

Material Safety Data Sheet



SODALIME (CO2 ABSORBENT-SODA LIME U.S.P./ N.F.)

Section 1. Chemical product and company identification

Product name : SODALIME (CO2 ABSORBENT-SODA LIME U.S.P./ N.F.)
Supplier : AIRGAS INC., on behalf of its subsidiaries
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253
MSDS # : 005213
Date of Preparation/Revision : 5/12/2010.
In case of emergency : 1-866-734-3438

Section 2. Hazards identification

Physical state : Solid.
Emergency overview : DANGER!
CAUSES SEVERE EYE AND SKIN BURNS. CAUSES RESPIRATORY TRACT IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
Severely corrosive to the eyes and skin. Causes severe burns. Irritating to respiratory system. Do not get in eyes or on skin or clothing. Contains material that may cause target organ damage, based on animal data. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Target organs : Contains material which may cause damage to the following organs: lungs, mucous membranes, upper respiratory tract, skin, eye, lens or cornea.
Potential acute health effects
Eyes : Corrosive to eyes.
Skin : Corrosive to the skin.
Inhalation : Irritating to respiratory system.
Ingestion : May cause burns to mouth, throat and stomach.
Potential chronic health effects : **CARCINOGENIC EFFECTS**: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

Section 3. Composition, Information on Ingredients

United States

calcium dihydroxide	1305-62-0	73 - 99
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Exposure limits

OSHA PEL 1989 (United States, 3/1989).

TWA: 5 mg/m³ 8 hour(s).

ACGIH TLV (United States, 1/2009).

TWA: 5 mg/m³ 8 hour(s).

NIOSH REL (United States, 6/2009).

TWA: 5 mg/m³ 10 hour(s).

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

water	7732-18-5	1 - 19
sodium hydroxide	1310-73-2	1 - 4

ACGIH TLV (United States, 1/2009).

C: 2 mg/m³
NIOSH REL (United States, 6/2009).
CEIL: 2 mg/m³
OSHA PEL (United States, 11/2006).
TWA: 2 mg/m³ 8 hour(s).
OSHA PEL 1989 (United States, 3/1989).
CEIL: 2 mg/m³

Section 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. 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. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire-fighting measures

- Flammability of the product** : Non-flammable.
- Products of combustion** : Decomposition products may include the following materials:
metal oxide/oxides
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

No specific fire or explosion hazard.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Personal protection in case of a large spill** : Full chemical-resistant suit and self-contained breathing apparatus should be worn only by trained and authorized persons.

Product name

Exposure limits

United States

calcium dihydroxide

OSHA PEL 1989 (United States, 3/1989).

TWA: 5 mg/m³ 8 hour(s).

ACGIH TLV (United States, 1/2009).

TWA: 5 mg/m³ 8 hour(s).

NIOSH REL (United States, 6/2009).

TWA: 5 mg/m³ 10 hour(s).

OSHA PEL (United States, 11/2006).

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water

sodium hydroxide

ACGIH TLV (United States, 1/2009).

C: 2 mg/m³

SODALIME (CO2 ABSORBENT-SODA LIME U.S.P./ N.F.)**NIOSH REL (United States, 6/2009).**CEIL: 2 mg/m³**OSHA PEL (United States, 11/2006).**TWA: 2 mg/m³ 8 hour(s).**OSHA PEL 1989 (United States, 3/1989).**CEIL: 2 mg/m³**Section 9. Physical and chemical properties**

Physical state	: Solid.
Melting/freezing point	: 580°C (1076°F) This is based on data for the following ingredient: calcium dihydroxide. Weighted average: 569.84°C (1057.7°F)
Specific gravity	: Weighted average: 1.87 (Water = 1)
VOC	: 0 % (w/w)

Section 10. Stability and reactivity

Stability and reactivity	: The product is stable. Conditions to Avoid: Converts to calcium and sodium carbonate when exposed to air.
Incompatibility with various substances	: Reactive with metals.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information**Toxicity data****United States**

Product/ingredient name	Result	Species	Dose	Exposure
calcium dihydroxide	LD50 Oral	Rat	7340 mg/kg	-
water	LD50 Oral	Rat	>90 mL/kg	-

Chronic effects on humans : Contains material which may cause damage to the following organs: lungs, mucous membranes, upper respiratory tract, skin, eye, lens or cornea.

Other toxic effects on humans : Hazardous by the following route of exposure: of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung corrosive).

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Reproduction toxicity : No known significant effects or critical hazards.

Section 12. Ecological information**Aquatic ecotoxicity**

calcium dihydroxide	-	Acute LC50 356 mg/L Marine water	Fish - Guppy - Poecilia reticulata - Young - 3 weeks	96 hours
	-	Acute LC50 160000 ug/L Fresh water	Fish - Western mosquitofish - Gambusia affinis - Adult	96 hours
	-	Acute LC50 33884.4 ug/L Fresh water	Fish - Zambezi barbel - Clarias gariepinus - Fingerling	96 hours
	-	Chronic NOEC 56 mg/L Marine water	Fish - Guppy - Poecilia reticulata - Young - 3 weeks	96 hours
sodium hydroxide	-	Acute EC50 40.38 mg/L Fresh water	Daphnia - Water flea -	48 hours

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-	Acute EC50 40.38 to 47.13 mg/L Fresh water	Ceriodaphnia dubia - Neonate - <24 hours Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <24 hours	48 hours
-	Acute LC50 196 mg/L Marine water	Fish - Guppy - Poecilia reticulata - Young - 3 to 4 weeks	96 hours
-	Acute LC50 125000 ug/L Fresh water	Fish - Western mosquitofish - Gambusia affinis - Adult	96 hours
-	Acute LC50 33000 to 100000 ug/L Marine water	Crustaceans - Common shrimp, sand shrimp - Crangon crangon - Adult	48 hours
-	Chronic NOEC 56 mg/L Marine water	Fish - Guppy - Poecilia reticulata - Young - 3 to 4 weeks	96 hours

Products of degradation : Some metallic oxides.

Section 13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Section 15. Regulatory information

United States

HCS Classification

: Corrosive material
Target organ effects

U.S. Federal regulations

: TSCA 8(a) IUR: water

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: sodium hydroxide; calcium dihydroxide

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

sodium hydroxide: Immediate (acute) health hazard; calcium dihydroxide: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: sodium hydroxide

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

State regulations

: **Connecticut Carcinogen Reporting:** None of the components are listed.

Connecticut Hazardous Material Survey: None of the components are listed.

Florida substances: None of the components are listed.

Illinois Chemical Safety Act: None of the components are listed.

Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.

Louisiana Reporting: None of the components are listed.

Louisiana Spill: None of the components are listed.

Massachusetts Spill: None of the components are listed.

Massachusetts Substances: The following components are listed: CALCIUM HYDROXIDE; SODIUM HYDROXIDE

Michigan Critical Material: None of the components are listed.

Minnesota Hazardous Substances: None of the components are listed.

New Jersey Hazardous Substances: The following components are listed: CALCIUM HYDROXIDE; HYDRATED LIME; SODIUM HYDROXIDE; CAUSTIC SODA

New Jersey Spill: None of the components are listed.

New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.

New York Acutely Hazardous Substances: The following components are listed: Sodium hydroxide

New York Toxic Chemical Release Reporting: None of the components are listed.

Pennsylvania RTK Hazardous Substances: The following components are listed: CALCIUM HYDROXIDE (CA(OH)₂); SODIUM HYDROXIDE (NA(OH))

Rhode Island Hazardous Substances: None of the components are listed.

Canada

WHMIS (Canada)

: Class E: Corrosive material

CEPA Toxic substances: None of the components are listed.

Canadian ARET: None of the components are listed.

Canadian NPRI: None of the components are listed.

Alberta Designated Substances: None of the components are listed.

Ontario Designated Substances: None of the components are listed.

Quebec Designated Substances: None of the components are listed.

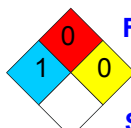
Section 16. Other information

Label requirements : CAUSES SEVERE EYE AND SKIN BURNS. CAUSES RESPIRATORY TRACT IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.)	:	Health	*	1
		Flammability		0
		Physical hazards		0

National Fire Protection Association (U.S.A.) :

Health



Special

Flammability

Instability

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.