SAFETY DATA SHEET

PRODUCT NAME: CAUSTIC SODA 50% LIQUID

Issue Date: 31 October 2025

SECTION 1: IDENTIFICATION

Product Name: Caustic Soda 50% Liquid
Other Names: Caustic Soda, Sodium Hydroxide Liquid, Soda lye solution
Product Code: CCS1, CCSL20, CCSL100, CCSL1000
Uses: pH control, as a general-purpose reagent, cleaning of milking machine systems, and for electroplating solutions.
Supplier: HamChem - Hamilton Chemicals Ltd, 75 Ruffell Road, Hamilton
Phone: 07-974-4971 Web: www.hamchem.nz Email: info@hamchem.nz

- **In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.**
- **In case of poisoning phone National Poisons Centre – 0800 764 766**

SECTION 2: HAZARD IDENTIFICATION

GHS Classifications
Corrosive to Metals – Category 1
Acute Oral Toxicity – Category 4
Skin Corrosion – Category 1B
Serious Eye Damage – Category 1

Signal Word: Danger

Hazard Statements
H290 May be corrosive to metals.
H302 Harmful if swallowed
H312 Harmful in contact with skin
H314 Causes severe skin burns and eye damage.

PRECAUTIONARY STATEMENTS
P101 If medical advice is needed, have product container or label at hand
P102 Keep out of reach of children
P103 Read label before use

Prevention
P234 Keep only in original packaging
P260 Do not breathe dusts or mists
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection.

Response
P301 + P312 IF SWALLOWED: Call a POISON CENTRE or Doctor if you feel unwell
P330 Rinse mouth

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 Wash contaminated clothing before reuse.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a POISON CENTRE 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.
P406 Store in corrosive resistant container with a resistant inner liner

Disposal
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3: COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
Sodium Hydroxide	1310-73-2	48 - 50
Water	7732-18-5	Remainder

SECTION 4: FIRST AID MEASURES

Swallowed: DO NOT delay. For advice, contact a Poisons Information Centre or a doctor at once. Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e., becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay.

Eye: DO NOT delay. 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 until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. Eye injuries require saline.

Skin: DO NOT delay. Immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. Transport to hospital or doctor without delay.

Inhaled: If fumes 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 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.

Advice to Doctor: For acute or short-term repeated exposures to highly alkaline materials: Respiratory stress is uncommon but present occasionally because of soft tissue oedema. Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary. Oxygen is given as indicated. The presence of shock suggests perforation and mandates an intravenous line and fluid administration. Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue. Alkalis continue to cause damage after exposure.

INGESTION: Milk and water are the preferred diluents. No more than 2 glasses of water should be given to an adult. Neutralizing agents should never be given since exothermic heat reaction may compound injury. Catharsis and emesis are absolutely contra-indicated. Activated charcoal does not absorb alkali. Gastric lavage should not be used. Supportive care involves the following: Withhold oral feedings initially. If endoscopy confirms transmucosal injury starts steroids only within the first 48 hours. Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention. Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

Medical Conditions Aggravated by Exposure: The material may accentuate any pre-existing dermatitis condition.

SECTION 5: FIRE FIGHTING MEASURES

General Measures: If safe to do so, remove containers from the path of fire. When any large container (including road and travel tankers) is involved in a fire, consider evacuation by 800m in all directions.

Flammability Conditions: Not considered to be a significant fire risk.

Extinguishing Media: In case of fire, appropriate extinguishing media include water spray or fog, foam, dry chemical powder, carbon dioxide.

Fire and Explosion Hazard: Noncombustible liquid.

Hazardous Products of Decomposition: Reacts with aluminum/zinc producing flammable, explosive hydrogen gas. Reacts violently with acids. Reacts with ammonium salts liberating ammonia gas. Reacts exothermically on dilution with water. Other combustion products include: caustic compounds.

Special Fire Fighting Instructions: Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow firefighting water to reach waterways, drains or sewers. Store firefighting water for treatment.

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) or chemical splash suit. Please note: structural firefighter's uniform will provide limited protection.

Flash Point: Non-flammable

Lower Explosion Limit: No data available

Upper Explosion Limit: No data available

Auto Ignition Temperature: No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

General Response Procedure: Avoid accidents, clean up immediately. Slippery when spilt. Eliminate all sources of ignition. Increase ventilation. Isolate danger area. Use clean, non-sparking tools and equipment. Shut off all possible sources of ignition.

Clean Up Procedures: Minor Spills – Contain and absorb spill with sand, earth, inert material or vermiculite. Place spilled material in clean, dry, sealable, labelled container. Major Spills – Alert Fire Brigade and tell them location and nature of hazard. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Neutralise/decontaminate residue. Collect solid residues and seal in labelled drums for disposal.

Containment: Stop leak if safe to do so.

Decontamination: Wash area and prevent run off into drains.

Environmental Precautionary Measures: Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Agency or your local Waste Authority.

Evacuation Criteria: When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800m in all directions.

Personal Precautionary Measures: Personnel involved in the clean-up should wear full protective clothing as listed in this SDS.

SECTION 7: HANDLING & STORAGE

Procedure for handling: Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Remove contaminated clothing and wash before reuse. Discard contaminated shoes. Keep away from combustible material. Empty containers pose a fire risk, evaporate residue under a fume hood. Chemicals should be used by only those trained in handling potentially hazardous materials.

Suitable container: Container type/packaging must comply with all applicable local/national legislation. Store in original packaging as approved by manufacturer. Do NOT use aluminum, galvanized or tin-plated containers. Plastic carboy or plastic container, plastic drum. Mild steel can.

Storage requirements: Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in this SDS. Protect from direct sunlight. Store away from foodstuffs. Do not store in aluminum or galvanized containers nor use die-cast zinc or aluminum bungs; plastic bungs should be used. At temperatures greater than 40°C, tanks must be stress relieved.

SECTION 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

General: The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing life-threatening health effects is: Sodium Hydroxide 50mg/m^3. Caustic Soda 50% ceiling ppm 2. Irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is: Sodium Hydroxide 5mg/m^3. Other than mild, transient adverse effects without perceiving a clearly defined odour is: Sodium Hydroxide 0.5mg/m^3.

Exposure Limits: No data available

Biological Limits: No information available on biological limit values for this product.

Engineering Measures: A system of local and/or general exhaust is preferred to keep employee exposure 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. Adequate ventilation should be provided so that exposure limits are not exceeded.

Personal Protection Equipment: RESPIRATOR – Wear a respirator with suitable filter for organic gases and vapours (type A) if engineering controls are inadequate (AS1715/175). EYES – Chemical goggles to prevent splashing in the eyes (AS1336/1337). HANDS – Elbow length impervious gloves (AS2161). CLOTHING – Chemical-resistant coveralls, splash apron and safety footwear (AS3765/2210).

Work Hygienic Practices: Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Strongly alkaline corrosive liquid
Odour	No specific odour
Colour	Clear slightly hazy water-white
pH	12.7
Vapour Pressure	<24hPa (@20°C)
Relative Vapour Density	1.38 Air = 1
Boiling Point	Approx. 140°C
Melting Point	Approx 12°C
Freezing Point	No data available
Solubility	Miscible with water
Specific Gravity	1.48-1.52 (Water=1)
Flash Point	Non-Flammable
Auto Ignition Temperature	No data available
Evaporation Rate	Very slow
Bulk Density	No data available
Corrosion Rate	No data available
Decomposition Temperature	No data available
Density	1.515 g/ml relative
Specific Heat	No data available
Molecular Weight	No data available
Net Propellant Weight	No data available
Octanol Water Coefficient	No data available
Particle Size	No data available
Partition Coefficient	No data available
Saturated Vapour Concentration	No data available
Vapour Temperature	No data available
Viscosity	No data available
Volatile Percent	50
VOC Volume	No data available
Additional Characteristics	No data available
Fast or Intensely Burning Characteristics	No data available
Flame Propagation or Burning Rate of Solid Materials	No data available
Non-Flammables that could contribute Unusual Hazards to a Fire	Aluminum, zinc and tin
Properties that may initiate or contribute to Fire Intensity	No data available
Reactions that release Gases or Vapours	Contact with some metals may generate flammable hydrogen gas
Release of invisible Flammable Vapours or Gases	No data available

SECTION 10: STABILITY & REACTIVITY

General Information: Corrosive liquid

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Absorbs carbon dioxide from the air.

Hazardous decomposition products: Corrosive to aluminum, tin and zinc, liberating flammable hydrogen gas. Reacts violently with acids. Reacts with ammonium salts liberating ammonia gas. Reacts exothermically on dilution with water.

Hazardous polymerization: Hazardous polymerization will not occur.

Incompatibles: Acids, Aluminum, ammonium salts, tin and zinc

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Conditions to avoid: Presence of water. Presence of incompatible materials.

SECTION 11: TOXICOLOGICAL INFORMATION

General Information –

Irritation
Skin (Rabbit) 500mg/24h SEVERE
Eye (Rabbit) 0.05mg/24h SEVERE
Eye (Rabbit) 1mg/24h SEVERE
Eye (Rabbit) 1mg/30s rinsed SEVERE

The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (non-allergic). This form of dermatitis is often characterized by skin redness (erythema) and thickening of the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of the response, but repeated exposures may product severe ulceration.

Eye Irritant: The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Ingestion: Swallowing can result in nausea, vomiting, diarrhea, abdominal pain and chemical burns to the gastrointestinal tract. Considered an unlikely route of entry in commercial/industrial environments.

Inhalation: Not normally a hazard due to non-volatile nature of product. The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation. Unlike most organs, the lung can respond to a chemical insult or chemical agent, by first removing or neutralizing the irritant and then repairing the damage (inflammation of the lungs may be a consequence). The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange which is the primary function of the lungs. Therefore, prolonged exposure to respiratory irritants may cause sustained breathing difficulties.

Skin Irritant: Bare unprotected skin should not be exposed to this material. The material may accentuate any pre-existing dermatitis condition. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (non-allergic). This form of dermatitis is often characterized by skin redness (erythema) and swelling of the epidermis. Histologically there may be inter-cellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

Other: Principal routes of exposure are usually by skin contact with the material, eye contact with the material and accidental ingestion. A prompt response to all contact is imperative to minimize damage. Reaction to contact with broken skin is prompt and intense. Reaction to contact with intact skin apart from initial soapy feeling may be delayed, but unless removed quickly will result in burns, which may proceed to deep ulceration with scarring.

Carcinogen Category: No data available

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Fish LC50 (96h): 43mg/L
Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. Environmental processes (such as oxidation and the presence of acids or bases) may transform insoluble metals to more soluble ionic forms. Microbiological processes may also transform insoluble metals to more soluble forms. Such ionic species may bind to dissolved ligands or absorb to solid particles in aquatic or aqueous media. A significant proportion of the dissolved/absorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms.

Persistence & degradability: Even though many metals show few toxic effects at physiological pHs, transformation may introduce new or magnified effects. A metal ion is considered infinitely persistent because it cannot degrade further. Persistence – Water/Soil LOW

Bio accumulative potential: The current state of science does not allow for an unambiguous interpretation of various measures of bioaccumulation. The counter-ion may also create health and environmental concerns once isolated from the metal. Under normal physiological conditions the counter-ion may be essentially insoluble and may not be bioavailable. Environmental processes may enhance bioavailability. Bioaccumulation: LOW.

Mobility in soil: When released to dry soil most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/or surface water ecosystems when soaked by rain or melt ice. Environmental processes may also be important in changing solubility's. Mobility: HIGH

Environmental Fate: Prevent, by any means available, spillage from entering drains or water courses. DO NOT discharge into sewer or waterways.

SECTION 13: DISPOSAL CONSIDERATIONS

General Information: Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility. Decontamination and destruction of containers should be considered.

Special Precautions for Land Fill: Contact a specialist disposal company or the local waste regulator for advice.

SECTION 14: TRANSPORT INFORMATION

UN Number:	1824
Proper Shipping name:	Sodium Hydroxide Solution
Dangerous Goods Class:	8 - Corrosive
Packing group:	II
Hazchem Code:	2R

SECTION 15: REGULATORY INFORMATION

HSNO Classifications: 8.1A, 6.1D, 8.2B, 8.3A
EPA Approval: HSR001576

SECTION 16: OTHER INFORMATION

End of SDS.

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