Section 1. IDENTIFICATION

Product Name:	**CAUSTIC SODA (Pearl)**
Other Names:	Sodium Hydroxide, Soda lye
Uses:	Industrial/commercial use: In flotation agents; in pH regulation; as a solvent; in water treatment; as a photochemical; as a reducing agent; and in hydraulic fracturing. Domestic use: In cleaning/washing agents and additives; adhesives; and cosmetic use.
Chemical Family:	No Data Available
Chemical Formula:	NaOH
Chemical Name:	Caustic Soda
Product Description:	No Data Available

CONTACT DETAILS OF THE SUPPLIER OF THIS SAFETY DATA SHEET

Business:	Colonial Chemicals Australia
Address:	Skewes Road, Bendemeer, NSW, AUSTRALIA,2355
Postal Address:	P.O Box 167 Moonbi, NSW, 2353
Phone:	02 67 696 658 **Mobile:** 0427 696658 **Fax:** 02 57015137
Email:	admin@colonialchemicals.com.au
Web Site:	www.colonialchemicals.com.au

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Poisons Information Centre	Westmead NSW	131126 or 1800-251525
Chemcall	Australia	1800-127406

Section 2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) 6

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

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Section 2. HAZARD IDENTIFICATION (Continued)

Hazard Statements		**H314**	Causes severe skin burns and eye damage.
		H290	May be corrosive to metals.
Precautionary Statements			
	Prevention	**P280**	Wear protective gloves/protective clothing/eye protection/face protection.
		P260	Do not breathe dust/fume/gas/mist/vapours/spray.
	Response	**P301+P330+P331**	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
		P303+P361+P353	IF 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.
		P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
		P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P390	Absorb spillage to prevent material damage.
		P363	Wash contaminated clothing before reuse.
	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.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Dangerous Goods Classification **Dangerous Goods** according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

CHEMICAL ENTITY	FORMULA	CAS No	PROPORTION (%w/w)
Sodium Hydroxide	NaOH	1310-73-2	>=98%

Section 4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed 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.

Eye 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.

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Section 4. FIRST AID MEASURES (Continued)

Skin	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.
Inhaled	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.
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 Conditions Aggravated by Exposure	No Data Available

Section 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 **Special Fire Fighting Instructions**	Fire or heat will produce irritating, toxic, and/or corrosive gases. 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

Section 6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ventilate enclosed spaces before entering. 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 Procedures	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.

Section 7. HANDLING AND STORAGE

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 well- ventilated 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.
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.
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.

Section 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) (Peaklimitation). 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.
Exposure Limits	No Data Available
Biological Limits	No Data 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 Protection 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 Hygienic 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.

Section 9. IDENTIFICATION

Physical State	SOLID
Appearance	FLAKE, PEARL, PRILL, BEADS, BLOCKS
Odour	ODOURLESS
Colour	WHITE, TRANSLUCENT
pH	>14
Vapour Pressure	0 torr (@ 20 °C)
Relative Vapour Density	No Data Available
Boiling Point (degrees C)	1390 °C
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	111 g/10 ml 20°C

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Section 9. IDENTIFICATION (Continued)

Specific Gravity (g/ml @ 25degreesC)	2.130 (Water = 1)
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
MolecularWeight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
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.
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.

Section 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.
Materials to Avoid	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 Polymerisation	Will not occur.

Section 11. TOXOCOLOGICAL INFORMATION

General Information

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.

Continued Over Page

Section 11. TOXOCOLOGICAL INFORMATION (Continued)

General Information (Continued)

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

Section 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/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.

Bioaccumulation Potential

Bioaccumulation: LogKow = -3.8796 (Low potential).

Environmental Impact

No Data Available

Section 13. DISPOSAL CONSIDERATIONS

General Information

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).

Section 14. TRANSPORT INFORMATION

Land Transport (Australia):	ADG Code
Proper Shipping Name	SODIUM HYDROXIDE, SOLID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	37 Toxic And/Or Corrosive Substances Non-Combustible
UN Number	1823
Hazchem	2W
Pack Group	II
Special Provision	No Data Available

Air	IATA DGR
Proper Shipping Name	SODIUM HYDROXIDE, SOLID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1823
Hazchem	2W
Pack Group	II
Special Provision	No Data Available

Sea	IMDG
Proper Shipping Name	SODIUM HYDROXIDE, SOLID
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1823
Hazchem	2W
Pack Group	II
Special Provision	No Data Available
EMS	FA, SB
Marine Pollutant	No

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Dangerous Goods Classification	**Dangerous Goods** according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code).

Section 15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	6

National/Regoinal Inventories

Australia (AICS)	Listed

Section 16. OTHER INFORMATION

Always use product as directed. Please read all labels carefully before using product. Further information may be obtained by contacting the Technical Officer on 0267 696 658. Supplied by Colonial Chemicals Australia.

SDS ISSUE Number:	**4**
SDS Revision Date:	**30 May 2017**
Reason for issue:	Update SDS. (Replaces SDS dated 19.03.2014).

In any event, the review and, if necessary, the re-issue of a SDS shall be no longer than 5 years after the last date of issue.

The information sourced for the preparation of this document was correct and complete at the time or writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product.

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Section 16. OTHER INFORMATION (Continued)

Key legend/Abbreviations/Acronyms that may be used in this S.D.S.:

<	Less Than
>	Greater Than
ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
AICS	Australian Inventory of Chemical Substances
atm	Atmosphere
CAS	Chemical Abstracts Service (Registry Number)
cm²	Square Centimetres
CO2	Carbon Dioxide
COD	Chemical Oxygen Demand
deg C (°C)	Degrees Celcius
deg F (°F)	Degrees Farenheit
EPA (New Zealand)	Environmental Protection Authority of New Zealand
g	Grams
g/cm³	Grams per Cubic Centimetre
g/l	Grams per Litre
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters HSNO Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
immiscible	Liquids are insoluable in each other.
inHg	Inch of Mercury
inH2O	Inch of Water
K	Kelvin
kg	Kilogram
kg/m³	Kilograms per Cubic Metre
lb	Pound
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.
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.
ltr or L	Litre
m³	Cubic Metre
mbar	Millibar
mg	Milligram
mg/24H	Milligrams per 24 Hours
mg/kg	Milligrams per Kilogram
mg/m³	Milligrams per Cubic Metre
Misc or Miscible	Liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	Millimetre
mmH2O	Millimetres of Water
mPa.s	Millipascals per Second
N/A	Not Applicable
NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Heath and Safety Commission
OECD	Organisation for Economic Co-operation and Development
Oz	Ounce
Pa	Pascal
PEL	Permissible Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppb	Parts per Billion
ppm	Parts per Million
ppm/2h	Parts per Million per 2 Hours
ppm/6h	Parts per Million per 6 Hours
psi	Pounds per Square Inch
R	Rankine
RCP	Reciprocal Calculation Procedure
SDS	Safety Data Sheet
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
tne	Tonne
TWA	Time Weighted Average (TWA/ES - Time Weighted Average or Exposure Standard)
Ug/24	Micrograms per 24 Hours
UN	United Nations
Wt	Weight

END OF SDS