To Our Customers:

The attached Safety Data Sheet (SDS) was prepared by the vendor of the product you purchased through one of our divisions. We used the manufacturer's electronic document directly or scanned a paper copy and generated a file for our automated SDS delivery system.

All statements, technical information, and recommendations contained therein are solely that of the manufacturer of the product. We at Zep Inc. did not verify the accuracy and completeness of the statements and do not warrantee or guarantee the information. We provide vendor SDSs to assist our customers in their compliance efforts. The attached document is in compliance with one of the respective country regulatory requirements noted below:

The OSHA Hazard Communication Standard (in the United States)
The Hazardous Products Regulations (in Canada)

We made every effort to deliver all of the information prepared by the manufacturer. We cannot anticipate all conditions under which this information will be used. If you have any questions about the statements on the SDS, please contact the company shown on the document.

Zep Inc. assumes no liability or responsibility for loss or damage resulting from the improper use or handling of this product, from incompatible product combinations, or from the failure to follow instructions, warnings, and advisories in the manufacturer's product label and Safety Data Sheet.

Sincerely,

Product Stewardship Team
Zep Inc.

Material Safety Data Sheet

LA0994
Caustic Soda Beads

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Id: LA0994
Product Name: Caustic Soda Beads
Synonyms: Sodium Hydroxide or Lye
Chemical Family: None Known
Application: Metal finishing. Cleaning agent. Petroleum industries. Chemical processing.

Distributed By:
Univar Canada Ltd.
9800 Van Horne Way
Richmond, BC
V6X 1W5

Prepared By: The Environment, Health and Safety Department of Univar Canada Ltd.
Preparation date of MSDS: 02/Feb/2015
Telephone number of preparer: 1-866-686-4827

24-Hour Emergency Telephone Number (CANUTEC): (613) 996-6666

2. HAZARDS IDENTIFICATION

Potential Acute Health Effects:
Eye Contact: Causes severe eye burns. Small quantities can result in permanent damage and/or loss of vision.
Skin Contact: Causes severe burns. Corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. May cause dermatitis.
Inhalation: Corrosive to the respiratory passage. Inhalation of dusts or mists can cause damage to the upper respiratory tract and to the lung tissue depending on severity of exposure. Effects can range from mild irritation of mucous membranes, severe pneumonitis and destruction of lung tissue.
Ingestion: Ingestion can cause damage to the mucous membranes, mouth and digestive system. Ingestion of product may result in death.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	Percentage (W/W)	LD50s and LC50s Route & Species:
Sodium Hydroxide 1310-73-2	96-100	Oral LDLo (Rabbit) : 500mg/kg
Sodium Carbonate 497-19-8	1-2	Dermal LD50 Mouse = 2210 mg/kg Inhalation LC50 Rat = 2300 mg/m^3 2 h Oral LD50 Rat = 4090 mg/kg
Sodium Chloride 7647-14-5	1-2	Oral LD50 Rat = 3 g/kg Inhalation LC50 Rat > 42 g/m^3 1 h

Note: No additional remark.

4. FIRST AID MEASURES

Eye Contact: Utmost speed is essential. Flush eyes with gently flowing water for 15-30 minutes, while holding the eyelid(s) open. Take care not to rinse the contaminated water into the unaffected eye or face. Seek immediate medical attention. Have an ophthalmologist make an evaluation of eye injury.
Skin Contact: Flush affected skin with gently flowing water for 15-30 minutes and remove contaminated clothing while rinsing. If wearing goggles, flush head and face thoroughly before removing goggles. Obtain medical attention immediately.
Inhalation: If symptoms are experienced, remove source of contamination or move victim to fresh air. If symptoms persist, get medical attention. If breathing has stopped, trained personnel should begin artificial respiration (AR) immediately. If breathing is difficult, give oxygen. In situations where administering oxygen is appropriate, first aiders must be trained in the safe use and handling of oxygen. It is preferable to administer oxygen under a doctor's supervision or advice. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Immediate medical assistance is required.
Ingestion: Gently wipe or rinse the inside of the mouth with water. Do not induce vomiting. Seek immediate medical attention. Administer artificial respiration if breathing has stopped. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing.
Notes to Physician: Treatment based on sound judgment of physician and individual reactions of patient.

5. FIRE FIGHTING MEASURES

Flash Point: None.
Flash Point Method: Not applicable.
Autoignition Temperature: Not available.
Flammable Limits in Air (%): Not Available.
Extinguishing Media: Not flammable. Use extinguishing media appropriate for surrounding fire.
Special Exposure Hazards: Contact with some metals (particularly magnesium, aluminum and galvanized zinc) can rapidly generate hydrogen. Use water spray to cool containers. Do not get water inside container. Avoid direct contact of this product with water as this can cause a violent exothermic reaction.
Hazardous Decomposition/Combustion Materials (under fire conditions): Oxides of sodium.
Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.
NFPA RATINGS FOR THIS PRODUCT ARE: HEALTH 3, FLAMMABILITY 0, INSTABILITY 1
HMIS RATINGS FOR THIS PRODUCT ARE: HEALTH 3, FLAMMABILITY 0, REACTIVITY 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment.
Environmental Precautionary Measures: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. Consult local authorities.
Procedure for Clean Up: Scoop up or vacuum up and place in an appropriate closed container. Avoid raising dust. Isolate spill and stop leak where safe. If the material has been mixed with water or any other liquid, then dike area to contain spill. Dilute spill with large amounts of water and neutralize with dilute acid. Use vacuum truck to pick up neutralized material for proper disposal. Flush area with water to remove trace residue.

7. HANDLING AND STORAGE

Handling: For food plant and other industrial use only. Handle and open containers with care. Never touch eyes of face with hands or gloves that may be contaminated with this product. Do not ingest. Avoid inhalation of chemical. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment. CAUTION - Do not add water to caustic soda beads. The proper way is to add the beads slowly to the surface of cold water and agitate while they dissolve to avoid violent eruption or explosive reaction. If the water is not agitated, adding caustic soda beads rapidly is dangerous. The danger is greater if the water is warm instead of cold. The high heat of solution of dry caustic soda may cause a sudden violent eruption of caustic solution. Also, a layer of concentrated solution may form and suddenly mix with a layer of less concentrated solution. In this case, the high heat of solution may create steam and cause the solution to erupt. Caustic soda reacts with magnesium, aluminum, zinc (galvanized), tin, chromium, brass and bronze, generating hydrogen which is explosive. 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. Do not enter a storage tank or container (truck or rail) that has contained this product, even if it appears empty.
Storage: Store in a dry, well ventilated area, separate from acids, peroxides, metals, easily ignitable materials and other incompatibles. Protect against moisture, water and physical damage. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen can be generated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Provide local exhaust to meet TLV requirements if making solutions or grinding up and mist or dust is generated. Ventilation facilities should be corrosion resistant. Localized ventilation should be used to control dust levels.
Respiratory Protection: If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator. In case of spill or leak resulting in unknown concentration, use a NIOSH approved supplied air respirator.
Gloves:

Appropriate chemical resistant gloves should be worn. Nitrile gloves. Neoprene gloves.
Skin Protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance. PVC clothing. Rubber apron. Rubber boots.
Eyes: Close fitting chemical safety goggles with faceshield.
Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Sodium Hydroxide	2 mg/m^3 Ceiling	2 mg/m^3 Ceiling	10 mg/m^3
Sodium Carbonate	Not available.	Not available.	Not Available.
Sodium Chloride	Not available.	Not available.	Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid Beads
Color: White - off white
Odor: Odorless
pH 12 (0.05% solution); 13 (0.5% solution); 14 (5% solution) Strongly basic
Specific Gravity: 2.130
Boiling Point: 1390°C /2534°F
Freezing/Melting Point: 310-320°C / 590-608°F
Vapor Pressure: Non-volatile
Vapor Density: Non-volatile
% Volatile by Volume: Non-volatile
Evaporation Rate: Non-volatile
Solubility: Soluble in water.
VOCs: Not Available.
Viscosity: Not Available.
Molecular Weight: Not Available.
Other: Not Available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.
Hazardous Polymerization: Will not occur
Conditions to Avoid: Addition of water results in large temperature increase. Avoid contact with incompatible materials.
Materials to Avoid: Tin. Aluminum. Zinc. Leather. Wool. Acids. Organic halogen compounds or organic nitro compounds. Magnesium metal. Brass. Bronze. Carbon monoxide gas may be produced on contact with reducing sugars. Water can cause violent reaction.
Hazardous Decomposition Products: Oxides of sodium.
Additional Information:

Contact with water may generate sufficient heat to ignite combustible materials.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: Ingestion can cause damage to the mucous membranes, mouth and digestive system. Ingestion of product may result in death.
Skin Contact: Causes severe burns. Corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. May cause dermatitis.
Inhalation: Corrosive to the respiratory passage. Inhalation of dusts or mists can cause damage to the upper respiratory tract and to the lung tissue depending on severity of exposure. Effects can range from mild irritation of mucous membranes, severe pneumonitis and destruction of lung tissue.
Eye Contact: Causes severe eye burns. Small quantities can result in permanent damage and/or loss of vision.

Additional Information: No additional information available.

Acute Test of Product:
Acute Oral LD50: Not Available.
Acute Dermal LD50: Not Available.
Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Sodium Hydroxide	Not listed.	Not listed.
Sodium Carbonate	Not listed.	Not listed.
Sodium Chloride	Not listed.	Not listed.

Carcinogenicity Comment: No additional information available.

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: Not Available.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ingredients	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
Sodium Hydroxide	LC50 (Rainbow Trout) 1149 mg/l LC50 (Chinook Salmon) 152 mg/l	Not Available.	Not Available.
Sodium Carbonate	310 - 1220 mg/L LC50 (Pimephales promelas) 96 h static 300 mg/L LC50 (Lepomis macrochirus) 96 h static	Not Available.	EC50 (Nitzschia) 242 mg/L LC50 (Daphnia Magna) 347 mg/L (24hr) LC50 (Daphnia Magna) 565 mg/L (96hr)
Sodium Chloride	4747 - 7824 mg/L LC50 (Oncorhynchus mykiss) 96 h flow-through 5560 - 6080 mg/L LC50 (Lepomis macrochirus) 96 h flow-through 6020 - 7070 mg/L LC50 (Pimephales promelas) 96 h static 6420 - 6700 mg/L LC50 (Pimephales promelas) 96 h static 12946 mg/L LC50 (Lepomis macrochirus) 96 h static 7050 mg/L LC50 (Pimephales promelas) 96 h semi-static	Not Available.	Not Available.

Other Information: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations. Properly neutralized liquid residues (pH 6 to 9) may be disposed of in waste water treatment facilities which allow the discharge of neutral salt solutions.
Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

DOT (U.S.):
DOT Shipping Name: SODIUM HYDROXIDE, SOLID
DOT Hazardous Class 8
DOT UN Number: UN1823
DOT Packing Group: II
DOT Reportable Quantity (lbs): Not Available.
Note: No additional remark.
Marine Pollutant: No.

TDG (Canada):
TDG Shipping Name: SODIUM HYDROXIDE, SOLID
Hazard Class: 8
UN Number: UN1823
Packing Group: II
Note: No additional remark.
Marine Pollutant: No.

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

U.S. Regulatory Rules

Ingredients	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Sodium Hydroxide	Not Listed.	Listed	Not Listed.
Sodium Carbonate	Not Listed.	Not Listed.	Not Listed.
Sodium Chloride	Not Listed.	Not Listed.	Not Listed.

California Proposition 65: Not Listed.
MA Right to Know List: Listed.
New Jersey Right-to-Know List: Listed.
Pennsylvania Right to Know List: Listed.

Additional Notes: Not Available.

WHMIS Hazardous Class:
E CORROSIVE MATERIAL

16. OTHER INFORMATION

Additional Information:

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Disclaimer:

NOTICE TO READER:
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Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Univar Sales Office.

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*****END OF MSDS*****