



# SAFETY DATA SHEET



## Sodium hydroxide, 50% solution, Membrane and Diaphragm Grade

### Section 1. Identification

**GHS product identifier** : Sodium hydroxide, 50% solution, Membrane and Diaphragm Grade  
**Code** : 0001  
**Other means of identification** : Caustic Soda.  
**Product type** : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** : Neutralization of acids, pH control, gas scrubbing, catalyst. Used in manufacture of pulp and paper, petroleum and natural gas, soap and detergents and cellulose. Also used in water treatment, food processing, mining and metal processing.

**Supplier's details** :

<p><b>Chemtrade Electrochem Inc.</b>                  100 Amherst Ave                  North Vancouver, British Columbia                  V7H 1S4, CA                  Emergency #: (604)-929-3441                  Toll free: 1-800-699-6924</p>	<p><b>Chemtrade Logistics Inc.</b>                  Suite 300, 155 Gordon Baker Road                  Toronto, Ontario                  M2H 3N5, CA                  Phone: (416)-496-5856</p>
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**Emergency telephone number (with hours of operation)** : CANUTEC: +1-613-996-6666 or \*666 (cellular)  
 2-C-0808  
 CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887  
 CCN 15610

### Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : SKIN CORROSION - Category 1A  
 SERIOUS EYE DAMAGE - Category 1  
 AQUATIC HAZARD (ACUTE) - Category 3  
 AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

**Hazard pictograms** :



**Signal word** : Danger  
**Hazard statements** : H314 - Causes severe skin burns and eye damage.  
 H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

## Section 2. Hazards identification

- Prevention** : P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.  
P273 - Avoid release to the environment.  
P264 - Wash hands thoroughly after handling.
- Response** : P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.  
P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.  
P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
- Storage** : P405 - Store locked up.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Do not taste or swallow. Wash thoroughly after handling.
- Other hazards which do not result in classification/ HHNOC/PHNOC** : Causes severe digestive tract burns.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Caustic Soda.

### CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** : 0001

Ingredient name	%	CAS number
Sodium hydroxide	48 - 52	1310-73-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of lukewarm water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain

## Section 4. First aid measures

- an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of lukewarm water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns.
- Ingestion** : Corrosive to the digestive tract. Causes burns.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : shortness of breath
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Symptoms may be delayed.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use solid water stream as it may spread the fire. Do not use halogenated extinguishing agents.
- Specific hazards arising from the chemical** : The product itself does not burn. May decompose upon heating to produce corrosive and/or toxic fumes. Contact with metal may release flammable hydrogen gas.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
metal oxide/oxides  
Toxic gases
- Special protective actions for fire-fighters** : Evacuate area. in case of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.
- 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, protective equipment and emergency procedures

- For non-emergency personnel** : 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- 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). Water polluting material. May be harmful to the environment if released in large quantities.

### Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

## Section 7. Handling and storage

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : 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. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : 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. Store locked up. Separate from acids. 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. Compatible storage materials may include but not be limited to the following: nickel and nickel alloys, steel, plastics, plastic or rubber lined steel.

## Section 8. Exposure controls/personal protection

### Control parameters

#### United States

#### Occupational exposure limits

Ingredient name	Exposure limits
Sodium hydroxide	<b>ACGIH TLV (United States, 3/2016).</b> C: 2 mg/m <sup>3</sup> <b>NIOSH REL (United States, 10/2013).</b> CEIL: 2 mg/m <sup>3</sup> <b>OSHA PEL (United States, 6/2016).</b> TWA: 2 mg/m <sup>3</sup> 8 hours.

#### Canada

#### Occupational exposure limits

Ingredient name	Exposure limits
Sodium hydroxide	<b>CA Alberta Provincial (Canada, 4/2009).</b> C: 2 mg/m <sup>3</sup> <b>CA British Columbia Provincial (Canada, 5/2015).</b> C: 2 mg/m <sup>3</sup> <b>CA Ontario Provincial (Canada, 7/2015).</b> C: 2 mg/m <sup>3</sup> <b>CA Quebec Provincial (Canada, 1/2014).</b> STEV: 2 mg/m <sup>3</sup> 15 minutes. <b>CA Saskatchewan Provincial (Canada, 7/2013).</b> CEIL: 2 mg/m <sup>3</sup>

- Appropriate engineering controls** : 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.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### Individual protection measures

## Section 8. Exposure controls/personal protection

- 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.
- Eye/face protection** : 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : 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.
- Other skin protection** : Appropriate footwear and any additional skin protection measures 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 protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid. [Clear to opaque.]
- Color** : Clear to white.
- Odor** : None.
- Odor threshold** : Not available.
- pH** : 14 (strongly alkaline)
- Melting point** : 12°C (53.6°F) (50% solution)
- Boiling point** : 143°C (289.4°F)
- Flash point** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not applicable.
- Lower and upper explosive (flammable) limits** : Not applicable.
- Vapor pressure** : 0.2 kPa (1.5001 mm Hg) [room temperature]
- Vapor density** : Not available.
- Relative density** : 1.531 g/cm<sup>3</sup> @ 20°C (68°F)
- Solubility** : Easily soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not applicable.

## Section 9. Physical and chemical properties

**Decomposition temperature** : Not available.

**Viscosity** : Not available.

## Section 10. Stability and reactivity

**Reactivity** : Contact with metals may release flammable hydrogen gas.

**Chemical stability** : Stable at normal conditions. Rapidly absorbs carbon dioxide from the air forming sodium carbonate.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : Reacts violently with strong acids. Corrosive to steels at elevated temperatures above 40°C. Corrosive to aluminum, tin, zinc, copper, brass and bronze.

**Incompatible materials** : Reactive or incompatible with the following materials: Acids. Organic material. Aluminum. Phosphorus. Zinc. Tin.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

There is no data available.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Sodium hydroxide	Eyes - Mild irritant	Rabbit	-	400 µg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 50 µg	-
	Eyes - Severe irritant	Rabbit	-	1%	-
	Eyes - Severe irritant	Rabbit	-	0.5 minutes 1 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 500 mg	-

#### Sensitization

There is no data available.

#### Mutagenicity

There is no data available.

#### Carcinogenicity

There is no data available.

#### Reproductive toxicity

There is no data available.

#### Teratogenicity

There is no data available.

#### Specific target organ toxicity (single exposure)

There is no data available.

#### Specific target organ toxicity (repeated exposure)

There is no data available.

## Section 11. Toxicological information

### Aspiration hazard

There is no data available.

**Information on the likely routes of exposure** : Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential acute health effects

**Eye contact** : Causes serious eye damage.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Causes severe burns.  
**Ingestion** : Corrosive to the digestive tract. Causes burns.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
 pain  
 watering  
 redness

**Inhalation** : shortness of breath

**Skin contact** : Adverse symptoms may include the following:  
 pain or irritation  
 redness  
 blistering may occur

**Ingestion** : Adverse symptoms may include the following:  
 stomach pains

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : No known significant effects or critical hazards.  
**Potential delayed effects** : No known significant effects or critical hazards.

#### Long term exposure

**Potential immediate effects** : No known significant effects or critical hazards.  
**Potential delayed effects** : No known significant effects or critical hazards.

#### Potential chronic health effects

**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

There is no data available.



## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Sodium hydroxide	Acute EC50 40.38 mg/L Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 125 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours

### Persistence and degradability

There is no data available.

### Bioaccumulative potential

There is no data available.

### Mobility in soil





Soil/water partition coefficient ( $K_{oc}$ ) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT	TDG	IMDG	IATA
<b>UN number</b>	UN1824	UN1824	UN1824	UN1824
<b>UN proper shipping name</b>	SODIUM HYDROXIDE SOLUTION RQ (Sodium hydroxide)	SODIUM HYDROXIDE SOLUTION	SODIUM HYDROXIDE SOLUTION	SODIUM HYDROXIDE SOLUTION
<b>Transport hazard class(es)</b>	8 	8 	8 	8 
<b>Packing group</b>	II	II	II	II
<b>Environmental hazards</b>	No.	No.	No.	No.

## Section 14. Transport information

<b>Additional information</b>	<b>Reportable quantity</b> 1923.1 lbs / 873.08 kg [150.75 gal / 570.64 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8).	<b>Emergency schedules (EmS)</b> - F-A, S-B
	<b>Special provisions</b> B2, IB2, N34, T7, TP2		

AERG : 154

**DOT-RQ Details** : Sodium hydroxide 1000 lbs / 454 kg

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

**U.S. Federal regulations** : **United States inventory (TSCA 8b):** All components are listed or exempted.  
**Clean Water Act (CWA) 311:** Sodium hydroxide

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : Immediate (acute) health hazard

#### Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Sodium hydroxide	No.	No.	Yes.	Yes.	No.

### SARA 313

There is no data available.

## Section 15. Regulatory information

### State regulations

**Massachusetts** : The following components are listed: Sodium hydroxide

**New York** : The following components are listed: Sodium hydroxide

**New Jersey** : The following components are listed: Sodium hydroxide

**Pennsylvania** : The following components are listed: Sodium hydroxide

### California Prop. 65

No products were found.



This product has been certified to NSF/ANSI 60 (certificate number 07871-01) for a Maximum Use Level (MUL) of 100 mg/L.

### Canada

#### Canadian lists

**Canadian NPRI** : None of the components are listed.

**CEPA Toxic substances** : None of the components are listed.

**Canada inventory** : All components are listed or exempted.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

**Health :** 3 \* **Flammability :** 0 **Physical hazards :** 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

**Health :** 3 **Flammability :** 0 **Instability :** 0

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
SKIN CORROSION - Category 1A	Expert judgment
SERIOUS EYE DAMAGE - Category 1	On basis of test data
AQUATIC HAZARD (ACUTE) - Category 3	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method

### History

**Date of issue mm/dd/yyyy** : 03/30/2017

**Date of previous issue** : 01/15/2015

**Version** : 2

**Prepared by** :

## Section 16. Other information

### 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.