

# Safety Data Sheet

## Section 01 Identification

<b>Product Identifier</b>	Sodium Hydroxide, Solid (Beads)	
<b>Other Means of Identification</b>	Caustic soda, sodium hydrate, lye, caustic	
<b>Product Use and Restrictions on Use</b>	Acid neutralization, petroleum refining, manufacture of paper products, metal cleaning, regeneration of ion exchange resins.	
<b>Initial Supplier Identifier</b>	Steveston Chemical Solutions Ltd. 2060 Viceroy Place Richmond, BC. Canada V6V 1Y9 Phone: 604 831 5865	
<b>Emergency Poison Phone Numbers by Province</b>	Alberta: 1-800-332-1414 British Columbia: 1-800-567-8911 Manitoba: 1-855-776-4766 New Brunswick: 911 Newfoundland & Labrador: 1-866-727-1110 Northwest Territories: 1-800-332-1414 Nova Scotia: 1-800-565-8161	Nunavut: 1-866-913-7897 Ontario: 1-800-268-9017 Prince Edward Island: 1-800-565-8161 Quebec: 1-800-463-5060 Saskatchewan: 1-866-454-1212 Yukon: 1-867-393-8700

## Section 02 Hazard Identification

### Physical Hazards

Corrosive to metals Category 1

### Health Hazards

Skin corrosion / irritation Category 1

### Signal Word

Danger

### Hazard Statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

### Pictograms



### Precautionary Statements

#### Prevention

P234 Keep only in original packaging.

P260 Do not breathe dust.

P264 Wash affected body parts thoroughly after handling.

P280 Wear protective gloves, protective clothing, eye protection, face protection.

## Response

P301 P330 P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 P361 P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.

P304 P340 P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.

P305 P351 P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P390 Absorb spillage to prevent material damage.

## Storage

P405 Store locked up.

## Disposal

P501 Dispose of contents / container in accordance with all federal, provincial and / or local regulations including the Canadian Environmental Protection Act.

## Hazards Not Otherwise Classified

Not available

## Supplemental Information

Not available

## Section 03 Composition / Information on Ingredients

### Hazardous Ingredients:

Chemical name	Common name(s)	CAS number	Concentration (w/w%)
Sodium Hydroxide	Caustic Soda	1310-73-2	99-100%

## Section 04 First-Aid Measures

### Description of necessary first-aid measures

<b>Inhalation</b>	Remove source of exposure or move person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor. If breathing has stopped, trained personnel should begin rescue breathing or if the heart has stopped, immediately start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Avoid mouth to mouth contact by using a barrier device.
<b>Ingestion</b>	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. If vomiting occurs naturally, lie on your side, in the recovery position.
<b>Skin contact</b>	Avoid direct contact. Wear chemical protective clothing, if necessary. Take off immediately contaminated clothing, shoes and leather goods. Rinse skin with lukewarm, gently flowing water / shower for 60 minutes. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before re-use, or discard.
<b>Eye contact</b>	Avoid direct contact. Wear chemical protective gloves, if necessary. Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 60 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor.

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

<b>Inhalation</b>	Causes severe burns to the mouth and throat.
<b>Ingestion</b>	Causes burns to the mouth and throat.
<b>Skin contact</b>	Causes severe skin burns.
<b>Eye contact</b>	Causes serious eye damage.
<b>Further information</b>	For further information see Section 11 Toxicological Information.

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## Section 05 Fire Fighting Measures

<b>Suitable extinguishing media</b>	Extinguish fire using extinguishing agents suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	Not available
<b>Specific hazards arising from the chemical</b>	May release toxic or irritating fumes at high temperatures. Reacts with many metals to liberate hydrogen gas that can form explosive mixtures.
<b>Special protective equipment for fire-fighters</b>	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

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## Section 06 Accidental Release Measures

<b>Personal Precautions / Protective Equipment / Emergency Procedures</b>	Wear appropriate personal protective equipment (See Section 08 Exposure Controls and Personal Protection). Stay upwind, ventilate area. Only enter area with PPE.
<b>Environmental Precautions</b>	Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
<b>Methods and Materials for Containment and Cleaning Up</b>	Dry sweeping is not recommended. Pre-dampening the material or use of a vacuum is preferred. Shovel into clean, dry, labeled containers and cover. Flush area with water.

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## Section 07 Handling and Storage

<b>Precautions for Safe Handling</b>	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Prevent the release of dust into the workplace air. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label. Never add water to a corrosive. Always add corrosives to water. When mixing with water, stir small amounts in slowly. Use cold water to prevent excessive heat generation. Never return contaminated material to its original container. Have suitable emergency equipment for fires, spills and leaks readily available.
<b>Conditions for Safe Storage</b>	Store in a cool, dry, well-ventilated area, out of direct sunlight, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible. Do not transfer to metal containers.
<b>Incompatibilities</b>	Acids, such as sulphuric, nitric, hydrochloric, phosphoric, fluosilicic (HFSA), sulphonic, acetic, citric, oxalic, and formic. Metals, such as aluminum, steel, and brass. Water, chlorinated hydrocarbons, flammable liquids, and nitrous compounds.

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**Section 08 Exposure Controls and Personal Protection**

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**Exposure limits**

Component	Regulation	Type of listing	Value
Sodium Hydroxide	ACGIH	STEL/Ceiling	2 mg/m <sup>3</sup>
	OSHA	PEL-TWA	2 mg/m <sup>3</sup>
	NIOSH	REL-Ceiling	2 mg/m <sup>3</sup>
	NIOSH	IDLH	10 mg/m <sup>3</sup>

**Engineering controls**

**Ventilation Requirements** Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

**Other** An emergency shower and eyewash station should be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations.

**Protective equipment**

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

**Eye and face protection** Where there is potential eye or face exposure, tightly fitting safety goggles and a face shield or a full face respirator or similar protective equipment which protects the wearer's face and eyes are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.

**Hand and body protection** Where handling this product it is recommended that chemically resistant gloves are worn. Resistance of specific materials can vary from product to product. Breakthrough times are obtained under conditions of continuous contact, generally at room temperature. Evaluate resistance under conditions of use and maintain protective clothing.  
Where there is potential for contact with clothing or skin, rubber boots and sufficient body protection, such as: a chemical body suit or an apron and coveralls of chemical resistant material, are recommended. Continued use of contaminated safety gear or clothing is not recommended; wash before reuse or discard.

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment.

**NIOSH respirator recommendations for: Sodium hydroxide****Up to: 10 mg/m<sup>3</sup>**

(APF = 25) Any supplied-air respirator operated in a continuous-flow mode

(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted N100, R100, or P100 filter.

(APF = 50) Any self-contained breathing apparatus with a full facepiece.

(APF = 50) Any supplied-air respirator with a full facepiece

**Emergency or planned entry into unknown concentrations or IDLH conditions:**

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

**Escape**

(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter. Any appropriate escape-type, self-contained breathing apparatus

**Thermal hazards**

Not available

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**Section 09 Physical and Chemical Properties**

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**Appearance**

<b>Physical state</b>	Beads
<b>Colour</b>	White
<b>Odour</b>	Odourless
<b>Odour threshold</b>	Not applicable

**Property**

<b>pH</b>	Not applicable
<b>Melting point / freezing point</b>	318 °C
<b>Initial boiling point and boiling range</b>	1388 °C
<b>Flash point</b>	Not applicable
<b>Evaporation rate</b>	Not available
<b>Flammability</b>	Non-flammable
<b>Upper flammable limit</b>	Not applicable
<b>Lower flammable limit</b>	Not applicable
<b>Vapour pressure</b>	Not available
<b>Vapour density</b>	Not available
<b>Relative density</b>	2.13 g/cm <sup>3</sup>
<b>Solubility</b>	Soluble in water
<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Auto-ignition temperature</b>	Not applicable
<b>Decomposition temperature</b>	Not available
<b>Viscosity</b>	Not applicable
<b>Specific gravity</b>	Not applicable
<b>Formula</b>	NaOH

Molecular weight 39.997 g/mol

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## Section 10 Stability and Reactivity

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<b>Reactivity</b>	May be corrosive to metals. Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. Reacts with water to generate heat. Reacts violently with acids.
<b>Stability</b>	This product is stable if stored according to the recommendations in Section 07.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization will not occur.
<b>Conditions to avoid</b>	Avoid contact with incompatible materials. Do not heat. Moisture. Generation of dusts
<b>Incompatible materials</b>	Acids, such as sulphuric, nitric, hydrochloric, phosphoric, fluosilicic (HFSA), sulphonic, acetic, citric, oxalic, and formic. Metals, such as aluminum, steel, and brass. Water, chlorinated hydrocarbons, flammable liquids, and nitrous compounds.
<b>Hazardous decomposition products</b>	Not available

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## Section 11 Toxicological Information

### Acute Toxicity (LD50 values)

Component	Route	Species	Value	Exposure time
Sodium hydroxide	Oral	Rat	140-340 mg/kg	
	Dermal	Rabbit	1350 mg/kg	

### Toxic Health Effect Summary

<b>Chemical characteristics</b>	Sodium hydroxide dissociates in aqueous conditions, and thus is not bioavailable. All of its toxic effects are assumed to be related to its effect on pH.
<b>Skin</b>	Causes severe skin burns.
<b>Ingestion</b>	Causes burns to the mouth and throat.
<b>Inhalation</b>	Causes severe burns to the mouth and throat.
<b>Eye contact</b>	Causes serious eye damage.
<b>Sensitization</b>	This product and its components at their listed concentration have no known sensitizing effects.
<b>Mutagenicity</b>	This product and its components at their listed concentration have no known mutagenic effects.
<b>Carcinogenicity</b>	This product and its components at their listed concentration have no known carcinogenic effects.
<b>Reproductive toxicity</b>	This product and its components at their listed concentration have no known reproductive effects.
<b>Specific organ toxicity</b>	This product and its components at their listed concentration have no known effects on specific organs.
<b>Aspiration hazard</b>	Not available
<b>Synergistic materials</b>	Not available

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## Section 12 Ecological Information

### Ecotoxicity

Component	Type	Species	Value	Exposure Time
Sodium Hydroxide	EC50	Water Flea	40.38 mg/L	48 hours
	LC50	Guppy	196 mg/L	96 Hours

<b>Biodegradability</b>	The domestic substance list categorizes sodium hydroxide as persistent.
<b>Bioaccumulation</b>	The domestic substance list categorizes sodium hydroxide as non-bioaccumulative.
<b>Mobility</b>	This product is water soluble, and will not adsorb to soil and may contaminate ground water.
<b>Other adverse effects</b>	Aquatic toxicity of sodium hydroxide will be highly dependant on the buffering capacity of the body of water it is released into.

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## Section 13 Disposal Considerations

<b>Waste From Residues / Unused Products</b>	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
<b>Contaminated Packaging</b>	Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility.

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## Section 14 Transport Information

<b>UN number</b>	UN1823
<b>UN proper shipping name</b>	SODIUM HYDROXIDE, SOLID
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	II
<b>Excepted quantities</b>	1 kg
<b>Environmental hazards</b>	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
<b>Special precautions</b>	No special provisions
<b>Transport in bulk</b>	ERAP index: not available  MARPOL 73/78 and IBC Code: This product is not listed in Chapter 17 of the IBC Code.
<b>Additional information</b>	Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position.

**TDG PRODUCT CLASSIFICATION:** This product has been classified on the preparation date specified at section 16 of this SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and published test data regarding the classification of this product are listed in the references at section 16 of this SDS.

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## Section 15 Regulatory Information

**NOTE: THE PRODUCT LISTED ON THIS SAFETY DATA SHEET HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN HAZARDOUS PRODUCTS REGULATIONS. THIS SAFETY DATA SHEET CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.**

### Domestic Substance List:

Chemical Name Listed	CEPA Categorized
Sodium Hydroxide Yes	Yes

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## Section 16 Other Information

**Note:** The responsibility to provide a safe workplace remains with the buyer / user. The buyer / user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

### References:

- 1) CHEMINFO
- 2) TOXNET
- 3) eChemPortal
- 4) ECHA
- 5) Transportation of Dangerous Goods Canada
- 6) HSDB
- 7) PAN