



## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Occidental Chemical Corporation**

**5005 LBJ Freeway**

**P.O. Box 809050**

**Dallas, Texas 75380-9050**

**24 HOUR EMERGENCY TELEPHONE:**

**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**

**MSDS NUMBER:** M32415

**SUBSTANCE: CAUSTIC SODA LIQUID (ALL GRADES)**

**TRADE NAMES:**

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

**REVISION DATE:** Mar 10 2006

### 2. HAZARDS IDENTIFICATION

**NFPA RATINGS (SCALE 0-4):** HEALTH=3 FIRE=0 REACTIVITY=1

**HMIS RATINGS (SCALE 0-4):** HEALTH=3 FLAMMABILITY=0 REACTIVITY=1

**EMERGENCY OVERVIEW:****COLOR:** colorless to slightly colored**PHYSICAL FORM:** liquid**ODOR:** odorless**SIGNAL WORD:** DANGER**MAJOR HEALTH HAZARDS:** CORROSIVE. CAUSES BURNS TO THE RESPIRATORY TRACT, SKIN, EYES AND GASTROINTESTINAL TRACT. CAUSES PERMANENT EYE DAMAGE.**PHYSICAL HAZARDS:** Mixing with water, acid or incompatible materials may cause splattering and release of heat.**ECOLOGICAL HAZARDS:** This material has exhibited moderate toxicity to aquatic organisms.**PRECAUTIONARY STATEMENTS:** Do not get in eyes, on skin, or on clothing. Do not breathe vapor or mist. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.**POTENTIAL HEALTH EFFECTS:****INHALATION:****SHORT TERM EXPOSURE:** irritation (possibly severe), burns, pulmonary edema**LONG TERM EXPOSURE:** to our knowledge, no effects are known**SKIN CONTACT:****SHORT TERM EXPOSURE:** irritation (possibly severe), burns**LONG TERM EXPOSURE:** dermatitis**EYE CONTACT:****SHORT TERM EXPOSURE:** irritation (possibly severe), burns, eye damage, blindness**LONG TERM EXPOSURE:** visual disturbances**INGESTION:****SHORT TERM EXPOSURE:** irritation (possibly severe), burns, nausea, vomiting**LONG TERM EXPOSURE:** to our knowledge, no effects are known**CARCINOGEN STATUS:****OSHA:** No**NTP:** No**IARC:** No

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**3. COMPOSITION, INFORMATION ON INGREDIENTS**

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**COMPONENT:** WATER**CAS NUMBER:** 7732-18-5**PERCENTAGE:** 48.5-94.5**COMPONENT:** SODIUM HYDROXIDE**CAS NUMBER:** 1310-73-2**PERCENTAGE:** 5.5-51.5**COMPONENT:** SODIUM CHLORIDE**CAS NUMBER:** 7647-14-5**PERCENTAGE:** 0-5.0

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**4. FIRST AID MEASURES**

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**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.

**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.

**NOTE 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.

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## 5. FIRE FIGHTING MEASURES

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**FIRE AND EXPLOSION HAZARDS:** Negligible fire hazard.

**EXTINGUISHING MEDIA:** Use extinguishing agents appropriate for surrounding fire.

**FIRE FIGHTING:** Move container from fire area if it can be done without risk. Cool containers with water. Wear NIOSH approved positive-pressure self-contained breathing apparatus. Avoid contact with skin.

**SENSITIVITY TO MECHANICAL IMPACT:** Not sensitive

**SENSITIVITY TO STATIC DISCHARGE:** Not sensitive

**FLASH POINT:** not flammable

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## 6. ACCIDENTAL RELEASE MEASURES

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### **OCCUPATIONAL RELEASE:**

Wear appropriate personal protective equipment recommended in Section 8 of the MSDS. Completely contain spilled material with dikes, sandbags, etc. Keep out of water supplies and sewers. Reprocess or reuse if possible. 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. Flush spill area with water, if appropriate. 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. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800) 424-8802 (USA) or (202)426-2675 (USA).

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## 7. HANDLING AND STORAGE

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**STORAGE:** 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 MSDS).

**HANDLING:** 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.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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### EXPOSURE LIMITS:

#### SODIUM HYDROXIDE:

2 mg/m<sup>3</sup> OSHA TWA

2 mg/m<sup>3</sup> OSHA ceiling (vacated by 58 FR 35338, June 30, 1993)

2 mg/m<sup>3</sup> ACGIH ceiling

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

**EYE PROTECTION:** Wear safety glasses with side shields. Wear chemical safety goggles with a faceshield to protect against skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** Wear chemical resistant clothing and rubber boots when potential for contact with the material exists. Contaminated clothing should be removed, then discarded or laundered. Always place pants legs over boots.

**GLOVES:** Wear appropriate chemical resistant gloves.

**PROTECTIVE MATERIAL TYPES:** butyl rubber, natural rubber, neoprene, nitrile, polyvinyl chloride (PVC), Tychem(R)

**IMMEDIATELY DANGEROUS TO LIFE OR HEALTH:** 10 mg/m<sup>3</sup>

**RESPIRATOR:** Where vapor concentration exceeds or is likely to exceed applicable exposure limits, a NIOSH approved respirator is required. If eye irritation occurs, a full face style mask should be used. When an air-purifying respirator is not adequate or when there are vapor concentrations above 10 ppm or for spills and/or emergencies, a NIOSH approved self-contained breathing apparatus or airline respirator, with full-face piece, is required. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** liquid

**APPEARANCE:** clear to opaque

**COLOR:** colorless to slightly colored

**ODOR:** odorless  
**BOILING POINT:** 230-291 F (110-144 C)  
**FREEZING POINT:** -26 to 59 F (-32 to 15 C)  
**VAPOR PRESSURE:** 13-135 mmHg @ 60 C  
**VAPOR DENSITY:** Not available  
**SPECIFIC GRAVITY (water=1):** 1.11-1.53 @ 15.6 C  
**DENSITY:** 9.27-12.76 lbs/gal @ 15.6 C  
**WATER SOLUBILITY:** 100%  
**PH:** 14.0 (7.5% solution)  
**VOLATILITY:** Not available  
**ODOR THRESHOLD:** Not available  
**EVAPORATION RATE:** Not available  
**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available

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## 10. STABILITY AND REACTIVITY

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**REACTIVITY:** Stable at normal temperatures and pressure.

**CONDITIONS TO AVOID:** 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 or food and beverage products in enclosed spaces.

**INCOMPATIBILITIES:** acids, halogenated compounds, prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys

**HAZARDOUS DECOMPOSITION:**  
Thermal decomposition products: None known.

**POLYMERIZATION:** Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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### **CAUSTIC SODA LIQUID (ALL GRADES):**

**TOXICITY DATA:** Sodium Hydroxide: 1350 mg/kg Dermal-Rabbit LD50. 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. Eye contact can cause severe irritation, corrosion with possible corneal damage and blindness. Ingestion may cause irritation, corrosion/ulceration, nausea, and vomiting. In general, chronic effects are due to long-term irritation. This material may cause dermatitis on the skin, or recurrent corneal ulceration and visual disturbances. In rare cases reports have noted long-term inhalation causes bronchial inflammatory reaction or obstructive airway dysfunction.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** respiratory system (including asthma and other breathing disorders)

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## 12. ECOLOGICAL INFORMATION

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**ECOTOXICITY DATA:**

**FISH TOXICITY:** This material has exhibited moderate toxicity to aquatic organisms. For sodium hydroxide: 100 ppm LC50 Daphnia; 25 ppm 24 hours LC50 Brook trout; 48 ppm LC50 King salmon; 33 - 100 ppm 48 hours LC50 Shrimp; 330 - 1000 ppm 48 hours LC50 Cockle

**FATE AND TRANSPORT:**

**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 believed not to bioaccumulate.

**OTHER ECOLOGICAL INFORMATION:** This material has exhibited slight toxicity to terrestrial organisms.

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## 13. DISPOSAL CONSIDERATIONS

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Reuse or reprocess if possible. Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D002.

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## 14. TRANSPORT INFORMATION

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

**PROPER SHIPPING NAME:** Sodium hydroxide solution

**ID NUMBER:** UN1824

**HAZARD CLASS OR DIVISION:** 8

**PACKING GROUP:** II

**LABELING REQUIREMENTS:** 8

**DOT HAZARDOUS SUBSTANCE(S):**

Sodium hydroxide 1000 lb(s) (454 kg(s))

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**SHIPPING NAME:** Sodium hydroxide solution

**UN NUMBER:** UN1824

**CLASS:** 8

**PACKING GROUP/RISK GROUP:** II

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## 15. REGULATORY INFORMATION

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**U.S. REGULATIONS:**

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

**SODIUM HYDROXIDE:** 1000 LBS RQ

**SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):** Not

regulated.

**SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):**

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

**SARA TITLE III SECTION 313 (40 CFR 372.65):** Not regulated.

**OSHA PROCESS SAFETY (29CFR1910.119):** Not regulated.

**FDA:** This material has Generally Recognized as Safe (GRAS) status under specific FDA regulations. Additional information is available from the Code of Federal Register (CFR) which is accessible on the FDA's website.

**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 Customer Service.

**NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW:**

**REPORTING REQUIREMENT:**

WATER 7732-18-5 48.5-94.5%

SODIUM HYDROXIDE 1310-73-2 5.5-51.5%

SODIUM CHLORIDE 7647-14-5 0-5.0%

**RIGHT TO KNOW HAZARDOUS SUBSTANCE LIST:**

SODIUM HYDROXIDE 1310-73-2 5.5-51.5%

**SPECIAL HEALTH HAZARD SUBSTANCE LIST:**

SODIUM HYDROXIDE 1310-73-2 5.5-51.5%

**PENNSYLVANIA RIGHT TO KNOW:**

**REPORTING REQUIREMENT:**

WATER 7732-18-5 48.5-94.5%

SODIUM HYDROXIDE 1310-73-2 5.5-51.5%

SODIUM CHLORIDE 7647-14-5 0-5.0%

**HAZARDOUS SUBSTANCE LIST:**

SODIUM HYDROXIDE 1310-73-2 5.5-51.5%

**ENVIRONMENTAL HAZARDOUS SUBSTANCE LIST:**

SODIUM HYDROXIDE 1310-73-2 5.5-51.5%

**SPECIAL HAZARDOUS SUBSTANCE LIST:**

Not regulated.

**CANADIAN REGULATIONS:**

**CONTROLLED PRODUCTS REGULATIONS (CPR):** This product has been classified in accordance with

the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**WHMIS CLASSIFICATION:** E.

**NATIONAL INVENTORY STATUS:**

**U.S. INVENTORY (TSCA):** All the components of this substance are listed on or are exempt from the inventory.

**TSCA 12(b) EXPORT NOTIFICATION:** Not listed.

**CANADA INVENTORY (DSL/NDSL):** All components of this product are listed on the DSL.

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## 16. OTHER INFORMATION

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### **MSDS SUMMARY OF CHANGES**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION
2. HAZARDS IDENTIFICATION
3. COMPOSITION, INFORMATION ON INGREDIENTS
4. FIRST AID MEASURES
5. FIRE FIGHTING MEASURES
6. ACCIDENTAL RELEASE MEASURES
7. HANDLING AND STORAGE
8. EXPOSURE CONTROLS, PERSONAL PROTECTION
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10. STABILITY AND REACTIVITY
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12. ECOLOGICAL INFORMATION
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