

Section 01 - PRODUCT AND COMPANY IDENTIFICATION

Product name: Calcitic Hydrated Lime

Company Name: Cal Arco Íris Ltda.

Address: Highway BR 354, Km 501.9 -s/nº- Rural Area - Formiga/MG- CEP:35570-970 - **Contact phone:** (37) 3322-1675

Phone/Fax: (37) 3322-6823 – **Emergency Phone:** (37) 3322-1675

Website/email: www.calarcoiris.com.br /calarcoiris@calarcoiris.com.br


Main recommended uses for the substance or mixture: Chemical product with alkaline characteristics used for the treatment of water, sewage, effluents and other industrial applications.


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 3
Serious eye damage/eye irritation	Category 1
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	Not required	Attention	Causes moderate skin irritation. H316	Not required	In case of skin irritation: Consult a doctor. P332+P313	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

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
Specific target organ toxicity - Single exposure		Attention	May cause respiratory tract irritation. H335 or 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 in a locked place. P405	Dispose of contents/ container in an appropriate place P501

Section 3 - COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name:	Calcium Hydroxide
Synonyms:	Hydrated lime, slaked lime.
Chemical formula:	Ca(OH) ₂
Product name:	Calcitic Hydrated Lime
Concentration or concentration range:	>90% (Calcium Hydroxide)
CAS registration number:	1305-62-0
UN No.:	Unregulated
Impurities that contribute to the hazard:	It does not present relevant impurities for classification and labeling.

Section 04 - FIRST AID MEASURES

Inhalation: Remove the patient to a cool, ventilated place. If breathing is difficult, give oxygen. Call a doctor.

Skin contact: Remove contaminated clothing. Immediately rinse with plenty of water for at least 15 minutes. Call a doctor.

Eye contact: 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: Rinse mouth abundantly and drink generous amounts of water. Seek medical help to check for possible irritation of the gastrointestinal tract. If victim is unconscious, do not induce vomiting. Never give anything by mouth to an unconscious person. If the victim is vomiting, keep the head down between the hips to aid breathing.

Long-term overexposure: 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: People with pre-existing skin conditions or impaired respiratory function may be more susceptible to the effects of this substance.

Actions to avoid: Avoid contact with the product.

Rescuer protection: 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.

Inhalation: This product does not present an inhalation hazard.

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.



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Section 05 - FIRE FIGHTING MEASURES

Extinguishing media:	Hydrated lime is non-flammable and non-explosive.
Specific hazards of the mixture:	Not applicable.
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, face protection, suitable protective gloves, in extreme cases, PVC or rubber apron, rubber or PVC boots and a mask with a gas filter. Calcitic hydrated lime can be cleaned by a vacuum suction unit or can be carefully placed inside the 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.

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. Hydrated lime should be kept dry and in closed containers at all times. Minimize contact with air. The product is non-flammable and non-explosive. 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 Raffia Bags or Kraft Paper Bags.

Unsuitable materials for packaging: metal packaging.

Section 08 - EXPOSURE CONTROL AND INDIVIDUAL PROTECTION

Control parameters:

OSHA Permissible Exposure Limit (PEL): 15 mg/m³ (total dust), 5 mg/m³ (breathable fraction)

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: not applicable

Section 09 - PHYSICO-CHEMICAL PROPERTIES

Physical State: Solid	Fusion point: 580°C	Flammability: Not available	Solubility (in water): 0.185 g/100 g of water
Form: Solid	Freezing point: Not available	Lower flammability limit: Not available	Partition coefficient - n-octanol/water: Not available
Color: white	Initial boiling point: Not available	Upper flammability limit: Not available	Auto-ignition temperature: Not available
Odor: Irritating	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 (1% by weight solution at 25°C)	Evaporation rate: Not available	Relative density: 2.24 g/cm ³ at 20° C (solid)	

Section 10 - STABILITY AND REACTIVITY

Reactivity: reacts with air and acids.	Conditions to avoid: minimize exposure to air to prevent degradation and avoid contact with acids. Attacks some metals.
Chemical stability: under normal conditions of use and storage, hydrated lime is stable.	Incompatible materials: reacts violently with strong acids. Reacts with phosphorus to form phosphine which catches fire with air. It can corrode some metals like aluminum and iron.
Possibility of hazardous reactions: the product reacts intensely when in contact with strong acids.	Hazardous decomposition products: None.

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 not expected in aquatic organisms. No available relevant test results to assess substance bioaccumulation. 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.

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: hydrated lime 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. The product may produce suspended particulate matter.

Section 13 - CONSIDERATIONS ON FINAL DESTINATION

Recommended methods for final disposal

Product: can be reused, as long as it is not contaminated with the products used to contain leaks. 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 paper bags, send the used packaging to a recycling service.

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).

Product Classified as non-hazardous for Land, Waterway and Air Transport.

UN number: Product not classified as dangerous for transport.

Proper boarding name: Product not classified as dangerous for transport.

Risk class: Product not classified as dangerous for transport.

Risk number: Product not classified as dangerous for transport.

Packing group: Product not classified as dangerous for transport.

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

The product must be transported 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