Infosafe No™	1CHC0	Issue Date : April 2018	RE-ISSUED by ACR

Product Name : **SODIUM HYDROXIDE 0.5-1.5% Solution**

Classified as hazardous

1. Identification

GHS Product Identifier	SODIUM HYDROXIDE 0.5-1.5% Solution
Company Name	AUSTRALIAN CHEMICAL REAGENTS (ACR) (ABN 19 008 264 211)
Address	38 - 50 Bedford Street Gillman S.A. 5013 Australia
Telephone/Fax Number	Tel: (08) 8440 2000 Fax: (08) 8440 2001
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.

Other Names	**Name**	**Product Code**
	Sodium Hydroxide 0.25N	0064

Other Information

EMERGENCY CONTACT NUMBER: +61 08 8440 2000
Business hours: 8:30am to 5:00pm, Monday to Friday.

Australian Chemical Reagents (ACR) 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 Australian Chemical Reagents (ACR) 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 Australian Chemical Reagents (ACR) is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture	Corrosive to Metals: Category 1 Skin Corrosion/Irritation: Category 2 Eye Damage/Irritation: Category 2A
Signal Word (s)	WARNING
Hazard Statement (s)	H290 May be corrosive to metals. H315 Causes skin irritation. H319 Causes serious eye irritation.
Pictogram (s)	Corrosion

Precautionary statement – Prevention	P234 Keep only in original container. P264 Wash thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement – Response	P302+P352 IF ON SKIN: Wash with plenty of soap and water. P332+P313 If skin irritation occurs: Get medical advice/attention. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice/attention. P362 Take off contaminated clothing and wash before reuse.

Precautionary statement – Storage	P390 Absorb spillage to prevent material damage. P406 Store in corrosive resistant container with a resistant inner liner.

3. Composition/information on ingredients

Chemical Characterization Liquid

Ingredients

Name	CAS	Proportion	Hazard Symbol	Risk Phrase
Water	7732-18-5	98.5-99.5 %		
Sodium hydroxide	1310-73-2	0.5-1.5 %		

4. First-aid measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.
Ingestion	Rinse mouth thoroughly with water immediately. Give plenty of water to drink. Never give anything by mouth to an unconscious person. If swallowed, do NOT induce vomiting. If vomiting occurs give further water to achieve effective dilution. Seek immediate medical assistance.
Skin	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 depending on the severity.
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.
First Aid Facilities	Maintain eyewash fountain, drench facilities and normal washroom facilities in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Protection for First Aiders	WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive.
Other Information	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

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.
Hazards from Combustion Products	Not combustible.
Specific Methods	This product contains a substantial proportion of water therefore ther are no restrictions on the type of extinguishing media which may be used.
Specific hazards arising from the chemical	Material does not burn.
Hazchem Code	2R

6. Accidental release measures

Personal Precautions	Evacuate the area of all non-essential personnel. Avoid contact with skin, eyes.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Absorb liquid with sand or earth. Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations.

7. Handling and storage

Precautions for Safe Handling	Avoid contact with eyes, skin, and clothing. Change contaminated clothing. Contaminated clothing should be removed and washed before re-use.
Conditions for safe storage, including any incompatabilities	Corrosive materials should be stored in a separate safety storage cabinet or room. Store in tightly closed container, in a cool, dry, well-ventilated area away from incompatible substances. Store away from heat, sources of ignition, acids, oxidising agents, moisture, metals (aluminium, lead, magnesium, tin, or zinc), foodstuffs, and clothing.
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 Regulations	Refer Australian Standard AS 3780-1994 'The storage and handling of corrosive substances'.
Storage Temperatures	Store at room temperature (15 to 25 °C recommended). Protect from freezing.
Unsuitable Materials	Aluminium, zinc or tin containers.

8. Exposure controls/personal protection

Other Exposure Information	A time weighted average (TWA) has been established for Sodium hydroxide - solid (Safe Work Australia) of 2 mg/m³ (Peak limitation). The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. 'Peak Limitation' - a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.
Appropriate engineering controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
Eye 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.
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: NR latex, vinyl and nitrile. Good: Neoprene gloves
Personal Protective Equipment	Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.
Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
Body Protection	Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Liquid
Appearance	Clear, colourless solution.
Odour	Odourless.
Melting Point	Approx. -0.1 °C.
Boiling Point	Approx. 100 °C.
Solubility in Water	Miscible (soluble) in all proportions.
Specific Gravity	1.00475 (0.5%wt); 1.00950 (1%wt); 1.01510 (1.5%wt).
pH	Basic. 12 (0.05% solution); 13 (0.5% solution); 14 (5% solution).
Flammability	Non combustible material.
Explosion Properties	Can react with certain/many metals to release explosive/highly flammable hydrogen gas. Can react explosively with nitro and chloro organic compounds.
Molecular Weight	40.00 (pure substance).

10. Stability and reactivity

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.
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	Metals, such as aluminium, tin, lead or zinc will react producing hydrogen gas.
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.

11. Toxicological Information

Ingestion	Ingestion of this product may cause irritation and burns of mucous membranes in the mouth, pharynx, oesophagus, stomach and gastrointestinal tract, nausea, vomiting, and abdominal pain. May produce effects on the cardiovascular system, such as, a fall in blood pressure, a 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 mists or vapours will result in respiratory irritation and possible harmful caustic effects including lesions of the nasal septum, pulmonary oedema, pneumonitis and emphysema.
Skin	May cause mild to severe irritation and possible burns to the skin, which can result in redness, itchiness, pain and swelling. Pain may be delayed. Slick feel to touch.
Eye	May cause slight to severe irritation to the eyes, which can result in redness, stinging, pain, loss of colour vision (blue vision) corneal oedema, lachrymation and possibly irreversible eye damage i.e. corneal burns. Risk of blindness!
Skin Sensitisation	Sodium hydroxide has been used widely and for a long time and no human cases of skin sensitisation have been reported and therefore sodium hydroxide is not considered to be a skin sensitizer.
Carcinogenicity	Not listed in the IARC Monographs. Alkalis are known to increase the risk of oesophageal cancer, which can occur years after the initial injury. The incidence of carcinoma following oesophageal injury from sodium hydroxide is 0.8-4%. Of the fifteen patients (age range 38-83) in a study by Isolauri and Markkula (1989) twelve had accidentally swallowed sodium hydroxide at the age of two or three years, one at fifteen years and one at twenty-three years of age. The time between ingestion and the diagnosis of oesophageal cancer was 22-81 years. Appelqvist and Salmo (1980) describe similar results, out of sixty patients with oesophageal cancer for which the time of ingestion was known, fifty-two had ingested the sodium hydroxide at the age of ten years or younger.
Chronic Effects	Repeated or prolonged exposure to this material may result in skin irritation. Repeated or prolonged skin contact may also lead to dermatitis.
Serious eye damage/irritation	Species: Rabbits, Protocol: Dose of 0.1 ml in lower conjunctival sac of left eye, Concentrations: 0.004; 0.04; 0.2; 0.4 and 1.2 %, Result: 0.004-0.2 %: non-irritant, 0.4 %: mild irritation, 1.2 % corrosive, Reference: Morgan et al. (1987). Species: Rabbits, Protocol: Dose of 0.1 ml, washed (after 30 s) and unwashed eyes, Concentrations: 0.1; 0.3; 1.0 and 3.0 %, Result: 0.1 and 0.3 %: no conjunctivitis nor iritis, 1.0 and 3.0 %: conjunctivitis and iritis, Reference: Murphy et al. (1982). Species: Rabbits, Protocol: OECD Guideline 405, Concentrations: 1 and 2 %, Result: 1 %: Not irritating, 2 %: Irritating, Reference: Jacobs (1992).
Skin corrosion/irritation	Species, Test Type: Human, upper outer arm, Protocol: 0.2 ml applied to a Plain Hill Top Chamber with Webril pad, 1 h exposure, Concentration: 0.5 %, Result: Irritating for 55% of the volunteers, Reference: Griffiths et al. (1997). Species, Test Type: Human, upper outer arm, Protocol: Human patch testing with Hill Top Chambers, exposure between 15 and 60 min, 0.2 ml, Concentration: 0.5 %, Result: Positive irritant for 61 % of volunteers, Reference: York et al. (1996). Species, Test Type: Human, intact skin, Protocol: Four different protocols, < 4 hours, Concentration: 1.0 %, Result: Positive irritant for about 50 % of volunteers, Reference: York et al. (1995). Species, Test Type: Human, intact skin of back and forearm, Protocol: Filter disc with 70 µl solution, 3, 15 and 60 min exposure, Concentration: 0.5 and 1 %, Result: Irritating (mainly erythema), Reference: Dykes et al. (1995).

12. Ecological information

Ecological Information	No ecological problems are to be expected when the product is handled and used with due care and attention.
Ecotoxicity	Harmful effect due to pH shift.
Persistence and degradability	Methods for the determination of biodegradability are not applicable to inorganic substances.
Environmental Protection	Avoid contaminating waterways.

13. Disposal considerations

Disposal Considerations	Dispose of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following: Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.
U.N. Number	1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION
Transport hazard class(es)	8
Hazchem Code	2R
Packaging Method	3.8.8RT8
Packing Group	II
EPG Number	8A1
IERG Number	37

15. Regulatory information

Regulatory Information	All of the significant ingredients in this formulation are compliant with NICNAS regulations. Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	S5

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Substances Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.
Contact Person/Point	Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Australian Chemical Reagents (ACR) accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
Empirical Formula & Structural Formula	NaOH (pure substance).

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