



# Illinois Cement Company

## Safety Data Sheet

Date of Issue: June 9, 2015

### PORTLAND CEMENT

## 1 IDENTIFICATION

**1.1 Product Names:** Illinois Cement Company LLC - Types I, III, Product, Bantox, Hardie

### 1.1.1 Product Code

Standard Industrial Classification: 3241

### 1.1.2 Chemical Family

Calcium compounds. Calcium silicate compounds and other calcium compounds containing iron and aluminum make up the majority of this product. Major compounds:

3CaO SiO<sub>2</sub> Tricalcium silicate CAS#12168-85-3

2CaO SiO<sub>2</sub> Dicalcium silicate CAS#10034-77-2

3CaO Al<sub>2</sub>O<sub>3</sub> Tricalcium aluminate CAS#12042-78-3

4CaO Al<sub>2</sub>O<sub>3</sub> Fe<sub>2</sub>O<sub>3</sub> Tetracalcium aluminoferrite CAS#12068-35-8

CaSO<sub>4</sub> 2H<sub>2</sub>O Calcium sulfate dihydrate or Gypsum CAS#7778-18-9

CaCO<sub>3</sub> Limestone CAS#471-34-1

### 1.1.3 Chemical Name and Synonyms

Portland cement, also known as hydraulic cement.

### 1.1.4 Formula

These products consists of finely ground Portland cement clinker mixed with a small amount of calcium sulfate, and possibly limestone.

## 1.2 Supplier/Manufacturer

Illinois Cement Company LLC  
1601 Rockwell Rd  
LaSalle, IL 61301

### 1.2.1 Emergency Contact Information

Safety Director, 815-224-2112

### 1.3 Trace Elements

Portland cement is made from materials mined from the earth and is processed using energy provided by fuels; and therefore may contain trace amounts of naturally occurring materials which might be detected during chemical analysis. For example: Portland cement may contain up to 0.75% insoluble residue, of which <0.1% may be free crystalline silica. Other trace constituents may include potassium and sodium sulfate compounds, chromium compounds, and nickel compounds.

## 2 HAZARDS IDENTIFICATION/TOXICOLOGICAL INFORMATION



### 2.1 Emergency Overview

Portland cement is a light gray powder that poses little 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 (including skin or eye) destruction in the form of chemical (caustic) burns, including third degree 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.

### 2.2 Potential Health Effects

#### 2.2.1 Eye contact

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

#### 2.2.2 Skin contact

Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing or avoiding skin contact, particularly contact with wet cement. Persons exposed to wet cement may not feel discomfort until hours after the exposure has ended and significant injury has occurred. Exposure to dry Portland cement may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Dry Portland cement contacting wet skin or exposure to moist or wet Portland cement may cause more severe skin effects including thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (caustic) chemical burns. Some individuals may exhibit an allergic response upon exposure to Portland cement, possibly due to trace amounts 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 hydraulic cement products.

#### 2.2.3 Inhalation

Portland cement may contain trace amounts (<0.1%) of free crystalline silica. Prolonged exposure to respirable free crystalline silica may aggravate other lung conditions. It also may cause delayed lung injury including 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.

#### 2.2.4 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 under any circumstances.

### 2.3 Carcinogenic Potential

Portland cement is not listed as a carcinogen by IARC, NTP, or OSHA. It does, however, contain trace amounts (<0.1%) of substances listed as carcinogens by some of these organizations. Crystalline silica is now classified by IARC as a known human carcinogen (Group 1). NTP has characterized respirable crystalline silica as "reasonably anticipated to be (a) carcinogen".

### 2.4 Medical Conditions Which May Be Aggravated By Inhalation or Dermal Exposure

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

## 3 COMPONENTS

### OSHA PEL ACGIH TLV-TWA NIOSH REL

#### 3.1 Hazardous Substances (8-Hour TWA) (1995 - 1996) (8-Hour TWA)

Portland Cement Clinker (CAS#65997-15-1) 50 million particles/ft<sup>3</sup> 10mg total dust/m<sup>3</sup>

Nominal 95% by weight

Calcium sulfate (CAS#7778-18-9) 5mg respirable dust/m<sup>3</sup> 10mg total dust/m<sup>3</sup>

[Gypsum (CAS#13397-24-5)] 10mg total dust/m<sup>3</sup>

Nominal 5% by weight

Calcium Oxide (CAS#1306-78-8) 5mg/m<sup>3</sup> 2mg/m<sup>3</sup>

(Free Lime)< 3% by weight

Magnesium Oxide (CAS #1309-48-4) 15mg total dust/m<sup>3</sup> 10mg total dust/m<sup>3</sup>

< 5% by weight

## 4 FIRST AID

### 4.1 Eyes

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

### 4.2 Skin

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

### 4.3 Inhalation of Airborne Dust

Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. (Inhalation of gross amounts of Portland cement requires immediate medical attention.)

### 4.4 Ingestion

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

## 5 FIRE & 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 (Although Portland cement poses no fire-related hazards, a self-contained breathing apparatus is recommended to limit exposure to combustion products when fighting any fire.)

Hazardous Combustion Products: None

Unusual Fire and Explosion Hazards: None

Hydrocarbons: None

## 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 personal protective equipment as described in Section 8. Scrape up wet material and place in an appropriate container. Allow the material to “dry” before disposal. Do not attempt to wash Portland cement down drains. Dispose of waste material according to local, state and federal regulations.

## 7 HANDLING AND STORAGE

Keep Portland cement dry until used. Normal temperature and pressure do not affect the materials. 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 mixture or fluids.

## 8 EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.1 Skin Protection

Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened (wet) Portland cement products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened Portland cement products might occur, wear impervious clothing and gloves and boots to eliminate skin contact.

### 8.2 Respiratory Protection

Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits. Use NIOSH/MSHA-approved respirators in poorly ventilated areas when dust causes discomfort or irritation, or where there is an applicable exposure limit (Advisory: Respirators and filters purchased after July 10, 1998 must be certified under 42 CFR 84).

### 8.3 Ventilation

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

### 8.4 Eye Protection

When engaged in activities where cement dust or wet cement or concrete could contact the eye, 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.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Gray or White powder

Odor: No distinct odor

Physical state: Solid (powder)

PH (in water) (ASTM D 1293-95): 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 (i.e. > 1000°C)

Melting point: Not applicable

Specific gravity (H<sub>2</sub>O = 1.0): 3.15

Evaporation rate: Not applicable

VOC: None

## **10 STABILITY AND REACTIVITY**

### **10.1 Stability**

Stable when properly stored (dry). Contact with incompatible materials such as acids, ammonia salts or aluminum should be avoided as flammable hydrogen can be released.

### **10.2 Conditions to Avoid**

Unintentional contact with water.

### **10.3 Incompatibility**

Wet Portland cement is alkaline. As such it is incompatible with acids, ammonium salts and aluminum metal.

### **10.4 Hazardous Decomposition**

Will not spontaneously occur. Adding water results in hydration and produces (caustic) calcium hydroxide.

### **10.5 Hazardous Polymerization**

Will not occur.

## **11 TOXICOLOGICAL INFORMATION - See Section 3**

## **12 ECOLOGICAL INFORMATION**

### **12.1 Eco toxicity**

No recognized unusual toxicity to plants or animals.

### **12.2 Relevant Physical and Chemical Properties**

(See Sections' 9 and 10).

## **13 DISPOSAL**

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

## **14 TRANSPORTATION DATA**

### **14.1 Hazardous Materials Description/Proper Shipping Name**

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

## **15 OTHER REGULATORY INFORMATION**

### **15.1 Status Under USDOL-OSHA Hazard Communication Rule 29 CFR 1910.1200**

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

### **15.2 Status Under CERCLA/Superfund 40 CFR 117 and 302(v)**

Not listed.

### **15.3 Hazard Category Under SARA (Title III) Section 311 and 312**

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

### **15.4 Status Under SARA (Title III) Section 313**

Not subject to reporting requirements under Section 313.

### **15.5 Status Under TSCA (as of May 1997)**

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

### **15.6 Status Under the Federal Hazardous Substances Act**

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

### **15.7 Status Under WHMIS**

Portland cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products regulations (class E - corrosive material) and is therefore subject to the labeling and MSDS requirements of the workplace hazardous materials information system (WHMIS).

## **16 OTHER INFORMATION**

### **16.1 Prepared By:**

Illinois Cement Company LLC  
1601 Rockwell Rd  
LaSalle, IL 61301

### **16.2 Other Important Information**

Portland cement should only be used by knowledgeable persons. Inexperienced product users must obtain proper training before using this product. 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 far more severe hazard than does 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, and does not, 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. Users therefore, should review other applicable material safety data sheets before working with this Portland cement or working with Portland cement Product(s). For example, Portland cement concrete.

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