Material Safety Data Sheet

Date of issue 15 March 2013
Version 2.01

1. Product and company identification

Product name : Caustic Soda Beads
Code : 0040
Synonym : Sodium Hydroxide; Anhydrous Sodium Hydroxide, Caustic Soda; NaOH; PELS™ Caustic Soda Beads; PELS™ Plus Caustic Soda Beads
Supplier : Axiall, LLC
115 Perimeter Center Place
Suite 460
Atlanta, GA 30346
USA
Emergency telephone number : +1 304-455-6882
Technical Phone Number : 1-800-243-6774 (C/A) 8am-5pm Eastern time

2. Hazards identification

Emergency overview : DANGER!

HARMFUL OR FATAL IF SWALLOWED. CAUSES SEVERE EYE AND SKIN BURNS. CAUSES RESPIRATORY TRACT IRRITATION. HARMFUL IF INHALED. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. Add this product only to water. Never add water to this product. Do not add to warm or hot water, a violent eruption or explosive reaction can result. Avoid contact with organic materials. Take any precaution to avoid mixing with strong acids. May cause fire or explosion.

Do not swallow. Do not get in eyes or on skin or clothing. Do not breathe dust or mists from solutions. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : Harmful if inhaled. Causes burns. Corrosive to the respiratory system.
Ingestion : Harmful or fatal if swallowed. May cause burns to mouth, throat and stomach.
Skin : Severely corrosive to the skin. Causes severe burns.
Eyes : Severely corrosive to the eyes. Causes severe burns. Direct contact with the eyes can cause irreversible damage, including blindness.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
Respiratory tract irritation
coughing
Edema
Ingestion : Adverse symptoms may include the following:
stomach pains
nausea or vomiting
gastric perforation
blistering may occur
Skin : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
ulcerations
Eyes :

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2 . Hazards identification

Adverse symptoms may include the following:
pain
watering
redness
Cornea opacity
ulcerations
Direct contact with the eyes can cause irreversible damage, including blindness.

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
sodium hydroxide	1310-73-2	96 - 100
sodium chloride	7647-14-5	0 - 2
sodium carbonate	497-19-8	0 - 2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products :

5 . Fire-fighting measures

Decomposition products may include the following materials:
carbon oxides
halogenated compounds
metal oxide/oxides

Special protective equipment 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.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Special provisions : If mixed with water, or likely to become mixed with water or any liquid, dike area to contain spill. Recycle, if possible. Or, dilute spill with large amounts of water then neutralize with dilute acid. Dispose of contents and container in accordance with all local, regional, national and international regulations. After all visible traces have been removed, flush area with large amounts of water.

Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on skin or clothing. Do not breathe dust or mists from solutions. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Add this product only to water. Never add water to this product. Do not add to warm or hot water, a violent eruption or explosive reaction can result. May cause fire or explosion. Avoid contact with organic materials. Take any precaution to avoid mixing with strong acids. When making solutions or diluting, only add caustic soda slowly to surface of cold water while stirring. Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Caustic soda may react with various sugars to generate carbon monoxide. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not enter a storage tank or container (truck or rail) that has contained this product, even if it appears empty.

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8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	IPEL
sodium hydroxide	TWA STEL	Not established 2 mg/m³ C	2 mg/m³ Not established	Not established 2 mg/m³ C	Not established 2 mg/m³ C	Not established Not established

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes : Chemical splash goggles and face shield.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : Impervious gloves. nitrile, neoprene

Respiratory : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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9 . Physical and chemical properties

Physical state	:	Solid. [Dustless granules.]
Flash point	:	Closed cup: Not applicable. [Product does not sustain combustion.]
Color	:	White.
Odor	:	Odorless.
pH	:	Strongly basic
Boiling/condensation point	:	1390°C (2534°F)
Melting/freezing point	:	310 to 320°C (590 to 608°F)
Specific gravity	:	2.13
Density (lbs / gal)	:	17.78
Bulk Density (g/cm³)	:	1.12 (loosely packed)
Vapor pressure	:	Not applicable.
Vapor density	:	Not applicable
Volatility	:	0% (w/w)
Evaporation rate	:	Not applicable.
Viscosity	:	Not applicable.
Solubility	:	Easily soluble in the following materials: cold water.
Water Solubility at room temperature	:	3470 g/l @ 100°C
Partition coefficient: n-octanol/water	:	Not available.
% Solid. (w/w)	:	100

10 . Stability and reactivity

Stability	:	Stable under recommended storage and handling conditions (see Section 7).
Conditions to avoid	:	Avoid increased storage temperature. Pressure hazard
Materials to avoid	:	Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids. Reactive or incompatible with the following materials: metals (Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.), acids, organic materials (May cause fire or explosion.), food sugars (Caustic soda may react with various sugars to generate carbon monoxide.), water (Aqueous reaction with caustic soda can generate heat (strongly exothermic).)
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
sodium hydroxide	LD50 Oral	Rat	0.24 g/kg	-
sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
sodium carbonate	LD50 Oral	Rat	4090 mg/kg	-

Conclusion/Summary : Harmful or fatal if swallowed. Harmful if inhaled.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Skin : Severely corrosive to the skin. Causes severe burns.

11 . Toxicological information

Eyes : Severely corrosive to the eyes. Causes severe burns. Direct contact with the eyes can cause irreversible damage, including blindness.

Respiratory : Corrosive to the respiratory system.

Sensitization

Skin : Not available.

Respiratory : Not available.

Target organs : May cause damage to the following organs: lungs, gastrointestinal tract, upper respiratory tract, skin, eyes.
Contains material which may cause damage to the following organs: eye, lens or cornea, stomach.

Carcinogenicity

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity

Teratogenicity : No known significant effects or critical hazards.

Reproductive toxicity

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
sodium hydroxide	Acute LC50 196 mg/L Marine water	Fish - Guppy - Poecilia reticulata	96 hours
	Chronic NOEC 56 mg/L Marine water	Fish - Guppy - Poecilia reticulata	96 hours
sodium chloride	Acute LC50 1294600 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
	Acute EC50 402600 to 469200 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	Chronic NEL 0.86 g/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
sodium carbonate	Acute LC50 300000 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
	Acute LC50 265000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours

Conclusion/Summary : Harmful to aquatic life.

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13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	1823	SODIUM HYDROXIDE, SOLID	8	II	-
IMDG	1823	SODIUM HYDROXIDE, SOLID	8	II	-
DOT	1823	SODIUM HYDROXIDE, SOLID	8	II	**Reportable quantity** 1039.3 lbs / 471.85 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: sodium hydroxide: 1000 lbs. (454 kg);

15 . Regulatory information

United States inventory (TSCA 8b) : All components are listed or exempted.

Australia inventory (AICS) : All components are listed or exempted.

Canada inventory (DSL) : All components are listed or exempted.

China inventory (IECSC) : All components are listed or exempted.

Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.

Japan inventory (ENCS) : All components are listed or exempted.

Korea inventory (KECI) : All components are listed or exempted.

New Zealand (NZIoC) : All components are listed or exempted.

Philippines inventory (PICCS) : All components are listed or exempted.

United States

SARA 302/304: No products were found.

CERCLA: Hazardous substances.: sodium hydroxide: 1000 lbs. (454 kg);

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
sodium hydroxide	1310-73-2	Y	N	N	Y	N
sodium chloride	7647-14-5	N	N	N	N	N
sodium carbonate	497-19-8	Y	N	N	Y	N
	Product as-supplied :	Y	N	N	Y	N

California Prop. 65

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15 . Regulatory information

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Canada

WHMIS (Canada) : Class E: Corrosive solid. Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 0 **Health** : 3 **Reactivity** : 1

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 3 **Flammability** : 0 **Physical hazards** : 1

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability** : 0 **Instability** : 1

Other special considerations : NSF® Standard 60 Drinking Water Treatment Chemicals – PELS™ Caustic Soda Beads and PELS™ Plus Caustic Soda Beads have Health Effect Listing and are certified for maximum use of 100 mg/l.

Date of previous issue : **3/4/2013.**

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by Axiall, LLC; and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.