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NATURAL HYDRAULIC LIME HEALTH AND SAFETY

MATERIAL SAFETY DATA SHEET LIME FOR CONSTRUCTION

Regulated by Standard NF P 15-311
In agreement with the order of 03/12/92, modified
by the order of 01/03/94 and the ruling of 05/01/93
According to directives 91 /155CEE

1. COMPANY AND PRODUCT NAME

1.1 NAME OF SUBSTANCE Roundtower Natural
Hydraulic Lime
1.2 COMMON NAME Natural Hydraulic Lime
1.3 NAME OF COMPANY Roundtower Natural Hydraulic Limes
Lochplace Building Conservation Ltd
The Forge
Inn ishannon
Co. Cork
Ireland
1.4 TELEPHONE NUMBER +353-(0)21-4776677
IN CASE OF EMERGENCY

2. INFORMATION ON THE COMPONENTS OF LIME

2.1 COMPOSITION Natural Hydraulic Lime is created by the calcination (at 1200 degrees) of an argillaceous limestone. The argillaceous limestone is quarried and calcined/burned. The burning process produces calcium oxide as well as calcium silicates and calcium aluminates. The resulting material is ground to suitable particle size and hydrated. The lime obtained by the calcination of argillaceous or siliceous limestone is called "Natural Hydraulic lime" (NHL).

When in contact with water the substance sets and hardens. Carbon dioxide present in the air also contributes to this hardening process. The lime contains a minimum of 12 % free lime. NHL can contain, organic elements in very small quantities. These elements should have no effect whatsoever on their property as mortars.

2.2 HAZARDOUS SUBSTANCES No.



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2.3 CLASSIFICATION/SYMBOL NHL 3.5

3. IDENTIFICATION OF HAZARDS

Natural hydraulic lime is not classified as a "dangerous substance" according to the rules of appendix VI of the 67/548/CEE directive. However, due to its alkaline qualities in solution, precautions must be taken while using it.

Danger symbol Xi

- * Natural hydraulic lime is an irritant to the eyes, respiratory tract and mucous membranes.
- * Risk of ocular lesions in the case of contact with powder or paste in the eye.
- * Upon mixing, taking into account its raised pH, natural hydraulic lime can irritate and dry out skin.
- * Prolonged contact with the skin can cause sensitivity.
- * In case of ingestion (of a significant quantity), Natural Hydraulic Lime is caustic to the digestive tract and may cause burns to the mouth, oesophagus and stomach.
- * No significant risk to the environment. However, in case of an accidental spill in residual water, the powder can cause a small rise in the pH of the water. Natural hydraulic lime is a stable material which causes other components to harden and makes them insoluble.

4. FIRST AID IN THE CASE OF EMERGENCY

4.1 CONTACT WITH EYES:

Rinse immediately and abundantly with clean water, consult a doctor and/or ophthalmologist.

4.2 CONTACT WITH THE SKIN:

Prolonged contact: if the Natural Hydraulic Lime is dry, remove as much powder as possible, then wash with clean water. If the Natural Hydraulic Lime is mixed wash abundantly with water. Be careful to ensure that no lime remains between the skin and watch, shoes or clothes.

4.3 INHALATION: In the case of inhalation of a large quantity, bring the subject away from the work area and consult a doctor in the case of any respiratory symptoms.

5. FIRE PREVENTION

Natural Hydraulic Lime is not flammable.

In the case of fire any type of equipment to extinguish can be used.



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6. IN THE CASE OF AN ACCIDENTAL SPILL

6.1 INDIVIDUAL PRECAUTIONS:

Avoid all contact with the eyes.

Avoid contact with the skin.

Do not breathe the dust.

In the case of dust escaping, wear a dust mask.

Wear appropriate protective gear (gloves, suit, boots).

6.2. TO PROTECT THE ENVIRONMENT

Avoid pouring Natural Hydraulic Lime in large quantities down drains or into surface water.

6.3 SPILLAGES Recover the lime in a manner which avoids raising dust.

7. STORAGE, USE AND HANDLING PRECAUTIONS

7.1 HANDLING:

Natural hydraulic lime should be handled in a manner so as to avoid creating dust.

7.2 STORAGE: Keep out of reach of children.

Avoid creating loose dust.

Avoid direct contact with skin and mucous membranes.

7.3 USE: Use of safety goggles is advised.

8. EXPOSURE LIMITS AND Individual SAFETY EQUIPMENT

8.1 EXPOSURE LIMITS: Limit of exposure to dust (article R.232-5-5 of the work code):

- Total dust:10 mg/m³

8.2. INDIVIDUAL PROTECTION:

- Respiratory protection When natural hydraulic lime is present in the air, use of a dust mask is recommended.

- Hand protection Wear waterproof gloves lined with cotton.

- Eye protection Wear goggles in the case of dust, powder or paste coming into contact with the eye.

- Skin protection Wear clothes appropriate to the type of work being done (overalls to cover the arms where gloves might not reach, and waterproof knee pads for working in a kneeling position).

Barrier creams can be used. Water resistant boots are recommended



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9. PHYSIO/CHEMICAL PROPERTIES

- 9.1 APPEARANCE: Powder
- 9.2 COLOUR: Light Grey
- 9.3 ODOUR: None
- 9.4 pH IN AQUEOUS SOLUTION: Alkaline between 12 and 13
- 9.5 MELTING TEMPERATURE: > 1000 °C
- 9.6 ABSOLUTE MASS VOLUME: 2.71 g/cm³ to 20°C
- 9.7 APPARENT MASS VOLUME: 0.77 g/cm³ to 20°C
- 9.8 SOLUBILITY IN WATER: Up to 1.5g/l to 20°C
- 9.9 SELF COMBUSTION: Not applicable
- 9.10 BURNING TEMPERATURES: Not applicable
- 9.11 DANGER OF EXPLOSION: Not applicable
- 9.12 PARTICLE SIZE: From 20 to 30% <5μ

10. STABILITY AND REACTIVITY

- 10.1 CONDITIONS TO AVOID: Moisture can cause the setting of Natural Hydraulic Lime.
- 10.2 MATERIALS TO AVOID: None
- 10.3 DANGEROUS BY- PRODUCTS: None
- 10.4 OTHER INFORMATION: The setting of Natural Hydraulic Lime is accompanied by a slight rise in temperature.

11. TOXICITY INFORMATION

- 11.1 INHALATION: Natural hydraulic lime can cause irritation of the respiratory tract.
Natural hydraulic lime can cause inflammation of the mucous membranes in the nose. In extreme cases, erosion of mucous membranes has been observed.
- 11.2 INGESTION: In case of ingestion of a significant quantity, natural hydraulic lime can cause burns to the mouth, oesophagus and stomach.
- 11.3 SKIN CONTACT: Natural hydraulic lime can irritate moist skin by partial hydration following a higher pH.
- 11.4 CONTACT WITH THE EYE: Natural hydraulic lime can cause irritation to the eyelids and cause serious eye lesions

which require a thorough eyewash and visit to the ophthalmologist.



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11.5 LONG TERM SKIN PROBLEMS: Prolonged exposure without appropriate protection

(gloves) can cause dermatitis.

11.6 CARCINOGENIC DANGERS: None reported

11.7 GENETIC TOXICITY: None reported

12. ECOLOGICAL INFORMATION

12.1 MOBILITY: None

12.2 BIO-ACCUMULATION POTENTIAL: None

12.3 ECOTOXICITY: In the case of an accidental spill in residual waters, Natural Hydraulic Lime powder can cause a slight increase in the pH level.

Natural Hydraulic Lime is a stable material which sets, and renders its components insoluble.

13. INFORMATION ON WASTE DISPOSAL

After setting, Natural Hydraulic Lime can be disposed of like other construction wastes and stored in appropriate containers according to current regulations.

14. TRANSPORT INFORMATION

Material not dangerous.

15. REGULATORY INFORMATION

15.1 DANGER SYMBOL: Xi: irritating product

15.2 MAIN INGREDIENT: Lime

15.3 R PHRASES: R3 6/37/38 : an irritant to the eyes, the respiratory tract and skin

R41 : risk of serious ocular lesions

15.4. S PHRASES: S2 : keep out of reach of children

S24/25 : avoid eye or skin contact

S26 : in case of contact wash thoroughly with clean water/consult a doctor

S37 : wear adequate gloves

S39: wear safety gear to protect the eyes and face

15.5 OCCUPATIONAL SICKNESS HAZARD:

Social security code: not reported

15.6 RELATED OCCUPATIONAL SICKNESS:

Social security code: sickness not listed



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15.7 SPECIAL MEDICAL ATTENTION:

Not applicable

16. OTHER INFORMATION

Not applicable

- The information contained in this document is based on our current knowledge of Natural Hydraulic Lime, it is given in good faith.
- In no case should this information be interpreted as a guarantee of quality.
- Please note that it is a risk to use a product for purposes other than those which it is intended. It is the responsibility of the user to determine the appropriate measures of security and to follow the text regulating its use. The instructions mentioned in this safety sheet are intended to aid the user in fulfilling his/her due obligations.