



Tomlinson Ready Mix
5597 Power Road, Ottawa, ON K1G 3N4

MATERIAL SAFETY DATA SHEET

(M. S. D. S.)

This is a "CONTROLLED" product under W.H.M.I.S. legislation

SECTION I - MATERIAL IDENTIFICATION AND USE

Material Name: Portland Cement Concrete
Manufacturer=s Name: Tomlinson Ready Mix, A Division of R.W. Tomlinson Limited
Address: 5597 Power Road, Ottawa, On K1G 3N4
Supplier=s Name: Tomlinson Ready Mix, A Division of R.W. Tomlinson Limited
5597 Power Road, Ottawa, On K1G 3N4
Chemical Name: Not applicable
Chemical Family: Portland Cement Product
Chemical Formula: Mixture cementitious material aggregates and water
Trade Name & Synonyms: Ready mixed concrete; concrete

SECTION II - HAZARDOUS INGREDIENTS OF MATERIAL

Concrete is a mixture of inert gravel or rock, sand, Portland Cement and water. It may also contain chemical admixtures and/or fly ash and/or granulated slag and/or silica fume which have no effect on the hazards associated with the use of the product. The chemical admixtures are present in quantities comprising less than 1% of the material.

<u>Hazardous Ingredients</u>	<u>%</u>
Portland Cement (CAS 65997-15-1)	10 - 20
Quartz (SiO ₂) (cas 14808-60-7)	3 - 7
Portlandite (Ca(OH) ₂) (CAS 1305-62-0)	2 - 4

SECTION II - HAZARDOUS INGREDIENTS OF MATERIAL

The hazardous ingredient in plastic (wet) concrete cannot become airborne. However, water added to the materials reacts with some of the ingredients to form calcium hydroxide, a corrosive chemical which will irritate the eyes and skin upon contact. Concrete dust from dried Portland Cement Concrete may also contain hazardous ingredients in sufficient concentrations to cause skin, eye, or respiratory irritation.

SECTION III - PHYSICAL DATA FOR MATERIAL

Physical State: Plastic until it becomes solid upon setting.
Odour and Appearance: Odourless, grey, plastic, flowable and granular.
Odour Threshold: None.
Specific Gravity: Normal range 1.5 to 2.9
Vapour Pressure: Not applicable.
Vapour Density: Not applicable.
Evaporation Rate: Not applicable.
Boiling Point: Not applicable.
Freezing Point: 0°C
Solubility in water: 0.1%
pH: pH 12 - pH 13

SECTION IV - FIRE & EXPOSION HAZARD OF MATERIAL - Not applicable

SECTION V - REACTIVITY DATA - Not applicable

SECTION VI - TOXICOLOGICAL PROPERTY OF MATERIAL

- o PLASTIC CONCRETE

Toxicological Properties: Plastic concrete has an alkalinity level of pH 12 to pH 13 which can cause skin and eye irritation.

SECTION VI - TOXICOLOGICAL PROPERTIES OF MATERIAL

Route of Entry: Skin contact, eye contact, ingestion.

Effects of Acute Exposure: Plastic concrete can cause alkali burns and eye irritations and burns. Ingestion may cause Irritation of the throat

Effects of Chronic Exposure: Damage to the epidermis and dermis (outer layers of the skin).

- o HARDENED OR A SET CONCRETE

Sawing or other demolition techniques may result in exposure to dust which may contain hazardous ingredients of the constituent products as follows:

- o PORTLAND CEMENT AND PORTLANDITE

Toxicological Properties: The hazardous ingredients when in contact with water produce calcium hydroxide, with an alkalinity level of pH 12 to pH 13. This level of alkalinity can cause skin and eye irritation.

Route of Entry: Skin contact, eye contact, inhalation, ingestion.

Effects of Acute Exposure: Cement and wet cement mixtures can dry skin, cause alkali burns and irritate the eyes and the upper respiratory tract. Ingestion can cause inflammation of the throat.

Effects of Chronic Exposure: Cement dust can cause inflammation of the tissue lining, the interior of the nose and the cornea (white) of the eye. Hyper-sensitive people may develop allergic dermatitis.

SECTION VI - TOXICOLOGICAL PROPERTIES OF MATERIAL

Exposure Limits: 0. Reg. 654/86 (8 hr TWAEV)*10 mg M; (total dust)
ACGIH (TLV - 8hr TWA).....10 mg M; (total dust)
MSHA (8hr - TWA).....50 mppcf **
OSHA (PEL 8 hr TWA).....50 mppcf

* Time Weighted Average Exposure Value (for 8 hour day - 40 hour week)

** Million particles per cubic foot

Portland Cement and portlandite are not known to constitute carcinogenic, reproductive, teratogenic or mutagenic hazards.

SECTION VI - TOXICOLOGICAL PROPERTIES OF MATERIAL

Quartz (SiO₂)

Route of Entry: Skin contact, eye contact, inhalation chronic.

Effects of Acute Exposure: Exposure to dust may irritate respiratory system, eyes and skin.

Effects of Chronic Exposure: Chronic exposure to respirable sand and gravel dust containing quartz at levels exceeding exposure limits has caused silicosis, a serious and progressive pneumoconiosis which can be disabling, and in extreme instances, lead to death. Symptoms may appear at any time, even years after exposure has ceased. Symptoms of silicosis may include shortness of breath, difficulty in breathing, coughing, diminished work capacity, diminished chest expansion, reduction of lung volume and right heart enlargement and/or failure. The only reliable method of detecting silicosis is through a chest X-ray. Silicosis may aggravate other conditions and may increase the risk of pulmonary tuberculosis infection. Smoking aggravates the effects of silica exposure.

LD50 of Material (Species and Route): Not applicable

LC50 of Material (Species and Route): Not applicable

Exposure Limits: Respirable silica dust - 0.2 mg/M; (TWAEV)
TWAEV - Time Weighted Average Exposure Values

For additional information on the above exposure limits, consult Ontario Regulations 654/86 and 769/83, amended 23/87.

Irritancy of Materials: Respiratory system, eyes, skin.

Carcinogenicity, Reproductive Effects, Teratogenicity, Mutagenicity

As of the date of preparation of this MSDS: (1) Sand and gravel is not included on the ACGIH, IARC, NTP or OSHA lists of potential carcinogens.
(2) Silica, in the form of Crystalline Quartz and as a component of this material, is listed as a potential carcinogen by IARC, but not by ACGIH, NTP or OSHA. IARC (International Agency for Research on Cancer) has determined that there is sufficient evidence of carcinogenicity in crystalline silica to experimental animals, and that there is a limited evidence of the carcinogenicity to humans. Limited evidence of Carcinogenicity indicates that causal interpretation is credible, but alternate explanations such as chance, bias or compounding factors could not adequately be excluded. There is no evidence that sand and gravel is a teratogen, mutagen or any reproductive effect.

SECTION VII - PREVENTATIVE MEASURES

Personal Equipment: Use gloves, boots and clothing to prevent skin contact. Wear safety glasses or goggles to prevent contact with eyes. Wear an approved respirator if exposed to dust from hardened concrete when sawing or using other demolition methods.

Engineering Controls (specify): Provide ventilation when sawing or using other demolition techniques to maintain dust concentrations below exposure limits listed in Section VI.

SECTION VII - PREVENTATIVE MEASURES

Leak and Spill Procedure: Sweep and shovel into waste disposal containers. Flush with water hose for final clean-up of floors, walkways, etc.

Waste Disposal: At approved landfill or waste disposal sites in accordance with local regulations.

Handling Procedures and Equipment: As above.

Storage Requirements: Not applicable.

Special Shipping Information: Not applicable.

SECTION VIII - FIRST AID MEASURES

Wash exposed areas of the body with soap and water; irrigate eyes with large amounts of water; consult a physician in cases of severe exposure; In case of accidental ingestion, drink two or three glasses of milk, call a physician and do not induce vomiting.

SECTION IX - PREPARATION DATE OF MSDS

Prepared by: Ready Mix Concrete Association of Ontario
365 Brunel Road, Unit 3, Mississauga, On L4Z 1Z5

Date: March 1992
Revised February 2001
Revised April 2003
Revised December 2005
Revised January 2008
Revised January 2009
Revised March 2012
Revised July 2013
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