

PRODUCT SAFETY DATA SHEET

Portland Cement



1. Identification of substance.

An odourless white to grey powder, mainly insoluble in water.
When water is added it becomes a binder for construction applications.
It is stored on site in bulk silos and paper bags.

2. Supplier.

The material is imported and distributed by
Dragon Alfa Cement Ltd.
The Cement Terminal
Dock Road
Sharpness Docks
Gloucestershire
GL13 9UX
Tel. (01453 811587) Fax. (01453 811953)

3. Composition / Information on ingredients.

The principle constituents of portland cement are calcium silicates, aluminates, ferro-aluminates and sulphates.
Trace quantities of gypsum and chromium compounds are also present.
The partly soluble ingredients, when mixed with water give rise to a potentially hazardous solution.
Hexavalent chromium salts in the material are soluble and when mixed with water will give rise to a hazardous solution.

4. Hazard Identification

Cement dust has been identified as an irritant.
Direct contact may irritate the skin, eyes, respiratory system and gastrointestinal tract.
When cement is mixed with water it produces a highly alkaline solution (ph about 12) if it comes into contact with the eyes or skin it may cause serious burns and ulceration, the eyes are particularly vulnerable and damage will increase with contact time.
Strong alkali solutions in contact with the skin tend to damage the nerve endings first, before damaging the skin.

Should wet concrete enter the inside of the boots or other PPE then this PPE should be immediately removed and the skin thoroughly washed as well as the contaminated clothing and footwear.

Eye Protection.

Dust proof goggles should worn whenever there is a risk of cement powder entering the eye.

10. Physical/Chemical Properties

.Physical Data.

Physical state	Particulate
Mean particle size	5 – 30 micron
Odour	Not applicable
PH (Wet cement)	12-14
Viscosity	N/A
Freezing point	N/A
Boiling point	N/A
Melting point	N/A
Flash point	Not flammable
Explosive properties	Not explosive
Density	2800 – 3200kg/m ³
Solubility	N/A

Chemical Compounds

Mainly a mixture of	3CaO – SiO ₂ 2CaO – SiO ₂ 3CaO – Al ₂ O ₃ 4CaO – Al ₂ O ₃ – Fe ₂ O ₃ CaSO ₄
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Contains less than 1% crystalline silica

11. Stability and Reactivity

There are no conditions contributing to chemical instability.

There are no decomposition products.

There are no special precautions necessary to prevent an unstable reaction.

12. Toxicological Information.

Short term

Eye contact

Cement is a severe eye irritant. Mild exposure can cause soreness. Gross exposure can lead to chemical burns and ulceration of the eye.

Skin

Cement powder or any cement/water mixture may cause irritant contact dermatitis, allergic (chromium) dermatitis and/or chemical burns.

Ingestion

The swallowing of small amounts of cement or any cement/water mixture is unlikely to cause any significant reaction. Larger doses may cause irritation of gastro-intestinal tract.

Inhalation

Cement powder may cause inflammation of the mucus membranes.

Long term (Chronic) effects.

High repeated exposure in excess of the OES have been linked with rhinitis and coughing.

Skin exposure has been linked to allergic (chromium) dermatitis. Allergic dermatitis more commonly arises through contact with cement/water mixtures than dry cement.

13. Ecological Information. Aquatic Toxicity rating

LC aquatic toxicity rating not determined. The addition of cements to water will however cause the pH to rise and may therefore be toxic to aquatic life in some circumstances.

Biological Oxygen Demand (BOD)

Not Applicable

14. Disposal Considerations

Dispose of surplus cement at an authorised waste site in line with the duty of care required under environmental legislation.

15. Transport Information

Classification for conveyance – Not required

16. Regulatory Information

This data sheet does not constitute an assessment as required under the Control of Substances Hazardous to Health Regulations 1994 (CoSHH).

The information it contains however will assist the user in carrying out such an assessment.

Chemicals (Hazard Information and packaging and supply)
Regulations 1996. Classification – Irritant

Risk Phrases

R36/37/38: Irritating to eyes, respiratory system and skin

Safety Phrases

S1: Keep out of reach of children

S24/25: Avoid contact with skin and eyes

S26: In case of contact with eyes, rinse with plenty of water and seek medical advice.

S36/37/39 Wear suitable protective clothing, gloves and eye protection.

17. Legislation and Other Information.

CONIAC Health and Safety Information Sheet No 26 (Cement)

Health and Safety at Work Act 1974.

Control of Substances Hazardous to Health Regulations 1994

HSE Guidance note EH40/97
(Occupational Exposure Limits 1997)

HSE Publication INDG 233
(Preventing dermatitis out of work)

Therefore chemical burns can develop without pain being felt at the time.

Cement mortar and concrete mixes may, until hardened, cause both irritant and allergic contact dermatitis.

5. First Aid Measures.

Eye Contact

Wash eyes immediately with plenty of clean water for at least 15 minutes and seek medical advice without delay.

Skin Contact

Wash the affected area thoroughly with soap and water, If irritation, pain or other skin problems occur, seek medical advice.

Clothing contaminated by wet cement, concrete or mortar should be removed and washed thoroughly before further use.

Ingestion

Do not induce vomiting. Wash out the mouth with clean water and give plenty of water to drink. seek medical advice if discomfort continues.

Inhalation

If irritation occurs move to fresh air, if nose or airways become inflamed seek medical advice.

6. Fire Fighting Measures

Cement is not flammable and will not facilitate combustion with other materials.

7. Accidental release Measures

For personal precautions see section 9

Cleaning up

If possible recover any spillage in the dry state, minimise airborne dust. The product can be slurred by the addition of water but will subsequently set as a hard material.

8. Handling and storage.

Bulk cement should only be stored in silos specifically constructed for cement storage.

These silos should be equipped with dust extraction filters, bulk cement should only be handled by mechanical methods.

Bagged cement should be stacked safely and any stacks should be constructed in a stable manner.

Any pallet used to store bagged cement should be sound and capable of supporting the weight of the load.

Bagged cement may have cement on its outer surface, when manually handling cement bags suitable gloves and overalls should be worn. If there is the possibility of cement dust entering the eye then protective dust proof goggles should also be worn. If there is the possibility of dust concentrations exceeding the Occupational Exposure Limit (5mg/m³ 8hr TWA) then suitable respiratory equipment should be used.

The handling of cement bags is subject to the Manual Handling Operations Regulations 1992. The risks outlined in these regulations should be considered.

9 Exposure Controls / Personal Protection.

Occupation Exposure Standard (OES)
OES 8hr Time weighted Average (TWA) . EH40/97
10mg/m³ total inhalable dust
4mg/m³ respirable dust.

Engineering Measures
Where reasonably practicable dust exposure should be controlled by engineering methods

Personal Protective Equipment (PPE)

Respiratory Protection
Suitable respiratory protection should be worn to ensure that personal exposure is less than the OSE.

Hand and Skin Protection.
Protective clothing should be worn which ensures cement or any cement / water mixture does not come into contact with the skin. In some circumstances such as when laying concrete waterproof trousers and wellingtons may be necessary.
Particular care should be taken to ensure that wet concrete does not enter the boots and persons do not kneel on the wet concrete so as to bring the wet concrete into contact with the unprotected skin.