

Section 01 - PRODUCT AND COMPANY IDENTIFICATION

Product name: Calcitic Lime

Company Name: Carmeuse Brasil Soluções Químicas SA

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Main recommended uses for the substance or mixture: Application in the steel, cellulose, animal feed, refractories, flux in steel manufacturing, calcium carbide manufacturing, water and effluent treatment, glass, cement, insecticide, fungicide, oil and sugar refining.




Section 02 - HAZARDS IDENTIFICATION

Classification of the substance or mixture:

<u>HAZARD IDENTIFICATION</u>	<u>CLASSIFICATION</u>
Acute toxicity - Oral	Category 5
Acute Toxicity - Dermal	Category 5
Acute toxicity - Inhalation	Category 5
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1 and subcategories 1A and 1B
Dangerous to the aquatic environment - Acute	Category 3
Specific target organ toxicity - Single exposure	Category 3

GHS labeling elements, including precautionary statements:

	Pictograms	Word of warning	Danger Phrase	Precautionary Phrases			
				Prevention	Emergency response	Storage	Disposition
Acute Toxicity - Oral	Not required	Attention	May be harmful if ingested. H303	Not required	If you feel unwell, contact a Toxicological Information Center/doctor. P312	Not required	Not required
Acute Toxicity - Dermal	Not required	Attention	May be harmful in contact with skin. H313	Not required	If you feel unwell, contact a Toxicological Information Center/doctor. P312	Not required	Not required
Acute Toxicity - Inhalation	Not required	Attention	May be harmful if inhaled. H333	Not required	In case of inhalation: If you feel unwell, contact a Toxicological Information Center/doctor. P304+P312	Not required	Not required
Skin corrosion/irritation		Attention	Causes skin irritation. H315	Wash carefully after handling. P264 Wear gloves and protective clothing and face protection. P280	IN CASE OF CONTACT WITH THE SKIN: Wash with plenty of soap and water. P302+P352 Specific treatment: Remove clothing, jewelry and pants immediately. Wash with plenty of soap and water, until no evidence of chemical remains. P321 In case of skin irritation: Consult a doctor. P332+P313 Remove all contaminated clothing and wash it before reuse. P362+P364	Not required	Not required

Serious eye damage/eye irritation		Danger	Causes serious eye damage. H318	Use eye protection. P280	IN CASE OF CONTACT WITH THE EYES: Rinse carefully with water for several minutes. If you wear contact lenses, remove them if it is easy. Keep rinsing. P305+P351+P338 Immediately contact a TOXICOLOGICAL INFORMATION CENTER or doctor. P310	Not required	Not required
Skin sensitization		Attention	May cause allergic skin reactions. H317	Avoid inhaling dust. P261 Contaminated work clothes cannot leave the workplace. P272 Wear gloves and protective clothing and face protection. P280	IN CASE OF CONTACT WITH THE SKIN: Wash with plenty of soap and water. P302+P352 In case of skin irritation or rash: consult a doctor. P333+P313 Specific treatment: Remove clothing, jewelry and pants immediately. Wash with plenty of soap and water, until no evidence of chemical remains. P321 Remove all contaminated clothing and wash it before reuse. P362+P364	Not required	Dispose of contents/ container in an appropriate place P501
Dangerous to the aquatic environment - Acute	Not required	Not required	Harmful to aquatic organisms. H402	Avoid release to the environment. P273	Not required	Not required	Dispose of contents/ container in an appropriate place P501
Toxicity to specific target organs - Single exposure		Attention	May cause respiratory tract irritation. H335 May cause drowsiness or dizziness. H336	Avoid inhaling dust. P261 Use only outdoors or in well-ventilated areas. P271	IN CASE OF INHALATION: Remove person to fresh air and keep at rest in a position comfortable for breathing. P304+P340 If you feel unwell, contact a TOXICOLOGICAL INFORMATION CENTER or a doctor. P312	Store in a well-ventilated place. Keep the container tightly closed. P403+P233 Store locked up. P405	Dispose of contents/ container in an appropriate place P501

Section 3 - COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name:	Calcium Oxide
Synonyms:	Quicklime, lime
Chemical formula:	CaO
Product name:	Calcitic Lime
Concentration or concentration range:	>90%(Calcium Oxide)
CAS registration number:	1305-78-8
UN No.:	1910
Impurities that contribute to the hazard:	It does not present relevant impurities for classification and labeling.

Section 04 - FIRST AID MEASURES

Inhalation:	<ul style="list-style-type: none"> - Remove the patient to a cool, ventilated place. - If breathing is difficult, give oxygen. - Call a doctor. 	
Skin contact:	<ul style="list-style-type: none"> - Remove contaminated clothing. Immediately rinse with plenty of water for at least 15 minutes. Call a doctor. 	
Eye contact:	<ul style="list-style-type: none"> - Speed is crucial, essential, indispensable. - Irrigate the affected area with plenty of clean water for 15 minutes. - Seek medical attention and continue irrigation until the patient arrives. 	
Ingestion:	<ul style="list-style-type: none"> - DO NOT INDUCE VOMITING. - Never give anything by mouth to an unconscious person. - Rinse mouth and throat with water and give plenty of water or milk to drink. - Call a doctor. 	
Long-term overexposure:	<ul style="list-style-type: none"> - Repeated and prolonged contact can cause irritation and "dermatitis". - Repeated and prolonged inhalation of high concentrations of dust may cause nasal septum ulceration and perforation. 	
Aggravation of preexisting conditions:	<ul style="list-style-type: none"> - People with pre-existing skin problems or impaired respiratory function may be more susceptible to the effects of this substance. 	
Actions to avoid:	<ul style="list-style-type: none"> - Avoid contact with the product. 	
Rescuer protection:	<ul style="list-style-type: none"> - Avoid skin and eye contact with the product. Use appropriate personal protective equipment (PPE). In all cases medical attention should be immediate and delayed effects are to be expected after exposure. 	
Notes to doctor:	Acute:	Skin and eye burns, respiratory tract tissue irritation.
	Chronic:	The chronic local effect may consist of multiple areas of skin destruction or primary dermatitis. Similarly, inhalation can result in irritation or damage to airway tissues to varying degrees and an increased susceptibility to respiratory disease.

Section 05 - FIRE FIGHTING MEASURES

Extinguishing media:	- Quicklime is non-flammable and non-explosive.
Substance-specific hazards:	- In the presence of water flammable materials may be subject to spontaneous combustion when saturated with quicklime, due to the exothermic reaction produced.
Protective measures for the firefighting team:	Use appropriate personal protective equipment (PPE). Use the required self-contained positive pressure respiratory protective equipment and full protective clothing. Remove containers from fire area if this can be done without risk. Cool containers exposed to flame from the side with water, even after the fire has been extinguished. Self-contained masks must be provided to firefighters in buildings or confined areas where this product is stored.

Section 06 - CONTROL MEASURES FOR SPILLS OR LEAKS

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Preventively isolate the spill site for at least 50 meters in all directions. Do not smoke. Do not touch damaged containers or spilled material without proper clothing. Use personal protective equipment as described in section 8 of this MSDS.

For emergency service personnel: Keep the product dry. Use suitable PPE, splash goggles, and in extreme cases, face protection, suitable protective gloves, PVC or rubber apron, rubber or PVC boots and a mask with a gas filter. Granulated calcitic quicklime can be replaced inside trucks using suitable lime-handling equipment; Calcitic micro-powdered quicklime can be cleaned by vacuum suction unit or be carefully placed into bags with suitable lime-handling equipment.

Environmental precautions: contain the product in dikes, preventing release into water courses or sewers. Prevent product from entering rivers, canals or wells.

Methods and materials for containment and cleaning: try to eliminate the leak and remove the product with absorbent blankets for alkaline products and vermiculite. Dilute any residues that remain on site with water, neutralize with acetic acid until the pH limits required for effluent emission are reached, collection in appropriate container for recovery or final disposal. For final disposal, proceed according to Section 13 of this MSDS.



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Section 07 - HANDLING AND STORAGE

Precautions for a safe environment: handle using personal protective equipment as described in Section 8 of this MSDS. Handle in a ventilated area and avoid contact with incompatible materials. Wash hands after handling product and remove clothing and PPE before entering eating areas and before eating, drinking, smoking or using the bathroom. Contaminated clothing should be changed and washed before reuse.

Safe storage conditions, including any incompatibilities: store in a ventilated place. Quicklime should be kept dry and in closed containers at all times. Minimize contact with air. The product is non-flammable and non-explosive. Due to the intense heat generated when quicklime comes into contact with water, it cannot be stored near chemicals. Contact with incompatible chemicals must be avoided if stored in a common warehouse. Incompatible with acid products, organic materials, solvents, oxidants and ammonium and heavy metal salts. No need to add stabilizers and antioxidants to ensure product stability.

Suitable packaging materials: Big Bags made of raffia or PVC and polyethylene bags.

Unsuitable materials for packaging: Kraft paper bags and metal packaging.

Section 08 - EXPOSURE CONTROL AND INDIVIDUAL PROTECTION

Control parameters:

Exposure limits: ACGIH: Exposure Limit: TLV - TWA: 2 mg/m³ PEL - TWA: 5 mg/m³

Engineering control measures: Use exhaust fans to keep dust levels below exposure limits in poorly ventilated and dusty workplaces. Handle, store and transport the product using adequate signage and in a protected area to avoid accidents. Keep emergency showers and eyewash stations available in the work area.

Personal protection measures:

Eye protection: safety glasses, and face shield in extreme cases.

Skin protection: Long-sleeved shirt and pants covering shoes. Clothing should fit tightly around the wrists, neck and ankles. Suitable protective gloves, PVC or rubber apron, PVC clothing or other equivalent material, rubber or PVC boots.

Respiratory protection: PFF1-S mask against dust and mists.

Thermal hazards: when in contact with water, quicklime generates intense heat. Use latex gloves with cotton textile support.

Section 09 - PHYSICO-CHEMICAL PROPERTIES

Physical State: White solid in different granulometric ranges	Fusion point: 2572° C	Flammability: Not available	Solubility (in water): 1.33g/l saturated solution at 10° C (quenching in water to form Calcium Hydroxide)
Form: solid	Freezing point: Not available	Lower flammability limit: Not available	Partition coefficient - n-octanol/water: Not available
Color: white	Initial boiling point: 2850° C	Upper flammability limit: Not available	Auto-ignition temperature: Not available
Odor: odorless	Boiling temperature range: Not available	Steam pressure: Not available	Decomposition temperature: Not available
Odor threshold: not available	Flash point: Not available	Steam density: Not available	Viscosity: Not available
pH: 12.5	Evaporation rate: Not available	Relative density: 3.35 g/cm ³	

Section 10 - STABILITY AND REACTIVITY

Reactivity: Reacts with air, water and acids.	Conditions to avoid: humid places and stored near acids.
Chemical stability: stable at room temperature under normal conditions of use and storage, as in closed containers. Contact with air must be completely sealed and the product must be kept away from incompatible materials, such as water and acids.	Incompatible materials: Incompatible with water and acids. In the presence of moisture, it generates excessive heat, which can ignite flammable materials. Reacts violently with acids.
Possibility of hazardous reactions: When in contact with water, it reacts releasing strong heat. Therefore, the product must be kept in dry weather, away from contact with water. The product also reacts intensely when in contact with acids.	Hazardous decomposition products: None.



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Section 11 - TOXICOLOGICAL INFORMATION

Acute toxicity:

Not specified by Brazilian law.

Skin corrosion/irritation:

Dermal exposure: Causes skin irritation, may cause dryness.

Serious eye damage/eye irritation:

Eye exposure: Irritant - may cause eye redness.

Respiratory or skin sensitization:

Inhalation: May cause irritation to the respiratory mucosa. Severe inhalation may result in airway inflammation, nasal septum ulceration and perforation and possible pneumonia.

Dermal exposure: May cause allergic skin reactions with itching and dermatitis.

Germ cell mutagenicity:

The product is not expected to show mutagenicity in germ cells.

Carcinogenicity:

The product is not expected to be carcinogenic.

Reproductive toxicity:

The product is not expected to show reproductive toxicity.

Specific target organ toxicity - single exposure:

The product is not expected to show specific target organ toxicity from single exposure.

Specific target organ toxicity - repeated exposure:

The product is not expected to show specific target organ toxicity from prolonged or repeated exposure.

Aspiration hazard:

Irritating to nose and throat.

Other information:

Do not transport or store the product together with food.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity: Bioaccumulative potential in aquatic organisms is not expected. No available relevant test results to assess bioaccumulation of substances or ingredients in the mixture. No available data on toxicity to aquatic or terrestrial organisms.

Persistence and degradability: the product will lose its natural characteristics in contact with air, water and acids. Because calcium oxide is hygroscopic, it reacts with air moisture and forms hydrated lime (Calcium Hydroxide). As it is soluble in acids, contact with the product should be avoided so that there is no degradation.

Bioaccumulative potential: bioaccumulation potential in aquatic organisms is not expected. No available relevant test results to assess substance bioaccumulation.

Soil mobility: the soil mobility potential of the substance is not available.

Other adverse effects: quicklime is not a hazardous product. The impact on the environment is only local, reaching only the area close to the leak. If in contact with water courses or lakes, it can raise the pH due to its basic characteristic.

Section 13 - CONSIDERATIONS ON FINAL DESTINATION

Recommended methods for final disposal

Product: Small amounts of material can be disposed of as common waste or returned to the container for later use if not contaminated. It must be administered in an appropriate and approved location.

Product leftovers: neutralize with acetic acid until reaching the pH limits required by the legislation for effluent emission. While not listed as a hazardous disposal product, this material may require appropriate analysis to determine specific disposal requirements. Local disposition regulations may differ from federal and state disposition regulations.

Used packaging: when transported in Big Bags its reuse is possible as long as with the same product. If the product is transported in polyethylene or paper bags, send the used packaging to a recycling service.



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Section 14 - TRANSPORT INFORMATION

National and International Regulations:

Ground transportation: resolution n° 420 of February 12, 2004 of the National Land Transport Agency (ANTT). Approves the Supplementary Instructions to the Regulation of Land Transport of Dangerous Goods and its modifications.

Waterway Transport: DPC - Directorate of Ports and Coasts (Transport in Brazilian waters); Maritime Authority Norms (NORMAM); STANDARD 01/DPC: Vessels Used in Open Sea Navigation; STANDARD 02/DPC: Vessels Used in Inland Navigation; IMO – “International Maritime Organization”; International Maritime Dangerous Goods Code (IMDG Code).

Air Transport: ANAC - National Civil Aviation Agency - Resolution No. 129 of December 8, 2009; RBAC N° 175 – (Brazilian Civil Aviation Regulation) - Transport of Dangerous Goods in Civil Aircraft; IS No. 175-001 - Supplementary Instruction - IS; ICAO – “International Civil Aviation Organization” – Doc 9284-NA/905; IATA - International Air Transport Association; Dangerous Goods Regulation (DGR).

UN number: 1910

Proper boarding name: Quicklime (Calcium Oxide)

Risk class: 8 - Corrosive substance

Risk number: 80

Packing group: III

Danger to the environment: Product not classified as a marine pollutant for waterway transport and not classified as dangerous for land transport.

Special provisions number 106: Classified as dangerous for air transport only

The product must be transported with the necessary care, avoiding damage to the packaging with consequent loss of the product, safeguarding the rules and legislation in force for the transport of the substance.

Section 15 - REGULATORY INFORMATION

Product Specific Regulations:

Decree Law No. 96.044 of May 18, 1988

Federal Decree No. 2.657 of July 3, 1998

Ordinance No. 1.274 of August 25, 2003

ANTT Resolution No. 420 of February 12, 2004

Law No. 12.305 of August 02, 2010

Decree No. 7.404 of December 23, 2010

Ordinance No. 229 of May 24, 2011

Globally Harmonized System of Classification and Labeling of Chemicals (GHS). 4. rev. ed. New York: United Nations, 2011

National Fire Protection Association: NFPA 704

ABNT NBR 14619:2014; ABNT NBR 7500:2013; ABNT NBR 7503:2013; ABNT NBR 9735:2012; ABNT NBR 14725-3:2012; ABNT NBR 14725-4:2012; ABNT NBR 7501:2011; ABNT NBR 14725-1:2009; ABNT NBR 14725-2:2009

Attention to the possible existence of local regulations. The product does not contain substances subject to any ban or restriction in the country or region.

Section 16 - OTHER INFORMATION

Important information: reading this MSDS before handling the product is recommended. Product training is of paramount importance for safe handling of the product.

References: Dangerous Properties of Industrial Materials N.Irving-Sax.

Important legal note: “The data and information transcribed in this MSDS are provided in good faith and are based on the scientific knowledge available at the time and on the specific existing literature. No guarantee is given on the result of the application of this information. Users are not exempted from their responsibilities at any stage of handling and transporting the product. The provisions of existing legal regulations prevail”.

Captions and abbreviations:

UN - United Nations

GHS - Globally Harmonized System - Classification and Labeling of Chemicals

NFPA - National Fire Protection Association

ANTT - National Land Transport Agency

ABNT - Brazilian Association of Technical Standards

NBR - Brazilian Standard

CAS - Chemical Abstract Service

PPE - Personal Protective Equipment

PVC - Polyvinyl Chloride

MSDS - Safety Data Sheet for Chemicals

pH - Hydrogenionic Potential