

# Safety Data Sheet

according to WHMIS 2015

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## Break 1

### SECTION 1: Identification

**Product name:** Break 1

**Other means of identification:** 50% Sodium hydroxide solution

**Recommended use and restrictions on use:** To raise the pH of laundry wash water to break up oily/fatty stains, neutralize acidic components, and soften wash water to enhance soil removal and suspension (anti-redeposition).


**Supplier Details:**

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**Emergency telephone number:** Call CANUTEC's 24-hr Number 613-996-6666

### SECTION 2: Hazard Identification

**Classification of the substance or mixture:**

 <p><b>Corrosion</b></p>	<ul style="list-style-type: none"><li>• Skin corrosion/irritation - Skin corrosion (Category 1A)</li><li>• Serious eye damage/eye irritation - Serious eye damage (Category 1)</li></ul>
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**Signal word:** Danger

**Hazard statements:** Causes severe skin burns and eye damage

**Precautionary statements:**

Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

IF exposed or concerned: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

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

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting.

Store locked up. Store in a well-ventilated place. Keep container tightly closed. Dispose of contents/container to an approved waste disposal plant.

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**Other hazards which do not result in classification:** May be harmful in contact with skin Harmful to aquatic life with long lasting effects.

### SECTION 3: Composition/Information on Ingredients

Chemical Name	CAS No.	Concentration (% wt/wt)
Sodium Hydroxide	1310-73-2	30-40%

### SECTION 4: First Aid Measures

#### Description of first aid measures:

**General advice:** Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**After inhalation:** Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

**After skin contact:** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.

**After eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

**After swallowing:** Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

**Self-protection of the first aider:** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

**Most important symptoms and effects, both acute and delayed:** Causes severe eye burns. Small quantities can result in permanent damage and/or loss of vision. Damage can range from severe irritation and mild scarring to blistering, disintegration, ulceration, severe scarring and clouding. Conditions that affect vision such as glaucoma and cataracts are possible late developments. In severe cases, there is progressive ulceration and clouding of eye tissue, which may lead to permanent blindness. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury. Can cause severe burns to mouth, esophagus and stomach. Inhalation of dusts or mists can cause damage to the upper respiratory tract and to the lung tissue depending on severity of exposure. Effects can range from mild irritation of mucous membranes, severe pneumonitis and destruction of lung tissue. Due to its corrosive nature, exposure to high concentrations of sodium hydroxide aerosol could cause a potentially fatal build-up of fluid in the lungs (pulmonary edema). Symptoms of pulmonary edema (tightness in the chest and shortness of breath) can develop up to 48 hours after exposure and are aggravated by physical exertion. May cause dermatitis.

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Corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Symptoms may include pain, severe local redness, swelling and tissue damage. Brief contact may cause severe skin burns. Sodium hydroxide can penetrate to deeper layers of skin and corrosion will continue until removed. Burns may not be immediately painful; onset of pain may be delayed minutes to hours.

### Indication of any immediate medical attention and special treatment needed:

**Note to physicians:** Treatment based on sound judgment of physician and individual reactions of patient. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower GI tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).

## SECTION 5: Firefighting Measures

### Extinguishing media

**Suitable extinguishing agents:** Use extinguishing media appropriate for surrounding fire. Does not burn. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available.

**For safety reasons, unsuitable extinguishing agents:** No information available.

**Special hazards arising from the substance or mixture:** Isolate and restrict area access. Contact with some metals (particularly magnesium, aluminum and galvanized zinc) can rapidly generate hydrogen. Product reacts with water. Reaction may produce heat and/or gases. This reaction may be violent. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

### Advice for firefighters:

**Protective equipment:** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**Additional information (precautions): Hazardous combustion products:** Oxides of sodium.

## SECTION 6: Accidental Release Measures

**Personal precautions, protective equipment, and emergency procedures:** Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

**Methods and material for containment and cleaning up:** Prevent further leakage or spillage if safe to do so.

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### SECTION 7: Handling and Storage

**Precautions for safe handling:** SPECIAL PRECAUTIONS FOR DILUTING CAUSTIC SODA:

1. ALWAYS add caustic soda to water with constant agitation. NEVER add water to the caustic soda.
2. The water should be lukewarm (80 - 100°F). NEVER start with hot or cold water.

The addition of caustic soda to liquid will cause a rise in temperature. If caustic soda becomes concentrated in one area, is added too rapidly, or is added to hot or cold liquid, a rapid temperature increase can result in DANGEROUS mists, boiling or spattering which can cause an immediate VIOLENT ERUPTION. Avoid contact with organic materials and concentrated acids- may cause violent reactions. Caustic soda reacts with magnesium, aluminum, zinc (galvanized), tin, chromium, brass and bronze, generating hydrogen which is explosive. Caustic soda may react with various sugars to generate carbon monoxide. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment.

**Conditions for safe storage, including any incompatibilities:** Product has a shelf life of 24 months. Store in a cool, dry, well ventilated area, away from heat and ignition sources. Place away from incompatible materials. Store in accordance with good industrial practices. Storage Temperature: >16°C (>60.8°F).

### SECTION 8: Exposure Controls/Personal Protection

**Control Parameters:**

Chemical Name	Alberta OEL	British Columbia OEL	Ontario	Quebec OEL	Exposure Limit - ACGIH	Immediately Dangerous to Life or Health - IDLH
Sodium Hydroxide 1310-73-2	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	CEV: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

Consult local authorities for recommended exposure limits

**Appropriate Engineering controls:** Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

**Respiratory protection:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. In misty atmospheres, use an approved organic vapor respirator in combination with a dust/mist filter. Particulate filter.

**Protection of skin:** NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials as well as the instructions/specifications provided by the glove supplier. Use gloves chemically resistant to this material, examples of preferred glove barrier materials include: neoprene, natural rubber, and polyethylene gloves. Skin contact should be prevented through the use of suitable protective clothing,

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gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance. Neoprene coated apron or chemical resistant clothing.

**Eye protection:** Close fitting chemical safety goggles with face shield.

**General hygienic measures:** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

### SECTION 9: Physical and Chemical Properties

<b>Appearance:</b>	Colorless liquid	<b>Vapor pressure:</b>	1.5 mmHg @ 20°C
<b>Odor:</b>	Odorless	<b>Vapor density:</b>	No data available
<b>Odor threshold:</b>	No information available	<b>Relative density/Specific gravity:</b>	1.52
<b>pH - value:</b>	12 (0.05% solution); 13 (0.5% solution); 14 (5% solution)	<b>Water Solubility:</b>	Completely soluble
<b>Melting/Freezing point:</b>	14 °C / 57 °F	<b>Partition coefficient (n-octanol / water):</b>	No data available
<b>Boiling point/Boiling range:</b>	No data available	<b>Auto/Self-ignition temperature:</b>	No data available
<b>Flash point:</b>	No data available	<b>Decomposition temperature:</b>	No data available
<b>Evaporation rate:</b>	No data available	<b>Kinematic viscosity:</b>	0.35 St @ 25°C
<b>Flammability:</b>	No data available	<b>Molecular formula:</b>	No data available
<b>Flammable limit lower:</b>	No data available	<b>Molecular weight:</b>	No information available
<b>Flammable limit upper:</b>	No data available		

### SECTION 10: Stability and Reactivity

**Reactivity:** Stable under normal conditions.

**Chemical stability:** Stable under normal conditions.

**Possible hazardous reactions:** No additional remark.

**Conditions to avoid:** Water. Moisture.

**Incompatible materials:** Acids. Organic materials. Heat is generated when mixed with water. Spattering and boiling can occur. Flammable hydrogen may be generated from contact with metals such as: aluminum, brass, tin, zinc. Avoid contact with acids, halogenated organics, organic nitro compounds, glycols. Caustic soda solution reacts readily with various reducing sugars (i.e. fructose, galactose, maltose, dry whey solids) to produce carbon monoxide. Precautions should be taken including monitoring the tank atmosphere for carbon monoxide to ensure safety of personnel. Nitro organic compounds. Glycols.

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**Hazardous decomposition products:** Oxides of sodium.

### SECTION 11: Toxicological Information

Chemical Name	Oral LD <sub>50</sub>	Dermal LD <sub>50</sub>	Inhalation LC <sub>50</sub>
Sodium hydroxide (CAS # 1310-73-2)	Not available	1350 mg/kg (Rabbit)	Not available

The following values are calculated based on chapter 3.1 of the GHS document.

**ATEmix (dermal):** 3,600.00 mg/kg

**Unknown acute toxicity:** No information available.

**Inhalation:** Inhalation of dusts or mists can cause damage to the upper respiratory tract and to the lung tissue depending on severity of exposure. Effects can range from mild irritation of mucous membranes, severe pneumonitis and destruction of lung tissue. Due to its corrosive nature, exposure to high concentrations of sodium hydroxide aerosol could cause a potentially fatal build-up of fluid in the lungs (pulmonary edema). Symptoms of pulmonary edema (tightness in the chest and shortness of breath) can develop up to 48 hours after exposure and are aggravated by physical exertion.

**Eye contact:** Causes severe eye burns. Small quantities can result in permanent damage and/or loss of vision. Damage can range from severe irritation and mild scarring to blistering, disintegration, ulceration, severe scarring and clouding. Conditions that affect vision such as glaucoma and cataracts are possible late developments. In severe cases, there is progressive ulceration and clouding of eye tissue, which may lead to permanent blindness.

**Skin contact:** May cause dermatitis. Corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Symptoms may include pain, severe local redness, swelling and tissue damage. Brief contact may cause severe skin burns. Sodium hydroxide can penetrate to deeper layers of skin and corrosion will continue until removed. Burns may not be immediately painful; onset of pain may be delayed minutes to hours.

**Ingestion:** Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury. Can cause severe burns to mouth, esophagus and stomach.

**Skin corrosion/irritation:** May cause dermatitis. Corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Symptoms may include pain, severe local redness, swelling and tissue damage. Brief contact may cause severe skin burns. Sodium hydroxide can penetrate to deeper layers of skin and corrosion will continue until removed. Burns may not be immediately painful; onset of pain may be delayed minutes to hours.

**Serious eye damage/eye irritation:** Causes severe eye burns. Small quantities can result in permanent damage and/or loss of vision. Damage can range from severe irritation and mild scarring to blistering, disintegration, ulceration, severe scarring and clouding. Conditions that affect vision such as glaucoma and cataracts are possible late developments. In severe cases, there is progressive ulceration and clouding of eye tissue, which may lead to permanent blindness.

**Respiratory or skin sensitization:** No information available.

**Germ cell mutagenicity:** No information available.

**Carcinogenicity:** No information available.

**Reproductive toxicity:** No information available.

**Specific target organ systemic toxicity - single exposure:** No information available.

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**Specific target organ systemic toxicity - repeated exposure:** No information available.

**Aspiration hazard:** No information available.

### SECTION 12: Ecological Information

#### Ecotoxicity:

Chemical Name	Freshwater Algae	Fish Species	Toxicity to Microorganisms	Crustacea
Sodium Hydroxide 1310-73-2	No available	45.4 mg/L LC <sub>50</sub> (Oncorhynchus mykiss) 96 h static	No available	No available

**Persistence and degradability:** No information available.

**Bioaccumulative potential:** No information available.

**Mobility in soil:** No information available.

**Other adverse effects:** No information available.

### SECTION 13: Disposal Considerations

**Waste disposal recommendations:** Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations. Properly neutralized liquid residues (pH 6 to 9) may be disposed of in waste water treatment facilities which allow the discharge of neutral salt solutions. Do not reuse empty containers.

### SECTION 14: Transport Information

**UN Number:** UN1824

**UN proper shipping name:** SODIUM HYDROXIDE, SOLUTION

**Transport hazard class:** 8

**Packing group:** II

### SECTION 15: Regulatory Information

#### U.S. Regulatory Rules

Chemical name	CERCLA / SARA – Section 302	SARA (311, 312) Hazard Class	CERCLA/SARA – Section 313
Sodium hydroxide 1310-73-2	Not listed	Listed	Not listed

#### International Inventories

**TSCA:** Complies

**DSL/NDL:** Complies

### SECTION 16: Other Information

YXELABS Incorporated provides the information contained herein in good faith but makes no representation as to its completeness or accuracy. This document is intended only as a guide to the appropriate precautionary handling

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of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

YXELABS Incorporated makes no warranties or representations, either express or implied, including without limitation any warranties of merchantability or fitness for a particular purpose, with respect to the information set forth herein or the product to which the information refers. Accordingly, YXELABS Incorporated will not be responsible for damages resulting from use or reliance upon this information.

### Abbreviations and acronyms:

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

CEV: Ceiling Exposure Value

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

IARC: International Agency for Research on Cancer

OEL: Occupational Exposure Limits

SARA: Superfund Amendments and Reauthorization Act

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

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