

Uniclass L621:C506	EPIC F2112:Y44	Aug 06
CI/SfB	Eq2	(U47)

Health and Safety data sheet



Health & Safety guidelines for the use of:
Portland Cements
Portland – Limestone Cements
Portland – Fly Ash Cements
Calcium Aluminate Cement
Geo – Environmental Cements
Readybag Products

1. Identification of substance

An odourless white to grey powder insoluble in water. When water is added it becomes a binder for construction applications. This data sheet applies to the following cements: Castle Multicem; Castle Cement; Castle Ordinary Portland Cement (OPC); Castle High Strength 52,5; Castle Rapid Hardening Portland Cement (RHPC); Castle Sulfate-resisting; Castle Sulfate-resisting Portland Cement (SRPC); Castle White Portland Cement; Castle Masonry Cement; Castle Quickcem; Castle High Alumina Cement; Castle Portland – Limestone Cement; Castle Portland – Fly Ash Cement; Castle General Purpose Grouts; Castle Depocrete; Castle Protomix; Castle Readybag Concrete General Purpose Mix; Castle Readybag Concrete 40N Mix; Castle Readybag Post Mate; Castle Readybag High Performance Post Mix and Castle Readybag Mortar General Purpose Mix.

2. Supplier/manufacturer

Castle Cement Limited
Park Square
3160 Solihull Parkway
Birmingham Business Park
Birmingham B37 7YN

Castle Cement Technical Helpline
tel: 0845 722 7853
fax: 01780 727154
e-mail: technical.help@castlecement.co.uk

3. Composition/information on ingredients

3.1 Chemical description

The principal constituents of these cements are calcium silicates, aluminates, ferro-aluminates and sulfates. Small amounts of alkalis, lime, magnesia and chlorides are also present together with trace amounts of chromium compounds.

Additional constituents may also be present e.g. pulverised-fuel ash, limestone, clay and granulated blastfurnace slag. Castle Multicem and Castle Masonry Cement also contain an air entraining agent and Castle Masonry Cement contains up to 25% filler material. CAS: 659971-15-1.

3.2 Hazardous ingredients

- a) The lime, calcium silicates and alkalis within the cement are partially soluble and when mixed with water will give rise to a potentially hazardous alkaline solution.
- b) Soluble chromium (VI) in these cements are soluble and when mixed with water will give rise to a potentially hazardous solution.

4. Hazards identification

4.1 When cement is mixed with water such as when making concrete or mortar, or when the cement becomes damp, a strong alkaline solution is produced. If this 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 alkaline solutions in contact with the skin tend to damage the nerve endings first before damaging the skin, therefore chemical burns can develop without pain being felt at the time.

4.2 Cement, mortar and concrete mixes may, until set, cause irritant dermatitis:

- Irritant contact dermatitis is due to a combination of the wetness, alkalinity and abrasiveness of the constituent materials.

If used outside of the declared shelf life, there may be a risk of allergic dermatitis.

- Allergic dermatitis is caused mainly by the sensitivity of an individual's skin to soluble chromium (VI).

5. First aid measures

5.1 Eye contact

A speedy response is essential in order to avoid permanent damage to the eyes. Wash eyes immediately with plenty of clean water for at least 15 minutes and seek medical advice without delay.

5.2 Skin contact

Wash the affected area thoroughly with soap and water before continuing. If irritation, pain or other skin trouble occurs, seek medical advice. Clothing contaminated by wet cement, concrete or mortar should be removed and washed thoroughly before use.

5.3 Ingestion

Do not induce vomiting. Wash out mouth with water and give patient plenty of water to drink.

5.4 Inhalation

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

6. Fire-fighting measures

6.1 Cements are not flammable and will not facilitate combustion with other materials.

7. Accidental release measures

7.1 Personal precautions

See 9.4

7.2 Cleaning up

Recover the spillage in a dry state if possible. Minimise generation of airborne dust. The product can be slurried by the addition of water but will subsequently set as a hard material. Keep children away from clean up operation.

8. Storage and handling

8.1 Storage

Bulk cement must be stored in silos that are waterproof, clean and protected from contamination, dry (internal condensation minimised) with stock rotated in chronological order of the despatch dates marked on delivery tickets.

Packed products must be stored in unopened bags clear of the ground in cool, dry conditions and protected from excessive draught.

Bags should be stacked in a safe and stable manner.

8.2 Handling

When handling cement bags, due regard should be paid to the risks outlined in the Manual Handling Operations Regulations. Some bags may have a small amount of cement on the outer surface. Appropriate personal protective clothing (see 9.4) should therefore be used whilst handling.

9. Exposure controls/personal protection

9.1 Occupational Exposure Limit (OEL)

OEL 8hr Time Weighted Average (TWA)
10mg/m³ total inhalable dust
4mg/m³ respirable dust

9.2 Engineering measures

Where reasonably practicable dust exposures should be controlled by engineering methods.

9.3 Stock control

Castle Cement treats all affected cements with a reducing agent to protect the end-user against the effects of soluble chromium (VI). Note: However, the reducing agent is only guaranteed to offer protection during the declared shelf life of the product. Thereafter, there may be a risk of allergic dermatitis. Therefore, using cement within its shelf life offers the best protection against allergic dermatitis.

9.4 Personal protective equipment

- a) Respiratory protection – suitable respiratory protection should be worn to ensure that personal exposure is less than the OEL.
- b) Hand and skin protection – protective clothing should be worn which ensures that cement, or any cement/water mixture, e.g. concrete or mortar, 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 unprotected skin. Should wet mortar or wet concrete get inside boots, gloves or other protective clothing then this protective clothing

should be immediately removed and the skin thoroughly washed as well as the protective clothing/footwear.

- c) Eye protection – dust-proof goggles should be worn wherever there is a risk of cement powder or any cement/water mixture entering the eye.

10. Physical/chemical properties

10.1 Physical data

Physical state	Particulate
Mean particle size	5-30 microns
Odour	Not Applicable (N/A)
pH	pH of wet cement 11-14
Viscosity	N/A
Freezing point	N/A
Boiling point	N/A
Melting point	N/A
Flash point	N/A (not flammable)
Explosive properties	N/A (not explosive)
Density	2750-3200kg/m ³
Solubility	N/A

10.2 Chemical compounds

Mainly a mixture of:	3 CaO – SiO ₂ 2 CaO – SiO ₂ 3 CaO – Al ₂ O ₃ 4 CaO – Al ₂ O ₃ – Fe ₂ O ₃ CaSO ₄ MgO
----------------------	---

Contains less than 1% crystalline silica.

11. Stability and reactivity

Conditions contributing to chemical instability: none
Hazardous decomposition products: none
Special precautions: none

12. Toxicological information

12.1 Short term effects

- a) Eye contact – cement is a severe eye irritant. Mild exposure can cause soreness. Gross exposures or untreated mild exposures can lead to chemical burning and ulceration of the eye.
- b) Skin contact – cement powder or any cement/water mixture may cause chemical burns and/or irritant contact dermatitis. If used outside of the declared shelf life, there may be risk of allergic dermatitis.
- c) Ingestion – the swallowing of small amounts of cement or any cement/water mixtures is unlikely to cause any significant reaction. Larger doses may result in irritation to the gastrointestinal tract.
- d) Inhalation – cement powder may cause inflammation of mucous membranes.

12.2 Chronic effects

High repeated exposures in excess of the OEL have been linked with rhinitis and coughing. Skin

exposure to cement outside of its declared shelf life may cause allergic dermatitis. Allergic dermatitis more commonly arises through contact with cement/water mixtures than dry cement.

13. Ecological information

13.1 Aquatic toxicity rating

LC50 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.

13.2 Biological Oxygen Demand (BOD)

Not applicable.

14. Disposal considerations

Dispose of empty bags or surplus cement to a place authorised to accept builders' waste. Keep out of the reach of children.

15. Transport information

Classification for conveyance – not required.

16. Regulatory information

16.1 Chemicals (Hazard Information & Packaging) Regulations

Classification – Irritant.

16.2 Risk/safety phrases

Risk phrases

- Risk of serious damage to eyes.
- Contact with wet cement, wet concrete or wet mortar may cause irritation, dermatitis or burns.
- Contact between cement powder and body fluids (e.g. sweat and eye fluid) may also cause skin and respiratory irritation, dermatitis or burns.
- Contains chromium (VI). May produce an allergic reaction.

Safety phrases

- Avoid eye and skin contact by wearing suitable eye protection, waterproof clothing, waterproof footwear and waterproof gloves.
- Clothing contaminated by wet cement should be removed immediately and washed before re-use.
- Avoid breathing dust.
- Keep out of reach of children.
- On contact with eyes or skin, rinse immediately with plenty of clean water. Seek medical advice after eye contact.

17. Legislation and other information

- CONIAC Health Hazard Information Sheet No. 26 (CEMENT)
- Health and Safety at Work etc Act 1974
- Control of Substances Hazardous to Health (Regulations)
- PORTLAND CEMENT DUST – criteria document for an occupational exposure limit. June 1994 (ISBN 07176 – 0763 – 1)
- HSE Guidance Notes EH26 (Occupational Skin Diseases – Health and Safety Precautions)
- HSE Guidance Note EH40 (Occupational Exposure Limits)
- Any authorised manual on First Aid by St. John's/St. Andrew's/Red Cross
- Manual Handling Operations Regulations
- Environmental Protection Act

Multicem, Quickem and Readybag are registered trademarks owned by Castle Cement Limited.

For further information please contact:

Castle Cement Limited
Park Square 3160 Solihull Parkway
Birmingham Business Park
Birmingham B37 7YN

Technical Helpline:

tel: 0845 722 7853
(calls charged at local rate)

fax: 01780 727154

technical.help@castlecement.co.uk

Customer Services:

tel: 0845 600 1616
(calls charged at local rate)

fax: 0121 606 1436

customer.services@castlecement.co.uk

L006(Sa)/08/06/pdf