

Sodium Hydroxide 50% Solution

Cromag Pty Ltd

Safety Data Sheet according to WHS and ADG requirements

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING**Product Identifier**

Product name	Telchem Caustic Soda 50% Solution / Sigma Sodium Hydroxide 50% Solution
Chemical Name	Sodium Hydroxide 50% Solution
Synonyms	Not Available
Proper shipping name	SODIUM HYDROXIDE SOLUTION
Chemical formula	NaOH
Other means of identification	Not Available

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

Relevant Identified Uses	Used to neutralise acids, make sodium salts and to hydrolyse fats to form soaps. To treat cellulose in making viscous rayon and cellophane. To precipitate alkaloids and most metals from water solutions of their salts. pH adjuster. Industrial cleaning applications in sugar industry. Pulp And paper, Aluminium.
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Details of the supplier of the safety data sheet

Company Name	Cromag Pty Ltd trading as Sigma Telford Group
Address	7 Valentine Street Kewdale WA 6105 Australia
Telephone	+61 8 9345 2233
Website	www.sigmatelford.com.au
Email	info@sigmatelford.com.au


Emergency telephone number

Association/Organisation	Not Available
Emergency telephone numbers	DFES: 000 (HAZMAT EMERGENCIES)
Other Emergency telephone numbers	POISONS: 13 11 26

SECTION 2 HAZARDS IDENTIFICATION**Classification of the substance or mixture****HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**

Poisons Schedule	S6
Classification	Metal Corrosion Category 1, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1

Label Elements

GHS label elements	
SIGNAL WORD	DANGER

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Hazard statement(s)

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Precautionary statement(s) Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P234	Keep only in original container.
P264	Wash hands thoroughly after handling.

Precautionary statement(s) Response

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.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	% [weight]	Name
1310-73-2	50	Sodium hydroxide
7732-18-5	50	Water

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ➢ 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 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.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ➢ 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.

	<ul style="list-style-type: none"> ➤ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> ➤ 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-valve mask device, or pocket mask as trained. Perform CPR if necessary. ➤ Transport to hospital, or doctor, without delay.
Ingestion	<ul style="list-style-type: none"> ➤ 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.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

For acute or short-term repeated exposures to highly alkaline materials:

- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- 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.
 - Neutralising 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 start 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).

SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.

[Ellenhorn & Barceloux: Medical Toxicology]

SECTION 5 FIREFIGHTING MEASURES

Extinguishing Media

- Water spray or fog
- Foam
- Dry chemical powder
- Carbon dioxide

Special hazards arising from the substrate or mixture

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Fire Incompatibility	None known.
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ➤ Alert Fire Brigade and tell them location and nature of hazard. ➤ Wear full body protective clothing with breathing apparatus. ➤ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ➤ The material is not readily combustible under normal conditions. ➤ Not considered to be a significant fire risk. <p>May emit corrosive fumes.</p>
HAZCHEM	2R

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ➤ Clean up all spills immediately. ➤ Avoid contact with skin and eyes. ➤ Control personal contact with the substance, by using protective equipment. ➤ Use dry clean up procedures and avoid generating dust. ➤ Place in a suitable, labeled container for waste disposal. ➤ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
Major Spills	<ul style="list-style-type: none"> ➤ Clear area of personnel and move upwind. ➤ Alert Fire Brigade and tell them location and nature of hazard. ➤ Wear full body protective clothing with breathing apparatus. ➤ Prevent, by any means available, spillage from entering drains or water course. ➤ Consider evacuation (or protect in place). ➤ Contain spill with sand, earth or vermiculite. ➤ Collect recoverable product into labelled containers for recycling. ➤ Neutralize/decontaminate residue (see Section 13 for specific agent). ➤ 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 contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ➤ DO NOT allow clothing wet with material to stay in contact with skin ➤ Avoid all personal contact, including inhalation. ➤ Wear protective clothing when risk of exposure occurs. ➤ <u>When handling DO NOT eat, drink or smoke.</u> ➤ Keep containers securely sealed when not in use.
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	<ul style="list-style-type: none"> ➤ Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. ➤ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained
Other Information	<ul style="list-style-type: none"> ➤ Store in an upright position. ➤ Store in original containers. ➤ 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. ➤ DO NOT store near acids, or oxidising agents ➤ No smoking, naked lights, heat or ignition sources.

Conditions for safe storage, including any incompatibilities

Suitable Container	<ul style="list-style-type: none"> ➤ Lined metal can, lined metal pail/ can. ➤ Plastic pail. ➤ Polyliner ➤ Drum ➤ Packing as recommended by manufacturer. ➤ Check all containers are clearly labelled and free from leaks.
Storage Incompatibility	<ul style="list-style-type: none"> ➤ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. ➤ Avoid contact with copper, aluminium and their alloys.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material Name	TWA	STEL	Peak	Notes
Australia Exposure Standards	Sodium hydroxide	Sodium hydroxide	Not Available	2 mg/m3	Not Available	Not Available


EMERGENCY LIMITS

Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
sodium hydroxide	Sodium hydroxide	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
sodium hydroxide	250 mg/m3	10 mg/m3
water	Not Available	Not Available

MATERIAL DATA

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
Personal Protection	
Eye and Face protection	<ul style="list-style-type: none"> ➤ Safety glasses with imperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when

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	<ul style="list-style-type: none"> ➤ handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. ➤ Chemical goggle. whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. ➤ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes. ➤ Alternatively a gas mask may replace splash goggles and face shields.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ➤ Elbow length PVC gloves ➤ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. ➤ Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ➤ Overalls. ➤ PVC Apron. ➤ PVC protective suit may be required if exposure severe. ➤ Eyewash unit. ➤ Ensure there is ready access to a safety shower.
Thermal hazards	Not Available

Respiratory protection

Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Transparent viscous liquid with no odour; miscible with water.		
Physical state	Liquid	Flash point (°C)	Not Applicable
Odour	Not Available	Evaporation rate	Not Available
Odour threshold	Not Available	Flammability	Not Applicable
Relative density (water=1)	1.53	Upper Explosive Limit (%)	Not Applicable
Colour	Clear - Transparent	Lower Explosive Limit (%)	Not Applicable
pH (as supplied)	14	Vapour pressure (kPa)	Not Available
Melting point/Freezing point (°C)	12	Solubility in water (g/L)	Miscible
Initial boiling point and boiling range (°C)	140 – 145	Vapour density (Air = 1)	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ➤ Unstable in the presence of incompatible materials. ➤ Product is considered stable. ➤ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation.
Ingestion	Ingestion of alkaline corrosives may produce immediate pain, and circumoral burns. Mucous membrane corrosive damage is characterised by a white appearance and soapy feel; this may then become brown, oedematous and ulcerated. Accidental ingestion of the material may be damaging to the health of the individual. Ingestion of sodium hydroxide may result in severe burns to the mouth, throat and stomach, pain, nausea and vomiting, swelling of the larynx and subsequent suffocation, perforation of the gastro-intestinal tract.
Skin Contact	Sodium hydroxide burns are not immediately painful; onset of pain may be delayed minutes or hours; thus care should be taken to avoid contamination of gloves and boots. Skin contact with alkaline corrosives may produce 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 blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects.
Eye	Direct contact with alkaline corrosives may produce pain and burns. Oedema, destruction of the epithelium, corneal opacification and iritis may occur.
Chronic	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Product Name	TOXICITY	IRRITATION
Sodium hydroxide	Oral (rabbit) LD50: 325 mg/kg ^[1]	Eye (rabbit): 0.05 mg/24h SEVERE
		Eye (rabbit): 1 mg/24h SEVERE
		Eye (rabbit): 1 mg/30s rinsed-SEVERE
		Skin (rabbit): 500 mg/24h SEVERE
Water	Oral (rat) LD50: >90000 mg/kg ^[2]	Not Available

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Sodium hydroxide	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (non allergic).
water	No significant acute toxicological data identified in literature search.

Acute Toxicity	⊖	Carcinogenicity	⊖
Skin Irritation/Corrosion	✓	Reproductivity	⊖
Serious Eye Damage/Irritation	✓	STOT – single exposure	⊖
Respiratory or Skin sensitisation	⊖	STOT – repeated exposure	⊖
Mutagenicity	⊖	Aspiration Hazard	⊖

Legend:
 ✗ – Data available but does not fill the criteria for classification
 ✓ – Data required to make classification available
 ⊖ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION**Toxicity**

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
Sodium hydroxide	LC50	96	Fish	4.16158 mg/L	3
Sodium hydroxide	EC50	96	Algae or other aquatic plants	1034.10043 mg/L	3
Sodium hydroxide	EC50	384	Crustacean	27901.643 mg/L	3
Sodium hydroxide	NOEC	96	Fish	56 mg/L	4

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Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data
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Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Sodium hydroxide	LOW	LOW

Bio accumulative potential

Ingredient	Bioaccumulation
Sodium hydroxide	LOW (Log KOW= -3.8796)
Water	LOW (Log KOW= -1.38)

Mobility in Soil

Ingredient	Mobility
Sodium hydroxide	LOW (KOC=14.3)
Water	LOW (KOC=14.3)


SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product/Packaging disposal	<ul style="list-style-type: none"> ➤ Containers may still present a chemical hazard/ danger when empty. ➤ Return to supplier for reuse/recycling if possible. ➤ DO NOT allow wash water from cleaning or process equipment to enter drains. ➤ In all cases disposal to sewer may be subject to local laws and regulations. ➤ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ➤ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO
HAZCHEM	2R

Land transport (ADG)

UN Number	1824	
UN proper shipping name	SODIUM HYDROXIDE SOLUTION	
Transport Hazard class(es)	Class	8
	Sub Risk	Not Applicable
Packing group	II	
Environmental Hazard	Not Applicable	
	Special provisions	Not Applicable

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Special precautions for user	Limited quantity	1 L
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Air transport (ICAO-IATA / DGR)

UN Number	1824	
UN proper shipping name	SODIUM HYDROXIDE SOLUTION	
Transport Hazard class(es)	ICAO/IATA Class	8
	ICAO/IATA Sub Risk	Not Applicable
Packing group	II	
Environmental Hazard	Not Applicable	
Special precautions for user	Not Available	

Sea transport (IMDG-Code / GGVSee)

UN Number	1824	
UN proper shipping name	SODIUM HYDROXIDE SOLUTION	
Transport Hazard class(es)	IMDG Class	8
	IMDG Sub Risk	Not Applicable
Packing group	II	
Environmental Hazard	Not Applicable	
Special precautions for user	EMS, Fire	F-A
	EMS, Spillage	S-B

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

SODIUM HYDROXIDE (1310-73-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated List

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (sodium hydroxide, water)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (water)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Ingredients with multiple CAS numbers

Name	CAS No
Sodium hydroxide	1310-73-2, 12200-64-5

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

Name	CAS No		
PC – TWA	Permissible Concentration-Time Weighted Average	PC – STEL	Permissible Concentration-Short Term Exposure Limit
IARC	International Agency for Research on Cancer	ACGIH	American Conference of Governmental Industrial Hygienists
STEL	Short Term Exposure Limit	TEEL	Temporary Emergency Exposure Limit
IDLH	Immediately Dangerous to Life or Health Concentrations	OSF	Odour Safety Factor
NOAEL	No Observed Adverse Effect Level	LOAEL	Lowest Observed Adverse Effect Level
TLV	Threshold Limit Value	LOD	Limit Of Detection
OTV	Odour Threshold Value	BCF	BioConcentration Factors
BEI	Biological Exposure Index		

END OF SDS