

MATERIAL SAFETY DATA SHEET  
MSDS  
FOR WHITE PORTLAND CEMENT

(COMPLIES WITH OSHA HAZARD  
COMMUNICATION STANDARD, 29  
CFR 1910 1200)

FWC

FEDERAL WHITE CEMENT  
P.O. BOX 548  
WOODSTOCK, ONTARIO  
CANADA N4S 7Y5

**Section 1 - IDENTIFICATION**Supplier/Manufacturer

Federal White Cement  
P.O. Box 548  
Woodstock, Ontario  
Canada N4S 7Y5

Emergency Contact Information

Main Offices: (519) 485-5410  
Sales: (800) 265-1806  
Fax: (519) 485-5892

Chemical Name and Synonyms

White Portland Cement (CAS #65997-15-1)  
( Also known as Hydraulic cement )

Product Name

Federal White Cement  
Portland – Type I, Type 10

Chemical Family

Calcium salts.

Formulas

3CaO.SiO <sub>2</sub>	(CAS #12168-85-3)
2CaO.SiO <sub>2</sub>	(CAS #1003~77-2)
3CaO.A1 <sub>2</sub> O <sub>2</sub>	(CAS #12042-78-3)
4CaO.A1 <sub>2</sub> O <sub>3</sub> Fe <sub>2</sub> O <sub>3</sub>	(CAS #12068-35-8)
CaSO <sub>2</sub> 2H <sub>2</sub> O	(CAS #13397-24-5)

Other salts.

Small amounts of MgO, and trace amounts of K<sub>2</sub>SO<sub>4</sub> and Na<sub>2</sub>SO<sub>4</sub>.  
may also be present.

**Section 2 - COMPONENTS Hazardous**

Portland cement clinker (CAS #65997-15-1) - approximately 55 -75% by weight

ACGIH TLV-TWA (1996) = 10 mg total dust/m<sup>3</sup>

OSHA PEL (8-hour TWA) 15 mg total dust/m<sup>3</sup>

OSHA PEL (8-hour TWA) 5 mg respirable dust/m<sup>3</sup>

Gypsum (CAS #13397-24-5) - approximately 3.0--5.0% by weight

ACGIH TLV-TWA (1996) = 10 mg total dust/m<sup>3</sup>

OSHA PEL (8-hour TWA) = 10 mg total dust/m<sup>3</sup>

OSHA PEL (8-hour TWA) = 5 mg respirable dust/m<sup>3</sup>

Respirable quartz (CAS #14808-60-7) - approximately 0.01 --0.07% by weight

ACGIH TLV-TWA (1996) = 0.10 mg respirable dust/m<sup>3</sup>

OSHA PEL (8-hour TWA) = (10 mg respirable dust/m<sup>3</sup>(percent silica + 2)]

NIOSH REL (8-hour TWA) = 0.05 mg respirable dust/m<sup>3</sup>

Chromates(CAS Various) - approximately 0—0.005% by weight

ACGIH TLV-TWA (1996) = 0.05 mg (Cr)/m<sup>3</sup>

OSHA PEL (8-hour TWA) = 0.1 mg (CrO<sub>3</sub>)/m<sup>3</sup>

Nuisance dust

ACGIH TLV-TWA (1996) = 5 mg respirable dust/m<sup>3</sup>

ACGIH TLV-TWA (1996) = 10 mg total dust/m<sup>3</sup>

OSHA PEL (8-hour TWA) = 15 mg total dust/m<sup>3</sup>

OSHA PEL (8-hour TWA) = 5 mg respirable dust/m<sup>3</sup>

Trace Ingredients

Trace amounts of naturally occurring chemicals might be detected during chemical analysis. Trace constituents may include up to 0.75% insoluble residue, some of which may be free crystalline silica, calcium oxide (also known as *lime* or *quick lime*), magnesium oxide, sodium sulfate, chromium compounds, and nickel compounds.

**Section 3 - HAZARD IDENTIFICATION**Emergency Overview

Portland cement is a white powder that poses immediate hazard. A single short-term exposure to the dry powder is not likely to cause serious harm. However, exposure of sufficient duration to wet portland cement can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry portland cement.

Potential Health Effects**Relevant Routes of Exposure**

Eye contact, skin contact, inhalation, and ingestion.

**Effects Resulting from Eye Contact:**

Exposure to airborne dust may cause immediate or delayed irritation or inflammation. Eye contact by large amounts of dry powder or splashes of wet portland cement may cause effects ranging from moderate eye irritation to chemical burns or blindness. Such exposures require immediate first aid (See Section 4) and medical attention to prevent significant damage to the eye.

**Effects Resulting from Skin Contact:**

Discomfort or pain cannot be relied upon to alert a person to hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing skin contact, particularly with wet cement. Exposed persons may not discomfort until hours after the exposure has ended and significant injury has occurred.

Dry portland cement contacting wet skin or exposure to moist or wet masonry cement may cause more severe skin effects including: thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe damage in the form of (alkali) chemical burns.

Some individuals may exhibit an allergic response upon exposure to portland cement, possibly due to trace elements of chromium. The response may appear in a variety of forms ranging from a mild rash to severe skin ulcers. Persons already sensitized may react to their first contact with the product. Other persons may first experience this effect after years of contact with portland cement products.

**Effects Resulting from Inhalation:**

Portland cement may contain trace amounts of free crystalline silica. Prolonged exposure to respirable free silica can aggravate other lung conditions and cause *silicosis*, a disabling and potentially fatal lung disease.

Exposure to portland cement may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

**Effects Resulting from Ingestion:**

Although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Portland cement *should not* be eaten.

**Carcinogenic potential:**

Portland cement is not listed as a carcinogen by NTP, OSHA, or IARC. It may however, contain trace amounts of substances listed as carcinogens by these organizations.

*Crystalline silica*, a contaminate in portland cement, is now classified by IARC as a known human carcinogen (Group I). NTP has characterized respirable silica as "reasonably anticipated to be a] carcinogen".

**Medical conditions which may be aggravated by inhalation or dermal exposure:**

Pre-existing upper respiratory and lung diseases.  
Unusual (hyper) sensitivity to hexavalent (chromium+6) salts.

Section 4 - FIRST AID**Eyes:**

Immediately flush eyes thoroughly with water. Continue flushing for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

**Skin:**

Wash skin with cool water and pH-neutral soap or mild detergent. Seek medical treatment in all cases of prolonged exposure to wet cement, cement mixtures, or liquids from fresh cement products, or prolonged wet skin exposure to dry cement.

**Inhalation of Airborne Dust:**

Remove to fresh air. Seek medical help if coughing and other symptoms do not subside.

**Ingestion:**

Do not induce vomiting. If conscious, have the victim drink plenty of water, and call a physician immediately.

Section 5-- FIRE AND EXPLOSION DATA

Flash point	None	Lower explosive limit	None
Upper explosive limit	None	Auto ignition temperature	Not Combustible
Extinguishing media	Not Combustible	Special Fire-fighting procedures	None
Hazardous combustion products	None	Unusual fire & explosion hazards	None

Section 6-ACCIDENTAL RELEASE MEASURES

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate protective equipment as described in **Section 8**.

Scrape up wet material and place in an appropriate container. Allow material to "dry" before disposal. Do not attempt to wash masonry cement down drains.

Dispose of waste material according to local, state and federal regulations.

Section 7 - HANDLING AND STORAGE

Keep portland cement dry until used. Normal temperatures and pressure do not affect the material.

Promptly remove dusty clothing or clothing which is wet with cement fluids and launder before reuse. Wash thoroughly after exposure to dust or wet cement mixtures or fluids.

Section 8-- EXPOSURE CONTROLS/PERSONAL PROTECTION**Skin Protection**

Prevention is essential in avoiding potentially severe skin injury. Avoid contact with unhardened portland cement. If contact occurs, properly wash affected area with soap and water. Where prolonged exposure to unhardened portland cement products might occur, wear impervious clothing and gloves to eliminate skin contact. Wear sturdy boots that are impervious to eliminate foot and ankle exposure.

Do not rely on barrier creams. Barrier creams should not be used in place of gloves.

Periodically wash areas contacted by dry portland cement, or by wet cement or concrete fluids, with a pH-neutral soap. Wash again at the end of work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet cement, it should be removed and replaced with clean, dry clothing.

**Respiratory Protection:**

Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits

**Respiratory Protection – Cont'd.**

Use NIOSH/MSHA-approved (under 30 CFR 11) or NIOSH-approved (under 42 CFR 84) respirators in poorly ventilated areas, if an applicable exposure limit has been exceeded, or when dust causes discomfort or irritation. (Advisory: Respirators and filters purchased after **June 10, 1998** must be certified under 42 CFR 84).

**Ventilation:**

Use local exhaust or general dilution ventilation to control exposure within applicable limits.

**Eye Protection:**

Where potentially subject to splashes or puffs of cement, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with portland cement or fresh cement products.

**Section 9-- PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	White powder	Odor	No distinct odor
Physical State	Solid (powder)	pH in water	12 to 13
Solubility in water	Slightly soluble (0.1 to 1.0%)	Vapor pressure	Not applicable
Vapor density	Not applicable	Boiling point	Not applicable
Melting point	Not applicable	Specific gravity(H <sub>2</sub> O=1)	2.75-- 2.80
Evaporation point	Not applicable		

**Section 10--STABILITY AND REACTIVITY****Stability:**

Stable.

**Conditions to Avoid:**

Unintentional contact with water.

**Incompatibility:**

Wet portland cement is alkaline. As such it is incompatible with acids, ammonium salts, and phosphorus.

**Hazardous Decomposition:**

Will not spontaneously occur. Adding water produces (caustic) calcium hydroxide.

**Hazardous Polymerization:**

Will not occur.

**Section 11--TOXICOLOGICAL INFORMATION**

For a description of available, more detailed toxicological information, contact the supplier or manufacturer.

**Section 12- ECOLOGICAL INFORMATION****Ecotoxicity:**

No recognized unusual toxicity to plants or animals.

**Relevant Physical and Chemical Properties:**

(See Sections 9 and 10)

**Section 13-- DISPOSAL**

Dispose of waste material according to local, state and federal regulations. (Since portland cement is stable, uncontaminated material may be saved for future use.)

Dispose of bags in an approved landfill or incinerator.

**Section 14- TRANSPORTATION DATA****Hazardous Materials Description/ Proper Shipping Name:**

Portland cement is not hazardous under U.S. Department of Transportation (DOT) regulations.

**Hazard Class:**

Not applicable.

**Identification Number:**

Not applicable.

**Required Label Text:**

Not applicable.

**Hazardous Substances/ Reportable Quantities(RQ):**

Not applicable.

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**Section 15-OTHER REGULATORY INFORMATION****Status under USDOL Hazard Communication Rule 29 CFR 1920.1200:**

Portland cement is considered a hazardous chemical" under this regulation, and should be part of any hazard communication program.

**Status under CERCLA/SUPERFUND 40 CFR 117 and 302:**

Not listed.

**Hazard Category under SARA (Title III).Section.311 and 312:**

Portland cement qualifies as a hazardous substance with delayed health effects.

**Status under SARA (Title III).Section 313:**

Not subject to reporting requirements under Section 313.

**Status under TSCA (as of May, 1997):**

Some substances in portland cement are on the TSCA inventory list.

**Status under the Federal Hazardous Substances Act:**

Portland cement is a "hazardous substance" subject to statutes promulgated under the subject act.

**Status under California Proposition 65:**

This product contains up to 0.05% (percent) of chemicals (trace elements) known to the State of California to cause cancer, birth defects, or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove that the defined risks do not exist.

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**Section 16-OTHER INFORMATION****Status under Canadian Environmental Protection Act:**

Not Listed.

**Status under WHMIS:**

Portland cement is considered a hazardous material under the Hazardous Products Act, as defined by the Controlled Products Regulations (Class E - Corrosive Materials) and is therefore subject to the labeling and MSDS requirements of the Worldwide Hazardous Materials Information System (WHMIS).

**Prepared by:**

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Manager marketing and Technical Services

**Approval Date or Revision Date:**

April, 2002.

**Date of Previous MSDS:**

January, 2001.

**Other Important Information:**

Portland cement should be used by knowledgeable persons. A key to using the product safely requires the user to recognize that portland cement chemically reacts with water, and that some of the intermediate products of this reaction (that is, those present while a portland cement product is setting) pose a more severe hazard than does dry portland cement itself.

While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards of portland cement 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.

SELLER MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Federal White Cement except that the product shall conform to contracted specifications. The information provided herein was believed by Federal White Cement to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of the product, and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or nondelivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with portland cement to produce portland cement products. Users should review other relevant material safety data sheets before working with this portland cement or working with portland cement products, for example, portland cement concrete.