



# MATERIAL SAFETY DATA SHEET

SECTION I - CHEMICAL PRODUCT AND COMPANY INFORMATION		
Product Name: <b>READY-MIX CONCRETE</b>	WHMIS – CLASSIFICATION: <b>D2A / D2B: MATERIALS CAUSING OTHER TOXIC EFFECTS</b> <b>E: CORROSIVE MATERIAL</b>	
MANUFACTURER'S AND SUPPLIER'S NAME:		
<b>GRAYMONT MATERIALS (NY) INC.</b>	Administration Office :111, Quarry Road, Plattsburg, New York, 12901	
<b>GRAYMONT (PORTNEUF) INC.</b>	595, boul. Dussault, St-Marc des Carrières (Qc), G0A 4B0	
EMERGENCY TEL. No.: <b>(613) 996 – 6666 CANUTEC (Canada)</b> <b>(800) 424 – 9300 CHEMTREC (US)</b>		
Chemical Name <b>Ready-Mix Concrete</b>	Chemical Family <b>Inorganic Compound</b>	Chemical Formula <b>N/A</b>
Molecular Weight <b>N/A</b>	Trade Name and Synonyms <b>Ready-Mix Concrete, Freshly Mixed Unhardened Concrete, Portland Cement with Sand and Gravel, Portland Cement Concrete</b>	Material Use <b>Concrete, construction</b>

SECTION II - COMPOSITION AND INFORMATION ON INGREDIENTS								
Hazardous Ingredients	Approximate Concentration	C.A.S. Number	Exposure limits (mg/m <sup>3</sup> )					
			OSHA PEL	ACGIH TLV	RSST VEMP	MSHA PEL	NIOSH REL	NIOSH IDLH
(Note 1)	(% by weight)		(TWA) 8/40h	(TWA) 8/40h	(TWA) 8/40h	(TWA) 8/40h	(TWA) 10/40h	(mg/m <sup>3</sup> )
<b>Portland Cement</b>	<b>5 to 30</b>	<b>65997-15-1</b>	<b>15 (total dust) 5 (respirable particulate) (50 mppcf)</b>	<b>10 (total dust) (Note 8)</b>	<b>10 (total dust) 5 (respirable dust)</b>	<b>10 (total dust)</b>	<b>10 (total dust) 5 (respirable dust)</b>	<b>5,000</b>

(Note 1): This MSDS covers many products. Individual composition of hazardous constituents will vary. (Note 2): Composition varies naturally – typically contains high levels of quartz (crystalline silica). (Note 3): The exposure limits are for “other particulates” : Particulate matter containing no asbestos and less than 1 % crystalline silica. (Note 4): OSHA PEL - Particulates Not Otherwise Regulated [PNOR]. (Note 5) ACGIH TLV - Particles Not Otherwise Specified [PNOS]. (Note 6): ACGIH TLV Version 1973 has been adopted by the Mine Safety Health Administration (MSHA) as the regulatory Exposure Standard. (Note 7): Total Dust: MSHA PEL = 10 mg/m<sup>3</sup>, for nuisance particulates listed in Appendix E of the 1973 ACGIH. TLV® booklet. (Note 8): Previously proposed ACGIH TLV at 1 mg/m<sup>3</sup> (Respirable fraction) and carcinogenicity category A4 are retained on the Notice of Intended Changes (NIC).

SECTION II - COMPOSITION AND INFORMATION ON INGREDIENTS (Cont'd)								
Hazardous Ingredients	Approximate Concentration	C.A.S. Number	Exposure limits (mg/m <sup>3</sup> )					
			OSHA PEL	ACGIH TLV	RSST VEMP	MSHA PEL	NIOSH REL	NIOSH IDLH
(Note 1)			(TWA) 8/40h	(TWA) 8/40h	(TWA) 8/40h	(TWA) 8/40h	(TWA) 10/40h	(mg/m <sup>3</sup> )
<b>(Complex Mixture)</b>	<b>(% by weight)</b>							
<b>Sand &amp; Gravel</b>	<b>60 to 100</b>	<b>None</b>	<b>15</b> (total particulate)	<b>10</b> (inhalable / total particles)	<b>10</b> (total dust)	<b>10</b> (total dust) (Note 7)	<b>N/A</b>	<b>N/A</b>
			<b>5</b> (respirable particulate) [PNOR]	<b>3</b> (respirable / particles) [PNOS]		<b>[DNOC]</b>		
<b>Flyash</b>	<b>0 to 20</b>	<b>68131-74-8</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Crystalline Silica, Quartz</b>	<b>60 to 100</b>	<b>14808-60-7</b>	<b>10/(%SiO<sub>2</sub>)+2</b> respirable silica dust	<b>0.025</b> respirable silica dust	<b>0.1</b> respirable silica dust	<b>10/(%SiO<sub>2</sub>)+2</b> respirable silica dust	<b>0.05</b> respirable free silica	<b>50</b>

## SECTION III - PHYSICAL AND CHEMICAL DATA

Physical State Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input checked="" type="checkbox"/>	Odor and Appearance <b>Gray slurry, granular paste. Odorless.</b>		Odor Threshold (p.p.m.) <b>Not applicable</b>	Specific Gravity <b>1.9 – 2.4</b>
Vapor Pressure (mm) <b>Not applicable</b>	Vapor Density (Air = 1) <b>Not applicable</b>	Evaporation Rate <b>Not applicable</b>	Boiling Point (°C) <b>&gt; 1000</b>	Melting Point (°C) <b>&gt; 1000</b>
Solubility in Water (20°C) <b>Negligible</b>	Volatiles (% by volume) <b>Not applicable</b>	pH (25 °C) <b>12 - 13</b>	Bulk Density (kg/m <sup>3</sup> ) <b>NA</b>	Coefficient of water/oil distribution <b>Not applicable</b>

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

Flammability  
 Yes  No  If yes, under which conditions?

Extinguishing Media  
**Ready-Mix Concrete does not burn. Use extinguishing media appropriate to surrounding fire conditions.**

Special Fire Fighting Procedures  
**Ready-Mix Concrete is non-flammable. Wear adequate personal protection to prevent contact with material or combustion products when fighting any fire. Firefighters should use self-contained NIOSH approved breathing apparatus with full face piece to protect against the products of combustion.**

Flash point (°C) and Method <b>Not applicable</b>	Upper flammable limit (% by volume) <b>Not applicable</b>	Lower flammable limit (% by volume) <b>Not applicable</b>
Auto Ignition Temperature (°C) <b>Not applicable</b>	TDG Flammability Classification <b>Non-flammable</b>	Hazardous Combustion Products <b>None</b>

Dangerous Combustion Products **None**

**EXPLOSION DATA**

Sensitivity to Chemical Impact <b>Not applicable</b>	Rate of Burning <b>Not applicable</b>	Explosive Power <b>Not applicable</b>	Sensitivity to Static Discharge <b>Not applicable</b>
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**SECTION V - REACTIVITY DATA**

Chemical Stability  
 Yes  No  If no, under which conditions?

Incompatibility to other substances  
 Yes  No  If so, which ones? **Wet unhardened concrete is alkaline and is incompatible with acids. Silicates react with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.**

Reactivity  
 Yes  No  If so, under which conditions? **Silicates dissolve in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.**

Hazardous Decomposition Products **None**

Hazardous Polymerization Products **None.**

**SECTION VI - TOXICOLOGICAL PROPERTIES**

Route of Entry

Skin Contact       Skin Absorption       Eye Contact       Acute Inhalation       Chronic Inhalation       Ingestion

Effects of Acute Exposure to Product:

**Skin**      **Direct contact may cause abrasion of the skin and contact dermatitis, the symptoms of which may include (but are not limited to) reddening, irritation, and rash. More severe effects, including chemical (caustic) burns, third degree burns and skin ulcers may occur. Skin absorption is not expected to be a significant exposure route.**

**Eyes**      **Contact may result in moderate eye irritation, chemical (caustic) burns, possible lesions and possible blindness when exposed for prolonged period. (Draize >80).**

**Inhalation**      **This product is normally mixed, transported and used only when wet. This reduces the potential for dust exposure. After the product has dried and hardened, further handling or processing may generate dust. If inhaled in form of dust, possible nose throat and respiratory tract irritation. Coughing, sneezing and shortness of breath may occur following exposures in excess of appropriate exposure limits.**

**Ingestion**      **Ingestion of small quantities of Ready-Mix Concrete is not known to be harmful. If ingested in large quantities may cause chemical (caustic) burns in the mouth, throat, stomach, and digestive tract.**

Effects of Chronic Exposure to Product:

**Contact dermatitis. This product contains Crystalline Silica. Prolonged or repeated inhalation of respirable Crystalline Silica from this product can cause silicosis.**

LD <sub>50</sub> of Product (Specify Species and Route) <b>Unavailable</b>	Irritancy of Product <b>Eyes, skin</b>	Exposure limits of Product <b>Unavailable</b>
LC <sub>50</sub> of Product (Specify Species) <b>Unavailable</b>	Sensitization to Product <b>Sensitization to hexavalent chromium (Skin and Respiratory tract)</b>	Synergistic materials <b>None reported</b>

Carcinogenicity       Reproductive effects       Tératogenicity       Mutagenicity

**Ready-Mix Concrete is not listed as a carcinogen by ACGIH, MSHA, OSHA, NTP, DFG, RSST or IARC. However, it contains trace amounts of Crystalline Silica and Chromium hexavalent (VI) listed carcinogens by these organizations. Previously proposed ACGIH TLV (1 mg/m<sup>3</sup> - Respirable fraction) and carcinogenicity category (A4 - Not Classifiable as a human Carcinogen) are retained on the Notice of Intended Changes (NIC). Crystalline Silica, which inhaled in the form of quartz or crystobalite from occupational sources, and Chromium hexavalent (VI), are classified by IARC as (Group 1) carcinogenic to humans. Silica, crystalline (Airborne particles of respirable size) and Chromium hexavalent (VI) compounds are regulated under California's Safe Drinking Water and Toxic Enforcement Act of 1986. (Proposition 65). Crystalline Silica is listed as a chemical known to the State to cause cancer. Chromium (hexavalent compounds) is listed as a chemical known to the State to cause cancer and reproductive toxicity. NIOSH considers crystalline silica and chromic acid and chromates to be potential occupational carcinogens as defined by the OSHA carcinogen policy [29 CFR 1990]. (Ca). NTP lists both respirable Crystalline Silica and Chromium hexavalent (VI) compounds as known to be human carcinogens based on sufficient evidence of carcinogenicity in humans. (K). ACGIH list respirable Crystalline Silica (quartz) as suspected human carcinogen (A2) and Chromium hexavalent (VI) compounds as confirmed human carcinogen (A1). DFG lists respirable Crystalline Silica as a substance that causes cancer in man (1) and Chromium hexavalent (VI) compounds as significant human carcinogen contributor (2). RSST lists respirable Crystalline Silica (quartz) as suspected human carcinogen.**

<b>SECTION VII - PREVENTIVE MEASURES</b>	
Personal Protective Equipment (PPE)	<b>Wear waterproof gloves, rubber boots, head protection and approved eye protection, and clothing sufficient to protect the skin from contact with fresh cement. Clothing saturated from contact with wet cement concrete should be removed promptly to prevent continued contact with skin.</b>
Gloves (Specify)	<b>Waterproof gloves.</b>
Respiratory (Specify)	<b>Under ordinary conditions no respiratory protection is required when handling <u>unhardened</u> concrete. However, cutting, crushing or grinding <u>hardened</u> concrete will release respirable crystalline silica. Wear a NIOSH approved dust respirator when exposed to dust above exposure limits. For <u>respirable quartz levels</u> that exceed or are likely to exceed an 8-hr TWA of <u>0.1 mg/m<sup>3</sup></u>, a NIOSH approved (N/R/P95) dust respirator is recommended. For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of <u>0.5 mg/m<sup>3</sup></u>, a NIOSH approved HEPA (N/R/P100) filter respirator is recommended. For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of <u>5.0 mg/m<sup>3</sup></u>, a NIOSH approved positive pressure (SAR), full face respirator or equivalent is recommended.</b>
Eyes (Specify)	<b>ANSI, CSA or ASTM approved safety glasses with side shields. Tight fitting dust goggles should be worn when excessive (visible) dust conditions are present. Do not wear contact lenses without tight fitting goggles when handling this chemical.</b>
Footwear (Specify)	<b>Waterproof boots.</b>
Clothing (Specify)	<b>Fully covering skin to protect the skin from contact with fresh cement.</b>
Other (Specify)	<b>Evaluate degree of exposure and use PPE if necessary.</b>
Engineering Controls (e.g. ventilation, enclosed process, specify)	<b>Engineering Controls are ordinarily not required when working with unhardened concrete. Enclose dust sources; use exhaust ventilation (dust collector) or other engineering controls as required to keep airborne levels below recommended exposure limits. Use product only in well-ventilated areas.</b>
Leak and Spill Procedure	<b>Limit access to trained personnel. Avoid contact with skin. Unhardened concrete should be removed and placed into a container. Allow material to dry or solidify before disposal. Prevent spilled materials from inadvertently entering streams, drains, or sewers.</b>
Waste Disposal	<b>Dispose of waste materials in accordance with applicable federal, state, provincial and local environmental laws and regulations.</b>
Handling Procedures and Equipment	<b>Wear personal protective equipment (PPE) and apply adequate engineering controls. Avoid skin and eye contact with wet cement. Respirable crystalline silica-containing dust may be generated when hardened concrete is subjected to mechanical forces such as in demolition work and surface treatment. Minimize dust generation. Contact lenses should not be worn when working with this product.</b>
Storage Requirements	<b>Do not store near food and beverages.</b>
Special Shipment Information	<b>Ready-Mix Concrete is not regulated by the Transportation of Dangerous Goods (TDG) Regulations (Canada) nor the Hazardous Materials Regulations (USA).</b>

**SECTION VIII - FIRST AID MEASURES**

## Skin

Wash skin with cool water and a pH neutral soap or a mild skin detergent. Seek medical treatment for rash, burns, irritation, and dermatitis and in all cases of prolonged unprotected exposures to wet unhardened concrete. Remove all Ready-Mix Concrete-contaminated clothing. Wash work clothes after each use. Wash cement exposed skin with soap and water before eating, drinking. Contact a physician if irritation persists or later develops.

## Eyes

Immediately rinse contaminated eye(s) with gently running lukewarm water (saline solution is preferred) for at least 15 minutes, while holding the eyelid(s) open. In the case of an embedded particle in the eye, or If irritation occurs or persists, consult a physician. Beyond flushing, do not attempt to remove material from the eye(s).

## Inhalation

Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside. If victim does not breathe, give artificial respiration. Contact a physician immediately.

## Ingestion

If victim is conscious, wash out mouth with water. Have conscious person drink several glasses of water. Do not induce vomiting. Contact a physician immediately. Never give anything by mouth to an unconscious or convulsing person.

## General Advise

Consult a physician for all exposures except minor instances of inhalation.

## SECTION IX - REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 (**SARA Title III**). / The Emergency Planning and "Community Right-to-Know" Act (**EPCRA**). / Comprehensive Environmental Response, Compensation and Liability Act (**CERCLA**). / Resource Conservation and Recovery Act (**RCRA**).

**Component Ready-Mix Concrete has been reviewed against the following regulatory listings:**

- **SARA Section 302 – Emergency Planning Notification. Extremely Hazardous Substances (EHS) List and Threshold Planning Quantity (TPQ). (40 CFR, Part 355, Section 30): Not listed.**
- **SARA Section 304 – Emergency Release Notification. Extremely Hazardous Substances (EHS) and Reportable Quantity (RQ) List. (40 CFR, Part 355, Section 40): Not listed.**
- **SARA Section 311/312 – Hazard Categories (40 CFR, Part 370): This product is regulated under CFR 1910.1200 (OSHA Hazard Communication) as Immediate (Acute) Health Hazards – Irritant.**
- **SARA Section 313 – Toxics Release Inventory (TRI). Toxic Chemical List (40 CFR, Part 372). Not listed.**
- **CERCLA – Hazardous Substance (40 CFR, Part 302): Not listed in Table 302.4.**
- **RCRA – Hazardous Waste Number (40 CFR, Part 261, Subpart D): Not listed.**
- **RCRA – Hazardous Waste Classification (40 CFR, Part 261, Subpart C): Not classified.**

CWA 311. - Clean Water Act List of Hazardous Substances.

**Ready-Mix Concrete does not appear on the Clean Water Act (CWA) list of hazardous substances.**

California Proposition 65.

**Component Ready-Mix Concrete does not appear on the above regulatory listing. However, crystalline silica and Chromium are components of this product. Silica, crystalline (Airborne particles of respirable size) and Chromium (hexavalent compounds) are regulated under California's Safe Drinking Water and Toxic Enforcement Act of 1986. (Proposition 65). Crystalline Silica is listed as a chemical known to the State to cause cancer. Chromium (hexavalent compounds) is listed as a chemical known to the State to cause cancer and reproductive toxicity.**

Transportation – Hazardous Materials Regulations (USA) & Transportation of Dangerous Goods (TDG) Regulations (Can).

**Ready-Mix Concrete does not appear on the above regulatory listings**

Toxic Substances Control Act (TSCA).

**All naturally occurring components of this product are automatically included in the USEPA TSCA Inventory List per 40 CFR 710.4 (b). Portland Cement a components of this product is subject to inventory update reporting (IUR).**

Canadian Environmental Protection Act (CEPA) – Substances Lists (DSL/NDSL).

**Portland Cement, Quartz and Fly Ash are components of this product and are specified on the public Portion of the Domestic Substances List (DSL).**

ANSI/NSF 60 - Drinking Water Treatment Additives.

**Not applicable**



FDA - U.S. Food and Drug Administration, Department of Health and Human Services.

**Not applicable**

**SECTION X - OTHER INFORMATION**

<p>Hazardous Materials Identification System (U.S.)</p>		<p>National Fire Protection Association (U.S.) NFPA 704</p> <p>Health Hazard</p> <p>NFPA has not assigned a rating to Ready-Mix Concrete.</p>	<p>Fire Hazard</p>  <p>Instability / Thermal Hazard</p> <p>Specific hazard</p>
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<p>WHMIS – Classification:</p> <p>“E” Corrosive Material.</p>	<p>WHMIS – Classification:</p> <p>“D2A and D2B”: Materials causing other toxic effects.</p>
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<p>Symbol:</p> 	<p>Symbol:</p> 
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Additional Information/Comments:

The technical data contained herein is given as information only and is believed to be reliable.

**GRAYMONT** makes no guarantee of results and assumes no obligation or liability in connection therewith.

Sources Used:

NFPA, TDG, CSST, RSST, (LSRO-FASEB), Hazardous Products Act, Environment Canada, Enviroguide, OSHA, ACGIH, IARC, NIOSH, CFR, NTP, HSDB, EPA SRS, MSHA, RTECS, DFG, Geology of the nonmetallics.

**SECTION XI - PREPARATION INFORMATION**

<p>Prepared by:</p>	<p>Telephone number:</p>	<p>Date :</p>
<p><b>GRAYMONT (QC) INC.</b> Quality Assurance &amp; Technical Services</p>	<p>(450) 449-2262</p>	<p>September 2009</p>

An electronic version of this MSDS is available at: [www.graymont.com](http://www.graymont.com) under the PRODUCTS section.