
1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY / UNDERTAKING

Product Name: **READY- MIXED CONCRETE, MORTAR AND SCREED**
Application: Allows specialty concrete mixtures to be developed and implemented on construction sites.
Company: **FP McCann Limited**
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2: COMPOSITION/INFORMATION ON INGREDIENTS

Concrete: Mixture of natural aggregates, cement and water. Other ingredients may include admixtures. Such additions are made to alter/improve the working characteristics of the material or to affect/enhance its properties once hardened.

Mortar: Mixture of natural aggregates, cement and water. Admixtures may be added.

Screed: Mixture of natural aggregates, cement and water. Admixtures may be added.

Chemical description: The principal constituents of cement are calcium silicates, aluminates, and sulphates. Small amounts of alkalis, lime and chlorides are also present. Whilst reducing agents are added to comply with the regulatory limit for Chromium (VI) their effect decreases with time and hexavalent chromium salts may be present, which give rise to a potentially hazardous solution when mixed with water. The natural aggregates in concrete contain a combination of various minerals, including silica.

Hazardous ingredients:

- 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.
- Hexavalent chromium salts in the cement are soluble and when mixed with water, will give rise to a potentially hazardous solution.
- Salts of organic acid within the air entraining agents are soluble and when mixed with water will contribute to the alkalinity of the solution.
- Airborne dust from the natural aggregates in dry concrete mixes may contain respirable silica. Long-term prolonged exposure to high levels of respirable crystalline silica, which can arise from a failure to implement adequate control measures, can lead to silicosis and ultimately an increased risk of developing lung cancer.

3: HAZARDS IDENTIFICATION

Wet concrete, mortar and screed are strong alkalis. 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.

Concrete, mortar and screed mixes may until set cause both irritant and allergic contact dermatitis:

- Irritant contact dermatitis is due to a combination of the wetness, alkalinity and abrasiveness of the constituent materials.
- Allergic contact dermatitis is caused mainly by the sensitivity of an individual's skin to hexavalent chromium salts.

Concrete, mortar and screed dust:

Inhalation of silica particles in dust created by cutting set concrete or surface treatment of hardened concrete containing high silica aggregates may cause respiratory damage. Long-term prolonged exposure to high levels of respirable crystalline silica, which can arise from a failure to implement adequate control measures or wear the correct respiratory protection, can lead to silicosis and ultimately an increased risk of developing lung cancer.

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4: FIRST AID MEASURES

Wet concrete, mortar & screed:

- Eye contact: Irrigate immediately with copious amounts of clean water. Seek immediate medical attention.
- Skin contact: Immediately wash with copious amounts of clean water. Clothing contaminated by wet cement, concrete or mortar should be removed and washed thoroughly before use.
- Ingestion: Wash out mouth and drink plenty of water. Do not induce vomiting. Seek medical advice if large amount is swallowed.

Concrete, Mortar and Screed dust:

- Eye contact: Irrigate immediately with copious amounts of clean water. Seek immediate medical attention.
- Skin contact: Wash the affected area thoroughly with soap and water before continuing. If irritation, pain or other skin conditions occur, seek medical advice.
- Ingestion: Do not induce vomiting. Wash out mouth with water and give patient plenty of water to drink.
- Inhalation: If irritation occurs, move to fresh air. If nose or airways become inflamed seek medical advice.

5: FIRE FIGHTING MEASURES

Concrete, Mortar and Screed are not flammable and will not facilitate combustion with other materials.

6: ACCIDENTAL RELEASE MEASURES

- Personal Precautions: See section 8.
- Methods for Cleaning: Recover bulk spillage without delay and, for wet mixes, while material is still in non-hardened (plastic) state, using suction system or mechanical shovel. 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.
- Environmental Precautions: Prevent from entering drains, sewers or water courses.

7: HANDLING AND STORAGE

- Handling: **Wet Concrete, Mortar and Screed:**
 Avoid skin and eye contact. The risks of dermatitis and burns are increased if the material is allowed to continue rubbing against the skin (e.g. inside boots, in gloves or through saturated clothing). Do not kneel or sit on the wet materials without the correct personal protective clothing, (see section 8).
- Concrete, Mortar and Screed dust:**
 The creation of dust from the cutting or surface treatment of hardened concrete should be kept to a minimum, with work methods and engineering control measures being used to reduce exposure. It is also strongly advised to use respiratory protective equipment in such circumstances.

8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace Exposure Limits:

Workplace Exposure Limit			
SUBSTANCE	Long term 8 HR TWA	Short term 15 Min TWA	Source
Total inhalable dust	10mg/m	-	EH40
Respirable dust	4mg/m	-	EH40
Respirable silica	0.1mg/m ³	-	EH40

Engineering Measures:	Where reasonably practicable dust exposures should be controlled by engineering methods, such as local exhaust ventilation.
Respiratory Protection:	Suitable respiratory protection (HSE approved standard) should be worn to ensure that personal exposure is less than the workplace exposure limit values.
Hand and Skin Protection:	Protective clothing should be worn which ensures that concrete, mortar or screed, does not come into contact with the skin. In some circumstances such as when laying concrete, waterproof gloves, waterproof trousers and boots may be necessary, also knee pads if kneeling down to finish a surface. 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 concrete, mortar or screed 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.
Eye Protection:	Dust-proof goggles (HSE approved standard) should be worn whenever there is a risk of cement powder or any cement/water mixture entering the eye. Suitable protection is advisable where there is a risk of material splashing.

9: PHYSICAL AND CHEMICAL PROPERTIES

General:	Detailed properties vary according to: <ol style="list-style-type: none"> a. The specific concrete, mortar or screed and b. The ingredients added to affect the working characteristics of the material. All mixes are: <ul style="list-style-type: none"> • Abrasive • Alkaline (typically pH10-14)
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Physical Data:

Physical state	Particulate	
Mean particle size	1 – 100 microns (concrete/mortar)	
Odour	N/A	
pH	pH of wet concrete/mortar 9 – 12	
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	
Typical densities	Concrete 2000 – 2500kg/m ³	Mortar 1800 – 2200kg/m ³
Dry Bulk Density	1100 - 1600kg/m ³	
Solubility	N/A	

10: STABILITY AND REACTIVITY

Reacts with moisture to become alkaline.

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11: TOXICOLOGICAL INFORMATION

Short Term Effects:

- Eye contact: Mild exposure can cause soreness. Gross exposures or untreated mild exposures can lead to chemical burning and ulceration of the eye.
- Skin: (Short-term exposure) May cause alkali burns; may cause acute allergic dermatitis in people sensitised to chromium compounds. (Chronic long-term exposure) May cause irritant contact dermatitis; may lead to sensitisation of the skin to chromium compounds.
- Ingestion: The swallowing of small amounts of any cement/water mixtures is unlikely to cause significant reaction. Large doses may result in irritation to the gastro intestinal tract.
- Inhalation: Cement powder may cause inflammation of mucous membranes. Inhalation of large quantities of dust or dust containing respirable silica (generated by cutting, drilling, etc.) may cause progressive lung damage, leading to permanent disability and, in extreme cases, to premature death.

Chronic Effects:

Skin exposure has been linked to allergic (chromium) dermatitis. Allergic dermatitis more commonly arises through contact with cement/water mixtures than dry cement or dry pre-mixed concrete or mortars. Long term exposure to silica dust may cause silicosis and lead to an increased risk of developing lung cancer.

12: ECOLOGICAL INFORMATION

- Aquatic Toxicity Rating: LC50 aquatic toxicity rating not determined. No data is available on the preparations themselves. When used as intended, no environmental impact is anticipated. If spillage occurs, do not allow material to enter drains, sewers or water courses.
- Biological Oxygen Demand (BOD): Not applicable

13: DISPOSAL CONSIDERATION

Not hazardous. However, disposal subject to local authority current requirements / regulations. Keep out of reach of children.

14: TRANSPORT INFORMATION

Not hazardous. Classification for conveyance – not required.

15: REGULATORY INFORMATION

- Risk Phrases:
- May cause sensitisation by skin contact
 - Risk of serious damage to eyes
 - Contact with wet cement, mortar or screed may cause irritation, dermatitis or burns
 - Contact between cement powder and bodily fluids(e.g. sweat and eye fluid) may also cause skin and respiratory irritation, dermatitis or burns
 - Contains Chromium (VI) may cause allergic reaction
- Safety Phrases:
- Avoid eye and skin contact by wearing suitable eye protection, clothing and gloves
 - 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

Chemicals (Hazard Information and Packaging for Supply) Regulations. Classification: Irritant.

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16: LEGISLATION AND OTHER INFORMATION

- CONIAC Health Hazard Information Sheet No 26 (CEMENT)
- The Health & Safety at Work (NI) Order 1978
- Consumer Protection Act 1987
- Control of Substances Hazardous to Health Regulations (NI) 2003
- Control of Substances Hazardous to Health (Amendment) Regulations 2005
- Construction (Design and Management) Regulations (NI) 2007 (CDM)
- Environmental Protection Act 1990
- HSE Guidance Note EH40 (Workplace Exposure Limits).
- Any authorised manual on First Aid by St.John's/St.Andrews/Red Cross
- Manual Handling Operations Regulations (NI) 1992 (as amended)

Guidance references:

Available from HMSO, HSE area offices, or local authority Environmental Health Departments:

- EH40/: Workplace Exposure Limits
- A step-by-step guide to COSHH Assessment (HS[G]97)

Important Notes:

The data and advice given apply when the product is used for the stated application or applications. The product is not sold as suitable for any other application. Use of the product for applications other than as stated in this sheet may give rise to risks not mentioned in this sheet.

The product should not be used other than for the stated application or applications without seeking advice from FP McCann Ltd.

If this product has been purchased for supply to a third party for use at work, it is the purchaser's duty to take all necessary steps to secure that any person handling or using the product is provided with the information in this sheet.

It is the responsibility and duty of the employer to inform employees and others who may be affected of any hazards described in this sheet and of any precautions which should be taken.

This sheet does not constitute or substitute for the users own assessment of workplace risk, as required by other health and safety legislation.

Further copies of this Safety Data Sheet may be obtained from FP McCann Limited.

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