SAFETY DATA SHEET

Caustic Soda Beads

SECTION 1: IDENTIFICATION

Product identifier used on a label:	**Caustic Soda Beads**
Product code:	1009
HS Code:	281511
CAS-No.:	1310-73-2
Synonyms:	Sodium Hydroxide, Lye
Recommended use of the chemical and restrictions on use:	Chemical reagent
Chemical family:	Inorganic base
Chemical formula:	NaOH
Name, address and phone # of supplier:	Aqua Bond Inc. 440 Passmore Ave. Toronto, ON, M1V 5J8 (416) 754-7211
24 Hr. Emergency phone #:	**CANUTEC (613) 996-6666**

SECTION 2: HAZARDS IDENTIFICATION

Classification of the chemical:	This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).
Hazard classification:	Corrosive to metals (Category 1), H290 Skin corrosion (Category 1A), H314 Serious eye damage (Category 1), H318 Short-term (acute) aquatic hazard (Category 3), H402
Label elements:	
Signal word:	DANGER
Hazard statements:	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H402 Harmful to aquatic life.

Precautionary statements:

Prevention

P234 Keep only in original packaging.
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
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.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
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/doctor.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.

Storage and Disposal

P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other Hazards: Not available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient name	Synonyms	CAS Number	Concentration (wt. %)
Sodium hydroxide	Caustic soda, Lye	1310-73-2	99 - 100%

SECTION 4: FIRST-AID MEASURES

Description of first aid measures:

Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Call a physician immediately.
Eye contact	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention if pain and irritation develops or persists.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed:
Causes severe skin burns and eye damage. (See section 2).

Indication of any immediate medical attention and special treatment needed: No information available.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:	Use media appropriate for the surrounding fire.
Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	Not Available.
Flash point:	Not Available.
Autoignition Temperature:	Not Available.
Specific hazards arising from the substance:	Sodium oxides.
Hazardous thermal decomposition products:	Sodium oxides.
Special protective equipment and precautions for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapours, mist or gas. Avoid dust formation. Ensure adequate ventilation. Wear respiratory protection. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.
Environmental precautions:	Should not be released into environment. Prevent from reaching drains, sewer, or waterway. Report releases as required by local and national authorities.
Methods and materials for containment and cleaning up:	Wear protective eyeware, gloves, and clothing. Refer to Section 8. Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Do not flush caustic residues to the sewer. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Absorb neutralized caustic residue on clay, vermiculite or other inert substance and package in a suitable container for disposal. Always obey local regulations. Keep in suitable closed containers for disposal. Refer to Section 13. If necessary use trained response staff or contractor.
Special spill response procedures:	In case of transportation accident, contact CHEMTREC at 1-800-424-9300.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	If adding caustic soda to water, add the caustic soda into water while stirring; never the reverse. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition.
Conditions for safe storage:	Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Do not allow product to get in contact with water during storage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Do not store with aluminum or magnesium. Do not mix with acids or organic materials. Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials
Incompatible materials:	Strong oxidizing agents, Strong acids, Organic materials
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions: Sodium oxides. Other decomposition products – no information available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Ingredient	**Exposure limits**
Sodium hydroxide (CAS No. 1310-73-2)	Airborne Exposure Limits: 2 mg/m^3 Ceiling - Canada. Alberta, Occupational Health and Safety Code (table 2: OEL). 2 mg/m^3 Ceiling - Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants. 2 mg/m^3 Ceiling - Canada. British Columbia OEL. 2 mg/m^3 Ceiling - OSHA Permissible Exposure Limit (PEL). 2 mg/m^3 Ceiling - ACGIH Threshold Limit Value (TLV).

Engineering controls:	Ensure adequate ventilation, especially in confined areas. Use mechanical exhaust or laboratory fumehood to avoid exposure. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Individual protection measures:	**Eye Protection**: Use chemical safety goggles and / or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area. **Skin Protection**: Wear appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. **Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White pellets
Odour:	Odourless
Odour threshold:	Not available.
pH:	14 (50 g/l at 20 °C)
Melting point/Freezing point:	318 °C (604 °F)
Initial boiling point/boiling range:	1,390 °C (2,534 °F)
Flash point:	Not available.
Evaporation rate:	Not available.
Flammability (solid; gas) :	Not available.
Lower flammable/explosive limit:	Not available.
Upper flammable/explosive limit:	Not available.
Vapour pressure:	< 24.00 hPa at 20 °C (68 °F) 4.00 hPa at 37 °C(99 °F)
Vapour density:	1.38 (Air = 1.0)
Relative density:	2.1300 g/cm^3
Solubility:	ca.1,260 g/L in water at 20 °C (68 °F)
Partition coefficient (n-octanol/water) :	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Very hygroscopic. Can slowly pick up moisture from air and react with Carbon Dioxide from air to form Sodium Carbonate.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Sodium Hydroxide in contact with acids and organic halogen compounds, especially Trichloroethylene, may cause violent reactions. Contact with metals such as Aluminum, Magnesium, Tin, and Zinc may cause formation of flammable Hydrogen gas. Sodium Hydroxide, even in fairly dilute solution, reacts readily with various sugars to produce Carbon Monoxide.
Conditions to avoid:	Moisture, dust formation and incompatible materials.
Incompatible materials:	Strong oxidizing agents, Strong acids, Organic materials.
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions - Sodium oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity data

Acute toxicity:

Skin corrosion/irritation
Skin: Rabbit, Result: Severe skin irritation - 24 h, (RTECS).

Serious eye damage/eye irritation
Eyes – Rabbit, Result: Causes serious eye irritation. (OECD Test Guideline 405) Causes serious eye damage.

Respiratory or skin sensitisation
Patch test: - Human Result: negative Remarks: (ECHA).
Inhalation: Corrosive to respiratory system.

Information on the likely routes of exposure: Skin, eye, ingestion, inhalation

Potential health effects (acute):

Inhalation: Severe 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 or runny nose. Severe pneumonitis may occur.
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, diarrhea, fall in blood pressure. Damage may appears days after exposure
Skin Contact: Corrosive. Contact with skin can cause irritation or severe burns and scarring with greater exposures.

	Eye Contact: Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness. **Chronic Exposure**: Prolonged contact with dilute solutions or dust has a destructive effect upon tissue.
Target organ effects:	Specific target organ toxicity - single exposure: No data available Acute oral toxicity - if ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. Acute inhalation toxicity - burns of mucous membranes, cough, shortness of breath, possible damage of respiratory tract.
Carcinogenicity:	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
Potential chronic health effects:	No information available.
Teratogenicity:	No information available.
Developmental effects:	No information available.
Fertility effects:	No information available.
Irritation/corrosion:	Irritation to eyes, skin and respiratory tract.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish

LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h (ECOTOX Database)

LC50 - Oncorhynchus mykiss (rainbow trout) - 45,4 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Ceriodaphnia (water flea) - 40.4 mg/l - 48 h (ECHA)

Toxicity to bacteria

EC50 - Photobacterium phosphoreum - 22 mg/l - 15 min (External MSDS)

Other adverse effects: Harmful to aquatic life.
Persistence and degradability: Not available.
Bioaccumulative potential: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

UN Number:	1823 (DOT, IMDG, IATA)
UN proper shipping name:	SODIUM HYDROXIDE, SOLID
Transport hazard class:	8 (DOT, IMDG, IATA)
Packing group:	II (DOT, IMDG, IATA)
Special precautions for user:	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident.

SECTION 15: REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

SECTION 16: OTHER INFORMATION

NFPA Ratings: Health: 3 Flammability: 0 Reactivity: 0

Revision date: January 14, 2020

UN = United Nations

Disclaimer

While the information and recommendations set forth are believed to be accurate as of data hereof, Aqua Bond Inc., makes no warranty with respect thereto and disclaims all liability from reliance thereon.