

SODA LIME

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1. Product Identification

Synonyms: Mixture of Calcium Hydroxide and Sodium Hydroxide and/or Potassium Hydroxide

CAS No.: Mixture

Molecular Weight: N/A

Chemical Formula: $\text{Ca(OH)}_2 + \text{NaOH} + \text{KOH}$

Product Codes: CHEM-309 and others.

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Calcium Hydroxide	1305-62-0	> 80	Yes
Potassium Hydroxide	1310-58-3	< 3	Yes
Sodium Hydroxide	1310-73-2	< 2	Yes

3. Hazards Identification

Emergency Overview

Emergency overview DANGER

Corrosive. Causes severe skin and eye burns. Causes digestive tract burns. Dust or vapor extremely irritating to the eyes and respiratory tract. OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). Potential health effects Routes of exposure Ingestion. Inhalation. Skin contact. Eye contact. Eyes Corrosive. Causes severe eye burns. Dust or splashes from the mixture may cause permanent eye damage.

Skin Corrosive. Causes severe skin burns.

Inhalation Corrosive. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

Ingestion Corrosive. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Target organs Eyes. Skin. Lungs. Respiratory system.

Chronic effects Corrosive. Prolonged contact causes serious tissue damage.

SAF-T-DATA^(tm) Ratings

Health Rating: 3 - Severe

Flammability Rating: 0 - None

Reactivity Rating: 1 - Slight

Contact Rating: 3 - Severe (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

Potential Health Effects

The perception of formaldehyde by odor and eye irritation becomes less sensitive with time as one adapts to formaldehyde. This can lead to overexposure if a worker is relying on formaldehyde's warning properties to alert him or her to the potential for exposure.

Inhalation:

May cause sore throat, coughing, and shortness of breath. Causes irritation and sensitization of the respiratory tract. Concentrations of 25 to 30 ppm cause severe respiratory tract injury leading to pulmonary edema and pneumonitis. May be fatal in high concentrations.

Ingestion:

Can cause severe abdominal pain, violent vomiting, headache, and diarrhea. Larger doses may produce decreased body temperature, pain in the digestive tract, shallow respiration, weak irregular pulse, unconsciousness and death. Methanol component affects the optic nerve and may cause blindness.

Skin Contact:

Toxic. May cause irritation to skin with redness, pain, and possibly burns. Skin absorption may occur with symptoms paralleling those from ingestion. Formaldehyde is a severe skin irritant and sensitizer. Contact causes white discoloration, smarting, cracking and scaling.

Eye Contact:

Vapors cause irritation to the eyes with redness, pain, and blurred vision. Higher concentrations or splashes may cause irreversible eye damage.

Chronic Exposure:

Frequent or prolonged exposure to formaldehyde may cause hypersensitivity leading to contact dermatitis. Repeated or prolonged skin contact with formaldehyde may cause an allergic reaction in some people. Vision impairment and enlargement of liver may occur from methanol component. Formaldehyde is a suspected carcinogen (positive animal inhalation studies).

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance. Previously exposed persons may have an allergic reaction to future exposures.

4. First Aid Measures

First aid procedures

Eye contact:

Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

Skin contact:

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.

Inhalation:

Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Call a physician or poison control center immediately.

Ingestion: Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Notes to physician:

Keep victim under observation. Treat symptomatically.

General advice:

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this safety data sheet to the doctor in attendance. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties The product is not flammable. No unusual fire or explosion hazards noted.

Suitable extinguishing media:

Water spray. Carbon dioxide (CO₂). Dry chemical powder. Foam.

Unsuitable extinguishing media:

None known.

Protection of firefighters:

Specific hazards arising from the chemical Fire may produce irritating, corrosive and/or toxic gases.

Protective equipment and precautions for firefighters:

Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters:

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

Specific methods:

In the event of fire and/or explosion do not breathe fumes.

6. Accidental Release Measures

Personal precautions:

Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Methods for cleaning up:

Avoid dust formation.

Large Spills:

Sweep up or vacuum up spillage and collect in suitable container for disposal.

Small Spills:

Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations. Neutralize spill area and washings with dilute acetic acid. Collect in a non-combustible container for prompt disposal.

7. Handling and Storage

Do not breathe dust or vapor. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using the product. Do not store in metal containers. Keep tightly closed in a dry, cool and well-ventilated place.

8. Exposure Controls/Personal Protection

Components	Type	Value
Calcium Hydroxide (1305-62-0)	TWA	5.0000 mg/m ³
Potassium Hydroxide (1310-58-3)	TWA	2.0000 mg/m ³
Sodium Hydroxide (1310-73-2)	TWA	2.0000 mg/m ³

U.S. - OSHA

Occupational exposure limits

Components	Type	Value	Form
Calcium Hydroxide (1305-62-0)	PEL	15.0000 mg/m ³	Total dust.
Sodium Hydroxide (1310-73-2)	PEL	2.0000 mg/m ³	5.0000 mg/m ³ Respirable fraction.

Engineering controls:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment:

Eye / face protection:

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection:

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Respirator type:

High-efficiency particulate respirator with full facepiece.

General hygiene considerations:

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and Chemical Properties

Appearance:

Pellets.

Color:

White to Off-white.

Odor:

Odorless.

Odor threshold:

Not available.

Physical state:

Solid.

pH:

Not available.

Flash point:

Not flammable.

Evaporation rate:

Not available.

Flammability limits in air, upper, % by volume:

Not flammable.

Flammability limits in air, lower, % by volume:

Not flammable.

Vapor pressure:

Not applicable.

Vapor density:

Not applicable.

Specific gravity:

~2

Relative density:

Not available.

Solubility (water):

Slight

Partition coefficient (n-octanol/water):

Not available

Auto-ignition temperature:

Not available.

Decomposition temperature:

Not available.

10. Stability and Reactivity

Chemical stability:

Material is stable under normal conditions. Readily absorbs carbon dioxide from air to form calcium carbonate. The substance is hygroscopic and will absorb water by contact with the moisture in the air.

Conditions to avoid:

Exposure to air. Moisture.

Incompatible materials Oxidizing agents. Acids. Maleic anhydride. Nitromethane. Phosphorus. Metals.

Hazardous decomposition products:

Oxides of calcium. May decompose upon heating to produce corrosive and/or toxic fumes.

Possibility of hazardous reactions:

Hazardous polymerization does not occur.

11. Toxicological Information

Product

Test Results

Soda Lime (Mixture)

Acute Oral LD50 Rat: 3929 mg/kg estimated

Components

Test Results

Calcium Hydroxide (1305-62-0)

Acute Oral LD50 Rat: 7340 mg/kg

Potassium Hydroxide (1310-58-3)

Acute Oral LD50 Rat: 273 mg/kg

Sensitization:

Not a skin sensitizer.

Acute effects:

Strongly corrosive. May cause deep tissue damage.

Local effects:

Causes severe burns.

Chronic effects:

Corrosive. Prolonged contact causes serious tissue damage.

Carcinogenicity:

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Skin corrosion/irritation:

Corrosive to skin and eyes.

Epidemiology:

No epidemiological data is available for this product.

Mutagenicity:

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Neurological effects:

No data available for this product.

Reproductive effects:

Contains no ingredient listed as toxic to reproduction

Teratogenicity:

No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

12. Ecological Information

Product	Test Results
Soda Lime (Mixture)	EC50 Daphnia: 1487 mg/l 48.00 hours estimated LC50 Fish: 97.87 mg/l 96.00 hours estimated

Components	Test Results
Calcium Hydroxide (1305-62-0)	LC50 Zambezi barbel (<i>Clarias gariepinus</i>): 33.8844 mg/l 96.00 hours
Potassium Hydroxide (1310-58-3)	LC50 Western mosquitofish (<i>Gambusia affinis</i>): 80 mg/l 96.00 hours
Sodium Hydroxide (1310-73-2)	EC50 Water flea (<i>Ceriodaphnia dubia</i>): 34.59 mg/l 48.00 hours; LC50 Western mosquitofish (<i>Gambusia affinis</i>): 125 mg/l 96.00 hours

Ecotoxicity:

Harmful to aquatic life. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Persistence and degradability:

Expected to be readily biodegradable.

13. Disposal Considerations

Waste codes D002:

Waste Corrosive material [pH \leq 2 or \geq 12.5, or corrosive to steel]

Disposal instructions:

Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.

Contaminated packaging:

Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

14. Transport Information**DOT:****Basic shipping requirements:**

UN number UN1907

Proper shipping name Soda lime

Hazard class 8

Packing group III

Additional information:

Special provisions IB8, IP3, T1, TP33

Basic shipping requirements:

Labels required 8

Additional information:

Packaging exceptions 154

Packaging non bulk 213

Packaging bulk 240

ERG number 154

IATA:**Basic shipping requirements:**

UN number 1907

Proper shipping name Soda lime

Hazard class 8

Packing group III

Additional information:

ERG code 8L

IMDG:**Basic shipping requirements:**

UN number 1907

Proper shipping name Soda Lime

Hazard class 8

Packing group III

15. Regulatory Information**US federal regulations:**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

CERCLA (Superfund) reportable quantity:

Potassium Hydroxide: 1000.0000

Sodium Hydroxide: 1000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA):

Hazard categories Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

Section 311 hazardous chemical:

Yes

Inventory status:

Country(s) or region	Inventory name	On inventory
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS):	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

State regulations:

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK

Hazardous Substances:	Listed substance
Calcium Hydroxide (CAS 1305-62-0)	Listed.
Potassium Hydroxide (CAS 1310-58-3)	Listed.
Sodium Hydroxide (CAS 1310-73-2)	Listed.

16. Other Information

NFPA ratings: Health: 3, Flammability: 0, Instability: 0

Label Hazard Warning:

DANGER. Corrosive. Causes severe skin and eye burns. Causes digestive tract burns. Dust or vapor extremely irritating to the eyes and respiratory tract.

Label Precautions:

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Keep container closed. Wash thoroughly after handling.

Label First Aid:

Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. **IF SWALLOWED:** Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance.

Product Use:

Laboratory Reagent and Consumer Hobby.

Revision Information:

None

Disclaimer:

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