1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name:	Caustic Soda
Synonym:	Sodium Hydroxide
Recommended Use:	Cleaning
Supplier:	Midland Chemicals
ABN:	91 622 018 986
Street Address:	18 Elliott Street Midvale Western Australia
Telephone Number:	+61 08 9274 1992
Facsimile:	+61 08 9250 1710
Emergency Telephone:	**1 800 033 111 (ALL HOURS)**

2. HAZARDS IDENTIFICATION

Road and Rail; Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Globally Harmonised System

Hazard Classification
Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Hazard Categories
Skin Corrosion/Irritation - Category 1A
Corrosive to Metals - Category 1

Pictograms

Signal Word
Danger

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

Precautionary Statement
Prevention
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P270 Do not eat, drink or smoke when using this product
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response
P303 + P361 + P353 F ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P310 Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363 Wash contaminated clothing before reuse.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P390 Absorb spillage to prevent material damage.

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

Disposal
P501 Dispose of contents/container in accordance with local / regional / national / international regulations.

Poisons Schedule: 6

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion
Sodium Hydroxide	1310-73-2	>=98%

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor at once.

Inhalation:
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply resuscitation if victim is not breathing. Do not use direct mouth-to-mouth method if victim ingested or inhaled the substance; use alternative respiratory method or proper respiratory device. Administer oxygen if breathing is difficult.

Skin Contact:
Skin contact: Immediately remove contaminated clothing and shoes. Flush skin (and hair) with running water for 20 - 30 minutes. For minor skin contact, avoid spreading material onto unaffected skin. Immediately call a Poison Centre or doctor/physician. Wash contaminated clothing and shoes before reuse.

Eye Contact:
Eye contact: Immediately flush eyes with running water for at least 15 minutes, holding eyelids apart and away from the eye. Remove contact lenses, if present and easy to do. Continue rinsing. Injury should be irrigated for 20 - 30 minutes. Immediately call a Poison Centre or doctor/physician.

Ingestion:
If swallowed: Rinse mouth, then (slowly) drink plenty of water or milk (no more than 2 glasses for an adult). Do NOT induce vomiting. If vomiting occurs, lean victim forward or place on their left side (head down position) to maintain an open airway and prevent aspiration. Keep victim warm and quiet. Immediately call a Poison Centre or doctor/physician. Never give anything by mouth to an unconscious person.

Advice to doctor:
Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves. Treat symptomatically and supportively.

Medical attention and special treatment:
No information Available

5. FIRE FIGHTING MEASURES

General Measures
If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.

Flammability Conditions
Non-combustible. Material does not burn.

Extinguishing Media
Use extinguishing media suitable for the surrounding fire. Use dry chemical, CO2, foam or water spray - Do NOT use water jets.

Fire and Explosion Hazard
Containers may explode when heated. Contact with metals may evolve flammable hydrogen gas. Contact with moisture or water may generate sufficient heat to ignite combustible substances; spattering and boiling may occur.

Hazardous products of combustion
Fire or heat will produce irritating, toxic, and/or corrosive gases.

Special Fire Fighting Instructions
Runoff from fire control or dilution water may be toxic and/or corrosive and pollute waterways.

Personal Protective Equipment
Wear self-contained breathing apparatus (SCBA) with a full face-piece, in positive pressure mode. Fully- encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is recommended for fire situations ONLY - it is NOT effective for spills.

Flash Point : No Data Available

Lower Explosion Limit : No Data Available

Upper Explosion Limit : No Data Available

Auto Ignition Temperature : No Data Available

Hazchem Code : 2W

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure:
Ensure adequate ventilation. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin and eyes. Do NOT breath dust.

Clean up Procedure:
Sweep spilled substance into suitable containers for later disposal. Prevent dust cloud. Do NOT get water inside containers.

Containment:
Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Dike and clean up all spills immediately.

Decontamination:
Small spills or residues can be flushed with plenty of water. Dilute acid (such as Acetic acid) may be used to neutralise residual traces after flushing.

Environmental Precautionary Measures:
Drains for storage or work areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.

Evacuation Criteria:
Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.

Personal Precautionary Measures:
Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for spills.

7. HANDLING AND STORAGE

This material must be stored, maintained and used in accordance with the relevant regulations.

Conditions for safe storage:
Store locked up. Store in an area with a corrosion resistant concrete floor. Store in a cool, dry, well-ventilated area. Keep container tightly closed. Protect from any possible contact with water/moisture. Store away from incompatible materials - oxidising substances, organic peroxides, strong acids, food and food packaging. Keep away from heat and ignition sources.

Precautions for safe handling:
Eyewash fountains and facilities for quickly drenching the body should be provided within the immediate work area for emergency use. Handle in accordance with good industrial hygiene and safety practice. Use only in a wellventilated area. Do NOT breath dusts or mists. Wear protective gloves/protective clothing/eye protection/face protection. Do NOT allow wash water from cleaning or process equipment to enter drains - It may be necessary to collect all wash water for treatment before disposal.

Container
Keep only in the original container; or in a suitable corrosive resistant container with a resistant inner liner. Do NOT use aluminium, galvanised, zinc or tin-plated containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

General:
Australia: Sodium hydroxide (CAS No. 1310-73-2) has an exposure standard of 2 mg/m3, time weighted average (TWA) (Peak limitation). Peak limitation notice: A maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time - which does not exceed 15 minutes. Immediately dangerous to life or health concentration (IDLH): 10 mg/m3.

Occupational Exposure Limits:
No Data Available

Biological Limits:
No information available.

Engineering Measures:
Use local exhaust ventilation to prevent the chemical from entering the breathing zone of any worker. Air monitoring is recommended to ensure control measures in place are working effectively.

Personal Protective Equipment:
Respiratory protection: In case of dust or aerosol formation, use a respirator with an approved filter. Filter type: Particulate. In conditions where exposure potential is high, wear a full-face air-supplied breathing apparatus and full protective suit. Hand protection: Wear impervious gloves - Suitable materials: PVC neoprene, natural or butyl-rubber. Unsuitable material: leather. Eye protection: Wear a full face shield or properly fitted chemical goggles in combination with respiratory protection. Skin/body protection: Impervious clothing/chemical resistant apron and boots. Suitable materials: PVC, neoprene.

Special Hazards Precautions:
To avoid violent reaction, ALWAYS add material to water, and NEVER water to material.

Work Hygiene Practices:
Do not eat, drink or smoke during work. Wear appropriate personal protective clothing/equipment to prevent skin and eye contact. Immediately wash skin when it becomes contaminated. Work clothing that becomes wet or significantly contaminated should be removed and replaced. Workers whose clothing may have become contaminated should change into uncontaminated clothing before leaving the work premises.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid Flake, pearl, prill, beads, blocks
Colour: white
Solubility: 111 g/10 ml 20°C
Specific Gravity: 2.130 (Water = 1)
Relative Vapour Density (air=1): No Data Available
Vapour Pressure (20 °C): 0 torr (@ 20 °C)
Flash Point (°C): No Data Available
Auto Ignition Temperature (°C): No Data Available
Boiling Point: 1390 °C
Melting Point (°C): 741 °C
pH: >14
Decomposition Temperature: 60 °C (8H2O) - 320 °C (10H2O)
Molecular Weight: 381.37 g/mol

Reactions That Release Gases or Vapours: Fire or heat will produce irritating, toxic, and/or corrosive gases

Release of Invisible Flammable Vapours and Gases: Contact with metals such as aluminium, zinc, tin and lead may evolve flammable hydrogen gas.

Non-Flammables That Could Contribute Unusual Hazards to a Fire: Contact with moisture or water may generate sufficient heat to ignite combustible substances.

Properties That May Initiate or Contribute to Fire Intensity: Non-combustible. Material does not burn.

10. STABILITY AND REACTIVITY

General Information:	CORROSIVE. The substance is a strong base - it reacts violently with acids.
Chemical stability:	Stable under normal conditions.
Conditions to avoid:	- Avoid heat and ignition sources. - Protect from any possible contact with water/moisture.
Incompatible materials:	Avoid oxidising substances, organic peroxides, strong acids, food and food packaging. Avoid contact with aluminium, tin, zinc, copper and their alloys
Hazardous decomposition products:	- Fire or heat will produce irritating, toxic, and/or corrosive gases. - Contact with metals may evolve flammable hydrogen gas.
Hazardous reactions:	Reaction with strong reducing agents or alkali metals will generate hydrogen gas.
Hazardous Polymerisation:	Will not occur.

11. TOXICOLOGICAL INFORMATION

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:

Ingestion: Corrosive to gastrointestinal tract. Cases of fatality due to ingesting (liquid) sodium hydroxide have been reported in humans, caused by oesophageal and gastric injury.

Eye contact: Corrosive to eyes. Causes serious eye damage.

Skin contact: Corrosive to skin. It causes deep penetrating burns and necrosis. The skin is discoloured and becomes brown or black. There could be recurring skin breakdown over a long period.

Inhalation: Corrosive to respiratory tract.

Toxicological Data: - Critical health effects: Sodium hydroxide is corrosive to the skin, eyes, gastrointestinal and respiratory tracts. - Toxicokinetics: The constituents of sodium hydroxide (sodium ion and hydroxide ions) are normal physiological constituents. Accordingly, systemic health effects, such as repeated dose toxicity, carcinogenicity and reproductive toxicity are not expected. The available data support this conclusion. - Acute toxicity: No acute oral studies are available in animals to establish a median lethal dose (LD50). Sodium hydroxide has low to moderate acute dermal toxicity (no reliable LD50 data). Sodium hydroxide can be absorbed into the body by inhaling the aerosol form (no LC50 data available). Observance in humans: Cases of fatality due to ingesting (liquid) sodium hydroxide have been reported in humans, caused by oesophageal and gastric injury. - Corrosion/irritation: Sodium hydroxide is corrosive to the skin, eyes and respiratory tract and corrosive following ingestion. It causes deep penetrating burns and necrosis. The skin is discoloured and becomes brown or black. There could be recurring skin breakdown over a long period. - Sensitisation: Not considered a skin sensitiser. - Repeated dose toxicity: No animal data are available on repeated dose toxicity studies on oral or dermal exposure. Observance in humans: Obstructive airway disease has been reported in a factory worker following chronic occupational exposure to sodium hydroxide mist. - Genotoxicity: In vitro and in vivo genotoxicity tests indicate no evidence for mutagenic activity. - Carcinogenicity: No information available. - Reproductive/developmental toxicity: The effect of sodium hydroxide on fertility is not known. No valid studies are available regarding effects on fertility or developmental toxicity in animals after oral, dermal or inhalation exposure. Sodium hydroxide is not expected to be systemically available in the body under normal handling and use conditions, and for this reason it can be stated that the substance will not reach the foetus nor reach male/female reproductive organs.

Carcinogen Category: None

12. ECOLOGICAL INFORMATION

Ecotoxicity Toxicity to Fish: 96 hr LC50: 4.16 mg/l Toxicity to Algae or other aquatic plants: 96 hr EC50: 1,034.1 mg/l Toxicity to Crustacea: 384 hr EC50: 27,901.6 mg/l Toxicity to Fish: 96 hr NOEC: 56 mg/l

Persistence and Degradability: Water/soil: Low persistence. Air: Low persistence.

Mobility: Soil: KOC = 14.3 (Low mobility)

Environmental fate: Avoid release to the environment. Drains for storage or work areas should have retention basins for pH adjustments and dilution of spills/residues before discharge or disposal of material.

Bioaccumalation: Bioaccumulation: LogKow = -3.8796 (Low potential).

Environmental Impact: No Data Available

13. DISPOSAL CONSIDERATIONS

Disposal methods: Dispose of contents/container in accordance with local/regional/national regulations. This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

Special Precautions for Land Fill:
Treat and neutralise at an approved treatment plant. Treatment should involve: Mixing or slurrying in water; neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licensed to accept chemical/pharmaceutical wastes; or incineration in a licensed apparatus (after admixture with suitable combustible material).

14. TRANSPORT INFORMATION

Road and Rail Transport
Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; DANGEROUS GOODS.

UN No: 1823
Class-Primary: 8 Corrosive Substances
Packing Group: II
Proper Shipping Name: SODIUM HYDROXIDE, SOLID
Hazchem Code: 2W

Marine Transport
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN No: 1823
Class-Primary: 8 Corrosive Substances
Packing Group: II
Proper Shipping Name: SODIUM HYDROXIDE, SOLID
Hazchem Code: 2W

Air Transport
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN No: 1823
Class-Primary: 8 Corrosive Substances
Packing Group: II
Proper Shipping Name: SODIUM HYDROXIDE, SOLID
Hazchem Code: 2W

15. REGULATORY INFORMATION

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Poisons Schedule: 6

16. OTHER INFORMATION

This material safety data sheet has been prepared by Midland Chemicals

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. No liability is accepted whether direct or indirect from its application since the conditions of final use are outside Midland Chemicals control. The end user is obliged to conform to relevant government regulations and/or patent laws applicable in their respective States of Countries.