



Safety Data Sheet (SDS)

Calcium oxide

CAS No 1305-78-8

Creation date: 19th Dec 2016

1 Identification of the substance or mixture and of the supplier

1.1 GHS product identifier : Calcium oxide

1.2 Other means of identification : Burnt lime, CALCIUM OXIDE, Lime, Quicklime

1.3 Use of the chemical : Manufacture of calcium hydroxide (hydrated lime), pH control, soil stabilization, as flux agent in iron and steelmaking and sugar refining

1.4 Manufacturer's details :

Company name: RCI Lime Sdn Bhd

Address: Lot 45157 & 45158, Gunung Panjang, 31600 Gopeng, Perak, Malaysia

Tel: +6 05 - 359 3188

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Emergency call: 019-458 8819

2. Hazard Identification

GHS Classification (Based on ICOP)

Physical Hazards	Explosives	
	Explosives	Not applicable
	Flammable gases	Not applicable
	Flammable aerosols	Not applicable
	Oxidizing gases	Not applicable
	Gases under pressure	Not applicable
	Flammable liquids	Not applicable
	Flammable solids	Not classified
	Self-reactive substances and mixtures	Not applicable
	Pyrophoric liquids	Not applicable
	Pyrophoric solids	Not classified
	Self-heating substances and mixtures	Not classified
	Substances and mixtures which, in contact with water, emit flammable gases	Not classified
	Oxidizing liquids	Not applicable
	Oxidizing solids	Classification not possible
	Organic peroxides	Not applicable
	Corrosive to metals	Classification not possible

Human Health Hazards	Acute toxicity (Oral)	Category 4
	Acute toxicity (Dermal)	Category 4
	Acute toxicity (Inhalation: Gases)	Not applicable
	Acute toxicity (Inhalation: Vapours)	Classification not possible
	Acute toxicity (Inhalation: Dusts)	Category 4
	Acute toxicity (Inhalation: Mists)	Not applicable
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Respiratory sensitization	Classification not possible
	Skin sensitization	Not classified
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Classification not possible
	Reproductive toxicity	Classification not possible
	Specific target organ toxicity - Single exposure	Category 1(respiratory system), 2(systemic toxicity, digestive organ)
Specific target organ toxicity - Repeated exposure	Category 1(respiratory system)	
Aspiration hazard	Classification not possible	
Environmental Hazards	Acute toxicity to the aquatic environment	Not classified
	Chronic toxicity to the aquatic environment	Not classified

Label Elements

Pictogram and Symbol :



Signal word :

Danger

Hazard

statement :

May be harmful if swallowed

Causes severe skin burns and eye damage

Causes serious eye damage

Causes damage to respiratory system. May cause damage to systemic toxicity, digestive organ

Causes damage to respiratory system through prolonged or repeated exposure

May be fatal if swallowed and enters airways

Precaution :

[Prevention]

Do not breathe dust/fume.

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

[Response]

IF SWALLOWED: Rinse mouth. Immediately seek medical attention or doctor/physician.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately seek medical attention or doctor/physician.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call doctor/physician and seek medical attention.

Wash contaminated clothing before reuse.

[Storage]

Store locked up.

[Disposal]

Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

3.1 Substance : Calcium oxide

3.2 Other name : Burnt lime, CALCIUM OXIDE, Lime, Quicklime

3.2 Chemical formula : CaO

3.3 CAS number : 1305-78-8

3.5 ICSC number : 0409

3.6 EC Number : 215-138-9

3.7 NITE number : 739

3.8 Concentration : >99%

4 First aid measures

4.1 Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion

IF SWALLOWED: Rinse mouth. Immediately seek medical attention and call a doctor/physician.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention immediately

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call doctor/physician and seek medical attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call doctor/physician and seek medical attention.

4.2 Most important symptoms/effects, acute and delayed

May be harmful if swallowed (Acute toxicity (Oral) Category 4)

Causes severe skin burns and eye damage (Skin corrosion/irritation Category 2)

Causes serious eye damage (Serious eye damage/eye irritation Category 1)

Causes damage to respiratory system May cause damage to systemic toxicity, digestive organ (Specific target organ toxicity - Single exposure Category 1 (respiratory system), 2 (systemic toxicity, digestive organ))

Causes damage to respiratory system through prolonged or repeated exposure (Specific target organ toxicity - Repeated exposure Category 1(respiratory system))

Please refer to "11 Toxicological information" in detail.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

5 Fire fighting measures

Acute hazards/symptoms in Fire : Not combustible.

First AID/Fire Fighting in Fire: In case of fire in the surroundings: all extinguishing agents allowed except water.

Use water spray to cool fire-exposed containers. Do NOT use carbon dioxide. Use extinguisher media most appropriate for the surrounding fire. Do NOT use halogenated agents. Use flooding quantities of water. Contact professional fire-fighters immediately.

6 Accidental release measures

Sweep spilled substance into dry containers. Do NOT use water on bulk material spills. Lime reacted vigorously with water, releasing heat. Personal protection: P2 filter respirator for harmful particles.

7 Handling and storage

7.1 Precautions for safe handling

Do not breathe dust/fume.

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Store locked up.

8 Exposure controls/personal protection

8.1 Control parameters, e.g., occupational exposure limit values or biological limit values. ACGIH 2005, TLV-TWA 2mg/m³

8.2 Appropriate engineering controls (Please refer to engineering controls described in "7.1 Precautions for safe handling".)

8.3 Individual protection measures, such as personal protective equipment (Please refer to Individual protection measures described in "7.1 Precautions for safe handling".)

9 Physical and chemical properties

9.1 Appearance (physical state, colour, etc.) : white - grey crystal powder

9.2 Odour : No odour

9.3 Odour threshold : No data

9.4 pH : 12.44 (solution in 25 degree Celsius)

9.5 Melting point/Freezing point : 2570 degree Celsius

9.6 Initial boiling point and boiling range : 2850 degree Celsius

9.7 Flash point : non-combustible

9.8 Flammability (solid, gas) : non-combustible

9.9 Upper/lower flammability or explosive limits : No data

9.10 Vapour pressure : No data

9.11 Vapour density : No data

9.12 Relative density / specific gravity : 3.30 - 3.40 g/cm³ (true)

9.13 Solubility(ies) : react with water. 1g/840mL water.

9.14 Partition coefficient: n-octanol/water : No data

9.15 Auto ignition temperature : non-combustible

9.16 Decomposition temperature : No data

9.17 GHS Classification - Physical Hazards

10 Stability and reactivity

10.1 Chemical stability : Chemically stable, but reacts with water to form calcium hydroxide, while generating heat. Reacts with carbon dioxide to form calcium carbonate

10.2 Possibility of hazardous reactions : React with strong oxidizing reagent.

10.3 Conditions to avoid (e.g., static discharge, shock or vibration) : Heat

10.4 Incompatible materials : strong oxidizing reagent

10.5 Hazardous decomposition products : CO, CO₂

11 Toxicological information

11.1 Acute toxicity (Oral)

There is no rat data, and it was classified into Category 5 from a data of mouse LD50: 3059mg/kg (RTECS (2004)).

May be harmful if swallowed (Acute toxicity (Oral) Category 4)

11.2 Acute toxicity (Dermal) : No data available

11.3 Acute toxicity (Inhalation: Gases) : Solid (GHS definition)

11.4 Acute toxicity (Inhalation: Vapours) : No data available

11.5 Acute toxicity (Inhalation: Dusts / Mist) : No data available

11.6 Skin corrosion / irritation

Since it has corrosivity on skin (ICSC (1997)) is very irritating to damp skin (ACGIH (2001)), and is designated to UN classification class 8-III, it was classified into Category 1C.

Causes severe skin burns and eye damage (Skin corrosion/irritation Category 2)

11.7 Serious eye damage / eye irritation

It categorised into Category 1 based on the corrosive to eye (ICSC (1997)), and corrosion of the skin / stimulative GHS classification being Category 1C.

Causes serious eye damage (Serious eye damage/eye irritation Category 1)

11.8 Respiratory sensitization / Skin sensitization

Respiratory sensitization: Since there is no data, it cannot be classified. Skin sensitization: It was put outside of the Category according to the negative statement (IUCLID (2000)) of a test in humans.

11.9 Germ cell mutagenicity

We found the description that it gave negative result in mitotic recombination tests by yeast cells, and it gave negative in the Ames examination (IUCLID (2000)). However, we found no in vivo results and we presupposed we could not classify it.

11.10 Carcinogenicity

Classification not possible due to lack of data and reports

11.11 Reproductive toxicity

It was considered that it cannot be classified because of insufficient data although it was described "no effects" in one-generation test of rats and mice (IUCLID (2000)).

11.12 Specific target organ toxicity - Single exposure

There is a statement that the inflammation of a respiratory tract (ACGIH (2001)) and pneumonitis (HSDB (2005)) are caused from dust inhalation and it was set as category 1 (respiratory systems), and if it drinks by mistake, a pulse will be quick and will become weak, breathing is quick and becomes shallow, body temperature falls, it becomes difficult to breathe by cancer of glottis, and will be in a shock states. There is the description which also produces esophageal, the stomach perforation (HSDB (2005)), but it was Priority2, it classified into Category 2 (whole body toxicity, digestive organ).

Causes damage to respiratory system. May cause damage to systemic toxicity, digestive organ (Specific target organ toxicity - Single exposure Category 1 (respiratory system), 2 (systemic toxicity, digestive organ))

11.13 Specific target organ toxicity - Repeated exposure

It was classified into Category 1 (respiratory systems) according to the statement of ulcers and perforations of nasal septum (ACGIH (2001)), and (ICSC (1997)).

Causes damage to respiratory system through prolonged or repeated exposure (Specific target organ toxicity - Repeated exposure Category 1 (respiratory system))

11.14 Aspiration hazard

Classification not possible

12 Ecological information

12.1 Acute toxicity to the aquatic environment

It was classified as Out of Category from 96-hour LC50=1070mg/L of fishes (Carp) (IUCLID, 2000).

12.2 Chronic toxicity to the aquatic environment

Since it was not water-insolubility (aqueous solubility =1200mg/L(PHYSPROP Database, 2005)) and acute toxicity was low, it was classified as Out of Category.

12.3 Other adverse effects

13 Disposal considerations

13.1 Description of waste residues and information on their safe handling and methods of disposal

If you would like to dispose of this chemical, you should properly dispose of this by yourself or ask qualified specific agents dispose of this according to related legislations and local regulations. If you would like to ask the agents dispose of this chemical, you should provide sufficient information on dangerousness and hazard of this chemical.

13.2 The disposal of any contaminated packaging

Container should be recycled after cleaning or if you would like to dispose of container

of this chemical, you should properly dispose of this by yourself or ask qualified specific agents dispose of this according to related legislations and local regulations. If you would like to ask the agents dispose of this container, you should provide sufficient information on dangerousness and hazard of this chemical in this container and information on ingredient and notice of container.

14 Transport information

14.1 Not classified as dangerous goods by Australian Dangerous Goods (ADG) Code.

14.2 Not classified as dangerous goods by International Maritime Dangerous Goods (IMDG)

14.3 Quicklime is not classified as a hazardous material by the US DOT and is not regulated by the Transportation of Dangerous Goods (TDG) when shipped by means other than air.

14.4 Classified as below by International Air Transport Dangerous Goods (IATA). Only applicable when transported by AIR.

14.4.1 UN Number : UN 1910

14.4.2 UN Proper shipping name : Calcium oxide

14.4.3 Transport Hazard class(es) : Class 8: Corrosive substances

14.4.4 Packing group, if applicable : III

14.5 Marine pollutant: Alkaline material and will cause an increase in pH.

14.6 Special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises

15 Regulatory information

15.1 Occupational Safety and Health (Classification, Packaging and Labelling of Hazardous Chemicals) Regulation 2013:

Risk Phrases: R36/38 - Irritating to eyes and skin.

Safety Phrase : 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.

: S36/39 - Wear suitable protective clothing, eye / face protection.

16 Other Information

16.1 SDS Creation Date : 19 December 2016

16.2 Revision : 8

16.3 References : Industrial Code of Practice (ICOP) 2014
