

## Safety Data Sheet

### 1. IDENTIFICATION OF THE PRODUCT AND THE SUPPLIER

#### 1.1 Product identifiers

Product name : SODIUM HYDROXIDE 2% SOLUTION

#### 1.2 Other means of identification

Caustic Soda Solution, Soda lye solution, NaOH

#### 1.3 Recommended use of the product and restrictions on use

Chemical manufacture; neutralising agent; pulp and paper, aluminium, detergent, and textile processing; vegetable oil refining; reclaiming rubber; etching and electroplating; food additive

#### 1.4 Details of supplier of the safety data sheet

Company : AGent Sales & Services Pty Ltd

Street address : 38 May Holman Drive, Bassendean, Western Australia 6054

Telephone : (+61 8) 6270 4500 / 1300 833 844

Fax : (+61 8) 6270 4544

#### 1.5 Emergency telephone number

Telephone : 1800 995 539

### 2. HAZARDS IDENTIFICATION

#### 2.1 GHS Classification

Corrosive to metals (Category 1)  
Skin corrosion/irritation (Category 1A)  
Serious eye damage/eye irritation (Category 1)

#### 2.2 GHS Label elements, including precautionary statements

Pictogram :



Signal word : Danger

#### Hazard statement(s)

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

#### Precautionary statement(s)

##### Prevention

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

##### Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

**Storage**

P405 Store locked up.  
P406 Store in corrosive resistant container with a resistant inner liner.

**Disposal**

P501 Dispose of contents/ container to an approved waste disposal plant.

**2.3 Other hazards**

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Component	CAS Number	Classification	Concentration (%)
Sodium hydroxide	1310-73-2	Met. Corr 1; Skin Corr. 1A; Eye Dam. 1; H290; H314	< 5
Water	7732-18-5	Not listed	75

For the full text of the H-Statements mentioned in this section, see Section 16

**4. FIRST AID MEASURES**

**4.1 Description of First Aid measures**

**General advice**

Contact the Poisons Information Centre (Phone: Australia 131 126; New Zealand 0800 764 766) or consult a doctor/physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

Remove victim from area of 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. 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. 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.

**In case of skin contact**

Remove contaminated clothing and wash affected areas with soap and water. Consult a doctor/physician. Launder clothing before reuse.

**In case of eye contact**

In case of eye contact, check for and remove any contact lenses. Immediately rinse thoroughly with plenty of running water for at least 15 minutes, keeping eyelids open. Seek immediate medical assistance.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek immediate medical assistance.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in Section 2.2 and/or Section 11.

**4.3 Indication of any immediate medical attention and special treatment needed**

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. Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

#### 4.4 First Aid facilities

Eye wash facilities and safety shower should be available.

### 5. FIRE FIGHTING MEASURES

#### 5.1 Suitable extinguishing media

Water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

#### 5.2 Special hazards arising from the chemical

Not combustible, however following evaporation of aqueous component residual material can decompose if involved in a fire, emitting toxic fumes. Contact with metals may liberate hydrogen gas which is extremely flammable.

#### 5.3 Special protective equipment and precautions for fire fighters

Wear self-contained breathing apparatus and suitable protective clothing.

#### 5.4 Hazchem code

2R

### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see Section 8.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. If contamination of sewers or waterways has occurred, advise local emergency services. Observe all local and national regulations.

#### 6.3 Methods and materials for containment and cleaning up

Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal according to local regulations (see Section 13). Caution - heat may be evolved on contact with water.

### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid inhalation of vapour or mist. For precautions see Section 2.2.

## 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, cool and well-ventilated place and out of direct sunlight. Store away from incompatible materials described in Section 10. Store away from foodstuffs. Do not store in aluminium or galvanised containers. Do not use die-cast zinc or aluminium bungs; plastic bungs should be used. At temperatures greater than 40°C, tanks must be stress relieved. Keep containers closed when not in use - check regularly for leaks. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

This material is classified as a Dangerous Goods Class 8 Corrosive Substance by the criteria of the ADG Code and must be stored and handled in accordance with the relevant regulations.

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### 8.1 Control parameters

Not value assigned for this specific material by SWA. However, Workplace Exposure Standard(s) for constituents(s) provided below:

#### Occupational Exposure Limits

Chemical Name	Reference	TWA – Peak Limitation		STEL		Carcinogen Category	Notices
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>		
Sodium hydroxide (1310-73-2)	ASCC	-	2	-	-	-	-

As published in "Workplace Exposure Standards for Airborne Contaminants, December 2011" by SWA.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

#### Biological Limits

None allocated for this product.

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Keep containers closed when not in use. If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

#### Personal protective equipment (PPE)

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods and environmental factors.

#### Eye/face protection

Safety glasses with unperforated 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 handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. Chemical goggles, whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. See Australian Standards (AS/NZS 1336 & 1337).

#### Skin protection

Wear protective gloves (long) and protective clothing (splash apron or equivalent chemical impervious outer garment and rubber boots) appropriate for the risk of exposure. See Australian Standards (AS 2161 & 2919 and AS/NZS 2210). Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands. Wash contaminated clothing and other protective equipment before storage or re-use.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination or type ABEK respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. See Australian Standards (AS/NZS 1715 & 1716).

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Form : Liquid Colour : Clear
<b>Odour:</b>	Slight odour
<b>Odour Threshold:</b>	No data available
<b>pH:</b>	14
<b>Melting Point:</b>	2°C
<b>Boiling Point / Range</b>	115°C
<b>Decomposition Temperature:</b>	No data available
<b>Evaporation Rate:</b>	No data available
<b>Flash Point:</b>	Not applicable
<b>Flammability Limits:</b>	Not applicable
<b>Specific Gravity:</b>	1.30 @ 20°C
<b>Vapour Density (air=1):</b>	No data available
<b>Vapour Pressure:</b>	17.5 mm Hg @ 20°C
<b>% Volatiles:</b>	70
<b>Solubility in water:</b>	Miscible

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Reacts violently with acids. Reacts exothermically on dilution with water.

### 10.2 Chemical stability

Stable under normal conditions of use, storage and temperature.

### 10.3 Possibility of hazardous reactions

Reacts with ammonium salts, evolving ammonia gas. Reacts readily with various reducing sugars (i.e. fructose, galactose, maltose, dry whey solids) to produce toxic and flammable carbon monoxide. Take precautions including monitoring the tank atmosphere for carbon monoxide to ensure safety of personnel before vessel entry.

### 10.4 Conditions to avoid

Avoid exposure to moisture, poor ventilation, contamination, excessive heat, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials

Incompatible with water, acids, organic materials, chlorinated solvents, ammonium salts, aluminium, tin and zinc.

### 10.6 Hazardous decomposition products

Not combustible, however following evaporation of aqueous component residual material can decompose if involved in a fire, emitting toxic fumes. Contact with metals may liberate hydrogen gas which is extremely flammable.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

No data available for this product.

For the constituent sodium hydroxide:

**Acute toxicity**

LD<sub>50</sub> Oral, rat - 325 mg/kg

**Skin corrosion/irritation**

Skin, rabbit – 500 mg / 24h SEVERE

**Serious eye damage/eye irritation**

Eye, rabbit – 0.05 mg / 24h SEVERE

Eye, rabbit – 1mg / 30s rinsed SEVERE

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity (STOT) - single exposure**

No data available

**Specific target organ toxicity (STOT) - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Health Effects**

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

**Eye contact:** A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.

**Skin contact:** Contact with skin will result in severe irritation. Corrosive to skin - may cause skin burns.

**Ingestion:** Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.

**Inhalation:** Breathing in mists or aerosols will produce respiratory irritation. Inhalation of high concentrations may result in coughing, wheezing, laryngitis, shortness of breath, spasm, inflammation and oedema of the larynx, the bronchi, pneumonitis and pulmonary oedema and damage to the mucous membrane.

**11.2 Information on possible routes of exposure**

The substance can be absorbed into the body by skin & eye contact, ingestion and by inhalation.

**11.3 Additional Information**

RTECS: Not available

**12. ECOLOGICAL INFORMATION****12.1 Ecotoxicity**

Avoid contaminating waterways.

**Toxicity to fish:**

No data available

**Toxicity to daphnia & other aquatic invertebrates**

No data available

**12.2 Persistence and degradability**

No data available.

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

## 12.5 Other adverse effects

Harmful to aquatic life.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Disposal methods and containers

Ensure waste disposal conforms to relevant local, state and federal authority waste disposal regulations. All empty packaging should be disposed of as unused product.

### 13.3 Special precautions for landfill or incineration

Contact a specialist disposal company or the local waste regulator for advice. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Processing, use or contamination of this product may change the waste management options.

## 14. TRANSPORT INFORMATION

Classified as **DANGEROUS GOODS** by the criteria of the ADG Code for transport by road or rail.

Classified as **DANGEROUS GOODS** by the criteria of the IMDG Code for transport by sea.

Classified as **DANGEROUS GOODS** by the criteria of the IATA Code for transport by air.

### 14.1 UN number

ADG : 1824

IMDG : 1824

IATA : 1824

### 14.2 Proper shipping name

ADG : SODIUM HYDROXIDE SOLUTION

IMDG : SODIUM HYDROXIDE SOLUTION

IATA : SODIUM HYDROXIDE SOLUTION

### 14.3 Transport hazard class

ADG : 8 Corrosive

IMDG : 8 Corrosive

IATA : 8 Corrosive

### 14.4 Packing group

ADG : II

IMDG : II

IATA : II

### 14.5 Environmental hazards

ADG : No

IMDG Marine Pollutant : No

IATA : No

### 14.6 Special precautions for users

No data

### 14.7 Hazchem code

ADG : 2R

IMDG EMS : F-A, S-B

### 14.8 Dangerous goods initial emergency response guide (SAA/SNZ HB76:2010)

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## 15. REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations

#### Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Poisons Schedule : 6

#### Carcinogen classification under WHS Regulations 2011, Schedule 10

Not listed

#### Notification status

AICS On the inventory, or in compliance with the inventory.

## 16. OTHER INFORMATION

### Key / legend to abbreviations and acronyms used in the MSDS

ADG	Australian Dangerous Goods
ASCC	Australian Safety and Compensation Council
DEC	Department of Environment and Conservation
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
IMDG EMS	International Maritime Dangerous Goods Emergency Schedule
NOHSC	National Occupational Health and Safety Commission
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons
Eye Dam.	Serious eye damage
Met. Corr.	Corrosive to metals



Skin Corr.	Skin corrosion
TWA	Time weighted average
STEL	Short term exposure level
SWA	Safe Work Australia
Peak Limitations	A ceiling concentration that should not be exceeded over a measurement period, which should be as short as possible, but not exceeding 15 minutes
LD <sub>50</sub>	Lethal dose 50. The single dose of a substance that causes the death of 50% of an animal population from exposure to the substance by any route other than inhalation
LC <sub>50</sub>	Lethal concentration that kills 50% of an animal population within a specified time
TD Lo	The lowest dose of a substance known to have produced signs of toxicity
RTECS	Registry of Toxic Effects of Chemical Substances
g/L	Grams per litre
g/cm <sup>3</sup>	Grams per cubic centimetre
mg/m <sup>3</sup>	Milligrams per cubic metre
mg/kg	Milligrams per kilogram
pH	Relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline
WHS	Work Health and Safety

### Literature references

“Workplace Exposure Standards for Airborne Contaminants, December 2011” by SWA  
Work Health and Safety Regulations 2011

### Reason(s) for Issue:

Update Contact Details

### Disclaimer

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