

SAFETY DATA SHEET



SODIUM SILICATE LIQUID ALKALINE

MSDS No.: M35886

Rev. Date: 2010-April-01

Rev. Num.: 04

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification: Occidental Chemical Corporation
5005 LBJ Freeway
P.O. Box 809050
Dallas, TX
75380-9050

24 Hour Emergency Telephone Number: 1-800-733-3665 or 1-972-404-3228 (U.S.); 32.3.575.55.55 (Europe); 1800-033-111 (Australia)

To Request an MSDS: MSDS@oxy.com or 1-972-404-3245

Customer Service: 1-800-752-5151 or 1-972-404-3700

Trade Name: Sodium Silicate Liquid Alkaline, Grades 2.2, 2.2 Special, 30 Clear, 45, 47, 47 Light, 47 Special, 49 FG, 49 FG Special, 50, 50 Clear, 50 Light, 50 Special, 50 Special Clear, F495, 52, 52 Special, JW-25, JW Clear, Pilot Special, WD-43, WD-43 Heavy, WD-43 Special

Synonyms: Liquid sodium silicate, Water glass, Sodium silicate liquid, alkaline

Product Use: Adhesives and binders, pulp and paper, deinking, detergents / soaps, catalysts, textiles, drilling fluids, mineral processing, refractory cements, zeolites

EMERGENCY OVERVIEW:

Color: Colorless
Physical State: Liquid
Appearance: Clear to opaque
Odor: Odorless to slight odor
Signal Word: DANGER

MAJOR HEALTH HAZARDS: CORROSIVE. CAUSES SEVERE SKIN BURNS. CAUSES SERIOUS EYE DAMAGE. MAY BE HARMFUL IF SWALLOWED.

PRECAUTIONARY STATEMENTS: Wash thoroughly after handling. Do not breathe mist, vapors, or spray. Wear protective gloves, protective clothing, eye, and face protection.

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POTENTIAL HEALTH EFFECTS:

Inhalation: May cause severe irritation of the respiratory tract with coughing, choking, pain and possibly burns of the mucous membranes. In some cases, pulmonary edema and/or pneumonia may develop, either immediately or more often within 72 hours. The symptoms may include tightness in the chest, dyspnea, frothy sputum, cyanosis, and dizziness. Physical findings may include moist rales, low blood pressure and high pulse pressure. Moist rales are a sound heard over fluid in the bronchial tubes.

Skin contact: Direct contact may cause severe irritation, pain, and possibly burns.

Eye contact: Direct contact may cause severe irritation, pain and burns, possibly severe, and permanent damage including blindness. The full extent of the injury may not be immediately apparent.

Ingestion: May cause immediate pain and severe burns of the esophagus and gastrointestinal tract with vomiting, nausea, and diarrhea. May cause swelling and tissue destruction to mucous membranes of the mouth, throat, esophagus, and stomach.

Chronic Effects: None known.

Interaction with Other Chemicals Which Enhance Toxicity: None known

Medical Conditions Aggravated by Exposure: Respiratory disorders, Skin disorders

See Section 11: TOXICOLOGICAL INFORMATION

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Percentage	CAS Number
Sodium silicate	35 - 53	1344-09-8
Water	47 - 65	7732-18-5

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation and/or Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

SKIN CONTACT: Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT: Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

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4. FIRST AID MEASURES

INGESTION: Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. Give large amounts of water. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. GET MEDICAL ATTENTION IMMEDIATELY.

Notes to Physician: The absence of visible signs or symptoms of burns does NOT reliably exclude the presence of actual tissue damage.

5. FIRE-FIGHTING MEASURES

Fire Hazard: Negligible fire hazard.

Extinguishing Media: Use media appropriate for surrounding fire.

Fire Fighting: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Flash point: Not flammable

6. ACCIDENTAL RELEASE MEASURES

Occupational Release:

Flush spill area with water, if appropriate. Dries to form glass film which can easily cut skin. Wear appropriate personal protective equipment recommended in Section 8 of the SDS. Liquid material may be removed with a vacuum truck. Wet material is slippery under foot. Shovel dried residue into suitable container. Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies. This material is alkaline and may raise the pH of surface waters with low buffering capacity.

7. HANDLING AND STORAGE

Storage Conditions: Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated. Keep separated from incompatible substances (see Section 10 of the Safety Data Sheet).

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7. HANDLING AND STORAGE

Handling Procedures: Do not get in eyes, on skin, or on clothing. Avoid breathing aerosol mist. Wash thoroughly after handling. Use care when handling hot material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Regulatory Exposure limit(s): No occupational exposure limits have been established at this time

ENGINEERING CONTROLS: Provide local exhaust ventilation where dust or mist may be generated.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear safety glasses with side-shields. If eye contact is likely, wear chemical resistant safety goggles. Wear chemical safety goggles with a faceshield to protect against eye and skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Wear protective clothing to minimize skin contact. When skin contact is likely, wear Tychem® SL or a similar protective suit. Wear appropriate heat resistant clothing when potential exists for contact with materials above 120 F (49 C).

Hand Protection: Wear appropriate chemical resistant gloves. Use gloves that are cut resistant if handling dry glass material.

Protective Material Types: Butyl rubber, Natural rubber, Neoprene, Nitrile, Tychem® SL, Tyvek®

Respiratory Protection: A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Clear to opaque
Color:	Colorless
Odor:	Odorless to slight odor
Molecular Formula:	$x\text{SiO}_2/\text{Na}_2\text{O}$ (x = 1.63 to 3.0 by weight)
Flash point:	Not flammable
Boiling Point/Range:	214-216 F (101-102 C)
Freezing Point/Range:	30 F (-1 C)
Specific Gravity (water=1):	1.42 - 1.70
Density:	11.8 - 14.2 lbs/gal
Water Solubility:	100%
pH:	11.5 - 12.5
Volatility:	>46%

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10. STABILITY AND REACTIVITY

Reactivity/ Stability:	Stable at normal temperatures and pressures. Prolonged contact with incompatible metals may produce flammable hydrogen gas.
Conditions to Avoid:	Prolonged storage above 140 F (60 C). Contact with acids will cause gelling and evolution of heat.
Incompatibilities/ Materials to Avoid:	Acids, Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys
Hazardous Decomposition Products:	None known
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

IRRITATION DATA:

Standard Draize (Eye):	Test results for solutions with the following pH/weight ratio of SiO ₂ /Na ₂ O are as follows: 11.6/2.54 = irritant; 11.6/2.4 = irritant; 12.2/2.0 = corrosive; 12.4/1.8 = corrosive
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TOXICITY DATA:

Component	LD50 Oral	LC50 Inhalation	LD50 Dermal
Sodium silicate	1153 mg/kg (Rat)	-----	4640 mg/kg (Rabbit)

TOXICITY:

Solutions of sodium silicate are alkaline. Exposure to alkaline solutions may result in irritation to severe burns depending on the concentration and duration of the exposure. Sodium silicate is a type of amorphous silica and does not cause pulmonary silicosis.

CARCINOGENICITY: This product is not classified as a carcinogen by NTP, IARC or OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

- **Aquatic Toxicity:**
This material has exhibited moderate toxicity to aquatic organisms

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FATE AND TRANSPORT:

BIODEGRADATION: This material is inorganic and not subject to biodegradation.

PERSISTENCE: This material is believed to persist in the environment.

BIOCONCENTRATION: This material is not expected to bioconcentrate in organisms.

ADDITIONAL ECOLOGICAL INFORMATION:

This material has exhibited slight toxicity to terrestrial organisms.

13. DISPOSAL CONSIDERATIONS

Reuse or recycle if possible. Dispose in accordance with all applicable regulations. May be subject to disposal regulations: U.S. EPA 40 CFR 261. Hazardous Waste Number(s): D002 (Corrosive).

14. TRANSPORT INFORMATION

U.S.DOT 49 CFR 172.101:

Status: Not regulated.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

Status: Not regulated.

15. REGULATORY INFORMATION

U.S. REGULATIONS

OSHA REGULATORY STATUS:

- This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) (US)

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

- Not regulated.

EPCRA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):

- Not regulated

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.21):

- Acute Health Hazard

EPCRA SECTION 313 (40 CFR 372.65):

- Not regulated.

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15. REGULATORY INFORMATION

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):

Not regulated

FDA: Sodium Silicates have Generally Recognized as Safe (GRAS) status under specific FDA regulations. Refer to the Code of Federal Register 21 CFR 173, 175, 176, 177, 182, and 184, which is accessible on the FDA's website.

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA): All components are listed or exempt

TSCA 12(b): This product is not subject to export notification

Canadian Chemical Inventory: All components are listed

STATE REGULATIONS

California Proposition 65:

This product is not listed, but it may contain contaminants known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact OxyChem Customer Service.

Component	Sodium silicate
California Proposition 65 Cancer WARNING:	Not Listed
California Proposition 65 CRT List - Male reproductive toxin:	Not Listed
California Proposition 65 CRT List - Female reproductive toxin:	Not Listed
Massachusetts Right to Know Hazardous Substance List	Not Listed
New Jersey Right to Know Hazardous Substance List	Not Listed
New Jersey Special Health Hazards Substance List	Not Listed
New Jersey - Environmental Hazardous Substance List	Not Listed
Pennsylvania Right to Know Hazardous Substance List	Not Listed
Pennsylvania Right to Know Special Hazardous Substances	Not Listed
Pennsylvania Right to Know Environmental Hazard List	Not Listed
Rhode Island Right to Know Hazardous Substance List	Not Listed

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification:	E
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16. OTHER INFORMATION

Prepared by: OxyChem Corporate HESS - Health Risk Management

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

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16. OTHER INFORMATION

Health:	3	Flammability:	0	Reactivity:	0
NFPA 704 - Hazard Identification Ratings (SCALE 0-4)					
Health:	3	Flammability:	0	Reactivity:	0

IMPORTANT:

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OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.
