MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION

Revision Date : JUNE 2007

Product Name : SODIUM HYDROXIDE SOLUTION 50%

Other Names : CAUSTIC SODA; SODIUM HYDROXIDE; SODA LYE SODIUM HYDRATE; WHITE CAUSTIC

Uses : Use to neutralise acids, make sodium salts and to hydrolyse fats to form soaps. To treat cellulose in making viscose rayon and cellophane. To precipitate alkaloids and most metals from water solutions of their salts. Gold mining a pH adjuster. Industrial cleaning applications in sugar industry.

Organisation	Location	Telephone	Ask For
Industrial Cleansers Pty Ltd	Unit 2A 424 Bilsen Rd Geebung Qld	07 3265 6311	
	EMERGENCY INFORMATION	**0417 720 832**	**Technical Officer**
Poisons Information Centre	Westmead NSW Australia	131126 1800-251525	
Chemcall	Australia	1800-127406	
	New Zealand	0800-243622	
National Poisons Centre	New Zealand	0800-764766	

2. HAZARD 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.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

ERMA New Zealand Approval Code : No Data

HSNO Hazard Classification : No Data

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA website http://www.ermanz.govt.nz/ should be consulted for a full list of triggered controls and cited regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportions (%)
SODIUM HYDROXIDE	[1310-73-2]	45 - 55
WATER	[7732-18-5]	Balance

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed

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 hel 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.

Inhaled

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.

Advice to Doctor

Treat symptomatically and as for strongly alkaline corrosive material.

Additional Information

Aggravated medical conditions caused by exposure

5. FIRE FIGHTING MEASURES

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).

Hazards from Combustion Products

Corrosive to aluminium, zinc and tin, liberating flammable hydrogen gas. Reacts violently with acids. Reacts with ammonium salts liberating ammonia gas. Absorbs carbon dioxide from air. Reacts exothermically on dilution with water.

Special protective precautions and equipment for fire fighters

No Data Available

Flammability Conditions

Corrosive to aluminium, zinc and tin, liverating flammable hydrogen gas. Reacts violently with acids. Reacts with ammonium salts liberating ammonia gas. Absorbs carbon dioxide from air. Reacts exothermically on dilution with water.

Additional Information

Hazchem Code : 2R

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures

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 of waterways.

Methods and materials for containment and clean up

For small spills - wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal. For large spills - Contain using sand or oil - prevent entry into drains and waterways. Use absorbent (soil, or sand inert material vermiculite). Collect and seal in properly labelled containers for disposal. Caution heat may be

evolved on contact with water. If contamination of sewers or waterways has occurred advise the local emergency services.

7. HANDLING AND STORAGE

Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use.

Conditions for safe storage, including any incompatibles

Keep containers closed at all times. Store away from acids and ammonium salts. Do not store in aluminium or galvanised containers or use die-cast zinc or aluminium bungs. Steel bungs should be used. Reacts exothermically with water. Heat evolved may cause boiling and spattering. At temperatures greater than 40 tanks stressed relieved. Check regularly for spills and leaks. Over a period of time, sludge may develop in the base of storage tanks. The sludge may contain mercury in a finely divided form, spread throughout the particulate matter in the sludge.

Container Type
No information available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards

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

Biological Limit Values

No Data Available

Engineering Controls

Ensure adequate ventilation to keep airborne concentrations below exposure standard.

Personal Protection

Respirator - where mist is a problem, use canister type respirator suitable for particulates and alkaline gases. Gloves - use nitrile rubber gloves where skin contact is possible. Eye protection - useful face visor to prevent eye and face contact. Clothing - use rubber gloves, boots, and apron to prevent skin contact. Launder frequently. Change clothing if required. Wash hands and face thoroughly after handling and before work breaks, eating, drinking, smoking and using toilet facilities.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Miscible with water.
Formula	NaOH
Odour	No Data Available
Vapour Pressure	Not Applicable

Vapour Density	Not Applicable
Boiling Point	140 deg C
Melting Point	12 deg C
Solubility in water	Misc
Specific Gravity	see below (Water = 1)
Flash Point	Not Applicable
pH	14 (neat)
Flammability Limits (as percentage volume in air)	
Lower Explosion Limit	Not applicable
Upper Explosion Limit	Not applicable
Ignition Temperature	Not Applicable
Specific Heat Value	No Data
Particle Size	No Data
Volatile Organic Compounds (VOC) content	No Data
Evaporation Rate	No Data
Viscosity	No Data
Percent Volatile	No Data
Octanol/Water partition coefficient	No Data
Saturated Vapour Concentration	No Data
Additional Characteristics	No Data
Flame Propagation/Burning Rate of Solid Materials	No Data
Properties of materials that may initiate or contribute to fire intensity	No Data
Potential for Dust Explosion	No Data
Reactions that Release Flammable Gases	No Data
Fast or Intensely Burning Characteristics	No Data
Non-flammables that could contribute unusual hazards to a fire	No Data
Release of invisible flammable vapours and gases	No Data
Decomposition Temperature	No Data

Additional Information
Solubility: Miscible with water. Specific gravity (20 deg C)" 1.51 - 1.54

10. STABILITY AND REACTIVITY

Chemical Stability : STABLE

Conditions to avoid : No Data

Incompatible Materials : No Data

Hazardous Decomposition Products : No Data

Hazardous Reactions : No Data

11. TOXICOLOGICAL INFORMATION

Toxicity Data

No LD50 data available for product, however, for the component solid Sodium Hydroxide. Intraperitoneal LD50 (mouse): 40 mg/kg Oral Lowest Lethal Dose (rabbit): 500 mg/kg Skin (rabbit): severe irritation 500 mg/24H Eye (rabbit): severe irritation 1 mg/30 sec rinse Highly corrosive to any tissue with which it comes into contact. Produces burns, deep ulceration and gelatinous necrotic areas at the site of contact. Low systemic toxicity.

Health Effects - Acute

Swallowed

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.

Inhaled

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.

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

13. DISPOSAL CONSIDERATIONS

Disposal

Dispose according to all local, state and federal regulations. Empty containers must be decontaminated. Can be dissolved carefully in water and greatly neutralised with dilute acid

and flushed to drain with copious amounts of water . Alternatively normally suitable for disposal at approved land waste site.

Special Precautions for land fill or incineration

No Data Available

14. TRANSPORT INFORMATION

UN No.	1824
Shipping Name	SODIUM HYDROXIDE SOLUTION
Dangerous Goods Class	8
Subsidiary Risk	None Allocated
Pack Group	II
Precautions for User	CORROSIVE
Hazchem Code	2R

15. REGULATORY INFORMATION

Poisons Schedule	6
EPG	37
AICS Name	SODIUM HYDROXIDE (Na(OH))
NZ Toxic Substance	3
Additional information	No Data

16. OTHER INFORMATION

Additional information

Legend to abbreviations and acronyms:

<	less than
>	greater than
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
CO2	Carbon Dioxide
COD	Chemical Oxygen Demand
ERMA	Environmental Risk Management Authority
HSNO	Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
LC50	LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50	LD stands for "Lethal Dose". LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
Misc	miscible
N/A	Not Applicable

NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average
UN	United Nations (number)
cm2	square centimetres
deg C ('C)	degrees Celsius
g	gram
g/cm3	grams per cubic centimetre
g/l	grams per litre
immiscible	liquids are insoluble in each other
kg	kilogram
kg/m3	kilograms per cubic metre
ltr	Litre
m3	cubic metre
mPa.s	milli Pascal per second
mbar	millibar
mg	milligram
mg/24H	milligrams per 24 hours
mg/kg	milligrams per kilogram
mg/m3	milligrams per cubic metre
miscible	liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	millimetre
ppb	parts per billion
ppm	parts per million
ppm/2h	parts per million per 2 hours
ppm/6h	parts per million per 6 hours
tne	tonne
ug/24H	micrograms per 24 hours
wt	weight

Literature references:

No Data

Sources for data:

No Data

This MSDS summarises Industrial Cleansers Pty Ltd best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Industrial Cleansers Pty Ltd expressly disclaims that the MSDS is a representation or guarantee of the

chemical specifications for the substance. Each user should read the MSDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.