1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product code: D2991
Product Name: 1-DODECANE SULFONIC ACID SODIUM SALT
Chemical Name: 1-Dodecanesulfonic acid, sodium salt (1:1)
Synonyms: Sodium laurylsulfonate
Recommended use: No information available.
CAS #: 2386-53-0
Formula: C12-H25-Na-O3-S
RTECS #: Not available
Ci#: Not available
Supplier: Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000
Emergency Telephone Number: CHEMTREC: 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Regina Wachenheim (East Coast)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
May cause skin and eye irritation. May cause irritation of respiratory tract.

Odor: No information available
Physical state: Solid.
Appearance: Powder.
Color: White.

OSHA Regulatory Status
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 1910.1200)
2. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Potential Health Effects:

Skin Contact:
May cause skin irritation.

Eye Contact:
Contact with eyes may cause irritation.

Inhalation:
May cause irritation of respiratory tract.

Ingestion:
No information available.

Chronic Potential Health Effects:

Component Carcinogen Status:

<table>
<thead>
<tr>
<th>Component</th>
<th>Carcinogen Status</th>
</tr>
</thead>
<tbody>
<tr>
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<td>No information available</td>
</tr>
<tr>
<td>2386-53-0 (100)</td>
<td></td>
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</tbody>
</table>

Target Organs:
No information available

Teratogenic Effects:
No information available

Mutagenic Effects:
No information available

Aggravated Medical Conditions:
No information available

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Dodecane Sulfonic Acid Sodium Salt</td>
<td>2386-53-0</td>
<td>100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General Advice:
Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126).

Skin Contact:
Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Product code: D2991
Product name: 1-DODECANE SULFONIC ACID SODIUM SALT
Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Notes to Physician: Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F): No information available.

Flash Point Tested according to:
Not available

Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available

Autoignition Temperature (°C/°F): No information available

Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO2). Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Hazardous Combustion Products: Carbon monoxide, Carbon dioxide, sodium oxides, sulfur oxides

Specific hazards: May be combustible at high temperatures. Avoid generating dust. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific Methods: Water mist may be used to cool closed containers.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

Environmental Precautions:
No information available.

Methods for Cleaning Up:
Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.
7. HANDLING AND STORAGE

Handling

**Technical Measures/Precautions:**
Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

**Safe Handling Advice:**
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Storage

**Technical Measures/Storage Conditions:**
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

**Incompatible Products:**
Oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure: Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protective Equipment**

**Eye protection:** Safety glasses. Safety glasses with side-shields.

**Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.

**Respiratory protection:** Effective dust mask. Wear respirator with dust filter.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

National occupational exposure limits

**United States**

**U.S Occupational Exposure Limits:** Not determined

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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<tr>
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</table>

**Canada**

**Canada Occupational Exposure Limits:** Not determined

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
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Product code: D2991  
Product name: 1-DODECANE SULFONIC ACID SODIUM SALT
Australia and Mexico
Occupational Exposure Limits for Australia and Mexico: Not determined

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<tr>
<th>Components</th>
<th>Australia</th>
<th>Mexico</th>
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<tbody>
<tr>
<td>1-Dodecane Sulfonic Acid Sodium</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Salt 2386-53-0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** Solid.
- **Appearance:** Powder.
- **Color:** White.
- **Odor:** No information available
- **Taste:** No information available
- **Molecular/Formula weight:** 272.39
- **Flash point (°C):** Not applicable
- **Lower Explosion Limit (%):** No information available
- **Upper Explosion Limit (%):** No information available
- **Autoignition Temperature (°C/°F):** No information available
- **pH:** No information available
- **Melting point/range(°C/°F):** 248 °C/478.4 °F
- **Boiling point/range(°C/°F):** No information available
- **Decomposition temperature(°C/°F):** No information available
- **Density (g/cm3):** No information available
- **Bulk density:** No information available
- **Specific gravity:** No information available
- **Evaporation rate:** No information available
- **Vapor density:** No information available
- **VOC content (g/L):** No information available
- **Odor threshold (ppm):** No information available
- **Partition coefficient (n-octanol/water):** 0.87-0.96
- **Flash point (°C):** Not applicable
- **Evaporation rate:** No information available
- **Vapor density:** No information available
- **VOC content (g/L):** No information available
- **Color:** White.
- **Solubility:** Solubility in Water: 2682 mg/l @ 25 °C

10. STABILITY AND REACTIVITY

- **Stability:** Stable at normal conditions
- **Conditions to avoid:** Heat. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- **Materials to avoid:** Oxidising agents.
- **Hazardous decomposition products:** Carbon monoxide. Carbon dioxide. Sodium oxides. Sulphur oxides.
- **Possibility of Hazardous Reactions:** No information available
- **Polymerization:** Hazardous polymerisation does not occur
- **Corrosivity:** No information available
- **Special Remarks on Corrosivity:** No information available

Product code: D2991
Product name: 1-DODECANE SULFONIC ACID SODIUM SALT
11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

1-Dodecane Sulfonic Acid Sodium Salt - 2386-53-0
  LD50/oral/rat = No information available
  LD50/oral/mouse = No information available
  LD50/dermal/rabbit = No information available
  LD50/dermal/rat = No information available
  LC50/inhalation/rat = No information available
  LC50/inhalation/mouse = No information available
  Other LD50 or LC50 information =
    No information available

Product Information

LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LD50/oral/mouse = No information available
LD50/oral/rat = No information available

Local Effects

Skin irritation: May cause skin irritation.
Eye irritation: Contact with eyes may cause irritation.
Inhalation: May cause irritation of respiratory tract.
Ingestion: Health injuries are not known or expected under normal use.
Sensitization: No information available

Chronic Toxicity

Chronic Toxicity No information available.
Carcinogenic effects: No information available. Not considered carcinogenic.

<table>
<thead>
<tr>
<th>Components</th>
<th>NTP</th>
<th>IARC</th>
<th>OSHA HCS - Carcinogens</th>
<th>ACGIH - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
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<td>Not listed</td>
<td>Not listed</td>
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</tbody>
</table>

Mutagenic Effects: No information available
Reproductive Effects: No information available
Teratogenic Effects: No information available
Target Organs: No information available

Product code: D2991

Product name: 1-DODECANE SULFONIC ACID SODIUM SALT
12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals:  Information given is based on data on the components and the ecotoxicology of similar products

Ecotoxicity effects:  Aquatic environment.

Aquatic toxicity:

1-Dodecane Sulfonic Acid Sodium Salt - 2386-53-0

Freshwater Fish Species Data:  2.71-4.34  LC50 96 hours Poecilia vivipara
                               220 mg/l  LC50  96 hours Phoxinus phoxinus (minnow)

Water Flea Data:  135-220 mg/l  EC50 24 hours  Daphnia magna

Mobility:  No information available

Persistence and degradability:  No information available

Bioaccumulative potential:  No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

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<tr>
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</thead>
<tbody>
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</tr>
<tr>
<td>Salt</td>
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</tr>
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</table>

14. TRANSPORT INFORMATION

DOT

UN-No:  Not regulated
Proper Shipping Name:  No information available
Hazard Class:  No information available
Packing Group:  None
Subsidiary Risk:  Not applicable
Marine Pollutant:  No data available
ERG No:  No information available
DOT RQ (lbs):  No information available

TDG (Canada)

UN-No:  Not Regulated
Proper Shipping Name:  No information available
Hazard Class:  No information available
Packing Group:  No information available
Subsidiary Risk:  No information available
Description:  No information available

ADR

UN-No:  Not Regulated
Proper Shipping Name:  No information available

Product code: D2991 Product name: 1-DODECANE SULFONIC ACID SODIUM SALT
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
MFAG: No information available
Maximum Quantity: No information available

RID
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available

ICAO
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

IATA
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
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<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>Philippines (PICCS)</th>
<th>KOREA KECL</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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<tbody>
<tr>
<td>1-Dodecane Sulfonic Acid Sodium Salt</td>
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<td>Present</td>
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<td>2-1640</td>
<td>Present</td>
<td>Present</td>
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</table>

U.S. Regulations


Product code: D2991
Product name: 1-DODECANE SULFONIC ACID SODIUM SALT
Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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<tbody>
<tr>
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CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Dodecane Sulfonic Acid Sodium Salt</td>
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<td>None</td>
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U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a) - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Dodecane Sulfonic Acid Sodium Salt</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Canada

WHMIS hazard class:
Non-controlled

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

<table>
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<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Components</th>
<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
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<tr>
<td>1-Dodecane Sulfonic Acid Sodium Salt</td>
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</table>

EU Classification

R-phrase(s)
not determined

S-phrase(s)
none

Product code: D2991
Product name: 1-DODECANE SULFONIC ACID SODIUM SALT
The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Not dangerous

16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1-2004 standards.

Preparation Date: 08-Oct-2012

Reason for revision: Not applicable

Prepared by: Sonia Owen

Literature reference: No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.