

SODA LIME (WITH INDICATOR FOR ABSORBING CARBON DIOXIDE)

GHS Safety Data Sheet

Version No:4
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

SODA LIME (WITH INDICATOR FOR ABSORBING CARBON DIOXIDE)

OTHER NAMES

"soda lime", $\text{NaOH} + \text{Ca}(\text{OH})_2$, "soda lime solid", "sodium hydroxide mixed with lime"

PROPER SHIPPING NAME

SODA LIME

PRODUCT USE

Used for; absorption of carbon dioxide gas and other acidic gases, as a drying agent, and laboratory reagent: in anaesthetic equipment, closed circuit diving and breathing apparatus and air purification plant.

SUPPLIER

Company: S D FINE - CHEM LIMITED

Address:

315- 317, T.V.IND.ESTATE,

248 WORLI ROAD,

MUMBAI- 400 030, INDIA

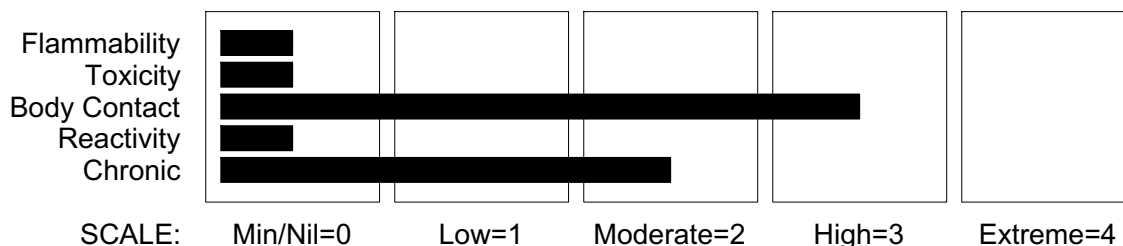
Telephone: 91- 22 24959898

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Section 2 - HAZARDS IDENTIFICATION

HAZARD RATINGS



GHS Classification

Metal Corrosion Category 1

Serious Eye Damage Category 1

Skin Corrosion/Irritation Category 1C



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria:

H290

H314

H318

May be corrosive to metals

Causes severe skin burns and eye damage

Causes serious eye damage

PRECAUTIONARY STATEMENTS

Prevention

continued...

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P234	Keep only in original container.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
Storage	
P405	Store locked up.
P406	Store in corrosive resistant container or with a resistant inner liner.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
soda lime	8006-28-8	
as		
calcium hydroxide	1305-62-0	75
sodium hydroxide	1310-73-2	4
water	7732-18-5	<20
inorganic salt indicators (some grades)		

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

EYE

- If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.

SKIN

- If skin or hair contact occurs:
- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

NOTES TO PHYSICIAN

- Treat symptomatically.
- For acute or short-term repeated exposures to highly alkaline materials:
- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
 - Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
 - Oxygen is given as indicated.
 - The presence of shock suggests perforation and mandates an intravenous line and fluid administration.

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Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

FIRE/EXPLOSION HAZARD

- Solid in contact with water or moisture may generate sufficient heat to ignite combustible materials.
 - Non combustible.
 - Not considered a significant fire risk, however containers may burn.
- Decomposition may produce toxic fumes of: metal oxides.
May emit corrosive fumes.

FIRE INCOMPATIBILITY

- None known.

Personal Protective Equipment

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
- Check regularly for spills and leaks.
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- WARNING: Contact with water generates heat.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with moisture.

SUITABLE CONTAINER

- Glass container is suitable for laboratory quantities.
- DO NOT use aluminium or galvanised containers.
- DO NOT use aluminium, galvanised or tin-plated containers.
- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure. <</>.

STORAGE INCOMPATIBILITY

- Calcium hydroxide
- produces explosive decomposition on contact with maleic anhydride
- may form explosive compounds or explode on contact with ammonium salts, phosphorus, nitroethane, nitromethane, nitroparaffins or nitropropane; salts may be shock-sensitive
- is incompatible with acids
- attacks some metals and coatings.
- Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.

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- These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
 - The state of subdivision may affect the results.
 - Reacts vigorously with acids.
- Reacts with aluminium / zinc producing flammable, explosive hydrogen gas.
- Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
 - Avoid contact with copper, aluminium and their alloys.

STORAGE REQUIREMENTS

- Store in an upright position.
- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- DO NOT store near acids, or oxidising agents.
- No smoking, naked lights, heat or ignition sources.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- soda lime:
- calcium hydroxide:
- sodium hydroxide:
- water:

CAS:8006- 28- 8
CAS:1305- 62- 0 CAS:1332- 69- 0
CAS:1310- 73- 2
CAS:7732- 18- 5

PERSONAL PROTECTION



RESPIRATOR

Particulate

EYE

- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity.
- Neoprene gloves.

Avoid contact with moisture.

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.

ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

Such protection might consist of:

- (a): particle dust respirators, if necessary, combined with an absorption cartridge;
- (b): filter respirators with absorption cartridge or canister of the right type;
- (c): fresh-air hoods or masks.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Odourless, white to grey (or coloured) granules/pellets. These pellets are hygroscopic and deliquescent (they absorb water and dissolve in this water). Absorbs 15-35% of its weight of CO₂.

PHYSICAL PROPERTIES

Solid.
Mixes with water.
Corrosive.
Alkaline.

State	Divided solid	Molecular Weight	Not applicable.
Melting Range (°C)	Not available.	Viscosity	Not Applicable
Boiling Range (°C)	Not available.	Solubility in water (g/L)	Soluble.
Flash Point (°C)	Not applicable	pH (1% solution)	>12.5
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°C)	Not applicable.	Vapour Pressure (kPa)	0 @ 20 deg. C
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	Not available.
Lower Explosive Limit (%)	Not applicable	Relative Vapour Density (air=1)	Not Applicable
Volatile Component (%vol)	Not applicable.	Evaporation Rate	Not applicable

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

EYE

- The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.
- When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
- Eye contact with calcium hydroxide may result in severe irritation and pain. The material may induce ulcerations of the corneal epithelium.

INHALED

- Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation.

CHRONIC HEALTH EFFECTS

- Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.
- Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
- Chronic exposure to calcium hydroxide may result in narrowing of the esophagus, with difficulty in swallowing. This may happen after weeks, months or years of exposure.
- Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung.
- Prolonged contact with dilute solutions or dust has a destructive effect on tissues.
- The effects of this substance on people already affected by skin conditions, eye or respiratory problems will increase their susceptibility to exposure effects significantly.

TOXICITY AND IRRITATION

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

- The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
- Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.

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Section 11 - TOXICOLOGICAL INFORMATION

■ The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation. Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).

The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis.

CALCIUM HYDROXIDE:

TOXICITY

Oral (rat) LD50: 7340 mg/kg

IRRITATION

Eye (rabbit): 10 mg - SEVERE

SODIUM HYDROXIDE:

TOXICITY

IRRITATION

Skin (rabbit): 500 mg/24h SEVERE

Eye (rabbit): 0.05 mg/24h SEVERE

Eye (rabbit): 1 mg/24h SEVERE

Eye (rabbit): 1 mg/30s rinsed- SEVERE

■ The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.<</>.

WATER:

■ No significant acute toxicological data identified in literature search.

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
calcium hydroxide			LOW	
sodium hydroxide	LOW		LOW	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

■ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction.
- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Treat and neutralise at an approved treatment plant. Treatment should involve: Mixing or slurring in water; Neutralisation followed by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: CORROSIVE

HAZCHEM:

2X

Land Transport UNDG:

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Section 14 - TRANSPORTATION INFORMATION

Class or division:	8	Subsidiary risk:	None
UN No.:	1907	UN packing group:	III
Shipping Name:SODA LIME (WITH INDICATOR FOR ABSORBING CARBON DIOXIDE)			

Air Transport IATA:

ICAO/IATA Class:	8	ICAO/IATA Subrisk:	None
UN/ID Number:	1907	Packing Group:	III
Special provisions:	A16		

Shipping Name: SODA LIME (WITH INDICATOR FOR ABSORBING CARBON DIOXIDE)

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Maritime Transport IMDG:

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	1907	Packing Group:	III
EMS Number:	F- A , S- B	Special provisions:	62

Limited Quantities: 5 kg

Shipping Name: SODA LIME (WITH INDICATOR FOR ABSORBING CARBON DIOXIDE)

Section 15 - REGULATORY INFORMATION

REGULATIONS

Regulations for ingredients

calcium hydroxide (CAS: 1305-62-0,1332-69-0) is found on the following regulatory lists;

"CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals"

sodium hydroxide (CAS: 1310-73-2) is found on the following regulatory lists;

"CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD Representative List of High Production Volume (HPV) Chemicals"

water (CAS: 7732-18-5) is found on the following regulatory lists;

"IMO IBC Code Chapter 18: List of products to which the Code does not apply", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD Representative List of High Production Volume (HPV) Chemicals"

No data for soda lime (CAS: , 8006-28-8)

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
calcium hydroxide	1305- 62- 0, 1332- 69- 0

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 14-Nov-2017