SAFETY DATA SHEET
SDS01408
CAUSTIC SODA MICROPEARLS

Preparation Date: 25/Mar/2019

1. IDENTIFICATION

Product identifier
Product Name CAUSTIC SODA MICROPEARLS
Other means of identification
SDS Number SDS01408
Synonyms Sodium Hydroxide or Lye

Recommended use of the chemical and restrictions on use
Recommended Use Industrial cleaners. Petroleum industries. Metal finishing Chemical processing
Drum cleaners.
Restricted Uses No information available

Initial Supplier Identifier
Univar Canada Ltd.
9800 Van Horne Way
Richmond, BC V6X 1W5
Telephone: 1-866-686-4827

Emergency telephone number
24 Hour Emergency Phone Number (CANUTEC): 1-888-226-8832 (1-888-CAN-UTECE)

2. HAZARD IDENTIFICATION

Hazardous Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive to metals</td>
<td>Category 1</td>
</tr>
<tr>
<td>Acute toxicity - Dermal</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Sub-category A</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Label elements
Hazard pictograms

Signal Word: Danger

Hazard statements
May be corrosive to metals
Causes severe skin burns and eye damage
Harmful if swallowed
Harmful to aquatic life

Precautionary Statements

Prevention
Wash thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original packaging
Avoid release to the environment
Immediately call a POISON CENTER or doctor
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
Absorb spillage to prevent material damage

Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in corrosive resistant container with a resistant inner liner
Absorb spillage to prevent material damage

Disposal
Dispose of contents/container to an approved waste disposal plant

Unknown acute toxicity
No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Mixture

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Synonyms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide</td>
<td>1310-73-2</td>
<td>90 - 100%</td>
<td>Sodium Hydroxide</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>1-5</td>
<td>Sodium Chloride</td>
</tr>
<tr>
<td>Sodium Carbonate</td>
<td>497-19-8</td>
<td>0.1-1</td>
<td>Sodium Carbonate</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Description of first aid measures

General advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation
Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.

Ingestion
Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Self-protection of the first aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed:
Causes severe eye burns. Small quantities can result in permanent damage and/or loss of vision. 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. May cause dermatitis. Corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Corrosive to the respiratory passage. Causes severe burns. Ingestion of product may result in death. Severe burns and complete tissue perforation of mucous membranes of mouth, throat and stomach.

Indication of any immediate medical attention and special treatment needed:

Note to physicians
Treatment based on sound judgment of physician and individual reactions of patient.

5. FIRE-FIGHTING MEASURES
Suitable Extinguishing Media
Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the substance or mixture
Contact with some metals (particularly magnesium, aluminum and galvanized zinc) can rapidly generate hydrogen. Use water spray to cool containers. Reacts with metals to generate flammable hydrogen gas. Do not get water inside container. Avoid direct contact of this product with water as this can cause a violent exothermic reaction.

Hazardous combustion products
No decomposition expected under normal storage conditions.

Special protective equipment and precautions for fire-fighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and materials for containment and cleaning up
Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precautions for safe handling
For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. 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.

Conditions for safe storage, including any incompatibilities
Store in accordance with good industrial practices. Keep containers tightly closed. 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. Store in a dry, well ventilated area, separate from acids, peroxides, metals, easily ignitable materials and other incompatibles. Store in corrosive resistant stainless steel container with a resistant inner
Control parameters

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Alberta OEL</th>
<th>British Columbia OEL</th>
<th>Ontario</th>
<th>Quebec OEL</th>
<th>Exposure Limit - ACGIH</th>
<th>Immediately Dangerous to Life or Health - IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide 1310-73-2</td>
<td>Ceiling: 2 mg/m³</td>
<td>Ceiling: 2 mg/m³</td>
<td>CEV: 2 mg/m³</td>
<td>Ceiling: 2 mg/m³</td>
<td>2 mg/m³ Ceiling</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Sodium Chloride 7647-14-5</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td>Sodium Carbonate 497-19-8</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Consult local authorities for recommended exposure limits.

Appropriate engineering controls

Engineering controls
Localized ventilation should be used to control dust levels. 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.

Individual protection measures, such as personal protective equipment

Eye/face protection
Close fitting chemical safety goggles with faceshield.

Hand protection
Appropriate chemical resistant gloves should be worn. Nitrile gloves. Neoprene gloves. Rubber gloves.

Skin and body 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. Rubber apron. Rubber boots. PVC clothing.

Respiratory protection
If exposure exceeds occupational exposure limits, use an appropriate NIOSH-approved respirator.

General hygiene considerations
Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

- Physical state: Solid
- Color: White
- Odor: Odorless
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Preparation Date: 25/Mar/2019

<table>
<thead>
<tr>
<th>Odor threshold</th>
<th>No information available</th>
</tr>
</thead>
</table>

**PROPERTIES**

<table>
<thead>
<tr>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>pH</strong></td>
<td>14</td>
</tr>
<tr>
<td><strong>Melting point / freezing point</strong></td>
<td>318 °C / 604 °F</td>
</tr>
<tr>
<td><strong>Initial boiling point/boiling range</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flammability Limit in Air</strong></td>
<td>No data available</td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Relative vapor density</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Specific Gravity</strong></td>
<td>2.13 @ 20°C</td>
</tr>
<tr>
<td><strong>Water solubility</strong></td>
<td>Completely soluble</td>
</tr>
<tr>
<td><strong>Solubility in other solvents</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Kinematic viscosity</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Dynamic viscosity</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Oxidizing properties</strong></td>
<td>No information available.</td>
</tr>
</tbody>
</table>

Molecular weight: 40
VOC Percentage Volatility: No information available
Liquid Density: No information available
Bulk density: No information available

**10. STABILITY AND REACTIVITY**

Reactivity/Chemical Stability
Stable under normal conditions

Possibility of hazardous reactions
Contact with water may generate sufficient heat to ignite combustible materials. May be corrosive to metals.

Conditions to avoid
Addition of water results in large temperature increase. Avoid contact with incompatible materials.

Incompatible materials
Aldehydes. Contact with water. Contact with acids. Contact with air. Product is corrosive to tin, aluminum, zinc and alloys containing these metals and will react with these metals in powder from, avoid contact with leather, wool, acids, organic halogen compounds. Hazardous carbon monoxide gas can form upon contact with reducing sugars, food and beverage products in enclosed spaces and can cause death.

Hazardous decomposition products
No decomposition expected under normal storage conditions.

**11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure
Inhalation
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. Corrosive to the respiratory passage.

Eye contact
Causes severe eye burns. Small quantities can result in permanent damage and/or loss of vision.

Skin contact
May cause dermatitis. Corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Causes severe burns.

Ingestion
Ingestion of product may result in death. Severe burns and complete tissue perforation of mucous membranes of mouth, throat and stomach.

Information on toxicological effects

Symptoms
No additional information available.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide</td>
<td>140 - 340 mg/kg (Rat)</td>
<td>= 1350 mg/kg (Rabbit)</td>
<td>Not available</td>
</tr>
<tr>
<td>1310-73-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>= 3 g/kg (Rat)</td>
<td>&gt; 10 g/kg (Rabbit)</td>
<td>&gt; 42 g/m³ (Rat) 1 h</td>
</tr>
<tr>
<td>7647-14-5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Carbonate</td>
<td>= 4090 mg/kg (Rat)</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td>497-19-8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unknown acute toxicity
No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
May cause dermatitis. Corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Causes severe burns.

Serious eye damage/eye irritation
Causes severe eye burns. Small quantities can result in permanent damage and/or loss of vision.

Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity
No information available.
Reproductive toxicity
No information available.

Specific target organ systemic toxicity - single exposure
No information available.

Specific target organ systemic toxicity - repeated exposure
No information available.

Aspiration hazard
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Ecotoxicity - Freshwater Algae Data</th>
<th>Ecotoxicity - Fish Species Data</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide 1310-73-2</td>
<td>Not available</td>
<td>45.4 mg/L LC50 (Oncorhynchus mykiss) 96 h static</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td>Sodium Chloride 7647-14-5</td>
<td>Not available</td>
<td>4747 - 7824 mg/L LC50 (Oncorhynchus mykiss) 96 h flow-through 5560 - 6080 mg/L LC50 (Lepomis macrochirus) 96 h flow-through 8020 - 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</td>
<td>Not available</td>
<td>EC50: 340.7 - 469.2mg/L (48h, Daphnia magna) EC50: =1000mg/L (48h, Daphnia magna)</td>
</tr>
<tr>
<td>Sodium Carbonate 497-19-8</td>
<td>242 mg/L EC50 Nitzschia 120 h</td>
<td>310 - 1220 mg/L LC50 (Pimephales promelas) 96 h static 300 mg/L LC50 (Lepomis macrochirus) 96 h static</td>
<td>Not available</td>
<td>EC50: =285mg/L (48h, Daphnia magna)</td>
</tr>
</tbody>
</table>

Persistence and degradability
No information available.

Bioaccumulation
No information available.
Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Do not reuse empty containers.

14. TRANSPORT INFORMATION

TDG (Canada):
UN Number: UN1823
Shipping name: SODIUM HYDROXIDE, SOLID
Class: 8
Packing Group: II
Marine pollutant: No.

DOT (U.S.):
UN Number: UN1823
Shipping name: SODIUM HYDROXIDE, SOLID
Class: 8
Packing Group: II
Marine pollutant: No

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Regulatory Rules

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CERCLA/SARA - Section 302</th>
<th>SARA (311, 312) Hazard Class</th>
<th>CERCLA/SARA - Section 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide - 1310-73-2</td>
<td>Not Listed</td>
<td>Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Sodium Chloride - 7647-14-5</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Sodium Carbonate - 497-19-8</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

International Inventories

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

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

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

16. OTHER INFORMATION

NFPA:
Health hazards: 3 Flammability: 0 Instability: 0

HMIS:
Health hazards: 3 Flammability: 0 Physical hazards: 0
**Legend**

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>TWA</th>
<th>TWA (time-weighted average)</th>
<th>STEL</th>
<th>STEL (Short Term Exposure Limit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>Maximum limit value</td>
<td>*</td>
<td>Skin designation</td>
</tr>
</tbody>
</table>

**Prepared By:**
The Environment, Health and Safety Department of Univar Canada Ltd.

**Preparation Date:** 25/Mar/2019

**Revision Date:** 25/Mar/2019

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End of Safety Data Sheet