1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: SWG™ Biocide
Chemical Name: Proprietary.
Chemical Family: Stabilized bromine biocide, aqueous solution
CAS-No: Mixture
Recommended use: Water treatment chemical

Company: Albemarle Corporation
451 Florida Street
Baton Rouge, LA 70801

Emergency Telephone Numbers:
- For Non-Emergency: 800-535-3030
- For Emergency: 225-344-7147

NFPA Health: 3
HMIS Health: 3

2. HAZARDS IDENTIFICATION

Emergency Overview:
- Corrosive - causes irreversible eye damage
- Causes skin burns
- Harmful if swallowed
- Harmful in contact with skin
- Can decompose exothermically at elevated temperatures (see Environmental Protection, Storage Requirement Section for details)

Potential Health Effects:
- Eyes: Possible risks of irreversible effects.
- Skin: Causes burns. Harmful in contact with skin.
- Inhalation: In the event of fire and/or explosion do not breathe fumes. Not expected to be acutely toxic.
- Ingestion: Harmful if swallowed.

See Section 11 for additional Toxicological information.

Occupational Exposure Limit: See Section 8

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>&lt;10</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Ad Lib
If medical advice is needed: Have product container or label at hand

Eye contact
If in eyes, hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin Contact
If on skin or clothing, take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation
Move to fresh air.

Ingestion
If swallowed, Call a physician or Poison Control Centre immediately. Have person sip a glass of water if able to swallow. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Notes to Physician
Probable mucosal damage may contraindicate the use of gastric lavage

5. FIRE-FIGHTING MEASURES

Combustion/explosion hazards
Not available.

Suitable Extinguishing Media
Not required

Hazardous Combustion Products
Bromine. Chlorine

Protective Equipment and Precautions for Firefighters
In the event of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
No information available

Environmental precautions
No information available

Methods for Clean-up
No information available

7. HANDLING AND STORAGE

Handling
Avoid contact of heated material with eyes, skin, and clothing

Storage
Avoid freezing, excessive heat or exposure to light, especially direct sunlight. If heating is necessary to prevent freezing, care must be taken to prevent overheating. Precautions should be taken to ensure that the average product temperature is maintained below 110F. Temperature monitoring is recommended. At elevated temperatures, self-heating can lead to vigorous gas generation and over-pressurization of storage containers if appropriate controls are not in place. Avoid exposure of this product to incompatible materials/chemicals (see Reactivity Data section). Use of incompatible materials can promote the exothermic decomposition of the product. In extreme cases, this could result in vigorous gas formation and over-pressurization of the storage container STORAGE CONTAINER: Vented and opaque containers: As the product ages, activity is gradually lost and pressure can build-up in the headspace (nitrogen); therefore, the product should be stored in vented containers. Product should also be stored in opaque containers to prevent exposure to light. To maximize product shelf life, store the product in an opaque container, in a cool, dry, well-ventilated area.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>ACGIH TLV (TWA)</th>
<th>ACGIH (STEL or Ceiling)</th>
<th>OSHA PEL (TWA)</th>
<th>OSHA (STEL or Ceiling)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>&lt;10</td>
<td>2mg/m³ (TWA)</td>
<td>2mg/m³ (STEL or Ceiling)</td>
<td>2mg/m³ (TWA)</td>
<td>2mg/m³ (STEL or Ceiling)</td>
</tr>
</tbody>
</table>

Engineering Controls  
Use only in well-ventilated areas

Personal Protective Equipment

- **Eye/face Protection**: Chemical goggles or face shield with safety glasses.
- **Skin Protection**: Wear protective gloves/clothing.
- **Hand protection**: Gloves resistant to chemical permeation.
- **Other information**: Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Flash point**: Not applicable.
- **Form**: Liquid
- **Color**: Yellow.
- **Odor**: Mild. Sweet.
- **pH**: 12.4 (min.)
- **Boiling Point**: 106°C
- **Viscosity, dynamic**: ~2.7cPs (25°C)
- **Oxidizing Properties**: Oxidizer

- **Rammable limits (LEL, UEL)**
- **Vapor pressure**: 19 mmHg (25°C)
- **Density**: 1.29-1.37 g/ml (25°C)
- **Water Solubility**: Miscible.
- **Melting/freezing point**: 0 °C / 32°F
- **Viscosity, kinematic**: ~2cSt (25°C)

10. STABILITY AND REACTIVITY

- **Stability**: Stable.
- **Conditions to Avoid**: Protect from light. Extremes of temperature and direct sunlight. Keep away from heat. Freezing.
- **Materials to avoid**: This product is strongly basic and an oxidizing agent. Avoid contact with alcohols, aldehydes, strong reducing agents, strong oxidizers, acids, ammonia-containing products, and common metals such as steel, aluminum, iron, and copper. Use of incompatible materials can promote the exothermic decomposition of the product.
- **Hazardous decomposition products**: None under normal use.
- **Hazardous Polymerization**: None under normal processing.
11. TOXICOLOGICAL INFORMATION

Acute Effects

<table>
<thead>
<tr>
<th>Mode of Exposure</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>Possible risks of irreversible effects.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Causes burns.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Harmful if swallowed.</td>
</tr>
</tbody>
</table>

LD50 Oral: 2491 mg/kg  
LD50 Dermal: >2000 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td></td>
</tr>
</tbody>
</table>

Ecotoxicity effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose in a safe manner in accordance with local/national regulations.
14. TRANSPORT INFORMATION

DOT
Proper Shipping Name: Corrosive Liquids, Basic, Inorganic, N.O.S. (Halogenated Complex, Sodium Hydroxide)
Hazard Class: 8
UN No.: 3266
Packing Group: III
Description: UN 3266 Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide), 8, III

IMDG/IMO
IMO Class: 8
Packaging Group: III
UN-No: 3266
IMO Labelling and Marking: 8
Proper Shipping Name: Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide)
EmS: F-A, S-B
Marpol - Annex II: Not determined
Marpol - Annex III: Unregulated
Transport Description: UN 3266 Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide), 8, III

IATA/ICAO
IATA/ICAO Class: 8
Packaging Group: III
UN-No: 3266
IATA/ICAO Labelling: 8
Passenger Aircraft: Maximum net quantity per package: 5 L
Cargo aircraft only: Maximum net quantity per package: 60 L
Proper shipping name: Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide)
Transport Description: UN 3266 Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide), 8, III

15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>International Inventories</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>AICS</th>
<th>BNECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>KECL</th>
<th>PICCS</th>
<th>CHINA</th>
<th>NZIoC</th>
</tr>
</thead>
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<tr>
<td>SWG™ Biocide</td>
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</tbody>
</table>

(X) Complies  (-) Does not Comply

TSCA Statement
This material is exempt from the Toxic Substances Control Act (15 USC 2601-2629).

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazardous Categorization
Chronic Health Hazard: No
Acute Health Hazard: Yes
Fire Hazard: No
Sudden Release of Pressure Hazard: No
Reactive Hazard: No

Reportable and Threshold Planning Quantities
The following components have RQs and/or TPQs under SARA and/or CERCLA
State Regulations
This product contains the following chemicals regulated in the states listed below.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>California Prop. 65</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
</tr>
</thead>
</table>

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

WHMIS Hazards
E  Corrosive material
D2B  Toxic materials

16. OTHER INFORMATION

Prepared By
Health & Environment Department
Albemarle Corporation

FOR ADDITIONAL NONEMERGENCY PRODUCT INFORMATION, CONTACT:

HEALTH AND ENVIRONMENT DEPARTMENT
ALBEMARLE CORPORATION
451 FLORIDA ST.
BATON ROUGE, LA. 70801
(800) 535-3030

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