica) are equal to one-half the limits for quartz.

Abbreviations:

ACGIH TLV: Threshold limit value of the American Conference of Governmental Industrial Hygienists (ACGIH), expressed as a time weighted average (TWA) concentration for an 8-hour work day and a 40-hour work week.

Mg/m3: Milligrams of substance per cubic meter of air.

NIOSH REL: Recommended exposure limit of the National Institute for Occupational Safety and Health (NIOSH), expressed as a TWA concentration for up to a 10-hour work day during a 40 hour work week.

OSHA PEL: Permissible exposure limit of the federal Occupational Safety and Health Administration (OSHA), expressed as a time weighted average (TWA) concentration for an 8 hour work day and a 40 hour work week.

Calcium Carbonate: OSHA PELs (respirable fraction) 5mg/m3, (total dust) 15mg/m3, ACGIH TLV 10mg/m3, NIOSH REL (respirable) 5mg/m3, (total) 10mg/m3.

Crystalline Silica SiO2: OSHA PELs (respirable fraction) [10mg/m3 / (% SiO2+2)], (total dust) [30mg/m3 / (%SiO2+2)]; ACGIH TLV (respirable fraction) 0.05mg/m3; NIOSH REL (respirable fraction) 0.05mg/m3.

Portland Cement: OSHA PELs (respirable fraction) 5mg/m3, (total dust) 15mg/m3, ACGIH TLV 10mg/m3, NIOSH REL (respirable) 5mg/m3, (total) 10mg/m3.

Other Particulates: OSHA PELs (total particulate, not otherwise regulated) 15mg/m3, (respirable particulate, not otherwise regulated) 5mg/m3, ACGIH TLV (nuisance particulates)10mg/m3 (inhalable), 5mg/m3 (respirable).

HEALTH HAZARDS:

Primary Route(s) of Entry:

Inhalation: Yes
Skin: Yes
Ingestion: No

Acute:

Eye Contact: Direct contact with dust may cause irritation by mechanical abrasion.

Skin Contact: Wet concrete in plastic state can dry the skin and cause alkali irritation. Direct contact in dry state may cause irritation by mechanical abrasion.

Skin Absorption: Not expected to be a significant exposure route.

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation and blockage.

Inhalation: Dusts may irritate the nose, throat, and respiratory tract by mechanical abrasion. Coughing, sneezing, and shortness of breath may occur following exposures in excess of appropriate exposure limits.

Chronic:

Inhalation: Chronic exposure to respirable dust in excess of appropriate exposure limits may cause lung disease. Silicosis may result from excessive exposure to respirable silica dust for prolonged periods. Not all individuals with silicosis will exhibit symptoms. Silicosis is progressive and symptoms can appear at any time, even after exposure has ceased. Symptoms may include shortness of breath, coughing, or right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection. Tobacco smoking may increase the risk of developing lung disorders, including emphysema and lung cancer.

Carcinogenicity: Ready-mixed concrete is not listed as a carcinogen by the National Toxicology Program (NTP) or the International Agency for Research on Cancer (IARC). However, crystalline silica is classified by the IARC as a carcinogenic to humans (Group 1). The NTP has characterized respirable silica as “known to be a human carcinogen”. Prolonged and repeated breathing of silica may cause lung cancer.

Signs & Symptoms of Exposure:

Medical Conditions Generally Aggravated by Exposure:

Inhaling respirable dust may aggravate existing respiratory system disease(s) and/or dysfunctions such as emphysema or asthma. Exposure may aggravate existing skin and /or eye conditions.

EMERGENCY & FIRST AID PROCEDURES:

Eyes: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or later develops.

Skin: Wash skin with soap and water. Contact a physician if irritation persists or later develops

Ingestion: If person is conscious, give large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. Get immediate medical attention.

Inhalation: Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops.

 **5. FIRE AND EXPLOSION HAZARD DATA**

Flash Point	Not Applicable
Extinguishing Media	Not Applicable
Special Fire Fighting Procedures	None
Unusual Fire & Explosion Hazards	Contact with powerful oxidizing agents may cause fire and/or explosions (see Section V of this MSDS)
Flammable Limits	Not Applicable
LEL	Not Applicable
UEL	Not Applicable



6. SPILL, LEAK AND DISPOSAL PRACTICES

The personal protection and controls identified in Section 8 of the SDS should be applied as appropriate.

Steps to be taken if material is released or spilled:

Spilled materials, where dust can be generated, may overexpose cleanup personnel to respirable silica and dust. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Do not dry sweep spilled material. Flush away with water or break up into manageable sized units.



7. STORAGE AND HANDLING PRECAUTIONS

Respirable silica and dust may be generated during processing, handling and storage. The personal protection and controls identified in Section VII of the MSDS should be applied as appropriate.

Do not store or handle near food and beverages or smoking materials.



8. PERSONAL PROTECTION AND EXPOSURE CONTROL MEASURES

Control parameters:

Occupational exposure limits:

<u>Ingredient name</u>	<u>Exposure limits</u>
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 148008-60-7)	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

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 is nuisance dust (total and respirable) and respirable crystalline Silica should be monitored and controlled. Terms including Particles Not Otherwise Specified, and Inert or Nuisance Due are often used interchangeable; however, the user should review each agency's terminology for difference 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 PEL must comply with OSHA and MSHA requirements for medical surveillance, respiratory fit testing, repair and cleaning, and user training. In dusty areas, 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.



9. PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	Not Applicable
Specific Gravity (H ₂ O = 1) Vapor	2.60 – 2.75
Pressure (mm Hg) Melting Point	Not Applicable
Vapor Density (AIR-1)	Not Applicable
Evaporation Rate	Not Applicable
Solubility in Water	Not Soluble
Physical State:	Flowing, granular, hard-
Color:	like gray stone
Odor:	None
PH:	12-13
Flammability	No



10. STABILITY AND REACTIVITY

Stability: Stable. Avoid contact with incompatible materials.

Incompatibility: Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Silica dissolves in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

Hazardous Decomposition or Byproducts: Respirable dust particles may be generated when ready-mixed concrete is sawed or ground.

Hazardous Polymerization: Will not occur. No conditions to avoid.



11. TOXICOLOGICAL INFORMATON

Information on toxicological effect

Acute toxicity: Not reported to be acutely toxic.

Irritation/Corrosion:

Eyes: May cause eye irritation or serious eye damage

Skin: May cause skin burns or skin ulcers.

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	0
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.

 **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.

13. DISPOSAL CONSIDERATION

Waste Disposal Method: Dispose of waste materials only in accordance with applicable federal, state and local laws and regulations. The product may become contaminated during use and it is the responsibility of the user to determine appropriate disposal method in this case.

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 responsibility of the transporting entity to follow all applicable laws, regulations, and rules regarding the transport of this material.

15. REGULATORY INFORMATION

U.S. Federal regulations: This product is a “Hazardous Chemical” as defined by 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): 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

16. OTHER INFORMATION

Prepared February 15, 2016

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