Safety Data Sheet SODIUM HYDROXIDE 0.5-1.5% Solution

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SECTION 1: Identification

GHS Product identifier

Product name	SODIUM HYDROXIDE 0.5-1.5% Solution

Recommended use of the chemical and restrictions on use

Used in chemical manufacturing (pH control, acid neutralization, off-gas scrubbing and catalyst); pulp and paper manufacturing; in petroleum and natural gas industry (removing acidic contaminants in oil and gas processing); manufacture of soap and detergents and other cleaning products; and cellulosics, such as rayon, cellophane and cellulose ethers; cotton mercerizing and scouring; water treatment; food processing; flue-gas scrubbing; mining; glass making; textile processing, laundering, and bleaching; refining vegetable oils; rubber reclamation; metal processing; etching and electroplating; oxide coating; electrolytic extraction of zinc; tin plating; aluminum processing; metal degreasing; drain and pipe cleaning; adhesive preparations; paint remover; wood treatment; disinfectant; cleaning of non-disposable bottles by the drink and beer industry; batteries; oven-cleaner pads; rubber latex stabilizer; stabilization of sodium hypochlorite; in making plastics to dissolve casein; pharmaceutic aid (alkalizer) and laboratory reagent.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Corrosive to metals, Cat. 1
- Skin corrosion/irritation, Cat. 2
- Serious eye damage/eye irritation, Cat. 2A

GHS label elements, including precautionary statements

Pictograms

Signal word	**Warning**
Hazard statement(s)	
H290	May be corrosive to metals
H315	Causes skin irritation
H319	Causes serious eye irritation
Precautionary statement(s)	
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water/soap
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P390	Absorb spillage to prevent material-damage.
P406	Store in a corrosive resistant/… container with a resistant inner liner.

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 40

Components

Component	Concentration
Water (CAS no.: 7732-18-5; EC no.: 231-791-2)	**98.5 - 100 % (weight)**
CLASSIFICATIONS: No data available. HAZARDS: No data available.	
Sodium hydroxide (CAS no.: 1310-73-2; EC no.: 215-185-5; Index no.: 011-002-00-6)	**0.5 - 1.5 % (weight)**
CLASSIFICATIONS: Skin corrosion/irritation, Cat. 1A. HAZARDS: H314 - Causes severe skin burns and eye damage. [SCLs/M-factors/ATEs]: Skin Corr. 1A; H314: C ≥ 5 %; Skin Corr. 1B; H314: 2 % ≤ C < 5 %; Skin Irrit. 2; H315: 0,5 % ≤ C < 2 %; Eye Irrit. 2; H319: 0,5 % ≤ C < 2 %	

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain, safety shower and a general washing facility in work area. Advice to Doctor: Treat symptomatically and supportively as for strong alkalis. Burns are not immediately painful; onset of pain may be minutes to hours. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.
If inhaled	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
In case of skin contact	Immediately remove contaminated clothing and wash affected area with water for at

	least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek immediate medical advice /attention.
In case of eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Seek medical attention.
If swallowed	If swallowed, do NOT induce vomiting.
Personal protective equipment for first-aid responders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing, or wear gloves.

Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary
For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Use fire extinguishing media appropriate for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam. This material is substantially water.

Specific hazards arising from the chemical
Material does not burn.

Special protective actions for fire-fighters
Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Use personal protective equipment. For personal protection see section 8.

Methods and materials for containment and cleaning up
Small Spillages: Absorb or contain liquid with sand, earth or spill control material. Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations.

SECTION 7: Handling and storage

Precautions for safe handling
Avoid contact with skin, eyes, or clothing. If ingested, seek medical advice immediately and show the container or the label. Wear appropriate protection. Change contaminated clothing. It is essential that all who come into contact with this material maintain high standards of personal hygiene ie. washing hands prior to eating, drinking, smoking or using toilet facilities.

Conditions for safe storage, including any incompatibilities
Corrosives area. Store in tightly closed containers, in a cool, dry, well-ventilated area away from sources of heat, moisture and incompatibilities. Store in original packages as approved by manufacturer. Absorbs carbon dioxide from air. Store away from water/moisture, acids, metals (aluminium, magnesium, zinc or tin).

Corrosiveness: Corrosivity to Metals: Corrosive to aluminium, tin, zinc, copper, brass and bronze. Corrosive to steel at elevated temperatures (above 40 °C). Not corrosive to nickel.
Slowly attacks glass at room temperature.

Storage Temperatures: Store at room temperature (15 to 23°C recommended). Protect from freezing.

Unsuitable Materials: Aluminium, magnesium, zinc or tin containers.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 1310-73-2

Sodium hydroxide

ACGIH (USA): (C) 2 mg/m3 TLV® inhalation; AU/SWA (Australia): 2 Peak limitation mg/m3 TWA inhalation; NIOSH (USA): (C) 2 mg/m3 REL inhalation;

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection
Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Normally not required but if in doubt ensure hand protection should complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Clear, colourless solution.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	~ -1 °C (2%); ~ -3 °C (4%).
Boiling point or initial boiling point and boiling range	~100 °C; 102 °C (5%).
Flammability	No data available.

Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	Reactions with a number of commonly encountered materials can generate sufficient heat to ignite nearby combustible materials. Reactions with metals, such as aluminium, tin and zinc, can form explosive/flammable hydrogen gas. Reaction with ammonia + silver nitrate forms explosive products. Reaction with sodium salt of trichlorophenol + methyl alcohol + trichlorobenzene + heat can cause an explosion. Reaction with impure tetrahydrofuran, which can contain peroxides, can cause serious explosions. Benzene extract of allyl benzenesulfonate prepared from allyl alcohol, and benzene sulfonyl chloride in presence of aqueous sodium hydroxide, under vacuum distillation, residue darkened and exploded.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	Basic. ~ 13.25 (2%); ~ 13.3 (3%); ~ 13.35 (4%).
Kinematic viscosity	Viscosity: >1 (ether=1).
Solubility	Solubility in Water: Miscible (soluble) in all proportions.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.0207 (2%wt); 1.03175 (3%wt); 1.0428 (4%wt).
Relative vapor density	>1.0.

Particle characteristics
No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
Other Information: Taste: Strong alkaline taste.

SECTION 10: Stability and reactivity

Reactivity
Reacts with incompatible materials

Chemical stability
Stable at room temperature in tightly closed containers under ordinary conditions of use and storage. Sensitive to air. Sodium hydroxide rapidly absorbs carbon dioxide from the air (forming sodium carbonate). Moreover, contamination with iron is possible in carbon steel storage vessels or in lined carbon steel storage vessels where the liner has been impaired.

Possibility of hazardous reactions
Reactions with many organic and inorganic chemicals, such as strong acids, nitroaromatic, nitroparaffin and organohalogen compounds, glycols and organic peroxides are vigorous, violent or explosive. Reaction with water is violent, generating significant heat, causing possible localized overheating and dangerously spattering corrosive sodium hydroxide. Reactions with sodium tetrahydroborate or metals, such as aluminium, tin, or zinc produce flammable and explosive hydrogen gas. Reactions with 1,2-dichloroethylene, trichloroethylene or tetrachloroethane can form spontaneously flammable chemicals. Reactions with solutions of sugars, such as fructose, lactose and maltose can produce carbon monoxide.

Hazardous Polymerization: Violently polymerizes acetaldehyde, acrolein or acrylonitrile.

Conditions to avoid
Extremes of temperature and direct sunlight, heat, moisture/water, light metals (aluminium, tin, or zinc), exposure to air, or carbon monoxide, and incompatible materials.

Incompatible materials
Many organic and inorganic chemicals, such as strong acids, nitroaromatic, nitroparaffin and organohalogen compounds, glycols and organic peroxides, water, acetaldehyde, acrolein or acrylonitrile, sodium tetrahydroborate or metals, such as aluminium, tin, or zinc, 1,2-dichloroethylene, trichloroethylene or tetrachloroethane, solutions of sugars, such as fructose, lactose and maltose.

Hazardous decomposition products
Toxic fumes of sodium/sodium oxides (Na2O). Contact in moist air with light metals (like aluminium, zinc, tin and lead) may evolve combustible/explosive/flammable hydrogen gas.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Ingestion: Corrosive. Ingestion may cause gastrointestinal tract irritation and possible burns of the mouth, pharynx, oesophagus, and gastrointestinal tract. May cause severe and permanent damage to the digestive tract, including perforation of the digestive tract (oesophagus and stomach). May cause severe pain, nausea, vomiting, diarrhoea, abdominal pain and shock. May affect central nervous system (depression, convulsions, coma, and possible death to respiratory failure) and the cardiovascular system (fall in blood pressure, fall in heart rate and inhibited respiration).

Inhalation: Sodium hydroxide has a negligible vapour pressure and is rapidly neutralized in air by carbon dioxide and therefore vapour exposure is not expected. Inhalation of aerosols may result in respiratory irritation, with coughing, burning sensation, dyspnoea, breathing difficulty and possible pulmonary oedema, chemical pneumonitis, emphysema, irreversible obstructive lung disease and coma.

Skin corrosion/irritation
Corrosive. Causes skin irritation and burns to the skin, which can result in redness, itchiness, pain and swelling. May cause deep, penetrating ulcers of the skin. Pain and sign of burns may be delayed, beginning with aching for several hours. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale colour. May be harmful if absorbed through the skin.

Serious eye damage/irritation
Corrosive. Causes severe irritation and burns to the eyes, which can result in redness, stinging, pain, lacrimation (tearing), blurred vision, loss of colour vision (blue vision), corneal oedema, photophobia, chemical conjunctivitis and possibly irreversible eye damage i.e. corneal burns. Risk of blindness!

Respiratory or skin sensitization
Not classified based on available information.

Germ cell mutagenicity
Germ cell mutagenicity: Not classified based on available information.
Mutagenicity: Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure
Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure
Not classified based on available information.

Aspiration hazard
No data available.

Additional information
Chronic Effects: Repeated or prolonged exposure to this material will result in severe skin irritation leading to tissue destruction. Prolonged or repeated skin contact may cause dermatitis. Effects may be delayed.

SECTION 12: Ecological information

Toxicity
Ecotoxicity: Toxic effect on fish and plankton. Harmful effect due to pH shift. Death of fish possible.

Information on Ecological Effects: Does not cause biological oxygen deficit.

[8X] Acute Toxicity - Fish: Fish toxicity: LC50: 189 mg/l (1 N solution = 40 g/l).

Persistence and degradability
No data available.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Results of PBT and vPvB assessment
No data available.

Endocrine disrupting properties
No data available.

Other adverse effects
No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations
Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)
UN Number: 1824
Class: 8
Packing Group: II
Proper Shipping Name: SODIUM HYDROXIDE SOLUTION

Environmental Hazards: Toxic effect on fish and plankton. Harmful effect due to pH shift. Death of fish possible.

Hazchem emergency action code (EAC)
2R

IMDG
UN Number: 1824
Class: 8
Packing Group: II
EMS Number:
Proper Shipping Name: SODIUM HYDROXIDE SOLUTION

IATA
UN Number: 1824
Class: 8
Packing Group: II
Proper Shipping Name: SODIUM HYDROXIDE SOLUTION

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP
Poison Schedule: S5

SECTION 16: Other information

Further information/disclaimer
ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)