SAFETY DATA SHEET

1. Identification

Product identifier: BIO-SOFT S-101

Other means of identification

Product code: 1737

Recommended use: Surfactant

Recommended restrictions: For industrial use only.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name: Stepan Company
Address: 22 West Frontage Road
Northfield, IL 60093
USA

Telephone
General: 1-847-446-7500

Emergency phone number
Medical: 1-800-228-5635
Chemtrec: 1-800-424-9300
Chemtrec Int'l: +1 703-527-3887

2. Hazard(s) identification

Physical hazards

Health hazards

Acute toxicity, oral: Category 4
Skin corrosion/irritation: Category 1
Serious eye damage/eye irritation: Category 1

Environmental hazards

Hazardous to the aquatic environment, acute hazard: Category 2
Hazardous to the aquatic environment, long-term hazard: Category 3

OSHA defined hazards

Not classified.

Label elements

Signal word: Danger

Hazard statement: Harmful if swallowed. Causes severe skin burns and eye damage. Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention
Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response
If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse.

Storage
Store locked up.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
None known.

Supplemental information
None.
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkyl(C10-16)benzenesulfonic acid</td>
<td>(Alt CAS 27176-87-0 85536-14-7)</td>
<td>68584-22-5</td>
<td>90 - 100</td>
</tr>
<tr>
<td>Alkyl Benzene-Ln. (C10-13)</td>
<td>(Alternate CAS: 67774-74-7)</td>
<td>129813-58-7</td>
<td>1 - &lt; 3</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td></td>
<td>7664-93-9</td>
<td>1 - &lt; 3</td>
</tr>
</tbody>
</table>

Other components below reportable levels  < 1

4. First-aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

**Ingestion**
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Most important symptoms/effects, acute and delayed**
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General information**
IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

**Suitable extinguishing media**
Dry chemical, foam, carbon dioxide, water fog.

**Unsuitable extinguishing media**
Water. Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
Move containers from fire area if you can do so without risk.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**
No unusual fire or explosion hazards noted.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

**Methods and materials for containment and cleaning up**
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.
Environmental precautions
Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage
Precautions for safe handling
Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not taste or swallow. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities
Store locked up. Store in original tightly closed container.

8. Exposure controls/personal protection
Occupational exposure limits

<table>
<thead>
<tr>
<th>Occupational exposure limits</th>
<th>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td>Type</td>
</tr>
<tr>
<td>Sulfuric acid (CAS 7664-93-9)</td>
<td>PEL</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid (CAS 7664-93-9)</td>
<td>TWA</td>
<td>0.2 mg/m3</td>
<td>Thoracic fraction.</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid (CAS 7664-93-9)</td>
<td>TWA</td>
<td>1 mg/m3</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear eye/face protection. Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection
- Hand protection
  Wear appropriate chemical resistant gloves.
- Other
  Wear appropriate chemical resistant clothing. Wear protective gloves.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance
- Physical state: Liquid.
- Form: Viscous. Liquid.
- Color: Dark amber.
- Odor: Not available.
- Odor threshold: Not available.
- pH: < 1 (as is)
- Melting point/freezing point: -0.4 °F (-18 °C)
- Initial boiling point and boiling range: > 212 °F (> 100 °C)
Flash point Not applicable
Evaporation rate Estimated slower than ethyl ether
Flammability (solid, gas) Not available.
Upper/lower flammability or explosive limits
   Flammability limit - lower (%) Not available.
   Flammability limit - upper (%) Not available.
   Explosive limit - lower (%) Not available.
   Explosive limit - upper (%) Not available.
Vapor pressure Not determined or unknown
Vapor density Estimated heavier than air
Relative density Not available.
Solubility(ies)
   Solubility (water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity 890 cP @ 25C
Other information
   Density 8.81 lb/gal @ 25C
   Pour point 5 °F (-15 °C)

10. Stability and reactivity
Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.
Conditions to avoid Heat, flames and sparks. Reacts violently with strong alkaline substances. This product may react with reducing agents. Contact with incompatible materials.
Incompatible materials This product may react with reducing agents. Incompatible with bases.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information
Information on likely routes of exposure
   Inhalation Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
   Skin contact Causes severe skin burns. May be harmful in contact with skin.
   Eye contact Causes serious eye damage.
   Ingestion Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Information on toxicological effects
Acute toxicity Harmful if swallowed. May be harmful in contact with skin.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-SOFT S-101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>500 - 2000 mg/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes severe skin burns and eye damage.</td>
<td></td>
</tr>
</tbody>
</table>
Causes serious eye damage.

Serious eye damage/eye irritation

Respiratory or skin sensitization

Respiratory sensitization
Not available.

Skin sensitization
This product is not expected to cause skin sensitization.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
The International Agency for Research on Cancer (IARC) has concluded that occupational exposure to strong-inorganic acid mists containing sulfuric acid is carcinogenic to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity
Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens
Not listed.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Not applicable.

Specific target organ toxicity - repeated exposure
Not applicable.

Aspiration hazard
Not applicable.

12. Ecological information

Ecotoxicity
Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-SOFT S-101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>EC50</td>
<td>Algae, 47.3 mg/l, 72 hours</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia, 2.4 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fish, 1.67 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability
Readily biodegradable.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazardous waste code
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

General
The provided transportation classifications are for bulk shipments only and may not be representative of all package/shipment sizes.

DOT

UN number
UN3265

UN proper shipping name
Corrosive liquid, acidic, organic, N.O.S. (Alkylbenzene sulfonic acid, Sulfuric acid RQ = 76336 LBS)

Transport hazard class(es)
Class 8
Subsidiary risk -
15. Regulatory information

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Toxic Substances Control Act (TSCA)**

- **TSCA Section 12(b) Export Notification** (40 CFR 707, Subpt. D)
  - Not regulated.

- **CERCLA Hazardous Substance List** (40 CFR 302.4)
  - Sulfuric acid (CAS 7664-93-9) Listed.

- **SARA 304 Emergency release notification**
  - SULFURIC ACID (CAS 7664-93-9) 1000 LBS

- **OSHA Specifically Regulated Substances** (29 CFR 1910.1001-1052)
  - Not regulated.
### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**SARA 302 Extremely hazardous substance**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Reportable quantity (pounds)</th>
<th>Threshold planning quantity (pounds)</th>
<th>Threshold planning quantity, lower value (pounds)</th>
<th>Threshold planning quantity, upper value (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>1000</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazardous chemical**

- **Classified hazard categories**
  - Acute toxicity (any route of exposure)
  - Skin corrosion or irritation
  - Serious eye damage or eye irritation

**SARA 313 (TRI reporting)**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>1 - &lt; 3</td>
</tr>
</tbody>
</table>

**Other federal regulations**

- **Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**
  - Not regulated.
- **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**
  - Not regulated.
- **Clean Water Act (CWA)**
  - Hazardous substance
- **Safe Drinking Water Act (SDWA)**
  - Not regulated.

**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

- Sulfuric acid (CAS 7664-93-9) 6552

**Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))**

- Sulfuric acid (CAS 7664-93-9) 20 %WV

**DEA Exempt Chemical Mixtures Code Number**

- Sulfuric acid (CAS 7664-93-9) 6552

**US state regulations**

**California Proposition 65**

- **WARNING:** This product can expose you to chemicals including Strong Inorganic Mists Containing Sulfuric Acid, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

**California Proposition 65 - CRT: Listed date/Developmental toxin**

- Sulfur dioxide (CAS 7446-09-5) Listed: July 29, 2011

**International Inventories**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory (NZIoC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)*

*A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).*

**16. Other information, including date of preparation or last revision**

**Issue date** 05-22-2014
Revision date: 12-12-2019
Version #: 11
HMIS® ratings:
- Health: 3
- Flammability: 1
- Physical hazard: 0
NFPA ratings:
- Health: 3
- Flammability: 1
- Instability: 0

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Revision information:
Hazard(s) identification: Supplemental information
Transport Information: Material Transportation Information
Regulatory Information: United States
HazReg Data: International Inventories