

MATERIAL SAFETY DATA SHEET

50% Liquid Caustic Soda

SECTION 01 – PRODUCT AND COMPANY INFORMATION

Product Name..... Caustic Soda 50%

Synonyms..... Caustic Soda, Sodium Hydroxide, 50%, Soda Lye Sodium Hydrate, White Caustic

Product Use Used in a wide variety of industrial and mining processes

Supplier Name **LogiChem Pty Ltd incorporating Jostek Chemicals**

Address **13 Brinsden Road, off Craig Road, West Kalgoorlie, Australia
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Phone (08) 9091-7708

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24 Hour Emergency Phone..... (08) 9091-7708

SECTION 02 – COMPOSITION

Chemical Components	CAS No.	Proportion
Sodium Hydroxide	[1310-73-2]	50% w/w

SECTION 03 – HAZARDS IDENTIFICATION

Hazardous according to criteria of NOHSC/ASCC

Dangerous According to the Australian Code for the Transport of Dangerous Goods

Classified as Dangerous Goods According to NZS 5433:1999

CORROSIVE

Risk Phrases: **R35** Causes severe burns.
R41 Risk of serious damage to eyes.

Safety Phrases: **S26** in case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39 wear suitable gloves and eye/face protection.
S45 in case of accident or if you feel unwell, seek medical advice immediately (show label whenever possible)

SECTION 04 – FIRST AID MEASURES

Ingestion Immediately rinse mouth with water. Give water to drink. DO NOT induce vomiting. If vomiting occurs, place victim's face downwards, head lower than hips to prevent vomit entering lungs. Seek immediate medical assistance.

Eye..... Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre.

Skin Immediately wash contaminated skin with plenty of water. For gross contamination, immediately drench with water and remove clothing. Remove contaminated clothing and wash before reuse. If swelling, redness, blistering, or irritation occurs seek medical advice. For skin burns, immediately flood burnt area with plenty of water and cover with a clean, dry dressing. Seek immediate medical advice.

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Inhalation..... Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. For all but the most minor symptoms arrange for patient to be seen by a doctor as soon as possible, either on site or at the nearest hospital.

FIRST AID FACILITIES

Eye wash station must be available in the immediate area as per Australian Standards.

ADVICE TO DOCTOR

Treat symptomatically for strong alkali and highly corrosive materials. (See toxicity section in this MSDS).

SECTION 05 – FIRE FIGHTING MEASURES

Not flammable. If involved with intense fires, may evolve highly caustic mists or vapours; may evolve sodium oxide (Na₂O), which is highly corrosive to mucous membranes.

EXTINGUISHING MEDIA

Fire-fighters must wear full protective clothing including self contained breathing apparatus. Not combustible, however reaction with metals will produce flammable hydrogen gas, which will burn if ignited. Use water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

It is strongly advised that any fires, which involve this product, should be fought in full protective gear and the use of SCABA. Fight fire with media determined by the source of the fire, all fire fighting media are compatible; however, the fire fighting water may become highly alkaline and therefore hazardous. Take care with splashes and consider means of containing the fire water.

FLAMMABILITY

Not flammable

SECTION 06 – ACCIDENTAL RELEASE MEASURES

Clean up personnel should wear full protective clothing including respiratory protection. Restrict access to area until completion of cleanup. Stop leak if safe to do so. Contain spill with absorbent material, such as sand or kitty litter. Prevent material from entering sewers or waterways.

Slippery when spilt. Highly corrosive to skin. Cordon off any spill area to avoid further accidents due to slippery nature of the spillage.

For small spills, dilute with copious amounts of water and hose away. For large spills, anyone who intends to deal with a large spill MUST wear the correct protective equipment; chemical goggles or face shield, cotton overalls with long sleeves and long legs, rubber or PVC boots, PVC or rubber gloves. Contain the spill and absorb in a solid absorbent such as sand, soil or proprietary absorbent. Wash down area with large amounts of water to remove remaining amounts of product. For large spills always check with local authorities before hosing into sewers or drains.

SECTION 07 – HANDLING & STORAGE

HANDLING PROCEDURES

Prevent possible eye and skin contact by wearing protective clothing and equipment. Storage tanks must be vented and banded. Store drums of sodium hydroxide separate from acids, metals and explosives. Provide adequate drainage. When diluting, use agitation and add concentrated sodium hydroxide to water at a controlled rate to control heat of dilution and to avoid splattering. Do not add water to sodium hydroxide.

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Ensure that storage complies with State and local regulations for the storage of dangerous goods. Floor of storage should be impervious. Keep well away from acids, most organic materials (check compatibility charts), oxidizing agents, foodstuffs, ammonium salts. Keep containers closed at all times.

Do not store in aluminum or galvanized containers (they will corrode). Check regularly for leaks or spills.

Keep containers closed at all times. Store away from acids. Keep dry. Reacts exothermically with water. Heat evolved may cause boiling and splattering. Check regularly for spills and leaks.

SECTION 08 – PERSONAL PROTECTION AND EXPOSURE CONTROLS

- Eye**..... Eye protection is critical. Wear a face shield and mono-goggles. If mist/s can be formed in the operation, wear SCBA.
- Hands/Feet** When handling, wear overalls buttoned to the wrist and neck, PV elbow length gloves and rubber boots (leather boots are not recommended).
- Other** Avoid all contact. Wear overalls and splash apron. Use with adequate ventilation. If inhalation risk exists wear air supplied mask meeting the requirements of AS1715 and AS1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or reusing.

Highly corrosive to any tissue with which it comes into contact. Produces burns, deep ulceration and gelatinous necrotic area at the site of contact. Low systemic toxicity.

EXPOSURE STANDARDS

TWA: - ppm 2 mg/m3 (As published by the National Occupational Health and Safety Commission)

Exposure standard means the average concentration of a particular substance in the worker's breathing zone, exposure to which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearly all workers.

TWA (Time Weighted Average) – is the time-weighted average airborne concentration over an eight hour working day, for a five day working week over an entire working life.

ENGINEERING CONTROLS

Natural ventilation only required as sodium hydroxide is non volatile. Avoid generating and breathing in any mist or spray.

If caustic soda mist is formed, keep clear; otherwise , wear full protective clothing and SCABA.

SECTION 09 – PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Appearance:	Clear water white to slightly buff coloured liquid.	pH:	>14, highly alkaline.
Formula	NaOH	Melting Point	12 deg C
Flash Point (C) PMCC:	Not Flammable	Vapour Pressure (hPa @ 20C):	Not Volatile
Boiling Point (C):	140 deg C	Relative Vapour Density*2:	Not Volatile
Water Solubility:	Soluble	Lower Explosive Limit (%):	N/D
Specific Gravity*1:	1.25 @ 20C	Upper Explosive Limit (%):	N/D

Legend: *1 (Water)=1, *2 (Air)=1, N/D=Not Determined, N/A=Not Applicable

Additional Information

Solubility: Miscible with water. Specific gravity (20 deg C)" 1.11 - 1.54

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SECTION 10 – STABILITY AND REACTIVITY

Reaction with water produces heat.
 Reacts violently with concentrated acids.
 Reacts with aluminum and zinc (galvanizing), and forms hydrogen, which can form explosive gas mixtures with air in confined spaces.

Reacts violently with a range of materials such as:-

Many chlorinated compounds
 Many oxidizers
 Nitro compounds
 Many organic compounds
 Reaction with ammonium compounds will release toxic ammonia and with amines will release the toxic amine; many amines are volatile.

SECTION 11– TOXICOLOGICAL INFORMATION

TOXICITY AND IRRITATION DATA

By far the most hazardous property of this product is its extremely corrosive action on tissue. Strong alkalis combined with tissue to form albuminates, and with natural fats to form soaps. They gelatinise tissue to form soluble compounds, which may result in deep and painful destruction. Even dilute solutions tend to soften the epidermis and emulsify or dissolve the fats.

Mists and small splashes of the concentrate cause small burns and contact with the eyes rapidly causes severe damage to the delicate tissue.

Ingestion causes severe damage to the mucous membranes or other tissue with which contact is made. It can cause perforation and scarring. Inhalation of the concentrated mist can cause damage to the upper respiratory tract and to lung tissue, depending on the severity of the exposure. Thus effects of inhalation can vary from mild irritation of the mucous membranes to severe pneumonitis

Intraperitoneal LD50 (mouse): 40 mg/kg (1)
 Oral Lowest Lethal Dose (rabbit): 500 mg/kg (1)
 Skin(rabbit): Severe irritation 500 mg/kg (1)
 Eye (rabbit): Severe irritation 1 mg/30 sec rinse (1)

ACUTE HEALTH EFFECTS

Ingestion	Can result in nausea, vomiting, diarrhoea, abdominal pain, swelling of the larynx and subsequent suffocation, perforation of the gastrointestinal tract, cardiovascular collapse and coma.
Eye	A severe eye irritant. Contamination of the eye can result in permanent injury. Corrosive to eyes; contact can cause corneal burns.
Skin	Will result in severe irritation. Repeated or prolonged skin contact may lead to irritant contact dermatitis. Corrosive to skin - may cause skin burns. Skin contact often does not cause pain, thus care should be taken to avoid contaminating gloves and boots.
Inhalation	Inhalation of mists will result in respiratory irritation and possible harmful corrosive effects including lesions of the nasal septum, pulmonary oedema, pneumonitis and amphysema. Inhalation of mists at elevated temperatures will increase these symptoms.

CHRONIC HEALTH EFFECTS

Repeated or prolonged contact with the material (at less than destructive concentrations) has caused dermatic effects in some people.

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SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity : No Data
 Persistence and degradability :..... No Data
 Mobility : No Data

Additional information

Environmental fate (exposure) : No Data
 Bioaccumulative potential : No Data

SECTION 13 – DISPOSAL CONSIDERATIONS

Refer to State Land Waste Management Authority. Empty containers must be decontaminated. Can be dissolved carefully in water and greatly diluted or carefully neutralized with dilute acid and flushed to drain with copious amounts of water. Alternatively, normally suitable for approval at approved land waste site.

SECTION 14 – TRANSPORTATION INFORMATION

Classified as an 8 (CORROSIVE) Dangerous Substance for the purpose of transport. Refer to relevant regulations for storage and transport requirements.

Not to be loaded with explosives (Class 1), dangerous when wet substances (Class 4.3), oxidizing agents (Class 5.1), organic peroxides (Class 5.2), radioactive substances (Class 7), or foodstuff and foodstuff empties, however exemptions may apply. This material is a Scheduled Poison (S6) and must be stored, maintained and used in accordance with the relevant regulations.

MATERIAL DETAILS

UN Number:	1824	Hazchem Code:	2R
Dangerous Goods Class:	8	Emergency Procedure Guide:	37
Subclass:	N/A	Poison Schedule:	6
Packaging Group:	II	Label:	Corrosive 8
AICS Name	Sodium Hydroxide (Na(OH))		
NZ Toxic Substance	3		



SECTION 15 – OTHER INFORMATION

Contact Person Jonty Eales – General Manager
 Telephone 08 9091-7708 (24 hours)

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