



Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

- Product Name** • **Liquid Caustic Soda 50%**
- Synonyms** • Liquid Caustic Soda; NaOH; Sodium Hydroxide

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

- Relevant identified use(s)** • Chemical reagent; Industrial uses

1.3 Details of the supplier of the safety data sheet

- Manufacturer** • Axiall, LLC
 1000 Abernathy Rd. NE, Suite 1200
 Atlanta, GA 30328
 United States
 www.axiall.com
 msdsinfo@axiall.com

Telephone (General) • +1 225-685-1240

- Supplier** • FSTI, Inc.
 • 6300 BridgePoint Pkwy
 Ste. 1-200
 Austin, TX 78730

Telephone (General) • 512-278-8800

Telephone (General) • 512-367-5895 - FAX

- Responsible Party - EU** • Intertek France
 12 Rue Alfred Kastler
 71530 Fragnes
 France
 christian.gimenez@intertek.com

Telephone (General) • 33 (0) 385 99 1274

Telephone (General) • 33 385 99 1288 - Fax

1.4 Emergency telephone number

- Manufacturer** • +1 304-455-6882

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 2015/830]

2.1 Classification of the substance or mixture

- CLP** • Skin Corrosion 1A - H314

2.2 Label Elements

CLP

DANGER



- Hazard statements** • H314 - Causes severe skin burns and eye damage.
- Prevention** • P260 - Do not breathe mist/vapours/spray.
P264 - Wash thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P310 - Immediately call a POISON CENTER or doctor/physician.
P363 - Wash contaminated clothing before reuse.
P321 - Specific treatment, see supplemental first aid information.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- Storage/Disposal** • P405 - Store locked up.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

CLP

- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

UN GHS Revision 3

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Third Revised Edition

2.1 Classification of the substance or mixture

UN GHS

- Skin Corrosion 1A
Serious Eye Damage 1

2.2 Label elements

UN GHS

DANGER



- Hazard statements** • Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

- Prevention** • Do not breathe mist/vapours/spray.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
Specific treatment, see supplemental first aid information.

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 doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

- Storage/Disposal** • Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

UN GHS

- According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous
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United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

- Skin Corrosion 1A
Serious Eye Damage 1

2.2 Label elements

OSHA HCS 2012

DANGER



- Hazard statements** • Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

- Prevention** • Do not breathe mist/vapours/spray.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
Specific treatment, see supplemental first aid information.
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 doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

- Storage/Disposal** • Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.
-

Canada

According to: WHMIS 2015

2.1 Classification of the substance or mixture

WHMIS 2015

- Skin Corrosion 1A
Serious Eye Damage 1

2.2 Label elements

WHMIS 2015

DANGER



- Hazard statements** • Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

- Prevention** • Do not breathe mist/vapours/spray.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

- Response** • IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Specific treatment, see supplemental first aid information.
Wash contaminated clothing before reuse.
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/doctor/ .
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

- Storage/Disposal** • Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

WHMIS 2015

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Composition				
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive
Sodium hydroxide	CAS:1310-73-2 EC Number:215-185-5 EU Index:011-002-00-6	49% TO 51%	NDA	EU CLP: Annex VI, Table 3.1: Skin Corr. 1A, H314 UN GHS Revision 3: Skin Corr. 1B; Eye Dam. 1 OSHA HCS 2012: Skin Corr. 1B; Eye Dam. 1 WHMIS 2015: Skin Corr. 1B; Eye Dam. 1
Sodium chloride	CAS:7647-14-5 EC Number:231-598-3	0% TO 2%	Ingestion/Oral-Rat LD50 • 3000 mg/kg	EU CLP: Self Classified: Eye Irrit. 2, H319 UN GHS Revision 3: Eye Irrit. 2; Skin Irrit. 3; Acute Tox. 5 (oral) OSHA HCS 2012: Eye Irrit. 2 WHMIS 2015: Eye Irrit. 2

Chloric acid, sodium salt	CAS: 7775-09-9 EC Number: 231-887-4 EU Index: 017-005-00-9	< 1%	Ingestion/Oral-Rat LD50 • 1200 mg/kg	EU CLP: Annex VI, Table 3.1: Ox. Sol. 1, H271; Acute Tox. 4, H302; Aquatic Chronic 2, H411 UN GHS Revision 3: Ox. Sol. 1; Acute Tox. 4 (oral); Aquatic Chronic 2 OSHA HCS 2012: Ox. Sol. 1; Acute Tox. 4 (oral) WHMIS 2015: Ox. Sol. 1; Acute Tox. 4 (oral)
Sodium carbonate (2:1)	CAS: 497-19-8 EC Number: 207-838-8 EU Index: 011-005-00-2	< 0.5%	Ingestion/Oral-Rat LD50 • 4090 mg/kg Inhalation-Rat LC50 • 2300 mg/m ³ 2 Hour(s)	EU CLP: Annex VI, Table 3.1: Eye Irrit. 2, H319 UN GHS Revision 3: Acute Tox. 4 (Inhalation); Acute Tox. 5 (oral); Eye Irrit. 2; Skin Irrit. 3; STOT SE 3: Resp. Irrit. (Inhalation) OSHA HCS 2012: Acute Tox. 4 (Inhalation); Eye Irrit. 2; STOT SE 3: Resp. Irrit. (Inhalation) WHMIS 2015: Acute Tox. 4 (Inhalation); Eye Irrit. 2; STOT SE 3: Resp. Irrit. (Inhalation)

See Section 16 for full text of H-statements.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation

- Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim 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. Give artificial respiration if victim is not breathing. Move victim to fresh air.

Skin

- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing.

Eye

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion

- If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media

- SMALL FIRES: Dry chemical, carbon dioxide or water spray.
LARGE FIRES: Dry chemical, carbon dioxide, alcohol-resistant foam or water spray.

Unsuitable Extinguishing Media

- No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards

- Containers may explode when heated.

Hazardous Combustion Products

- Depending on conditions, hazardous combustion products may include the following materials: halogenated compounds, metal oxide/oxides, sodium monoxide.

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Wear positive pressure self-contained breathing apparatus (SCBA).

SMALL FIRES: Move containers from fire area if you can do it without risk.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate the area before entry.

Emergency Procedures

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

6.2 Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Dike to collect large liquid spills.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling

- Handle and open container with care. Use only with adequate ventilation. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapors, spray. Do not get in eyes, on skin, or on clothing. Do not ingest. Add this product only to water. Never add water to this product. Do not add to warm or hot water, a violent eruption or explosive reaction can result. Avoid contact with organic materials. Take any precaution to avoid mixing with strong acids. May cause fire or explosion. When making solutions or diluting, only add caustic soda slowly to surface of cold water while stirring. Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. 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. Follow appropriate tank entry procedures (see ANSI Z117.1 - 2009 Safety Requirements for Confined Spaces). Empty containers retain product residue and can be hazardous. Do not reuse container. Liquid caustic soda is shipped hot (100-180°F). Avoid contact with skin. Contact with hot material causes thermal skin burns. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Ventilate enclosed areas. Keep only in the original container. Keep container tightly closed. Keep away from incompatible materials. Store in a cool, dry, well-ventilated place. Liquid caustic soda becomes more viscous and harder to handle as it approaches its freezing point, at which it becomes solid. Refer to freeze point temperature in properties section. User should ensure that equipment and procedures

are in place to ensure safe handling of the caustic at temperatures involved, which may include the need to heat or maintain temperature of the material.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada British Columbia	Canada Ontario	Canada Quebec	NIOSH
Sodium hydroxide (1310-73-2)	Ceilings	2 mg/m3 Ceiling	2 mg/m3 Ceiling	2 mg/m3 Ceiling	2 mg/m3 Ceiling	2 mg/m3 Ceiling
Exposure Limits/Guidelines (Con't.)						
	Result	OSHA				
Sodium hydroxide (1310-73-2)	TWAs	2 mg/m3 TWA				

8.2 Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory

- If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye/Face

- Wear chemical splash goggles and face shield.

Skin/Body

- 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. HANDS: 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.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Colorless liquid with no odor.
Color	Colorless	Odor	Odorless
Odor Threshold	No data available		
General Properties			
Boiling Point	142 °C(287.6 °F)	Melting Point/Freezing Point	10 to 12.8 °C(50 to 55.04 °F)
Decomposition Temperature	No data available	pH	Strongly basic
Specific Gravity/Relative Density	= 1.53 @ 15.6 °C(60.08 °F) Water=1	Water Solubility	100 %
Viscosity	No data available	Explosive Properties	No data available
Oxidizing Properties:	No data available		
Volatility			
Vapor Pressure	1 mmHg (torr) @ 739 °C(1362.2 °F)	Vapor Density	No data available
Evaporation Rate	No data available	Volatiles (Wt.)	49 to 51 %
Volatiles (Vol.)	49 to 51 %		
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	Not relevant.		
Environmental			
Octanol/Water Partition coefficient	No data available		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions

- Under normal conditions of storage and use, hazardous polymerization will not occur.

10.4 Conditions to avoid

- Incompatible materials. Excess heat.

10.5 Incompatible materials

- Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids. Reactive or incompatible with the following materials: metals (Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Metals: Magnesium, Aluminum, Zinc, tin, Chromium Compounds, copper, bronze, brass), acids, organic materials (May cause fire or explosion.), food sugars (Caustic soda may react with various sugars to generate carbon monoxide.), and water (Aqueous reaction with caustic soda can generate heat (strongly exothermic).).

10.6 Hazardous decomposition products

- Depending on conditions, decomposition products may include the following materials: halogenated compounds, sodium monoxide, metal oxide/oxides.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Sodium hydroxide (49% TO 51%)	1310-73-2	Irritation: Eye-Rabbit • 1 % • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation
Sodium chloride (0% TO 2%)	7647-14-5	Acute Toxicity: Ingestion/Oral-Rat LD50 • 3000 mg/kg; Irritation: Eye-Rabbit • 100 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 201.6 g/kg 6 Week(s)-Intermittent; <i>Vascular:BP elevation not characterized in autonomic section;</i> Mutagen: <i>Unscheduled DNA synthesis</i> • Ingestion/Oral-Rat • 16800 mg/kg 4 Week(s)-Continuous; Reproductive: Ingestion/Oral-Rat TDLo • 56400 mg/kg (5D pre-21D post); <i>Reproductive Effects:Maternal Effects:Postpartum; Reproductive Effects:Effects on Newborn:Biochemical and metabolic</i>
Sodium carbonate (2:1) (< 0.5%)	497-19-8	Acute Toxicity: Ingestion/Oral-Rat LD50 • 4090 mg/kg; Inhalation-Rat LC50 • 2300 mg/m ³ 2 Hour(s); <i>Lungs, Thorax, or Respiration:Dyspnea; Gastrointestinal:Other changes;</i> Irritation: Eye-Rabbit • 50 mg • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Multi-dose Toxicity: Inhalation-Rat TCLo • 16.2 mg/m ³ 16 Week(s)-Intermittent; <i>Sense Organs and Special Senses:Olfaction:Change in sensation of smell; Lungs, Thorax, or Respiration:Emphysema; Immunological Including Allergic:Decrease in cellular immune response</i>
Chloric acid, sodium salt (< 1%)	7775-09-9	Acute Toxicity: Ingestion/Oral-Rat LD50 • 1200 mg/kg; Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 80 mg/kg 4 Day(s)-Intermittent; <i>Blood:Changes in leucocyte (WBC) count;</i> Mutagen: DNA Inhibition • Ingestion/Oral-Rat • 84 mg/kg 12 Week(s)-Continuous

GHS Properties	Classification
Acute toxicity	EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available
Skin corrosion/Irritation	EU/CLP • Skin Corrosion 1A UN GHS 3 • Skin Corrosion 1A OSHA HCS 2012 • Skin Corrosion 1A WHMIS 2015 • Skin Corrosion 1A
Serious eye damage/Irritation	EU/CLP • No data available UN GHS 3 • Serious Eye Damage 1 OSHA HCS 2012 • Serious Eye Damage 1 WHMIS 2015 • Serious Eye Damage 1
Skin sensitization	EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available
Respiratory sensitization	EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available
Aspiration Hazard	EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available

Carcinogenicity	<p>EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available</p>
Germ Cell Mutagenicity	<p>EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available</p>
Toxicity for Reproduction	<p>EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available</p>
STOT-SE	<p>EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available</p>
STOT-RE	<p>EU/CLP • No data available UN GHS 3 • No data available OSHA HCS 2012 • No data available WHMIS 2015 • No data available</p>

Potential Health Effects

Inhalation

Acute (Immediate)

- May cause corrosive burns - irreversible damage.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate)

- Causes severe skin burns.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate)

- Causes serious eye damage. Direct contact with the eyes can cause irreversible damage, including blindness.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate)

- May cause irreversible damage to mucous membranes.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Key to abbreviations

LC = Lethal Concentration

LD = Lethal Dose

TC = Toxic Concentration

TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
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Liquid Caustic Soda 50%	NDA	<p>Aquatic Toxicity-Fish: 96 Hour(s) LC50 <i>Guppy - Poecilia reticulata</i> 196 mg/L [Marine water] Comments: sodium hydroxide</p> <p>96 Hour(s) NOEC <i>Guppy - Poecilia reticulata</i> 56 mg/L [Marine water] Comments: sodium hydroxide</p> <p>96 Hour(s) LC50 <i>Bluegill - Lepomis macrochirus</i> 1294600 µg/L [Fresh water] Comments: sodium chloride</p> <p>Aquatic Toxicity-Crustacea: 48 Hour(s) EC50 Water Flea <i>Daphnia</i> 469200 µg/L [Fresh water] Comments: sodium chloride</p> <p>48 Hour(s) EC50 Water Flea <i>Ceriodaphnia dubia</i> 40.4 mg/L [Fresh water] Comments: sodium hydroxide</p> <p>48 Hour(s) EC50 Water Flea <i>Ceriodaphnia dubia - Neonate</i> 40.38 mg/L [Fresh water] Comments: sodium hydroxide</p>
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12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Water solubility: Soluble.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1824	Sodium hydroxide solution	8	II	NDA
TDG	UN1824	SODIUM HYDROXIDE SOLUTION	8	II	NDA
IMO/IMDG	UN1824	SODIUM HYDROXIDE SOLUTION	8	II	NDA
IATA/ICAO	UN1824	Sodium hydroxide solution	8	II	NDA

14.6 Special precautions for user

- None specified.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

- Data lacking.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or

mixture**SARA Hazard Classifications** • Acute

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
Chloric acid, sodium salt	7775-09-9	Yes	No	Yes
Sodium carbonate (2:1)	497-19-8	Yes	No	Yes
Sodium chloride	7647-14-5	Yes	No	Yes
Sodium hydroxide	1310-73-2	Yes	No	Yes

Canada**Labor****Canada - WHMIS - Classifications of Substances**

• Sodium hydroxide	1310-73-2	E (including 0.04% in aqueous solution, 0.04N, 0.08%, 0.4% in aqueous solution, 2%, 2.5%, 4% in aqueous solution, 5%, 10%, 16%, 20%, 40%, 50% in aqueous solution, 8.7N)
• Sodium chloride	7647-14-5	Uncontrolled product according to WHMIS classification criteria
• Sodium carbonate (2:1)	497-19-8	D2B, E
• Chloric acid, sodium salt	7775-09-9	C, D1B

Canada - WHMIS - Ingredient Disclosure List

• Sodium hydroxide	1310-73-2	1 %
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	1 %
• Chloric acid, sodium salt	7775-09-9	Not Listed

Environment**Canada - CEPA - Priority Substances List**

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

United States**Labor****U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals**

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

Environment**U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants**

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Sodium hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

United States - California**Environment****U.S. - California - Proposition 65 - Carcinogens List**

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed

• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed
U.S. - California - Proposition 65 - Developmental Toxicity		
• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed
• Chloric acid, sodium salt	7775-09-9	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 Other Information

- **WARNING:** This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H271 - May cause fire or explosion; strong oxidizer
- H302 - Harmful if swallowed
- H319 - Causes serious eye irritation
- H411 - Toxic to aquatic life with long lasting effects

Revision Date

- 12/July/2016

Preparation Date

- 08/May/2014

Other Information

- NSF® Standard 60 Drinking Water Treatment Chemicals – Some liquid caustic soda brands have Health Effect Listing and are certified for maximum use of 200 mg/l.

Disclaimer/Statement of Liability

- The technical data given herein is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a

guidance for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a warranty or quality specification. No guarantee is being given as to the end use performance. The product is sold on the basis that buyers test the product for their specific purposes. This information related to the material designated and may not be valid for such material used in combination with any other materials or in any process.

Key to abbreviations

NDA = No Data Available