

# Ready-mixed concrete and mortar

## Material safety data sheet

### 01. Identification of substance/ preparation and company undertaking

**Name of substance:** Ready-mixed concrete and mortar.  
This safety datasheet applies to cement-containing products.

### 02. Hazard identification

Classification according to Directive 67/548/EEC:

**Hazardous – Irritant** R34, R38, R41, R43

Classification according to Regulation EC 1272/2008:

**Signal Word: Danger**

STOT SE3, Eye damage 1, Skin Sensitisation 1, Skin Irritation 2. H315, H317, H318, H335, H372

**Wet concrete can cause serious alkali burns if in direct contact with skin or eyes.**

#### Skin

Alkali burns, a form of skin ulceration, may result from contact with freshly mixed concrete.

Contact with strongly alkaline solutions such as concrete can initially cause nerve damage. Chemical burns may occur without the person being aware because they do not feel any pain.

Contact with wet cement mixes such as wet concrete can cause skin disease. Irritant contact dermatitis is caused by the combination of the wetness, alkalinity and abrasiveness of the ready-mixed concrete.

Allergic contact dermatitis may be caused by individual sensitivity to chromium compounds in cement.

#### Eyes

Wet concrete in contact with eyes can cause irritation, inflammation or serious alkali burns, which may lead to blindness.

#### Ingestion

Swallowing small amounts of fresh concrete is unlikely to cause any significant reaction.  
Larger amounts can cause irritation of the stomach and intestines.

#### Inhalation

Wet concrete is not likely to create dust, but respirable dust may be released by the surface treatment and cutting or drilling of hardened concrete. If inhaled in excessive quantities over a prolonged period or extended period, respirable dust can constitute a long term health hazard.

Dusts containing Respirable Crystalline Silica\* (quartz) present a greater hazard. Longterm exposure to respirable dust can lead to respiratory system damage and disease.

Respirable crystalline silica has been associated with the lung disease silicosis.

The quartz content of the product will vary, and is related to the type of aggregate used in the production of the concrete. Advice on the quartz content and other chemical information is available from the supplying unit.

\* Any references to respirable silica in this document only apply if hardened concrete is cut, drilled, milled or planed.

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### 03. Composition / information on ingredients

#### Ready-mixed concrete is a mixture of:

- A cementitious material which may be cement or a mixture of cement with an addition (e.g. fly ash, ground granulated blast furnace slag or silica fume).
- Fine and coarse aggregate
- Water
- Admixtures or additives may be added to modify the properties of the fresh or hardened concrete. Pigments may be added to colour the product.

### Hazardous ingredients

Substance name	EC No.	%	DSD Classification	CLP Classification
Portland Cement	266-043-4	10 - 20	Xi; R34, R38, R41, R43	H315, H317, H318, H335
Crystalline Silica*	238-878-4	Variable	Xn; R48/20	H372

### 04. First aid measures

#### Inhalation

If concrete dust is inhaled, remove to fresh air. If breathing difficulties or inflammation are experienced, seek medical attention.

#### Skin contact

Where skin contact occurs with wet concrete, either directly or through saturated clothing, the concrete must be washed off immediately with soap and water. If wet concrete enters boots or gloves, or saturates clothing, remove article immediately and wash before re-use.

#### Eye contact

Immediately and thoroughly irrigate with copious amounts of eye wash solution or clean water. Seek medical attention immediately.

#### Ingestion

Remove to fresh air. If person is conscious, rinse out mouth and give water to drink. Seek medical advice.

### 05. Fire fighting measures

Concrete is non-flammable and is not combustible.

**Suitable extinguishing media:** Not applicable.

**Unsuitable extinguishing media:** Not applicable.

**Special exposure hazards in fire:** None.

**Special protective equipment for fire fighters:** None.

### 06. Accidental release measures

#### Personal precautions

Avoid contact with skin and eyes. Wear impervious clothing, gloves and boots.

Wear eye protection. See Section 8 for guidance on personal protective equipment. See Section 7 for guidance on handling the product.

#### Environmental precautions

Prevent wet concrete from entering watercourses, ditches and drains.

#### Methods for cleaning

Clean up any spillage before the concrete hardens, using suction or mechanical removal methods.

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### 07. Handling and storage

#### Handling

Avoid skin and eye contact. Wet concrete can cause serious alkali burns if in direct contact with skin or eyes. Contact with concrete may also cause skin disease by the combination of the wetness, alkalinity and abrasiveness of the ready-mixed concrete. Allergic contact dermatitis may be caused by individual sensitivity to chromium compounds which may occur in cement.

Do not sit or kneel on wet, un-hardened concrete without wearing the correct personal protective equipment.

Where concrete enters boots or gloves, or saturates clothing, the article should be removed immediately and washed before further use.

Refer to Section 8 for guidance on personal protection.

#### Storage

Ready-mixed concrete is normally used upon receipt. However, the hardening process of ready-mixed concrete can be delayed by the use of additions and/or admixtures, extending the period during which the precautions given in this data sheet should continue to be taken and during which time access by unauthorised persons should be prevented.

### 08. Exposure controls / personal protection

#### Take measures to prevent:

- 01 Direct skin or eye contact with fresh concrete. It is also important not to kneel or sit on the fresh concrete as harmful contact can occur through saturated clothing.
- 02 Inhalation of dust created by the surface treatment and cutting of hardened concrete which may contain quartz. If inhaled in excessive quantities over an extended period, respirable dust containing quartz can constitute a long term health hazard.

### Exposure control limits/source

<b>Total dust</b>	W.E.L	10mg/m <sup>3</sup>	8 hrs	T.W.A
<b>Respirable dust</b>	W.E.L	4mg/m <sup>3</sup>	8 hrs	T.W.A
<b>Respirable quartz (Crystalline Silica SiO<sub>2</sub>)</b>	W.E.L	0.1mg/m <sup>3</sup>	8 hrs	T.W.A

W.E.L = Workplace Exposure Limit

T.W.A = Time Weighted Average

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### Control measures

Dust caused by cutting or drilling hardened concrete should be controlled by containment, suppression and extraction/ filtration where possible.

### Inhalation

**S22** – Do not breathe dust.

### Eyes, skin and hands

**S24/25** - Avoid contact with skin and eyes.

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

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

### Respiratory protection

Respiratory protection is not usually required when working with wet concrete, If work creates dust (e.g. when cutting or drilling hardened concrete), and engineering controls do not keep dust levels below the EN149 FFP3 levels shown in the previous table, then suitable respiratory protection should be used to protect against inhalation of dust, and to ensure exposure is below the Workplace Exposure Levels given in the table

### Hand protection

Impermeable gloves should be worn

### Eye protection

Eye protection should be worn to prevent the product entering the eyes (including dust).

### Skin protection

Overalls and/or long-sleeved jackets and full length trousers should be worn to protect skin from contact with wet concrete. Outer clothing should be waterproof if contact with wet concrete is likely. Wear impermeable boots to protect feet. Safety wellington boots should be worn If working with wet concrete, with waterproof trousers pulled over them to help prevent concrete entering the boots. If concrete saturates clothing, or enters gloves or boots, remove the articles immediately and wash before wearing again.

In addition to the above, the use of skin barrier cream and aftercare products is also recommended.

## 09. Physical and chemical properties

**Appearance:** Grey, granular paste unless pigmented.

**Odour:** Slight, earthy odour pH: Typically 10-14

**Boiling point / range:** Not determined

**Melting point / range:** Not determined

**Flash point:** Not applicable

**Auto flammability:** Not applicable

**Flammability:** Not applicable

**Explosive properties:** Not applicable

**Oxidising properties:** Not applicable

**Vapour pressure:** Not applicable

**Relative density:** Above 2.0

**Water solubility:** Dependant on aggregate type

**Fat solubility:** Not determined

## 10. Stability and reactivity

**Conditions to avoid:** None

**Materials to avoid:** None

**Hazardous decomposition products:** None

## 11. Toxicological information

### Inhalation

If inhaled over a prolonged or extended period, respirable dust from drilling or cutting hardened concrete can lead to respiratory system damage and disease. Respirable crystalline silica\* has been associated with the lung disease silicosis.

### Skin contact

Skin contact with wet concrete could result in serious alkali burns. Contact with concrete may also cause skin disease by the combination of the wetness, alkalinity and abrasiveness of the ready-mixed concrete. Allergic contact dermatitis may be caused by individual sensitivity to chromium compounds which may occur in cement.

### Eye contact

Wet concrete in contact with eyes can cause irritation, inflammation or serious alkali burns, which may lead to blindness.

### Ingestion

Ingestion is very unlikely. Ingestion of large amounts may cause irritation of the stomach and intestines. Seek medical attention.

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### 12. Ecological information

#### Environmental assessment

When used and disposed of as intended, no adverse environmental effects are foreseen, and concrete should not pose a significant ecological hazard.

Prevent wet concrete entering watercourses, ditches & drains.

### 13. Disposal consideration

#### Safe handling of residues / waste product

Hardened concrete is classed as non hazardous and 'inert' but should be disposed of in accordance with local and national legal requirements. Hardened concrete can be readily recycled.

### 14. Transport information

#### Special carriage requirements

None – not classified as dangerous for transport.

### 15. Regulatory information

#### 67/548/EEC:

##### Irritant Risk Phrases

**R34** – May cause burns. R38 - Irritating to the skin.

**R41** – Risk of serious damage to the eyes.

**R43** – May cause sensitisation by skin contact.

##### Safety Phrases

**S2** – Keep out of reach of children.

**S24/25** – Avoid contact with skin and eyes.

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

**S36/37/ 39** - wear suitable protective clothing, gloves and eye / face protection

#### EC 1272/2008: Danger

Eye Dam. 1, Skin Sens. 1, Skin Irrit 2; STOT SE3 (Inhalation of dust)

#### Hazard statements

**H315** – Causes skin irritation.

**H317** – May cause allergic skin reaction.

**H318** – Causes serious eye damage.

**H335** – May cause respiratory irritation.

**H372** – Causes damage to organs through prolonged and repeated exposure (inhalation of respirable silica if hardened concrete is cut or drilled).

#### Precautionary statements

**P102** – Keep out of reach of children.

**P261** – Avoid breathing dust.

**P262** – Do not get in eyes, on skin, or on clothing.

**P281** – Use personal protective equipment as required (see Section 8)

### 16. Other information

#### Training advice:

Wear and use of PPE.

#### Recommended uses and applications:

Industrial and construction applications

#### Further information

Contact [enquiries@uk.heidelbergmaterials.com](mailto:enquiries@uk.heidelbergmaterials.com) for further information.

HSE Guidance Note EH40/2007 PPE Regulations 1992  
COSHH Regulations 2002 Environmental Protection Act 1990

HSE Crystalline Silica EH59

Dangerous Substances Directive (DSD) 67/548/EEC  
Classification, Labelling and Packaging Regulations (CLP)  
EC1272/2008

**Further copies of this safety data sheet may be obtained from Heidelberg Materials UK**