

## SAFETY DATA SHEET

# OxyChem®



### CAUSTIC SODA LIQUID (ALL GRADES)

MSDS No.: M32415

Rev. Date: 05/29/2009

Rev. Num.:08

## 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: Customer Service:** MSDS@oxy.com or 1-972-404-3245  
1-800-752-5151 or 1-972-404-3700

**Trade Name:** Caustic Soda Diaphragm Grade 10%, 15%, 18%, 20%, 25%, 30%, 35%, 40%, 50%, Caustic Soda Rayon Grade 18%, 20%, 25%, 30%, 50%, 50% Caustic Soda Rayon Grade OS, Caustic Soda Membrane 6%, 18%, 20%, 25%, 30%, 48%, 50%, 50% Caustic Soda Membrane OS, 50% Caustic Soda Diaphragm OS, Caustic Soda Low Salt 50%, 25% Caustic Soda Purified, 50% Caustic Soda Purified, 50% Caustic Soda Purified OS, Caustic Soda Liquid 70/30, Membrane Blended, 50% Caustic Soda Membrane (Northeast), 50% Caustic Soda Diaphragm (West Coast), 50% Blended Rayon Grade Blended, Membrane Cell Liquor

**Synonyms:** Sodium hydroxide solution, Liquid Caustic, Lye Solution, Caustic, Lye, Soda Lye

**Product Use:** Metal finishing, Cleaner, Process chemical, Petroleum industry

## 2. HAZARDS IDENTIFICATION

\*\*\*\*\*

### EMERGENCY OVERVIEW:

**Color:** Colorless to slightly colored  
**Physical State:** Liquid  
**Odor:** Odorless  
**Signal Word:** Danger

## CAUSTIC SODA LIQUID (ALL GRADES)

MSDS No.: M32415

Rev. Date: 05/29/2009

Rev. Num.:08

**MAJOR HEALTH HAZARDS:** CORROSIVE. CAUSES BURNS TO THE RESPIRATORY TRACT, SKIN, EYES AND GASTROINTESTINAL TRACT. CAUSES PERMANENT EYE DAMAGE.

**PHYSICAL HAZARDS:** CORROSIVE. Mixing with water, acid or incompatible materials may cause splattering and release of heat.

**ECOLOGICAL HAZARDS:** Keep out of water supplies and sewers. This material is alkaline and may raise the pH of surface waters. This material has exhibited moderate toxicity to aquatic organisms.

**PRECAUTIONARY STATEMENTS:** Avoid breathing vapors or mist. Avoid contact with skin, eyes and clothing. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.

\*\*\*\*\*

### POTENTIAL HEALTH EFFECTS:

**Inhalation:** May cause irritation (possibly severe), chemical burns, and pulmonary edema.

**Skin contact:** May cause irritation (possibly severe) and chemical burns.

**Eye contact:** May cause irritation (possibly severe), chemical burns, eye damage, and blindness.

**Ingestion:** May cause irritation (possibly severe), chemical burns, nausea, and vomiting.

**Target Organs Effected:** Respiratory System, Skin, Eye

**Medical Conditions Aggravated by Exposure:** Asthma, Respiratory disorders

See Section 11: TOXICOLOGICAL INFORMATION

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

Hazardous Component	Concentration (by weight %)	CAS - No.
Water	48.5 - 94.5	7732-18-5
Sodium hydroxide	5.5 - 51.5	1310-73-2
Sodium chloride (NaCl)	1 - 5	7647-14-5

## 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/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 before reuse. Discard contaminated leather goods. GET MEDICAL ATTENTION IMMEDIATELY.

## CAUSTIC SODA LIQUID (ALL GRADES)

MSDS No.: M32415

Rev. Date: 05/29/2009

Rev. Num.:08

---

### 4. FIRST AID MEASURES

**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.

**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. Probable mucosal damage may contraindicate the use of gastric lavage.

---

### 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. Cool containers with water. Avoid contact with skin.

**Sensitivity to Mechanical Impact:** Not sensitive.

**Sensitivity to Static Discharge:** Not sensitive.

**Flash point:** Not flammable

---

### 6. ACCIDENTAL RELEASE MEASURES

---

**Occupational Release:**

Wear appropriate personal protective equipment recommended in Section 8 of the MSDS. Completely contain spilled material with dikes, sandbags, etc. Shovel dry material into suitable container. Liquid material may be removed with a vacuum truck. Remaining material may be diluted with water and neutralized with dilute acid, then absorbed and collected. Flush spill area with water, if appropriate. Keep product and flush water out of water supplies and sewers. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies.

---

### 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.

---

**CAUSTIC SODA LIQUID (ALL GRADES)**

MSDS No.: M32415

Rev. Date: 05/29/2009

Rev. Num.:08

**7. HANDLING AND STORAGE**

**Handling Procedures:** Avoid breathing vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. When mixing, slowly add to water to minimize heat generation and spattering.

**8. EXPOSURE CONTROLS/ PERSONAL PROTECTION****OSHA Regulatory Exposure limit(s):**

Hazardous Component	CAS - No.	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PEL Ceiling
Sodium hydroxide	1310-73-2	2 mg/m <sup>3</sup>	-----	-----

**Non-Regulatory Exposure Limit(s):**

The Non-Regulatory OSHA limits shown in the table are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).

Hazardous Component	CAS - No.	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Sodium hydroxide	1310-73-2	-----	-----	2 mg/m <sup>3</sup>	-----	-----	2 mg/m <sup>3</sup>

**ENGINEERING CONTROLS:** Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT:**

**Eye Protection:** 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 chemical resistant clothing and rubber boots when potential for contact with the material exists. Contaminated clothing should be removed, then discarded or laundered.

**Hand Protection:** Wear appropriate chemical resistant gloves

**Protective Material Types:** Natural rubber, Neoprene, Nitrile

Hazardous Component	Immediately Dangerous to Life/ Health (IDLH)
Sodium hydroxide	10 mg/m <sup>3</sup> IDLH

**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. If eye irritation occurs, a full face style mask should be used. 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**

<b>Physical State:</b>	Liquid
<b>Appearance:</b>	Clear to opaque
<b>Color:</b>	Colorless to slightly colored
<b>Odor:</b>	Odorless
<b>Boiling Point/Range:</b>	230 – 291 F (110 – 144 C)

**CAUSTIC SODA LIQUID (ALL GRADES)**

MSDS No.: M32415

Rev. Date: 05/29/2009

Rev. Num.:08

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Freezing Point/Range:</b>	-26 to 59 F (-32 to 15 C)
<b>Vapor Pressure:</b>	13 - 135 mmHg @ 60 C
<b>Vapor Density (air=1):</b>	No data available
<b>Specific Gravity (water=1):</b>	1.11 – 1.53 @ 15.6 C
<b>Water Solubility:</b>	100%
<b>pH:</b>	14.0 (7.5% solution)
<b>Volatility:</b>	No data available
<b>Evaporation Rate (ether=1):</b>	No data available
<b>Partition Coefficient (n-octanol/water):</b>	No data available

**10. STABILITY AND REACTIVITY**

<b>Reactivity/ Stability:</b>	Stable at normal temperatures and pressures.
<b>Conditions to Avoid:</b>	Mixing with water, acid or incompatible materials may cause splattering and release of large amounts of heat. Will react with some metals forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars, food and beverage products in enclosed spaces.
<b>Incompatibilities/ Materials to Avoid:</b>	Acids, Halogenated compounds, Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys
<b>Hazardous Decomposition Products:</b>	Toxic fumes of sodium oxide
<b>Hazardous Polymerization:</b>	Will not occur

**11. TOXICOLOGICAL INFORMATION****TOXICITY DATA:**

Hazardous Component	LD50 Oral	LC50 Inhalation	LD50 Dermal
Sodium hydroxide	Not listed	Not listed	1350 mg/kg (Rabbit)
Sodium chloride (NaCl)	3 g/kg (Rat)	42 g/m <sup>3</sup> (1 hr-Rat)	10 g/kg (Rabbit)

**TOXICITY:**

The severity of the tissue damage is a function of its concentration, the length of tissue contact time, and local tissue conditions. After exposure there may be a time delay before irritation and other effects occur. This material is a strong irritant and is corrosive to the skin, eyes, and mucous membranes. This material may cause severe burns and permanent damage to any tissue with which it comes into contact. Inhalation will cause severe irritation, possible burns with pulmonary edema, which may lead to pneumonitis. Skin contact with this material may cause severe irritation and corrosion of tissue. Repeated exposure may cause dermatitis. Eye contact can cause severe irritation, corrosion with possible corneal damage and blindness. Ingestion may cause irritation, corrosion/ulceration, nausea, and vomiting.

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

## CAUSTIC SODA LIQUID (ALL GRADES)

MSDS No.: M32415

Rev. Date: 05/29/2009

Rev. Num.:08

---

### 12. ECOLOGICAL INFORMATION

---

**AQUATIC TOXICITY:** This material has exhibited moderate toxicity to aquatic organisms. Data provided are for sodium hydroxide.

**Freshwater Fish Data:**

LC50 brook trout: 25 ppm/24 hr

LC50 king salmon: 48 ppm

**Invertebrate Toxicity Data:**

EC50 daphnia magna: 100 ppm

EC50 shrimp: 33 – 100 ppm/48 hr

EC50 cockle: 330 – 1000 ppm/48 hr

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

**PERSISTENCE:** This material is alkaline and may raise the pH of surface waters with low buffering capacity. This material is believed to exist in the disassociated state 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 reprocess, 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

---

### 14. TRANSPORT INFORMATION

---

**U.S.DOT 49 CFR 172.101:**

**PROPER SHIPPING NAME:** Sodium Hydroxide Solution  
**DOT UN NUMBER:** UN1824  
**HAZARD CLASS/ DIVISION:** 8  
**PACKING GROUP:** II  
**LABELING REQUIREMENTS:** 8  
**DOT RQ (lbs):** RQ 1000 lbs. (Sodium Hydroxide)

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**SHIPPING NAME:** Sodium hydroxide solution  
**UN NUMBER:** UN1824  
**CLASS:** 8  
**PACKING/RISK GROUP:** II

---

## CAUSTIC SODA LIQUID (ALL GRADES)

MSDS No.: M32415

Rev. Date: 05/29/2009

Rev. Num.:08

### 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):**  
If a release is reportable under CERCLA section 103, notify the state emergency response commission and local emergency planning committee. In addition, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Hazardous Component	CERCLA Reportable Quantities:
Sodium hydroxide	1000 lb (final RQ)

- **EPCRA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):** No components are listed.
- **EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.21):**  
Acute Health Hazard
- **EPCRA SECTION 313 (40 CFR 372.65):** No components are listed.
- **OSHA PROCESS SAFETY (29 CFR 1910.119):** Not regulated

#### NATIONAL INVENTORY STATUS

- **U.S. INVENTORY STATUS (TSCA):** All components are listed or exempt
  - **TSCA 12(b):** This product is not subject to export notification
- CANADIAN DOMESTIC SUBSTANCE LIST (DSL/NDL):** 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.

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

## CAUSTIC SODA LIQUID (ALL GRADES)

MSDS No.: M32415

Rev. Date: 05/29/2009

Rev. Num.:08

### 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.

<b>WHMIS Classification:</b>	E
------------------------------	---

## 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)

<b>Health:</b> 3	<b>Flammability:</b> 0	<b>Reactivity:</b> 1
<b>NFPA 704 - Hazard Identification Ratings (SCALE 0-4)</b>		
<b>Health:</b> 3	<b>Flammability:</b> 0	<b>Reactivity:</b> 1

### Reason for Revision:

1. Removed Chronic Toxicity: SEE SECTION 11

### IMPORTANT:

The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and OxyChem assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any Federal, State, local or foreign laws.

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.