

CALCIUM HYDROXIDE SPECIAL

GHS Safety Data Sheet

Version No:1

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

CALCIUM HYDROXIDE

OTHER NAMES

Ca-H₂O₂, Ca(OH)₂, "calcium hydrate", "caustic lime", "hydrated lime", "slaked lime", "lime water", "milk of lime", "limbux lime", setelime, kemikal, "lime hydrated",

PRODUCT USE

Laboratory reagent. A large volume industrial chemical. Manufacture of calcium salts. A binder in mortar, plaster, cement and in building and paving materials. A component in drilling muds, pesticides, fireproof coatings, water paints. As an acid neutralizing agent in water and sewage treatment. Disinfectant. As a flux in steel production; in manufacture of paper pulp. Depilatory, dehairing hides. Poultry food additive - shell forming agent. In purification of sugar.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,
248, WORLI,
MUMBAI- 400030.INDIA.

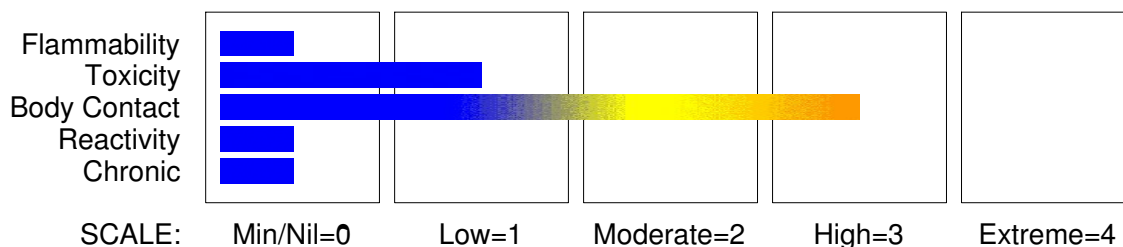
technical@sdfine.com

Telephone: 91- 22- 24959898

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Fax: 91- 22- 24937232

HAZARD RATINGS



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Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Eye Irritation Category 2A

Respiratory Irritation Category 3

Skin Corrosion/Irritation Category 2



EMERGENCY OVERVIEW

HAZARD

WARNING

Determined by using GHS criteria:

H335 H315 H319

May cause respiratory irritation

Causes skin irritation

Causes serious eye irritation

PRECAUTIONARY STATEMENTS

Prevention

Wash thoroughly after handling.

Wash hands thoroughly after handling.

Response

If skin irritation occurs, seek medical advice/attention.

Wear eye/face protection.

If eye irritation persists, get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Wash/Decontaminate removed clothing before reuse.

IF ON SKIN: Gently wash with plenty of soap and water.

Remove/Take off immediately all contaminated clothing

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
calcium hydroxide	1305-62-0	>95

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Section 4 - FIRST AID MEASURES

SWALLOWED

Rinse mouth out with plenty of water.

- 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.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

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.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

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.
 - Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.
- Alkalis continue to cause damage after exposure.

INGESTION:

- Milk and water are the preferred diluents

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Section 4 - FIRST AID MEASURES

No more than 2 glasses of water should be given to an adult.

- Neutralising agents should never be given since exothermic heat reaction may compound injury.

- * Catharsis and emesis are absolutely contra-indicated.

- * Activated charcoal does not absorb alkali.

- * Gastric lavage should not be used.

Supportive care involves the following:

- Withhold oral feedings initially.

- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.

- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.

- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology].

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

There is no restriction on the type of extinguisher which may be used.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

- Non combustible.
- Not considered to be a significant fire risk, however containers may burn.
- In a fire may decompose on heating and produce toxic / corrosive fumes.

FIRE INCOMPATIBILITY

Reacts with aluminium / zinc producing flammable, explosive hydrogen gas.

Personal Protective Equipment

Gloves, boots (chemical resistant).

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

continued...

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Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

Clean up all spills immediately.
Avoid contact with skin and eyes.
Wear impervious gloves and safety glasses.
Use dry clean up procedures and avoid generating dust.
Place spilled material in clean, dry, sealable, labelled container.

MAJOR SPILLS

Clear area of personnel and move upwind.
Alert Fire Brigade and tell them location and nature of hazard.
Control personal contact by using protective equipment.
Stop leak if safe to do so.
Use dry clean up procedures and avoid generating dust.
Collect recoverable product into labelled containers for recycling.
Collect residues and place in labelled polyethylene bag.
Wash area down with large quantity of water and prevent runoff into drains.
After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

calcium hydroxide 500 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

calcium hydroxide 25 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

calcium hydroxide 15 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:

calcium hydroxide 15 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

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Section 6 - ACCIDENTAL RELEASE MEASURES

O: *May be stored together with specific preventions*

X: *Must not be stored together*

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Use good occupational work practice. Observe manufacturer's storing and handling recommendations.

Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

Avoid all personal contact, including inhalation.

Avoid generating and breathing dust.

Wear personal protective equipment when handling.

Use in a well-ventilated area.

Avoid contact with incompatible materials.

When handling, DO NOT eat, drink or smoke.

Keep containers securely sealed when not in use.

Avoid physical damage to containers.

Always wash hands with soap and water after handling. Work clothes should be laundered separately.

Launder contaminated clothing before re-use.

SUITABLE CONTAINER

Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag.

NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.

STORAGE INCOMPATIBILITY

Avoid storage with acids, maleic anhydride, ammonium salts, nitromethane, nitroethane, nitropropane, nitroparaffins, phosphorus.

Forms salts with nitroparaffins in the presence of water which are explosive when dried.

DO NOT use aluminium or galvanised containers.

STORAGE REQUIREMENTS

Keep dry and Container must be air-tight.

Store in a cool, dry place.

Observe manufacturer's storing and handling recommendations.

Store in original containers.

Keep containers securely sealed.

Store in a well-ventilated area.

Store away from incompatible materials.

DO NOT store near acids.

Protect containers against physical damage.

Check regularly for spills and leaks.

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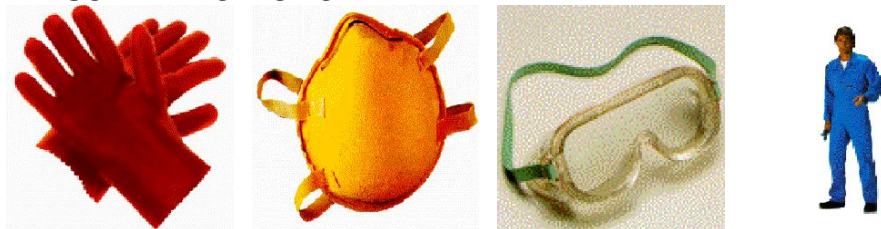
Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

MATERIAL DATA

In the absence of reports of adverse effects from exposure and the recognised lesser alkalinity of the alkaline earths compared with the the alkali hydroxides the relatively high value of TLV-TWA is recommended. This value corresponds in total alkalinity to 5 mg/m³ of sodium hydroxide or 2.5 times the TLV-TWA of sodium hydroxide.

PERSONAL PROTECTION



EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- 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

- Barrier cream.

Wear physical protective gloves, eg. leather or Cotton gloves or PVC gloves.
Wear safety footwear.

OTHER

- Overalls.
- Eyewash unit.

Ensure there is ready access to a safety shower.

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the computer-generated selection: calcium hydroxide

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

NATURAL RUBBER	A
NATURAL+NEOPRENE	A

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

Use in a well-ventilated area.

General exhaust is adequate under normal operating conditions.

If exposure to workplace dust is not controlled, respiratory protection is required; wear SAA approved dust respirator.

Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

White or off white amorphous odourless powder with bitter, alkaline taste; slightly soluble in water and insoluble in alcohol.

Readily absorbs carbon dioxide from the air to form calcium carbonate; and loses water when heated strongly to form calcium oxide.

Soluble in glycerol, sugar or ammonium chloride solutions.

Soluble in acids with evolution of heat. Bulk density: 400-500 kg/m³.

Grades available: Builders Lime, technical, Pure, BP sterilised.

PHYSICAL PROPERTIES

Solid.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Does not mix with water.

Sinks in water.

Alkaline.

Molecular Weight: 74.10

Melting Range (°C): 580 (- H₂O)

Solubility in water (g/L): Partly miscible

pH (1% solution): 12.4 (saturated)

Volatile Component (%vol): Nil

Relative Vapour Density (air=1): Not applicable.

Lower Explosive Limit (%): Not applicable

Autoignition Temp (°C): Not applicable

State: Divided solid

Boiling Range (°C): Decomposes.

Specific Gravity (water=1): 2.2- 2.3

pH (as supplied): Not applicable

Vapour Pressure (kPa): Negligible

Evaporation Rate: Non Volatile

Flash Point (°C): Not applicable

Upper Explosive Limit (%): Not applicable

Decomposition Temp (°C): 580

Viscosity: Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

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

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

Considered an unlikely route of entry in commercial/industrial environments.

EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.

Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

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Section 11 - TOXICOLOGICAL INFORMATION

SKIN

Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.

Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

Solution of material in moisture on the skin, or perspiration, may markedly increase skin corrosion and accelerate tissue destruction.

Open cuts, abraded or irritated skin should not be exposed to this material.

The material may accentuate any pre-existing skin condition.

INHALED

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

Although inhalation is not thought to produce harmful effects (as classified under EC Directives), the material may still produce health damage, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally confined to doses producing mortality rather than those producing morbidity (disease, ill-health).

Reactions may not occur on exposure but response may be delayed with symptoms only appearing many hours later.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by skin contact with the material.

eye contact.

with the material and inhalation of generated dust.

Chronic exposure symptom is narrowing of the esophagus, with difficulty in swallowing.

This may happen after weeks, months or years of exposure. [CCINFO Mallinck]

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 7340 mg/kg

IRRITATION

Eye (rabbit): 10 mg - SEVERE

Section 12 - ECOLOGICAL INFORMATION

Fish LC50 (96hr.) (mg/l): 160

Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.

Consult manufacturer for recycling options.

Consult State Land Waste Management Authority for disposal.

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Section 13 - DISPOSAL CONSIDERATIONS

Bury residue in an authorised landfill.
Decontaminate empty containers.

WASTE DISPOSAL PROCEDURES

- Collect and package the recoverable quantities of calcium hydroxide into labelled containers for recycling or disposal. Dissolve small quantities of calcium hydroxide in water to give a 10% solution. Neutralize with 2M hydrochloric acid. Discard the contents into the drain with water [Armour 1996].

SPILLAGE DISPOSAL

- Wear nitrile rubber gloves, goggles and protective clothing to control personal contact. Cover the calcium hydroxide spill with a 1:1:1 mixture by weight of sodium carbonate or calcium carbonate, calcium carbonate and sand. Scoop the contents into a container and add water to dissolve the calcium hydroxide and sodium carbonate. Allow to stand for 24 hours. Neutralise with 2M hydrochloric acid. Discard the solution into the drain with large quantities of water [Armour 1996].

Section 14 - TRANSPORTATION INFORMATION

LabelsRequired:
HAZCHEM:



UNDG:

DangerousGoodsClass:	8	Subrisk:	
UNNumber:	3262	PackingGroup:	II
ShippingName:CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.			

Air Transport IATA:

ICAO/IATAClass:	8	ICAO/IATASubrisk:	
UN/IDNumber:	3262	PackingGroup:	II
Specialprovisions:			
ShippingName:CORROSIVE SOLID, BASIC, INORGANIC N.O.S.			

Maritime Transport IMDG:

IMDGClass:	8	IMDGSubrisk:	
UNNumber:	3262	PackingGroup:	II
EMSNumber:		Specialprovisions:	
Marine Pollutant:	Not Determined		
ShippingName:CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.			

Section 15 - REGULATORY INFORMATION

REGULATIONS

Calcium hydroxide (CAS: 1305-62-0) 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
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

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Section 16 - OTHER INFORMATION

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.

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