



MATERIAL SAFETY DATA SHEET

PRODUCT: CAUSTIC SODA PEARL

Date of Issue: May 2013

1. IDENTIFICATION OF THE MATERIAL AND THE SUPPLIER

Product Name: Caustic Soda Pearl
Other Names: Sodium Hydroxide, Sodium hydrate, Lye
Recommended Use: General Chemical
Formula:
Molecular Formula H-Na-O
Structural Formula NaOH
Chemical Family: Alkali Hydroxide

Supplier: Glendale Packaging Pty Ltd
Address: Unit 1/75 Newton Road, Wetherill Park NSW 2164
Telephone Number: (02) 9756 2315
Emergency Telephone: (02) 9756 2315 or Poisons Information 131126
A.C.N: 114 020 450

2. HAZARDS IDENTIFICATION

Hazard Classification: Hazardous substance Dangerous Goods. Classified as hazardous according to the criteria of NOHSC.

Hazard Category: C Corrosive,

Risk Phrase(s)
R35 – Causes severe burns
R41 - Risk of serious damage to eyes.

Safety Phrase(s):
S2 – Keep out of reach of Children.
S26 – In case of contact with eyes, rinse immediately with Plenty of water, and contact a Poison Information Centre.
S37/39 – Wear Suitable gloves and eye/face protection.

SUDSP Classification: Schedule 6
ADG Classification: Class 8 Corrosive



3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Caustic Soda, Sodium Hydrate, Lye

Appearance: White deliquescent solid in small bead form, absorbs water on Exposure to air.

Ingredients:

Chemical Name:	Risk Phases:	CAS No:	Proportion (w/w):
Sodium Hydroxide	R35, R41	1310-73-2	95 - 100%

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

4. FIRST AID MEASURES

Poison Information Centres in each state can provide additional assistance for Scheduled poisons. Phone 131126 from anywhere in Australia.

Ingestion:

Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Rinse mouth thoroughly with water. Give water to drink. DO NOT induce vomiting. If victim can swallow, have him/her drink 250 to 300mls of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Obtain medical attention immediately.

Eye Contact:

Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 30 minutes, by the clock, holding the eyelid(s) open. Take care not to rinse contaminated water into the non affected eye. If irritation persists, repeat flushing. If available, a neutral saline solution may be used to flush the contaminated eye(s) an additional 30 minutes. Obtain medical attention immediately.

Skin Contact:

First aiders avoid direct contact with this chemical. As quickly as possible, flush contaminated area with lukewarm, gently running water for at least 30 minutes, by the clock. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). If irritation persists, repeat flushing. Obtain medical attention immediately. Completely decontaminate clothing, shoes and leather goods before re-use or discard.

Inhalation:

Remove source of contamination or move victim to fresh air. Obtain medical advice immediately.

**Other First Aid:**

Provide general supportive measures (comfort, warmth, rest). Consult a physician and/or the nearest poison Information Centre for all exposures except minor instances of inhalation contact.

Advice to Doctor:

Treat symptomatically as for strong alkalis.

5. FIRE FIGHTING MEASURES

Specific hazards:

Non-Combustible material.

Fire fighting further advice:

Not Combustible. Can react with some metals generating flammable hydrogen gas. Contact with some organic chemicals can produce violent or explosive conditions. Reaction with water may generate enough heat to ignite combustible material.

Suitable Extinguishing media:

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

6. ACCIDENTAL RELEASE MEASURES

Small Spills:

Wear personal protective equipment. Sweep up but avoid generating dust. Contain solutions using sand or diatomaceous earth. Collect and seal in properly labeled drums. Wash remaining area with large volumes of water.

Large Spills:

PRECAUTIONS: Restrict access to area. Clear area of unprotected personnel. Provide adequate protective equipment and ventilation. Remove chemicals which can react with the Spilled material. Spills are slippery.

CLEAN UP: Contain spill or leak. Do not allow entry into sewers or waterways. Neutralise the final traces and flush area with water. Spilled solutions should be contained by dyking with inert material, such as sand or earth. Solutions can be recovered or carefully diluted with water and cautiously neutralized with acids such as acetic acid or hydrochloric acid.

DISPOSAL: Federal, state and local regulations should be reviewed prior to disposal. May be possible to neutralise, dilute and flush the material into a sewer. May be possible to atomise dilute solutions in an approved combustion chamber. Harmful to aquatic life in high concentrations.



7. HANDLING AND STORAGE

Handling:

Avoid generating mist or spray. When diluting solution, add sodium hydroxide to water in small amounts. Heat evolved when dissolving may cause boiling and splattering. Add to large volumes of cold water only. Label containers. Keep containers closed when not in use. Empty containers may contain residues which are hazardous. Use smallest possible amounts in designated areas with adequate ventilation. Have emergency equipment (for fires, spills, and leaks e.t.c) readily available.

Storage Conditions:

Materials that react violently with sodium hydroxide should not be stored in the same area. Use corrosion- resistant structural materials, lightning and ventilation systems in the storage area. Store in suitable labeled containers. Keep containers tightly closed when not in use and empty. Protect from damage. Containers made of nickel alloys are preferred. Steel containers are acceptable if temperatures are not elevated. Storage tanks should be above ground and surrounded with dykes capable of holding entire contents. Limit quantity of material in storage. Restrict access to storage areas. Post warning signs when appropriate. Keep storage area separate from populated work areas. Inspect periodically for deficiencies such as damage or leaks.

Class 8 goods are not to be loaded with Classes 1, 4.3, 5.1, 5.2, 6 *, 7, or foodstuffs or foodstuff empties. * When Class 6 is a cyanide and class 8 is an acid. Do not store or transport with strong acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards:

TLV/TWA: 2mg/m³, peak, NOHSC Australia.

Engineering Controls:

Maintain concentration below recommended exposure limit.

Engineering control methods to reduce hazardous exposures are preferred. General methods include mechanical ventilation, (dilution and general exhaust), process or personnel enclosure, control of process conditions and process modification (e.g. substitution of a less hazardous material). Administrative controls and personal protective equipment may also be required. Use corrosion – resistant ventilation system separate from other exhaust ventilation systems. Exhaust directly to the outside. Use local exhaust ventilation and process enclosure if necessary, to control airborne spray / mists. Supply sufficient air to make up for air removed by exhaust systems.



Personal Protection:

RESPIRATORY PROTECTION: If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

Have appropriate equipment available for use in emergencies such as spills or fire. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

CONCENTRATIONS IN AIR: **UP TO 50 mg/m³**; Powered air- purifying respirator with dust and mist filters(s); or SAR operated in a continuous flow mode. **UP TO 100 mg/m³**: Full-face piece SCBA; or full-face piece SAR; or full-face piece respirator with high-efficiency particulate filter(s). **Up to 250mg/m³**. Positive pressure, full-face piece.

SAR. **EMERGENCY OR PLANNED ENTRY IN UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS**; Positive pressure, full- face piece SCBA; or positive pressure, full – face piece SAR with an auxiliary positive pressure SCBA.

ESCAPE: Full- face piece respirator with high- efficiency particulate filter(s); or escape – type SCBA. NOTE: The IDLH concentration for sodium hydroxide is 250 mg/m³. NOTE: Substance causes eye irritation or damage; eye protection needed.

ABBREVIATIONS: SAR = supplied – air respirator; SCBA = self-contained breathing apparatus. IDLH = Immediately Dangerous to Life or Health.

NOTE: In these recommendations the IDLH concentration is defined as the maximum concentration which would not cause any escape impairing symptoms or irreversible health effects to a person if the respirator failed.

Eye/Face Protection: Splash proof chemical safety goggles. A face shield may also be necessary.

Skin Protection: Impervious gloves, coveralls, boots and/or other resistant protective clothing. Have a safety shower/eye-wash fountain readily available in the immediate work area.

RESISTANCE OF PROTECTIVE CLOTHING; SODIUM HYDROXIDE: **GOOD:** Chlorinated polyethylene (CPE), natural rubber, neoprene, nitrile/polyvinyl chloride (PVC), nitrile, polyethylene (PE), PVC, polyurethane, styrene – butadiene rubber (SBR), Viton/chlorobutyl rubber, Silver shield, SBR/neoprene **FAIR/POOR:** Butyl rubber **SODIUM HYDROXIDE SOLUTIONS, LESS THAN 30%:** **GOOD:** PE, neoprene/natural rubber,

SODIUM HYDROXIDE SOLUTIONS, 30 – 70%: **VERY GOOD:** Natural rubber, neoprene, nitrile/PVC, nitrile, PE, PVC, Viton, and Saranex **GOOD:** Butyl rubber, CPE, Viton neoprene, butyl rubber/neoprene, Teflon, natural rubber/ neoprene/nitrile-butadiene rubber, SBR, neoprene/natural rubber, neoprene/ PVC **FAIR/POOR:** Polyvinyl alcohol, nonwoven PE.

NOTE: Resistance of specific materials can vary from product to product. Evaluate resistance under conditions of use and maintain clothing carefully.

Personal Protection comments. Remove contaminated clothing promptly. Keep contaminated clothing in closed containers. Discard or launder before rewearing. Inform



laundry personnel of contaminants hazards. DO not eat, drink or smoke in work areas. Wash hands thoroughly after handling this material. Maintain good house keeping.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Water deliquescent solid in small bead form.
Odour Threshold:	Odourless.
Specific Gravity:	Approx 1.1 to 1.5.
Flash point:	Non-combustible (does not burn)
Flammability Limits:	Non-flammable
pH:	12 (0.05% solution); 13 (1% Solution) 14 (5% Solution).
Solubility in water:	Completely Soluble.

10. STABILITY AND REACTIVITY

Incompatibility – Materials to avoid

Strong Acids – May react violently

Metals – reaction may produce flammable and explosive hydrogen gas.

Organohalogen Compounds – May react to form spontaneously combustible compounds.

Nitro and chloro organic compounds – May react explosively.

Hazardous decomposition Products – None.

Hazardous Polymerization – Does not occur

Corrosivity to metals – Corrosive to steel, aluminum, tin. Corrosive to steel at elevated temperatures.

Fire Explosion Hazard:

Explosion Data – Sensitivity to mechanical impact > Not Applicable

Explosion Data – Sensitivity to Static Charge > Not Applicable

Fire Hazard Comments – Sodium hydroxide and its solutions will not burn or support combustion. However, reaction of sodium hydroxide with a number of commonly encountered oxidisable materials (see Chemical Reactivity) can generate sufficient heat to ignite nearby combustible materials.

Fire Extinguishing Agents – Use an extinguisher appropriate to the material which is burning.

Fire Fighting Procedures – Water can be used to extinguish a fire in an area where product is stored.

Combustion Products – None

Fire Fighters to wear full body protective clothing with breathing apparatus.

11. TOXICOLOGICAL INFORMATION

**Acute Effects:****Ingestion:**

There are no reported cases of industrial workers ingesting sodium hydroxide or its solutions. Should ingestion occur, severe pain; burning of the mouth, throat and oesophagus, vomiting, diarrhea, collapse and possible death may result.

Eye Contact:

Extremely Corrosive. Can penetrate deeply causing irritation or severe burns depending on the concentrations and duration of exposure. In severe cases, ulceration and permanent blindness may occur.

Skin Contact:

Extremely Corrosive. Capable of causing severe burns with deep ulceration. Can penetrate to deeper layers of skin. Corrosion will continue until removed. Severity depends on concentration and duration of exposure. Burns are not immediately painful; onset of pain may be minutes to hours.

Inhalation:

Effects of inhaling sodium hydroxide mists have not been clearly established. Most references indicate that the irritation of the nose, throat and lungs would occur due to the corrosive nature of sodium hydroxide. However, there are no actual reports of industrial workers exposed to sodium hydroxide experiencing these symptoms.

Long Term Effects:

HEALTH EFFECTS – There have been no documented effects due to long – term exposure to sodium hydroxide.

CARCINOGENICITY – Sodium hydroxide has been implicated as a cause of cancer of the oesophagus in individuals who have ingested it. The cancer may develop 12 to 42 years after the ingestion incident. Similar cancers have been observed at the sites of severe thermal burns. These cancers may be due to tissue destruction and scar formation rather than the sodium hydroxide itself. Not classified as a carcinogen by Work safe Australia.

TERATOGENICITY and EMBRYOTOXICITY – Insufficient Information.

TOXICOLOGICAL SYNERGISTIC MATERIALS – Insufficient Information.

MUTAGENICITY – Insufficient Information.

POTENTIAL FOR ACCUMULATION – None.

Toxicity Data:

ANIMAL TOXICITY DATA: Lethal dose (rabbits, oral): 500 mg/kg. Irritant dose (rabbits, dermal): 50 mg/24 hour-severe skin irritant. Irritant dose (rabbits, ocular): 50 ug/24 hour – severe eye irritant. More detailed information about the effects of chemicals on health can be obtained from NOHSC Australia.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.



13. DISPOSAL CONSIDERATIONS

Refer to State Land Waste Management Authority. Decontaminate empty containers before disposal, by triple rinsing with water, using rinse water in further processing or neutralize rinse water.

14. TRANSPORT INFORMATION

U.N. Number:	1823
Proper Shipping Name:	SODIUM HYDROXIDE SOLID
DG Class:	8
Hazchem Code:	2X
Packing Group:	II
EPG:	8A1
Segregation Dangerous Goods:	Not to be loaded with Classes 1, 4.3, 5.1, 5.2, 6, 7, Class 8 Strong Acids or Foodstuffs, or Foodstuff empties.

15. REGULATORY INFORMATION

Classified as hazardous according to the criteria of NOHSC, Schedule 6 poison according to SUSDP, Class 8 according to Australian Dangerous Goods.

R-phrases: **R35** Causes severe burns.

R41 Risk of serious damage to eye.

S-phrases: **S2** Keep out of reach of children

S26 In case of contact with eyes, rinse immediately with plenty of water and Seek medical advice.

S37/39 Wear suitable gloves and eye/face protection.

16. OTHER INFORMATION

References: (1) National Code of Practice for the preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)], (2) List of Designated Hazardous Substances [NOHSC: 10005:1999] (3) ADG Code 6th edition. (4) Formula Chemicals Caustic Soda Pearl MSDS issued December 2005.

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END OF MSDS
