



MATERIAL SAFETY DATA SHEET
(OSHA 29 CFR 1910.1200)
FOR PORTLAND CEMENT
CAS #65997-15-1

SECTION I - IDENTITY

Manufacturer's Name and Address: Buzzi Unicem USA Inc.
100 Brodhead Road
Bethlehem PA, 18017
Emergency Telephone Number: (800-424-9300) Chemtrec
Information Telephone Numbers: (317) 706-3300
(888) 422-2425
Date of Preparation: 08/01/04
Common Name and Synonyms: Portland Cement, Hydraulic Cement, Oil Well Cement
Trade Name and Synonyms: Lone Star Portland cement
Incor® Portland Cement

SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

Chemical Family: Calcium Salts

Ingredients*

Tri Calcium Silicate, $3\text{CaO}\cdot\text{SiO}_2$ (CAS #12168-85-3)
Di Calcium Silicate, $2\text{CaO}\cdot\text{SiO}_2$ (CAS #10034-77-2)
Tri Calcium Aluminate, $3\text{CaO}\cdot\text{Al}_2\text{O}_3$ (CAS #12042-78-3)
Calcium Aluminoferrite, a solid solution (CAS #12068-35-8)
Gypsum $\text{CaSO}_4\cdot 2\text{H}_2\text{O}$ (CAS #13397-24-5)
Small amounts of CaO, MgO, Na_2SO_4 and K_2SO_4 may be present.

*Since portland cement is manufactured from materials mined from the earth (limestone, shale, sand, gypsum), and process heat is provided by burning fuels derived from the earth, trace but detectable amounts of naturally occurring metals, and possibly harmful elements may be found during chemical analysis. Under ASTM Standards, portland cement may contain up to 0.75 percent insoluble residue. More than 0.1% of these residues may be free crystalline silica.

SECTION III - PHYSICAL / CHEMICAL CHARACTERISTICS

Solubility in Water - Slight (0.1 - 1.0%)
Specific Gravity - 3.15
Gray colored powder with no odor

The following properties are not applicable as portland cement is a solid in powder form:

Boiling point, vapor pressure, vapor density, melting point, evaporation rate.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Portland cement is non-combustible and not explosive. Therefore there are no flammable or explosive limits nor unusual fire and explosion hazards.

SECTION V - REACTIVITY DATA

Portland cement is stable.

Portland cement will not polymerize.

Portland cement is incompatible with aluminum powder and other alkali and alkaline earth elements which will react in wet mortar or concrete, liberating hydrogen gas. Keep portland cement dry until used to preserve product utility.

SECTION VI HEALTH HAZARD DATA

Portland cement is classified as a nuisance dust by OSHA (Occupational Safety and Health Administration), MSHA (Mine Safety and Health Administration), and ACGIH (American Conference of Governmental Industrial Hygienists). As such, OSHA Permissible Exposure Limit is 5 mg/m³ for respirable dust and 10 mg/m³ for total dust; and for ACGIH total dust containing no asbestos and less than 1% silica, Threshold Limit Value is 10 mg/m³. Portland cement is not known to cause cancer, however, free crystalline silica from gypsum may be present at more than 0.1%. Free crystalline silica can cause cancer. Exposure to portland cement can affect the skin, the eyes, and mucous membranes.

Acute Exposure: Wet portland cement, especially as an ingredient in plastic (unhardened) concrete, mortar or slurries, forms a strong chemical base and can dry the skin, and cause severe alkali burns. Portland cement dust can irritate the eyes and upper respiratory system.

Chronic Exposure: Portland cement dust can cause inflammation of the lining tissue of the interior of the nose, and inflammation of the cornea. Individuals who are allergic to chromium may develop an allergic dermatitis. (Portland cement may contain traces of chromium)

Emergency First Aid Procedures: Irrigate (flood) eyes immediately and repeatedly with clean water. Wash exposed skin areas with soap and water. Apply sterile dressings. Get prompt medical attention.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

If portland cement is spilled, it can be cleaned up using dry methods that do not disperse dust into the air. Avoid breathing the dust. Emergency procedures are not required.

Portland cement can be treated as a common waste for disposal, or returned to the container for later use if it is not contaminated or wet.

SECTION VIII - CONTROL MEASURES

In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended.

Local exhaust can be used, if necessary, to control airborne dust levels.

The use of barrier creams or impervious gloves, boots, and clothing to protect the skin from contact with wet portland cement is recommended.

Following work with portland cement, workers should shower with soap and water.