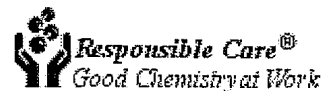


OxyChem[®]**MATERIAL SAFETY DATA SHEET**

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:****1-866-295-5278 or 1-615-399-5148****CUSTOMER SERVICE:****1-800-752-5151 or 1-972-404-3800****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%, 48%, 50%; 50% Caustic Soda Membrane OS; 50% Caustic Soda Diaphragm OS; 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)

SYNONYMS:

Sodium hydroxide solution

PRODUCT USE: metal finishing, cleaner, process chemical, petroleum industry**REVISION DATE:** Apr 07 2004

2. COMPOSITION, INFORMATION ON INGREDIENTS

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: 0-1.3

3. HAZARDS IDENTIFICATION

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

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

EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: liquid

ODOR: odorless

MAJOR HEALTH HAZARDS: MAY CAUSE BURNS TO THE RESPIRATORY TRACT, SKIN, EYES AND GASTROINTESTINAL TRACT. MAY CAUSE PERMANENT EYE DAMAGE.
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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

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.

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.

5. FIRE FIGHTING MEASURES

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.

SENSITIVITY TO MECHANICAL IMPACT: Not sensitive

SENSITIVITY TO STATIC DISCHARGE: Not sensitive

FLASH POINT: not flammable

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Shovel dry material into suitable container. Liquid material may be removed with a vacuum truck. Flush spill area with water, if appropriate. Keep 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. 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).

7. HANDLING AND STORAGE

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.

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.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

SODIUM HYDROXIDE:

- 2 mg/m³ OSHA TWA
- 2 mg/m³ OSHA ceiling (vacated by 58 FR 35338, June 30, 1993)
- 2 mg/m³ ACGIH ceiling
- 2 mg/m³ MEXICO peak

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

EYE PROTECTION: 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.

GLOVES: Wear appropriate chemical resistant gloves.

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

RESPIRATOR: A NIOSH approved respirator with N95 (dust, fume, mist) filters 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 half facepiece air-purifying respirator may be used in concentrations up to 10X the acceptable exposure level and a full facepiece air-purifying respirator may be used in concentrations up to 50X the acceptable exposure level.

Supplied air should be used when the level is expected to be above 50X the acceptable level, or when there is a potential for uncontrolled release.

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

COLOR: colorless

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

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Carbon monoxide gas may form upon contact with reducing sugars, 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.

11. TOXICOLOGICAL INFORMATION

CAUSTIC SODA LIQUID (ALL GRADES):

TOXICITY DATA: Sodium Hydroxide: 1350 mg/kg Dermal-Rabbit LD50. 220 mg/kg (50% solution) Oral-Rat 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.

12. ECOLOGICAL INFORMATION

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 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.

13. DISPOSAL CONSIDERATIONS

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.

14. TRANSPORT INFORMATION

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

15. REGULATORY INFORMATION

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.

STATE REGULATIONS:

California Proposition 65: This product 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 0-1.3%

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%

HAZARDOUS SUBSTANCE LIST:

SODIUM HYDROXIDE 1310-73-2 5.5-51.5%

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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: D1B, 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.

16. OTHER INFORMATION

IMPORTANT: The information presented herein, while not guaranteed, was prepared by competent 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, SUITABILITY, STABILITY OR OTHERWISE.** The information included herein is not intended to be all-inclusive as to the appropriate manner and/or conditions of use, handling and/or storage. Factors pertaining to certain conditions of storage, handling, or use of this product may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended to, and nothing herein shall be construed as a recommendation to, infringe any existing patents or violate any laws, rules, regulations or ordinances of any governmental entity.