



PPC

**MATERIAL SAFETY DATA
SHEET FOR CEMENT**

MSDS

1. Product Identification

Manufacturer:
PPC Ltd.
148 Katherine Street
(Cnr Grayston Drive)
Sandton

PPC (telephone): 011 386 9000
PPC Helpline: 0800 023 470
Poison Information Centres: 011 495 5112 / 021 931 6129 / 021 689 5227 (all hours)

(i) Trade name : OPC, SureBuild, SureRoad, UniCem, BotCem.

(ii) Chemical family :
020 Calcium compounds
014 Silicates
026 Iron compounds (ferrites)
013 Aluminum compounds (aluminates)

(iii) Chemical name : Portland cement

(iv) Synonyms : Cement, Portland cement, Portland-composite cement, Blastfurnace cement, pozzolanic cement and Composite cement.

(v) Chemical abstract number : 65997-15-1

(vi) NIOSH number : -

(vii) RTECS number : W8770000

(viii) UN number : Awaiting

2. Composition

Main constituents are calcium silicates, aluminates, ferro-aluminates and sulfates. It contains gypsum and small amounts of sodium, potassium and chromium compounds.

Tricalcium silicate $3\text{CaO}\cdot\text{SiO}_2$	55-70 %	CAS # 12168-85-3
Dicalcium silicate $2\text{CaO}\cdot\text{SiO}_2$	5-20 %	CAS # 1003-77-2
Tricalcium aluminate $3\text{CaO}\cdot\text{Al}_2\text{O}_3$	2-10 %	CAS # 12042-78-3
Tetra calcium aluminoferrite $4\text{CaO}\cdot\text{Al}_2\text{O}_3\cdot\text{Fe}_2\text{O}_3$	5-15 %	CAS # 12068-35-8
Gypsum $\text{CaSO}_4\cdot 2\text{H}_2\text{O}$	2-5 %	CAS # 13397-24-5
Calcium oxide CaO	<1.5 %	CAS # 1305-78-8

Extenders that are inter-ground with Portland cement clinker and gypsum are indicated by the standard designation. They are defined as:

- L – Limestone
- S – Slag
- V – Siliceous fly ash

3. Hazard identification

Hazard Classification – Irritant

ii) Hazard ID - Rating ...

- (a) Health Rating : 1 - Slight
- (b) Flammability : 0 - None
- (c) Instability: 2 - Moderate
- (d) Contact Rating: 2 - Moderate

(iii) Personal Protective Equipment: Wear gloves and long sleeves

(iv) Overview: Cement dust acts as a skin and respiratory irritant. Dust and wet cement act as a serious eye irritant. Long term exposure may lead to contact dermatitis.

4. First Aid Measures

Product in Eye: Wash eyes with large volumes of water. Seek medical attention.
The fornices (behind the eyelids) should always be checked for congealed material.

Product Ingestion: Ingestion in a harmful quantity is very unlikely to occur.
If ingested drink plenty of water and consult a doctor immediately. **DO NOT INDUCE VOMITING.**

Product Inhaled: Remove exposed person to fresh air. Prolonged exposure at high dust concentrations may cause a cough and phlegm.

Product on Skin: Wash with water and soap.

Note to Medical Practitioner: n.a.

5. Fire Fighting Measures

This product is not combustible, use agent most appropriate to extinguish surrounding fire.

6. Accidental Release Measures

Personal precautions

Dust mask where TLV is exceeded. Wear eye shielding. Any type of glove which prevents contact with the product

Environmental precautions

Non toxic in small quantities. Large quantities in water will lead to high pH values, up to 12.5. Aquatic life will be endangered.
The cement will harden, possibly forming a crust. It may dissolve slowly in acid conditions

(i) Small spills

(a) Containment Sweep up. Prevent dust becoming airborne

(b) Clean-up Sweep up. Prevent dust becoming airborne

(ii) Large spills

(a) Containment Sweep up. Prevent dust becoming airborne

(b) Clean-up Sweep up. Prevent dust becoming airborne

7. Handling / Storage

During handling aerated cement has liquid properties which disperse after settlement.

Storage Colour Code : Orange

Suitable Material Paper or plastic bags. Silos, bins

8. Exposure controls/ Personal Protection

Occupational exposure limits TWA OEL RL 5mg/m³ respirable dust, 10mg/m³ total inhalable dust.
Personal protection Dust mask, safety glasses or goggles, gloves

9. Physical and Chemical properties

Physical Properties

Fine grey to white powder. Particle size < 0.1 mm.
Relative density 2.2 to 3.8 g/ml
Melting point > 1500°C
Alkalinity can exceed pH of 12 in water.

Chemical Properties

No hazardous decomposition products

10. Stability and Reactivity

Stable, but product will solidify over a period of hours if moistened or wet. Absorbs moisture from the air and solidifies over prolonged periods if not kept in a protected dry atmosphere.

11. Toxicological information

Dust acts as a skin and respiratory irritant. Dust and wet cement cause serious eye irritation. Long term exposure may lead to contact dermatitis

12. Ecological information

Non toxic in small quantities. Large quantities in water will lead to high pH values, up to 12.5. Aquatic life will be endangered. The cement will harden, possibly forming a crust. It may dissolve slowly in acid conditions.

13. Disposal considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. Dispose of container and unused contents in accordance with local regulations.

14. Transport Information

In terms of the National Road Traffic Act, act 93 of 1996 regulations and SANS 10228 (The identification and classification of dangerous goods for transport by road and rail modes), Portland cement and cement blends are not hazardous.

In terms of the International Maritime Dangerous Goods Code, Portland cement and cement blends are not hazardous and as such do not have a U.N. number. Portland cement is listed as an Appendix C cargo in terms of the BC code.

15. Regulatory information

Not regulated

16. Other information

Risk phrases R36 R37, R38

Safety phrases S24, S25, S26, S36, S37, S39

- R36 Irritating to eyes.
- R37 Irritating to respiratory system.
- R38 Irritating to skin.

- S24 Avoid contact with skin.
- S25 Avoid contact with eyes.
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S36 Wear suitable protective clothing.
- S37 Wear suitable gloves.
- S39 Wear eye/face protection.

Reference/ source

Author and / or Contact details: Refer to section 1.

External Source of MSDS: The Physical and Theoretical Chemistry Laboratory
Oxford University Chemical and Other Safety Information. <http://ptcl.chem.ox.ac.uk/MSDS/#MSDS>.
NIOSH & SACPA

Information contained in this Material Safety Data Sheet is accurate at the date of publication. The company does not accept liability for any injury, illness, loss or misinterpretation arising from the use of this data.

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