



PRODUCT SAFETY DATA SHEET

(Prepared in accordance with Annex II of the REACH Regulation (EC) 1907/2006)

1: Identification of the substance / preparation and of the company / undertaking	
1.1: Identification of the substance or preparation	
Substance Name	Quicklime
Synonyms	Lime, Burnt lime, Un-slaked lime, Building lime, Calcia, Fat lime, Chemical lime, Fluxing lime, Hard burnt lime, Soft burnt lime, Pebble lime, Calcium oxide, Calcium monoxide, Quick lime, Calcined limestone, Lump Lime, White Rhino Quicklime, Crushed Quicklime, Fine Quicklime, Sterilime, Clayfix, PPL Lime Fines, Lump Quicklime, Crushed Quicklime BK, Crushed Quicklime SK, Milled Quicklime BK, Milled Quicklime SK.
Chemical Name and Formula	Calcium oxide – CaO
Trade Name	Clayfix, Sterilime, White Rhino Quicklime
CAS N°	1305-78-8
EINECS N°	215-138-9
Molecular Weight	56,08
1.2: Use of the substance	
Building material industry Chemical industry Metal and steel industry Agriculture Biocidal use Environmental protection (e.g. flue gas treatment, waste water treatment, sludge treatment) Drinking water treatment Feed, food and pharmaceutical industry Civil engineering Paper and paint industry Glass industry	
1.3: Company identification	
Name	Clogrennane Lime Ltd.
Address	Clogrennane, Carlow.
Phone	00353 (0)59 9131811
Fax	00353 (0)59 9131607
Web	www.irishlime.ie
E-mail of competent person responsible for SDS in the MS or in the EU	jconnolly@clogrennane.ie
1.4: Emergency telephone	
European Emergency N°	112
National centre for Prevention and Treatment of Intoxications N°	01 8092566 01 8379964 npicdublin@beaumont.ie
Emergency telephone at the company Available outside office hours	00353 (0)879863618 <input checked="" type="checkbox"/> yes <input type="checkbox"/> no

2: Hazard identification**2.1: Indication of hazard****Xi Irritant****2.2: Human health**

Risk phrases

R37 Irritating to respiratory system
R38 Irritating to skin
R41 Risk of serious damage to eyes

Warning phrase

In contrast to the powder itself, the product, when diluted with water, can produce severe skin damage in humans, (alkaline burns), especially if prolonged skin contacts takes place.

3: Composition / information on ingredients**3.1: Composition**

Calcium oxide, and minor constituents of geological origin, varying from source to source.

4: First-aid measures**4.1: Eyes**

Irrigate eyes immediately with plenty of water and seek medical advice.

4.2: Inhalation

Move source of dust or move person to fresh air. Keep victim warm and at rest. Obtain medical attention immediately. Irritating to the respiratory tract, may cause inflammation.

4.3: Ingestion

Wash mouth with water and drink copious quantities of water. Do not induce vomiting. Seek medical advice immediately.

4.4: Skin

Carefully and gently brush the contaminated body surfaces in order to remove all traces of product. Wash affected area immediately with plenty of water. Remove contaminated clothing. If necessary seek medical advice. Consult a physician if exposed area is large or if irritation persists. May cause burns in the presence of moisture (alkaline burns).




4.5: General advise

No known delayed effects. Consult a physician for all exposures except for minor instances.

5: Fire-fighting measures

5.1: Flammability	
	The substance is not flammable, and non-combustible, it inhibits the spread of flame. The product reacts with water and generates heat. This may cause risk to flammable material.
5.2: Extinguishing media	
	The product does not burn. Avoid water and the humidification of the quick lime, use dry powder, foam or CO ₂ type of fire extinguishers to fight the surrounding fire.
5.3: Combustion products	
	None
6: Accidental release measures	
6.1: Personal precautions	
	Avoid contact with skin and eyes, keep dust levels to a minimum, and ensure that sufficient ventilation or suitable respiratory protective equipment is used (section 8).
6.2: Environmental precautions	
	Contain the spillage. Keep the material dry if possible. Cover area if possible to avoid unnecessary dust hazard. Avoid uncontrolled spills to watercourses and drains (pH rising). Any large spillage into watercourses must be alerted to the Environment Agency or other regulatory body.
6.3: Methods for cleaning up	
	Keep the material dry if possible. Pick up the product mechanically in a dry way. Use vacuum suction unit, or shovel into bags.
7: Handling and storage	
7.1: Handling	
7.1.1: Precautions for safe handling	Avoid contact with skin and eyes. Wear protective equipment (see section 8). Keep dust levels to a minimum. Minimise dust generation. Enclose dust sources, use exhaust ventilation (dust collector at handling points). Handling systems should preferably be enclosed. When handling bags usual precautions should be paid to the risks outlined in the Council Directive 90/269/EEC.
7.2: Storage	
7.2.1: Precautions for safe storage	Store under dry conditions. Minimise contact with air and moisture. Bulk storage should be in purpose – designed silos. Keep away from acids, significant quantities of paper, straw, and nitro compounds. Keep out of reach of children. Do not use aluminium for transport or storage if there is a risk of contact with water.
8: Exposure controls / personal protection	

8.1: Exposure limit values	
8.1.1: CAS N° / EINECS N°	1305-78-8 / 215-138-9
8.1.2: Chemical name	Calcium oxide
8.1.3: Occupational exposure standard (OES)	(OEL) 2mg/m ³ , (8hr TWA)


8.2: Exposure controls	
8.2.1: Occupational exposure controls	Handling systems should preferably be enclosed or suitable ventilation installed to maintain atmospheric dust below the OES, if not wear suitable protective equipment.
8.2.1.1: Respiratory protection	 Use appropriate respiratory protection against particles according to the risk level.
8.2.1.2: Hand protection	 Use approved nitrile impregnated gloves having CE marks.
8.2.1.3: Eye protection	 Tight fitting goggles with side shields, or wide vision full goggles. Do not wear contact lenses when handling this product. It is also advisable to have individual pocket eyewash.
8.2.1.4: Skin protection	Clothing fully covering skin, full length pants, long sleeved overalls, with close fittings at openings. Footwear resistant to caustics, and avoiding dust penetration.
8.2.1.5: General safety and hygiene measure	Wear clean, dry personal protective equipment. Barrier cream can be used if necessary. If heavily exposed daily, employees must shower, and if necessary use a barrier cream to protect exposed skin, particularly neck, face and wrists.
8.2.2: Environmental exposure controls	All ventilation systems should be filtered before discharge to atmosphere.

9: Physical and chemical properties

9.1: General information	
9.1.1: Appearance	White or off white (beige) solid material of varying sizes: Lump, granular or fine powder.
9.1.2: Odour	Slight earthy odour.
9.2: Important health, safety and environmental information	
Remark	Calcium oxide reacts exothermically with water to form Calcium dihydroxide: $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + 1155 \text{ kJ/kg CaO}$
pH	12,4 Ca(OH) ₂ saturated solution at 25°C
Solubility in water	1850 mg/l at 0°C 1650 mg/l at 20°C 770 mg/l at 100°C

9.3: Other information	
Melting point	2570 °C
Boiling point	2850 °C at 100 hPa
Specific gravity	3,3 – 3,4 g/cm ³ at 20°C
Bulk density	700 – 1300 kg/m ³ at 20°C
Vapour pressure	Non volatile
Partition coefficient	Not applicable
Flash point	Not applicable
Flammability	Not flammable
Explosive properties	Not flammable
10: Stability and reactivity	
10.1: Conditions to avoid	
	Minimise exposure to air and moisture to avoid degradation.
10.2: Materials to avoid	
	<p>Calcium oxide reacts exothermically with water to form Calcium dihydroxide: $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + 1155 \text{ kJ/kg CaO}$</p> <p>Calcium oxide reacts exothermically with acids to form Calcium salts.</p> <p>Calcium oxide reacts with aluminium and brass in the presence of moisture leading to the production of hydrogen: $\text{CaO} + 2 \text{ Al} + 7 \text{ H}_2\text{O} \rightarrow \text{Ca}(\text{Al}(\text{OH})_4)_2 + 3 \text{ H}_2$</p>
10.3: Additional remarks	
	Calcium oxide absorbs moisture and carbon dioxide from air to form calcium carbonate, which is a common material in the nature.
11: Toxicological information	
11.1: Acute effect	
Eye contact	Risk of serious damage to eyes.
Inhalation	Inhalation of dust causes discomfort to the upper respiratory tract. Irritant to the respiratory tract in high concentration of dust.
Ingestion	Calcium oxide is not toxic. Large amounts may cause irritation to the gastrointestinal tract.
Skin contact	Irritating to skin in the presence of moisture.
11.2: Long term exposure	
Eye contact	Risk of serious damage to eyes.
Inhalation	Prolonged and repeated inhalation of dust may affect the respiratory tract.
Skin contact	In case of prolonged skin contact, product may cause serious damage to skin in combination with moisture.

12: Ecological information	
12.1: Ecotoxicity	
12.1.1: Acute/Prolonged toxicity to fish	On <i>C. carpio</i> LC ₅₀ = 1070 mg/l for 96 hours, the substance is non-toxic, because LC ₅₀ -value is > 100 mg/l. At a concentration of 1070 mg/l, the system has a pH value of 12,5-12,8. This pH-value will rapidly decrease as result of dilution and carbonation.
12.1.2: Acute/Prolonged toxicity to aquatic invertebrates	On aquatic crustacea LC ₅₀ = 160 mg/l for 24 hours.
12.1.3: Acute/Prolonged toxicity to aquatic plants	No test data
12.1.4: Toxicity to micro-organisms e.g. bacteria	At high concentration, through the rise of temperature and pH, calcium oxide is used for disinfection of sewage sludges.
12.1.5: Chronic toxicity to aquatic organisms	No data
12.1.6: Toxicity to soil dwelling organisms	No data
12.1.7: Toxicity to terrestrial plants	No data, but calcium oxide is used as a fertiliser.
12.1.8: General effect	Acute pH-effect. Although this product is useful to correct water acidity, an excess of more than 1 g/l may be harmful to aquatic life. pH-value of > 12 will rapidly decrease as result of dilution and carbonation.
12.2: Mobility	
	Calcium oxide reacts with water and/or carbon dioxide to form respectively calcium dihydroxide and/or calcium carbonate, which are sparingly soluble, and so present a low mobility in most ground. Moreover those products are used as fertilisers.
12.3: Persistence and degradability	
	Not relevant for inorganic substances.
12.4: Bioaccumulative potential	
	Not relevant for inorganic substances.
13: Disposal considerations	
	Disposal should be in accordance with local and national legislation.
14: Transport information	
14.1: Transport consideration	
14.1.1: Classification	Not classified as hazardous for transport.
14.1.2: ADR (Road)	Not subject to identification.
14.1.3: RID (Rail)	Not subject to identification.
14.1.4: IMDG / GGVSea (Sea)	Not subject to identification .
14.1.5: IATA-DGR / ICTAO-TI(Air)	Code UNO 1910 – Class 8 – Group of packing III
14.2: Special precaution	
	Avoid any release of dust during transportation, by using tight tanks for powders and covered trucks for pebbles.

15: Regulatory information	
15.1: Labelling according to EEC-directives	
15.1.1: Symbol and classification of the substance according to Directive 67/548/EEC	Xi Irritant 
15.1.2: Restriction of marketing and employment	None
15.1.3: National regulations	Water endangering class 1 (Germany)
16: Other information	
16.1: Risk phrases	
	R37 Irritating to respiratory system R38 Irritating to skin R41 Risk of serious damage to eyes
16.2: Safety phrases	
	S2 Keep out of reach of children S25 Avoid contact with eyes S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S37 Wear suitable gloves S39 Wear eye/face protection
16.3: Further information	
	This safety data sheet supplements the technical use instructions without replacing them. The information contained therein is based on the state of our knowledge regarding the product, at the mentioned date. They are provided in good faith. It does not exempt the user from knowing and applying all texts regulating his activity. It will be his sole responsibility to take all necessary precautions when using the product.
16.4: Guidance and references	
	Data sheet prepared in accordance with: Annex II of the REACH Regulation (EC) 1907/2006. <u>References:</u> 1. Council Directive 90/269/EEC 2. Booklet L64 - Safety Signs and Signals. The Health and Safety (Safety Signs and Signals) Regulations 1996 - Guidance on Regulations (HSE) - ISBN 0 7176 0870 0 3. IUCLID Dataset –2000 4. The Merck Index (Ed. Merck & Co, Rahway, USA)
16.5: Revision	
The additions or modifications are announced in italic.	The present version is a renewed version, in order to be in accordance with the Annex II of the REACH Regulation (EC) 1907/2006. Version October 2007
End of the safety data sheet	