SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

PRODUCT IDENTIFIER

Product Name	Sodium Hydroxide 10% (Caustic Soda)
CAS Number	1310-73-2

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Registered distributor company name	Pure Ingredients Ltd	Pure Nature
Address	626A Rosebank Road, Avondale 1026	626A Rosebank Road, Avondale 1026
Telephone	+64 9 813 5619	+64 813 9412
Website	www.pureingredients.co.nz	www.purenature.co.nz
Email	compliance@pureingredients.co.nz	info@purenature.co.nz

EMERGENCY TELEPHONE NUMBER

Association / Organisation	0800 CHEMCALL / 0800 243 622 (24hr)
Emergency telephone numbers	111
Other emergency telephone numbers	0800 764 766

SECTION 2 HAZARDS IDENTIFICATION

HSNO Hazard Classification	Skin corrosion – Category 1B — 8.2B Serious eye damage – Category 1 — 8.3A Acute toxicity: Oral - Category 4 — 6.1D (oral) Acute toxicity: Dermal - Category 4 — 6.1D (dermal) Corrosive to metals – Category 1 — 8.1A
HSNO Approval Number	HSR001576
Hazard Nature	This product is classified as HAZARDOUS under HSNO criteria
Pictogram(s)	
Signal Word	DANGER
Hazard Statement(s)	Causes severe skin burns and eye damage. Causes serious eye damage. Harmful if swallowed. Harmful in contact with skin. May be corrosive to metals.
Prevention Statements(s)	Keep out of reach of children. Read label before use. Wash hands and any exposed skin/hair thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/clothing and eye/face protection. Do not breathe dust/fume. Keep only in original container.
Response Statement(s)	Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material damage.
Storage Statement(s)	Store locked up. Store in a corrosive resistant container with a resistant inner liner.
Disposal Statement(s)	Dispose of contents and packaging in accordance with relevant legislation.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

CAS No.	% [weight/volume]	INCI Name
1310-73-2	10	Sodium Hydroxide

SECTION 4 FIRST AID MEASURES

NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111

Main symptoms caused by exposure	Exposure will cause severe chemical burns and pain to skin, eyes and the gastrointestinal tract. Cough, sore throat and burning sensation will occur if inhaled.
Swallowed	Call an ambulance immediately. Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting. Give water to rinse out mouth, then spit out rinse water. Provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay with a copy of this safety data sheet.
Eye	Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing for at least 15 minutes, or until advised to stop by the Poison Centre or a doctor. Transport to hospital or doctor without delay with a copy of this safety data sheet. Removal of contact lenses after an eye injury should be undertaken by skilled personnel.
Skin	Immediately brush off any solid material from the skin using dry cloth materials. Flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear while in the shower. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poison Centre or doctor. Transport to hospital or doctor for treatment with a copy of this safety data sheet.
Inhaled	If fumes, aerosols or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor without delay with a copy of this safety data sheet.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media	Small fire: Dry chemical, CO_2 or water spray. Large fire: Dry chemical, CO_2, alcohol-resistant foam, flooding quantities of water spray or fog. DO NOT use water jet.
Fire fighting	Alert Fire Brigade and tell them location and nature of hazard. Clear fire area of all non-emergency personnel. Stay upwind. Eliminate ignition sources. Prevent spillage from entering drains or water courses. Wear breathing apparatus plus protective gloves. Use firefighting procedures suitable for surrounding area. DO NOT allow water to get inside containers. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Dike fire-fighting water if possible. Equipment should be thoroughly decontaminated after use.
Fire/explosion hazard	Non-combustible. Not considered a significant fire risk, however contact with water can lead to generation of significant heat, which may be sufficient to ignite combustible materials. Risk of fire/explosion after contact with incompatible materials.
Hazards from combustion products	May emit toxic fumes of sodium oxide.
Fire incompatibility	None known.
Personal protective equipment	Firefighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves). Limit exposure duration to 1 BA set30 mins.
Hazchem code	2W

SECTION 6 ACCIDENTAL RELEASE MEASURES

Only fully trained personnel should be involved in handling chemicals.	
Minor spills	Clean up all spills immediately. Clear area of all personnel not involved in the clean-up. Avoid contact with skin and eyes. Wear full protective equipment. Use dry clean up procedures. Place in a suitable labelled container for waste disposal.
Major spills	Clear area of all personnel not involved in the clean-up. Wear full body protective clothing with breathing apparatus. If possible, cover the spilled material with a plastic tarpaulin to contain the spillage and protect from rain. Alert Fire Brigade and tell them location and nature of hazard. Collect recoverable product into labelled containers for recycling. Contain spilled material with sand, earth, vermiculite or another non-combustible material. Prevent, by any means available, spillage from entering drains or water courses. Neutralise/decontaminate residue. Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. After clean-up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If significant contamination of drains or waterways occurs, advise emergency services.
Emergency response planning guidelines	<table><tr><th>Chemical (CAS No.)</th><th>ERPG-1</th><th>ERPG-2</th><th>ERPG-3</th><th>Units</th></tr><tr><td>Sodium hydroxide (1310-73-2)</td><td>0.5</td><td>5</td><td>50</td><td>mg/m^3</td></tr></table>ERPG-3 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing or developing life-threatening health effects. ERPG-2 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action. ERPG-1 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing other than mild transient health effects or perceiving a clearly defined, objectionable odor.

SECTION 7 HANDLING AND STORAGE

Procedure for handling	Operators should be trained in procedures for safe use of this material. Contact lenses should not be worn when working with this chemical. Avoid all personal contact. Implement controls to reduce risk of exposure, such as closed systems and isolated operations. Wear chemical resistant protective clothing that completely covers skin. Use appropriate personal protective equipment. Use in a well-ventilated area. WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Use good occupational work practice. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Suitable packaging	The UN Packaging specification number as well as the UN packaging Logo is to be printed on the bags. Store in original packaging. Corrosive resistant Lined metal can, Plastic pail, Polylined drum, Plastic bag. DO NOT use aluminium, galvanised or tin-plated containers. Check all packaging is clearly labelled and free from leaks. NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse.
Storage incompatibility	Store away from liquids. DO NOT store near acids, or oxidising agents. Store away from nitro compounds and trichlorethylene.
Storage requirements	Store locked up. Store in original containers. Keep containers securely sealed to protect from moisture contamination. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure controls	<table><tr><th>Source</th><th>Material</th><th>Measurement</th><th>Limit</th></tr><tr><td>New Zealand WES 2019</td><td>Sodium hydroxide</td><td>Time weighted average (TWA)</td><td>Ceiling 2mg/m^3</td></tr></table>
Ventilation system	A system of local and/or general exhaust should be used to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal respirators	An approved dust mask with a P2 respirator is recommended when using this product in dusty conditions or where exposure standards are exceeded. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin protection	Wear impervious protective clothing, including chemical resistant boots, rubber gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye protection	Use approved chemical safety goggles and a full-face shield.
Other	Ensure there is ready access to an emergency shower. Ensure that there is ready access to eye wash unit.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White hygroscopic pearls, pellets, flakes, sticks or solid cast mass	Boiling range	1390°C
Physical properties	Soluble in water, alcohol, ether, glycerol	Solubility in water (20°C)	~1100 g/L (miscible)
State	Solid	pH (1% solution)	~12.7
Odour	Odourless	Bulk density	2.13 g/cm^3
Molecular weight	40	Vapour pressure (25°C)	<0.0000001 kPa
Melting range	323°C		

SECTION 10 STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions. Can become unstable at elevated temperatures and pressures.
Conditions to avoid	Avoid excessive heat, direct sunlight, moisture, and temperature extremes. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Rapidly picks up moisture from the air and with carbon dioxide in air forms sodium carbonate. Dissolution in water can liberate enough heat to cause steaming, spattering and ignite adjacent combustible material. In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas.
Incompatible materials	Reacts violently with strong acids, may react with oxidising agents. Avoid contact with copper, aluminium and their alloys, strong acids and oxidising agents. Flammable gas may be produced on contact with metals. May be incompatible with cellulose based absorbents and mineral-based & clay-based absorbents. Reacts with ammonium salts and evolves ammonia gas.
Hazardous decomposition products	Toxic fume of sodium oxide.
Hazardous reactions	Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Health Effects	
Swallowed	Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the oesophagus and stomach will experience burning pain; vomiting and diarrhoea may follow. Epiglottal swelling may result in respiratory distress and asphyxia; shock can occur. Narrowing of the oesophagus, stomach or stomach valve may occur immediately or after a long delay (weeks to years). Severe exposure can perforate the oesophagus or stomach leading to infections of the chest or abdominal cavity, with low chest pain, abdominal stiffness and fever. All the above can cause death.

SECTION 11 TOXICOLOGICAL INFORMATION

Eye	Direct eye contact with corrosive bases will cause pain and burns with deep ocular tissue damage. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.
Skin	The material can produce severe deep tissue chemical burns following contact with the skin. Skin contact with alkaline corrosives causes severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep. Entry into the bloodstream through contact may produce systemic injury with harmful effects.
Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. In severe cases, lung swelling may develop, sometimes after a delay of hours to days. There may be low blood pressure, a weak and rapid pulse and crackling sounds. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
Chronic Health Effects	Sodium hydroxide is not expected to be systemically available in the body under normal handling and use conditions. Repeated or prolonged inhalation exposure may cause damage to lungs and the respiratory system. Solid sodium hydroxide is hygroscopic, so dust formation is not expected.
Toxicity	Acute Oral Toxicity: Schedule 4 toxic substance. [NZ EPA CCID] Acute Dermal Toxicity, Rabbit, LD50: 1350 mg/kg [NZ EPA CCID] Acute Inhalation Toxicity, LC50: No data available.
Irritation/corrosion	Skin: Corrosive to skin. Eyes: Corrosive to eyes.
Carcinogenic effects	Not classified or listed by IARC, NIOSH occupational Carcinogen List, NTP, OSHA, ACGIH, and California Prop 65.
Mutagenic effects	Not available.
Reproductive or developmental effects	Not classified.
Aspiration hazard	No data available.
Specific target organ toxicity	Not classified, however long-term exposure to aerosols of the product may lead to respiratory system damage.
Sensitisation (respiratory/contact)	Not classified.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity	May be harmful to the aquatic environment due to high pH.
Toxicity data	Acute toxicity, Fish, (Oncorhynchus mykiss), 96hr LC50: 45.4 mg/L (static) [NZ EPA CCID] Acute toxicity, Crustacean, (Ceriodaphnia dubia), 48hr EC50: 40.38 mg/L [NZ EPA CCID] Acute toxicity, Algae: No data available.
Persistence and degradability	Rapidly degradable.
Mobility	Very mobile in soil and soluble in water.
Bioaccumulation	Not bioaccumulative. Remark: Considering its high water solubility, NaOH is not expected to bioconcentrate in organisms. Log Pow is not applicable for an inorganic compound which dissociates.
BOD5 and COD	Not applicable.
Products of biodegradation	Not applicable.
Toxicity of the products of biodegradation	Not applicable.

SECTION 13 DISPOSAL CONSIDERATION

Product	Consult an approved Waste Management company for disposal options. Recycle wherever possible. The product may be treated so that it is no longer hazardous. This includes incineration at an approved site or burial in a landfill in such a manner that it will not lead to any adverse health effects to any person or exceed any TEL (tolerable exposure limit) set by the Authority for this substance. Treatment in a biological wastewater treatment system with prior approval and arrangement is also permissible providing that the substance is rendered non-hazardous and does not pose any adverse effects to human health or the environment.
Packaging	Consult an approved Waste Management company for disposal options. Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed. For toxic, corrosive or ecotoxic substances the residual contents of the package must be diluted to below the thresholds for the respective hazard and the diluted residue is 1% or less of the volume of the package. (e.g. triple rinsing of agrichemical containers).

SECTION 14 TRANSPORT INFORMATION

Transport	Road & Rail	Marine	Air
UN number	1823	1823	1823
UN proper shipping name	SODIUM HYDROXIDE, SOLID	SODIUM HYDROXIDE, SOLID	SODIUM HYDROXIDE, SOLID
Transport hazard class(es)	8	8	8
Packing group	II	II	II
Environmental hazards	Nil	Nil	Nil
Hazchem code	2W	2W	2W
EMS number	F-A, S-B	F-A, S-B	F-A, S-B

SECTION 15 REGULATORY INFORMATION

Classified as hazardous according to the criteria of the New Zealand Hazardous Substances and New Organisms Act.
EPA Approval number: HSR001576.

Location compliance certification regulations apply where substances of Skin corrosion – Category 1B/HSNO class 8.2B are present in quantities of 250 kg or more. Refer to Health and Safety at Work (Hazardous Substances) Regulations 2017, Regulation 13.38.

Certified handler and tracking regulations do not apply.

For full HSNO controls and Health and Safety at Work regulations for this substance refer to the New Zealand EPA's Approved Hazardous Substances with Controls website.

Sodium hydroxide (CAS: 1310-73-2) is found on the following inventories: NZIoC, EINECS, TSCA, AIIC, ENCS.

SECTION 16 OTHER INFORMATION

The information contained in this Safety Data Sheet is obtained from current and reliable sources. Pure Ingredients Ltd provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This Safety Data Sheet summarises our best current knowledge of the health and safety hazard information of the product but does not claim to be all inclusive. This document is intended only as a guide to the appropriate handling of this material.

Reference: supplier's SDS.

Version: 00 Revision Date: 21/03/2022: PIL new version – SA082 01092020