SIGMA-ALDRICH

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Sodium hypochlorite solution
Product Number: 13440
Brand: Sigma-Aldrich
Supplier: Sigma-Aldrich Corporation
Address: 3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone: +1 800-326-5832
Fax: +1 800-326-6052
Emergency Phone # (For both supplier and manufacturer): (314) 776-9555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-0558

2. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
Corrosive
GHS Classification
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 1)
GHS Label elements, including precautionary statements
Pictogram
Signal word: Danger
Hazard statement(s)
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
Precautionary statement(s)
P273 Avoid release to environment.
P330 P351 P338 If in eyes: Wash out with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
P310
HMIS Classification
Health hazard: 3
Flammability: 0
Physical hazards: 0
NFPA Rating
Health hazard: 3
Fire: 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: ClNaO

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite</td>
<td>7781-52-9</td>
<td>231-668-3</td>
<td>017-011-00-1</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Dry powder

Special protective equipment for fire fighters
Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Sodium oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed container for disposal.

Reactivity Hazard: 0
Potential Health Effects
Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin: May be harmful if absorbed through skin. Causes skin burns.
Eyes: Causes eye burns.
Ingestion: May be harmful if swallowed.
7. HANDLING AND STORAGE

Precautions for safe handling:

Acid-initiated in contact with water:

Stability:

Conditions for safe storage:

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection:

When risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with this product.

Other protective equipment:

Class 1: Eye protection

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

pH:

Melting point:

Boiling point:

Density:

10. STABILITY AND REACTIVITY

Chemical stability:

Possibility of hazardous reactions:

Conditions to avoid:

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Other information on acute toxicity:

Other information on chronic toxicity:

Carcinogenicity:

12. ECOTOXICOLOGICAL INFORMATION

Bioaccumulative potential:

13. DISPOSAL CONSIDERATIONS

Disposal methods:

14. TRANSPORT INFORMATION

Transport risk class:

15. REGULATORY INFORMATION

EU classification:

Risk phrases:

Safety phrases:

16. REGULATORY INFORMATION

EC Directives

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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.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation
May be harmful if Inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion
May be harmful if swallowed.

Skin
May be harmful if absorbed through skin. Causes skin burns.

Eyes
Causes eye burns.

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonia, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

Synergistic effects
no data available

Additional Information
no data available

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity
no data available

PERSISTENCE and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1791 Class: 8 Packing group III Proper shipping name: Hypochlorite solutions
Reportable Quantity (RQ): 400 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1791 Class: 8 Packing group III EMS-No: F-A, S-B Proper shipping name: HYPOCHLORITE SOLUTION Marine pollutant: No

IATA
UN number: 1791 Class: 8 Packing group III Proper shipping name: Hypochlorite solution

15. REGULATORY INFORMATION

OSHA Hazards
Corrosive

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

Sodium hypochlorite
CAS-No. 7681-52-9 Revision Date 2007-03-01

Pennsylvania Right To Know Components
Water
CAS-No. 7732-18-5 Revision Date 2007-03-01
Sodium hypochlorite
CAS-No. 7681-52-9 Revision Date 2007-03-01

New Jersey Right To Know Components
Water
CAS-No. 7732-18-5 Revision Date 2007-03-01
Sodium hypochlorite
CAS-No. 7681-52-9 Revision Date 2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further Information

Sigma-Aldrich - 13440
Delivery 08900447-000010 Purchase Order CC072111/HOUSE