SAFETY DATA SHEET

Caustic Soda Pearl

SECTION 01 - IDENTIFICATION

Product identifier	Sodium Hydroxide, Solid
Other means of identification	Caustic Soda, Anhydrous Sodium Hydroxide Sodium Hydrate
Recommended use of chemical	NAOH solutions are used to neutralise acids and make sodium salts
Supplier name	Ixom Operations Pty Limited trading as LogiChem
Supplier address	Lot 33 Bulong Road Parkeston-Kalgoorlie, Australia PO Box 878 Kalgoorlie WA 6433 Australia
Supplier phone	1800 033 111 / Int. +61 (0) 3 9663 2130
24 Hour emergency phone	1800 033 111

SECTION 02 – HAZARD(S) IDENTIFICATION

Classification	Skin Corrosion/Irritation - Category 1A Corrosive to Metals - Category 1
Signal word	Danger
Hazard statements	H290 - May be corrosive to metals H314 - Causes severe skin burns and eye damage
Precautionary statements	***Prevention*** P264 - Wash hands and face 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): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower 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 P310 - Immediately call a POISON CENTER or doctor/physician

SECTION 03 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Components	Cas No:	Proportion
Sodium Hydroxide	1310-73-2	>94%

SECTION 04 – FIRST AID MEASURES

Description of necessary first aid measures	***Eye*** – Immediately flush eyes with copious amounts of water for at least 30 minutes while holding eyelids open. Take care not to rinse contaminated water into the non-affected eye. Washing must be started within 10 seconds of contact and continued for 30 minutes to prevent permanent injury. Seek immediate medical attention. An Ophthalmology consultation is a must. ***Ingestion*** - Do NOT INDUCE VOMITING. Give large quantities of water and milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately. ***Inhalation*** – Remove from contaminated area immediately; avoid becoming a casualty. If NOT breathing apply artificial resuscitation. Experienced person may administer oxygen if breathing is difficult. Immediately transport to a hospital or doctor. ***Skin*** - Immediately flush with plenty of water for at least 15 minutes while removing

	contaminated clothing and shoes. Call a doctor immediately. Wash clothing before re-use.
Medical attention / special treatment	Perform endoscopy in all cases of suspected sodium hydroxide ingestion. In cases of severe oesophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base, electrolytes and fluid intake are also required.
Symptoms caused by exposure	Persons with lung diseases may be at an increased risk due to the toxic effects of this chemical on these organs.

SECTION 05 – FIRE FIGHTING MEASURES

Suitable extinguishing media	Use any means suitable for extinguishing surrounding fire. Use carbon dioxide or suitable dry chemical extinguisher. Do NOT use water.
Specific hazards arising from the chemical	Hot or molten material can react violently with water. Can react with certain metals, such as aluminium, to generate flammable hydrogen gas. Not considered to be an explosion hazard.
Special protective equipment & precautions for fire fighters	Fire fighters should wear full protective equipment including self-contained breathing apparatus. Not considered to be a fire hazard.

SECTION 06 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Evacuate all unnecessary personnel. Allow only trained personnel wearing appropriate protective equipment to be involved in spill response. Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilt. Isolate the danger area. Use clean, non-sparking tools and equipment. Shut off all possible sources of ignition. Personnel involved in the clean up should wear full protective clothing as listed in section 8.
Environmental precautions	Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.
Methods and materials for containment and cleaning up.	Stop leak if safe to do so. Dike spills immediately. Mechanically collect as much of the spill as possible. Absorb with sand, earth or clay. Transfer to suitable, labelled, corrosion-resistant containers and dispose of promptly as hazardous waste. Spill on areas other than pavement, dirt or sand may be handled by removing the affected soils and placing into approved containers. Dilute acid (preferably acetic acid may be used to neutralise residual traces of caustic soda) after flushing.

SECTION 07 – HANDLING AND STORAGE

Precautions for safe handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Do not smoke, eat or drink when handling product. Product can react violently with water and acids. Caustic solution generates heat when further diluted with water. Concentrations greater than 40%, the heat generated can raise temperatures above the boiling point resulting in sporadic, violent eruptions or spattering. Emergency showers and eye-washes must be available. When used in its various applications, the product must be prevented from coming into uncontrolled direct contact with other products such as acids and metals. Never neutralise the solid product.
Conditions for safe storage (including any incompatibles)	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Store away from aluminium, tin, zinc and alloys (bronzes), chrome and lead. Protect from damp and kept

	apart from acids, halogenated hydrocarbons, nitroparaffins, etc. The floor must be waterproof and anti-slip. A water supply or source must be provided in the place of storage. Emergency showers and eye-washes must be available. Special conditions: Prevent the product from becoming damp or aerated. Hygroscopic product. Becomes carbonated in contact with the air or moisture. Store in original packaging as approved by manufacturer. Recommended materials for warehouse storage and containers: Carbon steel, carbon steel drums, polythene sacks or Big-Bags.

SECTION 08 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters – exposure standards, biological monitoring	VLA-EC: 2 mg/m3 (INSHT). TLV-STEL: 2 mg/m3 (ACGIH). WEL-Limit value - Short term: 2 mg/m3 (UK) Human exposure: Workers: DNEL (local effects): 1 mg/m3 (inhalation; long-term toxicity) General population: DNEL (local effects): 1 mg/m3 (inhalation; long-term toxicity) OSHA PEL 8 hour TWA 2mg/m3 ACGIH TLV - Ceiling 2mg/m3
Appropriate engineering controls	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Adequate ventilation should be provided so that exposure limits are not exceeded.
Personal protective equipment (PPE)	***Clothing*** – Suit or plastic apron providing protection against acids/alkalis (AS3765/2210). ***Eyes*** – Use safety goggles, splash proof and / or appropriate full face shield (AS1336/1337). ***Footwear*** – safety footwear providing protection against acids/alkalis (AS3765/2210). ***Gloves*** – Gloves for chemical hazards (AS2161). ***Other*** - RESPIRATOR: In the case of sodium hydroxide powder emissions, use mask with dust filter (P2 or P3) (AS1715/1716). An eyewash fountain should be within the immediate work area for emergency use. Do not smoke, eat or drink when handling product.

SECTION 09 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White deliquescent solid, can be in the form of flakes, pellets or sticks
Odour	Odourless
Odour threshold	Not available
pH	13-14 (0.5% soln)
Melting point/freezing point	323 °C @ 101 325 Pa °C / Not available
Specific gravity (water = 1)	2.13 (Water=1)
Boiling point and boiling range	1390 °C
Flash point	Not available
Evaporation rate	Not available
Flammability	Not available
Upper/lower flammability or explosive limits	Not available
Vapour pressure (hPa @ 20°C)	0 mmHg (20'C) (@20°C
Vapour density	Not available
Relative density	2.13 g/cm3

Solubility(ies) (water)	Solub g/l (25 °C)
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Specific heat value	Not available
Particle size	Not available
Volatile organic compounds content	Not available
% volatile	Not available
Saturated vapour concentration	Not available
Release of invisible flammable vapours and gases	Not available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity	Reacts with aluminium, tin, zinc and their alloys, copper, lead, etc. giving off hydrogen.
Chemical stability	The substance is stable under normal environmental conditions and foreseeable conditions of temperature and pressure during the storage and handling.
Conditions to avoid	Do not expose to the elements for excessive periods, to prevent degradation of the container.
Incompatible materials	Highly exothermal reaction with strong acids. Aluminium, tin, zinc and their alloys, copper, lead, etc. Acetic acid, allyl chloride, chlorine trifluoride, chloroform, methylic alcohol, chloronitrotoluene, chlorosulphonic acid, glyoxal, cyanohydrin, hydrochloric acid, hydrofluoric acid, hydroquinone, nitric acid, sulphuric acid and oleum, nitropropane, phosphorous, propiolactone, phosphorous pentoxide, tetrachlorobenzene, tetrahydrofuran, nitromethane and nitroparaffins. Caustic soda forms salts with nitromethane and nitroparaffins that explode on impact. Caustic soda solution reacts readily with various reducing sugars (ie: fructose, glactose, maltose, dry whey solids) to produce carbon monoxide.
Hazardous decomposition products	When the product decomposes, toxic sodium oxide gases are given off.

SECTION 11– TOXICOLOGICAL INFORMATION

Information on routes of exposure	***Eyes*** – Corrosive. Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness. ***Ingestion*** - Corrosive. Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Symptoms may include bleeding, vomiting, diarrhoea, fall in blood pressure. Damage may appear days after exposure. ***Inhalation*** – Sever irritant. Effects from inhalation of dust or mist vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat runny nose. Severe pneumonitis may occur. ***Skin*** - Corrosive. Contact with skin can cause irritation or severe burns and scarring with greater exposures.
Symptoms related to exposure	Not available
Numerical measures of toxicity	**Oral Lowest Lethal Dose (rabbit):** 500mg/kg **Skin (rabbit):** severe irritation 500mg/24hr **Eyes (rabbit):** severe irritation 1mg/30sec rinse
Immediate, delayed and chronic health effects from exposure	Prolonged contact with dilute solutions or dust has a destructive effect upon tissue. Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.
Exposure levels	Not available
Interactive effects	Not available

Data limitations	Not available

SECTION 12– ECOLOGICAL INFORMATION

Ecotoxicity	The hazard of the substance for the environment is caused by the hydroxyl ion (pH effect). For this reason the effect of the substance on the organisms depends on the buffer capacity of the aquatic or terrestrial ecosystem. The high water solubility and low vapour pressure indicate that the substance will be found predominantly in water. Also the variation in acute toxicity for aquatic organisms can be explained for a significant extent by the variation in buffer capacity of the test medium. LC50 values ranged between 33 and 189 mg/l.
Persistence and degradability	Readily biodegradable Other relevant information Abiotic degradation: NaOH is a strong alkaline substance that dissociates completely in water to Na+ and OH-. High water solubility and low vapour pressure indicate that NaOH will be found predominantly in aquatic environment. This implies that it will not adsorb on particulate matter or surfaces. Atmospheric emissions as aerosols are rapidly neutralized by carbon dioxide and the salts will be washed out by rain.
Bioaccumulative potential	Bioconcentration factor (BCF): experimental data: Considering its high water solubility, NaOH is not expected to bioconcentrate in organisms. In addition, sodium is a naturally-occurring element that is prevalent in the environment and to which organisms are exposed regularly, for which they have some capacity to regulate the concentration in the organism.
Mobility in soil	High water solubility and mobility.
Other adverse effects	Not available

SECTION 13 – DISPOSAL CONSIDERATIONS

Safe handling and disposal methods	Use very dilute acid for neutralisation. Neutralise aqueous solutions by diluting with very diluted hydrochloric acid. Drain effluent with plenty of water, keeping pH under control. Beware of heat and splashes caused by water reactions (dissolution heat) or neutralisation.
Disposal of any contaminated packaging	All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
Environmental regulations	Dispose of in accordance with Local, State and Federal regulations at an approved waste disposal facility.

SECTION 14 – TRANSPORT INFORMATION

UN number	1823
Proper shipping name	Sodium Hydroxide, solid
Transport hazard class(es)	8 – Corrosive Substances
Subsidiary risk	NA
Packaging group	II
Environmental hazards	Not available
Special precautions during transport	Not available
Hazchem code	2X

SECTION 15 – REGULATORY INFORMATION

AICS name	Sodium hydroxide (Na(OH))
Poisons Schedule number	6

Caustic Soda Pearl

SECTION 16 – OTHER INFORMATION

SDS creations date	14 May 2007
Most recent revision date	01 February 2018
Revision number	010 THIS ISSUE NUMBER REPLACES ALL ISSUES
Reason for revision	Annual Update
Contact person	Ixom 1800 033 111

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

END OF SDS