

**HEALTH AND SAFETY DATA SHEET FOR
COMMON CEMENTS AND CEMENT PRODUCTS**

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY UNDERTAKING

1.1 Identification of substance/preparation

Cement. An odourless white to grey powder slightly soluble in water.

This data sheet applies to the following products containing cement: Castle Cement, Castle Ordinary Portland Cement (OPC)

1.2 Use of the substance/preparation

Common cement is used as a hydraulic binder for the production of concrete, mortars, grout etc

2. HAZARDS IDENTIFICATION

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.

2.1 Hazard characterisation

Irritating to respiratory system and skin
Risk of serious damage to eyes
May cause sensitisation by skin contact

2.2 Primary routes of entry

Inhalation	:	Yes
Skin/eyes	:	Yes
Ingestion	:	No, except in accidental cases

2.3 Human health

Inhalation : frequent inhalation of large quantities of cement dust over a long period of time increased the risk of developing lung diseases.

Eyes : Eye contact with cement (dry or wet) may cause serious and potentially irreversible injuries.

Skin : 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. Hence prolonged skin contact with wet cement, fresh concrete or mortar may cause serious burns.

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.

2.4 Environment

Under normal use, the product is not expected to be hazardous to the environment.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Chemical Composition

Common cement types according to the EN 197 – 1 (common cements and EN 197 – 4 (Blas furnace cements). The principal constituents of these cements are calcium silicates, aluminates, ferro-aluminates and sulphates. 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 blast furnace slag.

4. FIRST AID MEASURES

If medical advice is sought take this safety datasheet with you.

4.1 Inhalation

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

4.2 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.

4.3 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, footwear, watches etc contaminated by wet cement, concrete or mortar should be removed and washed thoroughly before use.

4.3 Ingestion

Do not induce vomiting. If person is conscious, wash out mouth with water and give plenty of water to drink. After significant ingestion seek immediate medical attention.

5. FIRE-FIGHTING MEASURES

Cements are non-flammable and non-explosive. They will not facilitate combustion with other materials and all types of extinguishing media are suitable. No additional specialist equipment is required by fire fighters.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Protective Measures

Wear protective equipment as described under Heading 8 and follow the advice for safe handling and use given under Heading 7.

6.2 Environmental Protection Measures

Do not wash cement down sewage and drainage systems or into bodies of water (e.g. streams).

6.3 Methods for cleaning up

Recover the spillage in a dry state if possible. Keep children away from clean up operations.

Dry cement

- Use dry clean up methods that do not cause airborne dispersion, for example an industrial vacuum cleaner equipped with high efficiency particulate filters (HEPA filter) or an equivalent technique or;
- Clear up the dust by mopping, wet brushing or by spraying with water (fine mist to avoid the dust becoming airborne) and remove slurry

Wet cement

- Clean up wet cement and place in a container. Allow material to dry and solidify before disposal as described under Heading 13

7. HANDLING & STORAGE

7.1 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 Heading 8) should therefore be used whilst handling.

Avoiding generating dust :-

For bagged cement used in open ended mixers: first add water and then carefully add the cement. Keep the height of the fall low. Start the mixing smoothly. Do not compress empty bags, except when contained in another clean bag.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure limit values

WEL 8hr time weighted average (TWA)

10 mg/m³ total inhalable dust

4 mg/m³ respirable dust

8.2 Exposure Controls

8.2.1 Occupational exposure controls

Respiratory protection : suitable respiratory protection should be worn to ensure that personal exposure is less than the WEL. This should conform to the relevant standard.

Eye protection : Dust-proof goggles should be worn wherever there is a risk of cement powder or any cement/water mixture entering the eye. This should conform to EN 166.

Hand and skin protection : Use waterproof abrasion and alkali resistant gloves.

Waterproof clothing gloves and boots should be worn which ensure 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.

Do not eat, drink or smoke when working with cement to avoid contact with the skin or mouth.

Immediately after working with cement-containing materials, workers should wash, shower or use skin moisturisers. Remove contaminated clothing, footwear, watches etc and clean thoroughly before re-using them.

9. TOXICOLOGICAL INFORMATION

9.1 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) Acute dermal toxicity : acute dermal toxicity : limit test, rabbit, 24 hours contact, 2.000 mg/kg body weight – no lethality
- d) 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.
- e) Inhalation – cement powder may cause inflammation of mucous membranes. Coughing, sneezing and shortness of breath may occur following exposures in excess of occupational exposure limits.

9.2 Chronic effects

- a) Inhalation – Chronic exposure to respirable dust in excess of occupational exposure limits may cause coughing, shortness of breath and may cause chronic obstructive lung disease.
- b) Carcinogenicity – a casual association between cement exposure and cancer has not been established
- c) Contact dermatitis / sensitising effects – some individuals may exhibit eczema upon exposure to wet cement caused by either the high pH which induces irritant contact dermatitis, or by an immunological reaction to soluble Cr (VI) which elicits allergic contact dermatitis. The response may appear in a variety of forms ranging from a mild rash to severe dermatitis and is a combination of those two mechanisms. An exact diagnosis is often difficult. If the cement contains a soluble Cr (VI) reducing agent and as long as the mentioned period of effectiveness is not exceeded a sensitising effect is not expected.

9.3 Medical conditions aggravated by exposure

Inhaling cement dust may aggravate existing respiratory system disease (s) and/or medical conditions such as emphysema or asthma and / or existing skin and / or eye conditions.