SAFETY DATA SHEET

Section 1: Identification

1.1 Product identifier:

Portland Cement, Ready-mixed Concrete

Other means of Identification: Portland Cement Concrete, Freshly mixed

1.2 Recommended use:

Identified uses:

Industrial uses in construction of buildings, pavement and manufacture of concrete.

Restrictions on use:

Professional and industrial uses only, people working with this product should be properly trained regarding its hazards and its safe use. Keep out of reach of children.

1.3 Manufacturer / Supplier:

Viola Ready Mix Inc.
2815 14th Ave
Markham, Ontario
P: 905-475-7764
www.violareadymix.com

1.4 Emergency telephone number (24-hour):

1-613-996-6666 CANUTEC (Call Collect or *666 Cellular) 24-hours

Section 2: Hazard Identification

2.1 Classification:

Skin Corrosion Cat. 1; H314
Eye Damage Cat. 1; H318
Skin Sensitization Cat. 1; H317

2.2 Label elements:

Danger.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Prevention

Wash hands and exposed skin thoroughly after handling.
Avoid breathing dusts.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves, boots, protective clothing, and eye protection or face protection.

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a POISON CENTER or doctor.

Disposal

Recycle and or dispose of contents and containers in accordance with local, regional, national and international regulations.

2.3 Other hazards:

Not available

SAFETY DATA SHEET

Section 3: Composition / Information on Ingredients

Chemical Name	CAS No.	Wt.%
Portland Cement	65997-15-1	10 – 25
Calcium oxide	1305-78-8	5 - 30
Blast furnace slag	65996-69-2	10 - 15
Fly ash	68131-74-8	10 - 15
Crystalline silica, Quartz	14808-60-7	1 - 10
Limestone	1317-65-3	1 - 5
Chromate compounds	Not available	Trace
Nickel compounds	Not available	Trace
Other composition information: Product composition may vary from batch to batch and concentration of individual components may be present outside of the stated ranges.		

Section 4: First-Aid Measures

4.1 Description of first-aid measures:

Inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical help if coughing or other symptoms persist.

Eye Contact: Rinse eyes cautiously with water for several minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Skin Contact: Take off immediately all contaminated clothing, shoes and leather goods such as watchbands and belts. Rinse skin with water or shower. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated promptly by a doctor.

Ingestion: If exposed or concerned, call a POISON CENTER or doctor for treatment advice. Rinse mouth. Do not induce vomiting unless directed to do so by the poison center or doctor. If vomiting occurs naturally, lie person on their side, in the recovery position.

4.2 Most important symptoms and effects, acute and delayed:

Inhalation: No exposure to inhalable substances is expected from the wet concrete.
Cutting or other processes that generate dust from the dried concrete may generate inhalable dusts. Dusts may cause respiratory irritation. Long-term inhalation exposure to dusts containing respirable size crystalline silica can cause silicosis and lung cancer.

Eye Contact: Severely irritating in contact with eyes. Causes eye damage which may be permanent and may cause blindness. Sharp, glassy particles can cause damage to eye tissue by mechanical abrasion.

Skin Contact: Wet Portland cement can cause caustic burns, sometimes referred to as cement burns. Cement burns may result in blisters, dead or hardened skin, or black or green skin. In severe cases, these burns may extend to the bone and cause disfiguring scars or disability.
Workers cannot rely on pain or discomfort to alert them to cement burns because cement burns may not cause immediate pain or discomfort. By the time the worker becomes aware of a cement burn, much damage has already been done. Cement burns can get worse even after skin contact with cement has ended. Any person experiencing a cement burn is advised to see a health care professional immediately.

May cause an allergic skin reaction from trace amounts of sensitizing metals in cement. Symptoms of an allergy range from mild rashes to severe skin ulcers.

SAFETY DATA SHEET

4.2 Most important symptoms and effects, acute and delayed (continued):

Ingestion: Severely irritating to the mouth, throat and gastro-intestinal system if swallowed. Symptoms may include severe pain and burning of the mouth, throat, esophagus and gastrointestinal tract with nausea, vomiting and diarrhea. If aspiration into the lungs occurs during vomiting, severe lung damage may result.

4.3 Indication of any immediate medical attention and special treatment needed:

Corrosive material: Emergency medical attention is needed if in contact with eyes or if swallowed.

4.4 Medical Conditions Aggravated by Exposure:

Employees who work with wet cementitious materials and experience skin problems, including seemingly minor ones, are advised to see a health care professional for evaluation and treatment. In cement-related dermatitis, early diagnosis and treatment can help prevent chronic skin problems.

Section 5: Fire-fighting Measures

5.1 Extinguishing media:

Use extinguishing media appropriate to the surrounding fire conditions.

Unsuitable extinguishing media: None known

5.2 Special hazards arising from the product:

Product is not flammable or combustible.

5.3 Special protective equipment and precautions for fire-fighters:

As for any fire, fire-fighters protective clothing and positive pressure SCBA may be necessary.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear protective work gloves, clothing, boots and eye protection.
Stop further release if safe to do so.
Do not touch spilled material.
Do not breathe any dusts that may be generated during clean-up of dried cement.

6.2 Environmental precautions:

Prevent releases into the environment.

6.3 Methods and material for containment and cleaning up:

Contain the spilled concrete using a dike or barrier to prevent spread of the spill.
Do not dry sweep cement dust or blow with compressed air.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

People working with this product should be properly trained regarding its hazards and its safe use.
Wash hands and exposed skin thoroughly after handling. Wash with plenty of water and pH neutral soap; do not use waterless hand cleaners such as alcohol-based gels. Clean nail beds and creases between fingers.
Avoid wearing watches and rings at work; wet cement can collect next to the skin and cause burns.
Contaminated work clothing should not be allowed out of the workplace.
Prevent eye contact: Wear protective gloves, protective clothing and eye protection or face protection.
Follow good practices for safe glove removal.
For hardened, set cement: Use wet cutting methods when possible to avoid generation of breathable dusts.

7.2 Conditions for safe storage:

Store in a secure location, accessible by authorized persons only.
Keep out of reach of children.
Keep away from incompatible substances such as strong acids.

SAFETY DATA SHEET

Section 8: Exposure Controls / Personal Protection

8.1 Control parameters:

Ingredient	ACGIH® TLV®	OSHA PEL	Other Exposure Limits
Portland Cement	1 mg/m^3 (respirable)	15 mg/m^3 (total dust) 5 mg/m^3 (respirable)	NIOSH REL: 10 mg/m^3 NIOSH IDLH: 5000 mg/m^3
Calcium oxide	2 mg/m^3	5 mg/m^3	NIOSH REL: 2 mg/m^3 NIOSH IDLH: 25 mg/m^3
Blast furnace slag	Not established	Not established	Not available
Fly ash	Not established	Not established	Not available
Crystalline silica, Quartz	0.025 mg/m^3 (respirable)	quartz (total dust): 30 mg/m^3 / (%SiO2 + 2) quartz (respirable): 10 mg/m^3 / (%SiO2 + 2) Table Z-3	Ontario TWA: 0.1 mg/m^3 Designated Substance NIOSH REL: 0.05 mg/m^3 NIOSH IDLH: 50 mg/m^3
Limestone	Not established	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)	NIOSH REL: 10 mg/m^3 (respirable)

8.2 Exposure controls:

Engineering controls: Handle in accordance with good industrial hygiene and safety practice. Ensure regular cleaning of equipment, work area and clothing.

For dry cement: If airborne dusts are generated, monitor concentrations in air and provide local exhaust ventilation when any exposure guideline is exceeded.

If engineering controls and work practices are not effective in controlling exposure to this material or if adverse health symptoms are experienced, wear suitable personal protection equipment including approved respiratory protection.

8.3 Individual protection measures:

Eye/Face protection: Wear safety glasses, chemical safety goggles or full face protection.

8.3 Individual protection measures (continued):

Skin protection: Wear waterproof, snug-fitting alkali-resistant gloves, boots, knee and elbow pads. Wear protective clothing with long-sleeves and long pants. Protective clothing can be taped inside gloves and boots. Take off contaminated clothing and wash it before re-use. Contaminated work clothing should not be allowed out of the workplace.

Respiratory protection: None required for handling wet, ready-mix cement. For dry cement: When concentrations in air exceed the occupational exposure guideline, wear an approved air-purifying respirator with an appropriate cartridge. Consult safety supplier for respirator specifications.

A respiratory protection program that meets the regulatory requirement, such as Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator's use.

Other protection: Have adequate washing facilities and eyewash fountain readily available in the work area for immediate emergency use.

Every attempt should be made to avoid skin and eye contact with cement. Do not get powder inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are wet with cement mixtures. Wash clothing and shoes thoroughly before reuse.

Do not eat, drink or smoke where this material is handled, stored and processed. Wash hands thoroughly before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

SAFETY DATA SHEET

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance:	Semi-solid. Granular paste, grey.
Odour:	Odourless
Odour threshold:	Not available
pH:	>12
Melting point/freezing point:	Not applicable
Initial boiling point and boiling range:	Not applicable (>1000°C)
Flash point:	Not available
Flammability (solid, gas):	Not flammable
Upper/lower flammability or explosive limits:	Not applicable
Evaporation rate:	Not available
Vapour pressure:	Not available
Vapour density:	Not available
Relative density:	1.5 – 2.9 (water=1)
Solubility (ies):	Slightly soluble in water (<1%)
Partition coefficient (n-octanol/water):	Not available
Auto-ignition temperature:	Not applicable
Decomposition temperature:	Not available
Viscosity:	Not available

Section 10: Stability and Reactivity

10.1 Reactivity:

Not reactive

10.2 Chemical stability:

Stable at normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions:

Portland cement concrete is highly alkaline and incompatible with acids, ammonium salts and aluminum metal.

10.4 Conditions to avoid:

None known.

10.5 Incompatible materials:

Strong acids - Incompatible with strong acids; may react vigorously.
Water - reaction generates heat.
Aluminum – Aluminum powder and other alkali earth elements will react in the presence of water liberating extremely flammable hydrogen gas. Calcium oxide is corrosive to aluminum metal.
Fluoride compounds – cement dissolves in HF producing corrosive silicon tetrafluoride gas.
Reacts with Ammonium salts.

10.6 Hazardous decomposition products:

None known.

SAFETY DATA SHEET

Section 11: Toxicological Information

11.1 Information on toxicological effects:

Likely routes of exposure

Skin contact; Eye contact. Inhalation of hazardous substances in wet concrete is not an expected route of exposure.
From cutting of dried, hardened concrete: possible exposure from inhalation of dust.

Acute toxicity

Inhalation: Data not available for the mixture.

Ingestion: Data not available for the mixture.

Skin: Data not available for the mixture.

Skin corrosion / irritation

Skin contact with wet cement products can cause thickening or cracking of the skin.
Human experience has shown Portland cement can cause caustic burns when in prolonged contact with the skin.

Serious eye damage / irritation

Information for Portland Cement and Calcium oxide: Causes serious eye damage and possible blindness. Damage may be permanent if treatment is not immediate.

STOT (Specific Target Organ Toxicity) – Single exposure

From cutting of dried, hardened concrete: Breathing dusts causes respiratory irritation. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide.

STOT (Specific Target Organ Toxicity) – Repeated exposure

From cutting of dried, hardened concrete: Prolonged and repeated breathing of dust may cause lung disease. The extent and severity of lung injury correlates with the length of exposure and dust concentration. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide.
Contains crystalline silica. Long-term exposure to fine airborne crystalline silica dust may cause silicosis a form of pulmonary fibrosis that can cause shortness of breath, cough and reduced lung function. Particles with diameters less than 1 micrometer are considered most hazardous.

Aspiration hazard

Does not meet criteria for classification for aspiration toxicity.

Sensitization - respiratory and/or skin

Product may contain trace concentrations of Chromate and Nickel compounds that can cause an allergic skin reaction, allergic contact dermatitis, or ACD. Once sensitized, brief skin contact with very small amounts of Cr VI may result in inflammation, rash, itching or severe skin ulcers.
ACD is long-lasting and employees can remain sensitized to Chromium VI for many years.
Not known to be a respiratory sensitizer.

Carcinogenicity

Portland cement is not classifiable as a human carcinogen.
Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity.

Reproductive toxicity

Data not available

Germ cell mutagenicity

Data not available

Interactive effects

Data not available

SAFETY DATA SHEET

Section 12: Ecological Information

12.1 Toxicity:

Avoid release to the environment.
Mixing with water forms an alkaline solution. May be harmful to wildlife and aquatic life.

12.2 Persistence and degradability:

Not readily bio-degradable.

12.3 Bioaccumulative potential:

Not applicable

12.4 Mobility in soil:

Data not available

Section 13: Disposal Considerations

13.1 Disposal methods:

Discard in accordance with municipal or provincial regulations where they apply.
Contact local authorities for disposal of large quantities of product.
Prevent material from entering sewers, drains, ditches or waterways.

Section 14: Transport Information

14.1 Canada Transportation of Dangerous Goods (TDG) Regulations:

Cement is not covered by international transport regulations (IMDG, UN Model Regulations).

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

Canada

NSNR status: All ingredients are listed on the DSL or are not required to be listed.

USA

TSCA status: All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

Section 16: Other Information

Revision date:

January 9, 2019

References and sources for data:

CCOHS Cheminfo
IPCS – International Programme on chemical Safety.
NIOSH Pocket Guide
Portland Cement Association

Legend to abbreviations:

ACGIH® – American Conference of Governmental Industrial Hygienists
LD_{50}- Median lethal dose; the dose causing 50 % lethality
NIOSH – National Institute for Occupational Safety and Health
OSHA - Occupational Safety and Health Administration
REL – Recommended Exposure Limit
STEL – Short-term Exposure Limit
TLV - Threshold Limit Value
TWA – Time Weighted Average

SAFETY DATA SHEET

Additional information:

Portland cement should only be used by trained, knowledgeable persons. This safety data sheet is believed to provide a useful summary of the hazards of Portland cement as it is commonly used, but cannot anticipate and provide all of the information that might be needed in every situation. In particular, the data furnished in this sheet does not address hazards that may be posed by other materials mixed with Portland cement products.