Material Safety Data Sheet
Soda lime MSDS

Section 1: Chemical Product and Company Identification

Product Name: Soda lime
CAS#: 8006-28-8
RTECS: VX9650000
TSCA: TSCA 8(b) inventory: Calcium hydroxide; Potassium hydroxide; Sodium hydroxide
CI#: Not available.
Synonym: SODASORB; MALLCOSORB
Chemical Name: Not applicable.
Chemical Formula: Not applicable.

Section 2: Composition and Information on Ingredients

Composition:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium hydroxide</td>
<td>1305-62-0</td>
<td>50-100</td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>1-10</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>&lt;4</td>
</tr>
</tbody>
</table>

Toxicological Data on Ingredients: Calcium hydroxide: ORAL (LD50): Acute: 7340 mg/kg [Rat.]. 7300 mg/kg [Mouse]. Potassium hydroxide: ORAL (LD50): Acute: 273 mg/kg [Rat]. 365 mg/kg [Rat]. Sodium hydroxide LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of eye contact (irritant). Hazardous in case of skin contact (irritant), of eye contact (corrosive), of ingestion. Slightly hazardous in case of skin contact (corrosive, permeator), of inhalation (lung sensitizer). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching.

Potential Chronic Health Effects:
Hazardous in case of skin contact (irritant).  CARCINOGENIC EFFECTS: Not available.  MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells.  [Potassium hydroxide]. Mutagenic for mammalian somatic cells.  [Sodium hydroxide].  TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to mucous membranes, upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards:
Potentially explosive reaction with bromoform + crown ethers, chlorine dioxide, nitrobenzene, nitromethane, nitrogen trichloride, peroxidized tetrahydrofuran, 2,4,6-trinitrotoluene. Reaction with ammonium hexachloroplatiate(2-) + heat forms heat sensitive explosive product. Potassium hydroxide will cause explosive decomposition of maleic anhydride. Detonation will
occur when potassium hydroxide is mixed with n-methyl-nitroso urea and methylene chloride. Nitrogen trichloride explodes on contact with potassium hydroxide. (Potassium hydroxide)

### Section 6: Accidental Release Measures

**Small Spill:**
Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**
Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

### Section 7: Handling and Storage

**Precautions:**
Keep locked up. Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as metals, acids.

**Storage:**
Keep container tightly closed. Keep container in a cool, well-ventilated area.

### Section 8: Exposure Controls/Personal Protection

**Engineering Controls:**
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:**
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:**
Calcium hydroxide TWA: 5 (mg/m3) from ACGIH (TLV) [United States] TWA: 5 (mg/m3) [Canada] TWA: 5 (mg/m3) from NIOSH Potassium hydroxide CEIL: 2 from ACGIH (TLV) [United States] [1999] Sodium hydroxide STEL: 2 (mg/m3) from ACGIH (TLV) [United States] TWA: 2 CEIL: 2 (mg/m3) from OSHA (PEL) [United States] CEIL: 2 (mg/m3) from NIOSH Consult local authorities for acceptable exposure limits.

### Section 9: Physical and Chemical Properties

**Physical state and appearance:** Solid. (Granular solid.)

**Odor:** Odorless.

**Taste:** Not available.

**Molecular Weight:** Not applicable.
**Color:** White.

**pH (1% soln/water):** Basic.

**Boiling Point:** Not available.

**Melting Point:** 580°C (1076°F) based on data for: Calcium hydroxide. Weighted average: 554.93°C (1030.9°F)

**Critical Temperature:** Not available.

**Specific Gravity:** Weighted average: 2.22 (Water = 1)

**Vapor Pressure:** Not applicable.

**Vapor Density:** Not available.

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water.

**Solubility:** Slightly soluble in cold water. Insoluble in diethyl ether.

---

**Section 10: Stability and Reactivity Data**

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatible materials, water

**Incompatibility with various substances:**
Reactive with metals, acids, moisture. Slightly reactive to reactive with oxidizing agents, reducing agents, organic materials, alkalis.

**Corrosivity:**
Highly corrosive in presence of aluminum, of zinc. Non-corrosive in presence of glass, of stainless steel(316).

**Special Remarks on Reactivity:**
Incompatible with maleic anhydride, phosphorous, nitroethane, nitromethane, nitorparaffins, nitropropane, polychlorinated phenols + potassium nitrate. When chlorinated phenols are heated for analytical purposes with calcium hydroxide-potassium nitrate mixtures, chlorinated benzodioxins analogous to extremely toxic tetrachlorodibenzodioxin may be formed. Readily absorbs CO2 from air forming calcium carbonate. (Calcium hydroxide). When dissolved in water or alcohol or when the solution is treated with acid, much heat is generated. Reacts violently with acids, halogens, halogenated hydrocarbons, maleic anhydride, organic anhydrides, isocyanates, alkylene oxides, epichlorhydrin, aldehydes, alcohols, glycols, phenols, cresols, caprolactum solution. Also incompatible with nitro compounds (nitrobenzene, nitromethane, nitrogen trichloride), organic materials, acid anhydrides, acid chlorides, magnesium, peroxidized tetrahydrofuran, chlorine dioxide, maleic dicarbide, sugars. When wet attacks metals such as aluminum, tin, lead, and zinc. (Potassium hydroxide)

**Special Remarks on Corrosivity:**
When wet, attacks metals such as aluminum, tin, lead, and zinc, producing flammable hydrogen gas. Severe corrosive effect on brass and bronze. (Potassium hydroxide)

**Polymerization:** Will not occur.

---

**Section 11: Toxicological Information**

**Routes of Entry:** Absorbed through skin. Inhalation. Ingestion.
Toxicity to Animals: Acute oral toxicity (LD50): 273 mg/kg [Rat]. (Potassium hydroxide).

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Potassium hydroxide]. Mutagenic for mammalian somatic cells. [Sodium hydroxide]. Contains material which may cause damage to the following organs: mucous membranes, upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of eye contact (corrosive), of ingestion, of inhalation (lung corrosive). Slightly hazardous in case of skin contact (corrosive, permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

Special Remarks on other Toxic Effects on Humans:

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Federal and State Regulations:
Illinois toxic substances disclosure to employee act: Calcium hydroxide; Sodium hydroxide Illinois chemical safety act: Sodium hydroxide New York release reporting list: Potassium hydroxide; Sodium hydroxide Rhode Island RTK hazardous substances:
Calcium hydroxide; Sodium hydroxide
Pennsylvania RTK: Calcium hydroxide; Potassium hydroxide; Sodium hydroxide
Florida: Potassium hydroxide
Minnesota: Calcium hydroxide; Potassium hydroxide; Sodium hydroxide
Massachusetts RTK: Calcium hydroxide; Potassium hydroxide; Sodium hydroxide
New Jersey: Calcium hydroxide; Potassium hydroxide; Sodium hydroxide; Soda Lime
Louisiana spill reporting: Sodium hydroxide


Other Classifications:

WHMIS (Canada):
CLASS D-2B: Material causing other toxic effects (TOXIC). CLASS E: Corrosive solid.

DSCL (EEC):
R34- Causes burns. R41- Risk of serious damage to eyes. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28- After contact with skin, wash immediately with plenty of water. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):
- Health Hazard: 3
- Fire Hazard: 0
- Reactivity: 2
- Personal Protection: j

National Fire Protection Association (U.S.A.):
- Health: 2
- Flammability: 0
- Reactivity: 2
- Specific hazard:

Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.
Other Special Considerations: Not available.
Created: 10/09/2005 06:28 PM
Last Updated: 05/21/2013 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.