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Health and Safety data sheet for Hydrated Lime Products

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

1.1 Identification of substance/preparation

This data sheet applies to the following products containing hydrated lime. Castle Hydrated Lime, Castle/Hanson Natural Hydraulic Lime, Castle Lime Putty, Castle Moderately, Hydraulic Lime Mortar, Castle Eminently Hydraulic Lime Mortar and Castle Fine Lime Plaster.

1.2 Use of the substance/preparation

Hydrated lime: An odourless white powder soluble in water. When mixed with cement, sand and water it becomes a binder for building applications (e.g. mortars and renders).

Natural hydraulic lime: An odourless white powder. When mixed with sand and water it becomes a binder for building applications (e.g. mortars and renders).

Lime putty: An aqueous suspension of calcium hydroxide. When mixed with sand it becomes a binder for building applications (e.g. mortars and renders).

Hydraulic lime mortar: A mixture of aggregate and natural hydraulic lime. When mixed with water it becomes a binder for building applications (e.g. mortars and renders).

Fine lime plaster: An aqueous suspension of calcium hydroxide and aggregate which forms a binder for building applications (e.g. mortars and plasters).

1.3 Company identification

Hanson Cement Limited

Ketton
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PE9 3SX

Hanson Cement Technical Helpline

tel: 0845 722 7853
fax: 01780 727154

e-mail: cement.technical.help@hanson.biz

1.4 Emergency telephone

Telephone: 0845 722 7853

2. HAZARDS IDENTIFICATION

Irritating to eyes and skin. Can cause burns in the presence of moisture. It is advisable to ensure that eye wash is available when hydrated lime, natural hydraulic lime, lime putty, hydraulic lime mortar or fine lime plaster is handled.

2.1 Hazard characterisation

Xi Irritant

R37/38 Irritating to respiratory system and skin

R41 Risk of serious damage to eyes

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 increases 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.

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

The principle constituent of Castle lime products is calcium hydroxide Ca(OH)₂. Natural hydraulic limes also contain some calcium silicates, aluminates, ferro-aluminates and sulfates, small quantities of magnesium and other trace elements. Additional constituents may also be present e.g. dried sands in Castle Moderately Hydraulic Lime Mortar, Castle Eminently Hydraulic Lime Mortar and Castle Fine Lime Plaster.

3.2 Components presenting a health hazard

Substance	Concentration range	EINECS	CAS	Symbol (C&L)	R
calcium hydroxide.	≤ 100%	215-137-3	1305-62-0	Xi	R37/38 R41

4. FIRST AID MEASURES

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

4.1 Inhalation

Irrigate nose and throat with water for at least 20 minutes. It is advisable to seek medical attention. Remove patient from prolonged and repeated inhalation of high exposure.

4.2 Eye contact

Irrigate with water for at least 20 minutes. SEEK MEDICAL ATTENTION. SPEED IS ESSENTIAL.

4.3 Skin contact

Wash affected area immediately with plenty of water. Remove contaminated clothing. Seek medical advice if necessary.

4.4 Ingestion

Do not induce vomiting. Wash mouth with water and drink copious quantities of water.

5. FIRE-FIGHTING MEASURES

Hydrated lime, natural hydraulic lime, lime putty, hydraulic lime mortar and fine lime plaster are not combustible. No special fire-fighting equipment is required. No extinguishing media or explosion hazard is identified.

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

Avoid contamination of drains or water courses. Spillage into water courses must be alerted to the Environmental Agency.

6.3 Methods for cleaning up

Contain the spillage. Keep the material dry or allow to dry if lime putty or fine lime plaster. Act to minimise dust. Keep children away from clean up operations.

7. HANDLING & STORAGE

7.1 Handling

When handling packed products, due regard should be paid to the risks outlined in the Manual Handling Operations Regulations. Some bags may have a small amount of lime on the outer surface. Appropriate personal protective clothing should therefore be used whilst handling. Keep dust levels to a minimum. Avoid contact with eyes and skin. Use barrier cream if necessary.

7.2 Storage

Minimise contact with air and moisture. Keep separate from flammable materials and chemicals with which it might react. Store in properly designed bunkers or silos. Packed products should not be in contact with flammable materials and storage should be in masonry or concrete structures. Bags and tubs should be stacked in a safe and stable manner. Lime putty and fine lime plaster should be stored under cool, frost free conditions. This is necessary as the

water in the putty/plaster freezes in temperatures below 0°C, and could lead to separation. Part used tubs should have the lids tightly sealed to prevent carbonation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure limit values

WEL 8hr Time Weighted Average (TWA) 4 mg/m³ total inhalable dust

8.2 Exposure controls

8.2.1 Occupational exposure controls

Respiratory protection: Handling systems should preferably be enclosed or suitable ventilation installed to maintain atmospheric dust below WEL. If atmospheric dust exceeds WEL, approved dust respirators or air-streamed helmets should be worn.

Eye protection: Dust-proof goggles should be worn wherever there is a risk of lime powder or any lime/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 lime, or any lime/water mixture, does not come into contact with the skin. Should lime 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 lime to avoid contact with the skin or mouth.

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

8.2.1 Environmental exposure controls

According to available technology.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 General information

Hydrated lime and natural hydraulic lime	fine dry powder.
Lime putty	an aqueous suspension of calcium hydroxide.
Hydraulic lime mortar	powder with solids of varying sizes.
Fine lime plaster	an aqueous suspension of calcium hydroxide and solids of varying sizes.

9.2 Physical data

Colour	white to off-white or grey
Odour	possible earthy odour
pH	11.5 – 13 (as aqueous solution approximately 2g/litre)
Melting point	5800C
Vapour pressure	0mmHg at 200C
Bulk density	480kg/m ³ (loose), 590kg/m ³ (compacted)
Solubility in water	1.76g/litre saturated solution at 100°C

10. STABILITY AND REACTIVITY

10.1 Conditions to avoid

Avoid exposure to moisture.

10.2 Materials to avoid

Reacts with acids with the evolution of heat.

11. TOXICOLOGICAL INFORMATION

11.1 Short term effects

- Eye contact – can be very painful. May cause partial or total loss of sight if untreated.
- Skin contact – irritating to skin. May cause burns in the presence of moisture.
- Ingestion – cause corrosion of and damage to gastrointestinal tract.
- Inhalation – irritant to respiratory tract.

11.2 Chronic effects

- Inhalation – Prolonged or repeated inhalation of high dust concentrations may cause ulceration and perforation of the nasal septum and pneumonitis.
- Contact dermatitis– Prolonged or repeated contact with skin may result in severe irritation or dermatitis.

11.3 Medical conditions aggravated by exposure

Inhaling 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.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Aquatic toxicity – non toxic LC50 aquatic toxicity values are >100mg/litre

12.2 Mobility

Soluble in water as hydroxide to form alkaline solution. Low mobility in most ground conditions.

12.3 Persistence and degradability/Bio accumulative potential/results of PBT assessment/other adverse effects

Non biodegradable – reacts with atmospheric carbon dioxide to form calcium carbonate (limestone).

13. DISPOSAL CONSIDERATIONS

Hydrated lime, natural hydraulic lime, lime putty, hydraulic lime mortar, fine lime plaster and empty packaging can normally be disposed of only at licensed waste facilities. Disposal should be in accordance with local and national legislation. Keep out of reach of children.

14. TRANSPORT INFORMATION

Not classified as hazardous for transport by road and rail.

15. REGULATORY INFORMATION

15.1 Classification and labelling



Xi Irritant

Risk phrases

- Risk of serious damage to eyes.
- Contact with wetted Hydrated Lime, wetted Natural Hydraulic Lime, wetted Hydraulic Lime Mortar, Lime Putty or Fine Lime Plaster may cause irritation, dermatitis or burns.
- Contact between Hydrated Lime, Natural Hydraulic Lime or Hydraulic Lime Mortar powder and body fluids (e.g. sweat and eye fluid) may cause skin and respiratory irritation, dermatitis or burns.

Safety phrases

- Avoid eye and skin contact by wearing suitable eye protection, waterproof clothing, waterproof footwear and waterproof gloves.
- Clothing contaminated by wetted Hydrated Lime, wetted Natural Hydraulic Lime, wetted Hydraulic Lime Mortar, Lime Putty or Fine Lime Plaster 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.

15.2 UK legislation/requirements

- Health and Safety at Work etc Act 1974
- Control of Substances Hazardous to Health (Regulations)
- HSE Guidance Note EH26 (Occupational Skin Diseases – Health and Safety Precautions)
- HSE Guidance Note EH40 (Workplace Exposure Limits)
- Any authorised manual on First Aid by St. John's/ St. Andrew's/Red Cross
- Manual Handling Operations Regulations
- Environmental Protection Act

16. OTHER INFORMATION

Abbreviations

- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transport Association
- LC50 Lethal Concentration where 50% of the test animals die.
- OEL occupational exposure limit
- WEL workplace exposure limit
- TWA: Time Weighted Averages

The information on this data sheet reflects the currently available knowledge and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product, including the use of the product in combination with any other product or any other process, is the responsibility of the user. It is implicit that the user is responsible for determining appropriate safety measures and for applying the legislation covering their own activities.

Please note: Reference to a Technical Standard number in this leaflet is deemed to include the latest published edition and/or any published amendments issued after the standard's publication, unless a date of issue is quoted in which case reference is to the provisions stated in that edition.

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