1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: ELS™ Microemulsion

Other means of identification

Synonyms: Lecithin: L-α-Phosphatidylcholine, Azolectin; Sodium Benzoate: Benzoic acid sodium salt; Sorbitan monooleate, ethoxylated: Polyoxyethylenesorbitan monooleate

Recommended use of the chemical and restrictions on use

Recommended Use: Bioremediation product for the remediation of contaminated soil and groundwater

Restrictions on Use: Not for drinking water purification treatment.

Manufacturer/Supplier

PeroxyChem LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
Phone: +1.267/ 422-2400 (General Information)
E-Mail: sdsinfo@peroxychem.com

Emergency telephone number

For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)
1 303/ 389-1409 (Medical - U.S. - Call Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW
Hazards not otherwise classified (HNOC)
No hazards not otherwise classified were identified.

Other Information
CONTAINMENT HAZARD: Any vessel that contains wet ELS must be vented due to potential pressure build up from fermentation gases

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorbitan monooleate, ethoxylated</td>
<td>9005-65-6</td>
<td>2-4</td>
</tr>
<tr>
<td>Lecithin</td>
<td>8002-43-5</td>
<td>20-30</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>60-80</td>
</tr>
<tr>
<td>Sodium Benzoate</td>
<td>532-32-1</td>
<td>2-4</td>
</tr>
</tbody>
</table>

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact
In case of contact, immediately flush eyes with plenty of water. Get medical attention if irritation develops and persists.

Skin Contact
Wash skin with soap and water. Get medical attention if irritation develops and persists.

Inhalation
Move to fresh air in case of accidental inhalation of vapors. Consult a physician if necessary.

Ingestion
Drink 1 or 2 glasses of water. Get medical attention if symptoms occur. If swallowed, do not induce vomiting - seek medical advice. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
None known

Indication of immediate medical attention and special treatment needed, if necessary
Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Carbon dioxide (CO₂). Dry chemical. Dry powder.

Specific Hazards Arising from the Chemical
Combustible material: may burn but does not ignite readily

Explosion data
Sensitivity to Mechanical Impact
Not sensitive.

Sensitivity to Static Discharge
Not sensitive.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
For personal protection see Section 8.
ELS™ Microemulsion

Other
For further clean-up instructions, call PeroxyChem Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

Environmental Precautions
No special environmental precautions required.

Methods for Containment
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up
After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling
Handle in accordance with good industrial hygiene and safety practice.

Storage
Any vessel that contains wet ELS must be vented due to potential pressure build up from fermentation gases. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible products
Water, Alkalis

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering measures
None under normal use conditions.

Individual protection measures, such as personal protective equipment

Eye/Face Protection
Safety glasses with side-shields.

Skin and Body Protection
Wear suitable protective clothing.

Hand Protection
Protective gloves

Respiratory Protection
Use only with adequate ventilation.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance
Light amber emulsion

Physical State
Liquid

Color
No information available

Odor
odorless

Odor threshold
No information available

pH
6.5 - 6.9

Melting point/freezing point
Not applicable No data available

Boiling Point/Range
No information available

Flash point
> 200 °F

Evaporation Rate
No information available

Flammability (solid, gas)
No information available

Flammability Limit in Air

Upper flammability limit:
No information available

Lower flammability limit:
No information available

Vapor pressure
No information available
**ELS™ Microemulsion**

Vapor density
Density
Specific gravity
Water solubility
Solubility in other solvents
Partition coefficient
Autoignition temperature
Decomposition temperature
Viscosity, kinematic
Viscosity, dynamic
Explosive properties
Oxidizing properties
Molecular weight
Bulk density

**None information available**

**No information available**

**Dispersible in water**

**No information available**

**10. STABILITY AND REACTIVITY**

**Reactivity**
None under normal use conditions

**Chemical Stability**
Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**
None under normal processing.

**Hazardous polymerization**
Hazardous polymerization does not occur.

**Conditions to avoid**
Temperatures above 71°C

**Incompatible materials**
Water, Alkalis.

**Hazardous Decomposition Products**
None under normal use.

**11. TOXICOLOGICAL INFORMATION**

**Product Information**
Ingredients in this product have been designated as GRAS (Generally Recognized as Safe) by government agencies.

**LD50 Oral**
There are no data available for this product

**LD50 Dermal**
There are no data available for this product

**LC50 Inhalation**
No information available

**Sensitization**
Not expected to be sensitizing based on the components.

**Information on toxicological effects**

**Symptoms**
No information available.

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

**Carcinogenicity**
Contains no ingredient listed as a carcinogen.

**Mutagenicity**
No information available

**Reproductive toxicity**
No information available.

**STOT - single exposure**
No information available.

**STOT - repeated exposure**
No information available.
Aspiration hazard No information available.

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Ecotoxicity effects** Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

**Persistence and degradability** Expected to biodegrade, based on component information.

**Bioaccumulation** Bioaccumulation is unlikely.

**Mobility** Will likely be mobile in the environment due to its water solubility but will likely degrade over time.

**Other Adverse Effects** None known.

### 13. DISPOSAL CONSIDERATIONS

**Waste disposal methods** Can be landfilled or incinerated, when in compliance with local regulations.

**Contaminated Packaging** Dispose of in accordance with local regulations.

### 14. TRANSPORT INFORMATION

**DOT** NOT REGULATED

### 15. REGULATORY INFORMATION

#### U.S. Federal Regulations

**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 Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute health hazard</td>
<td>No</td>
</tr>
<tr>
<td>Chronic health hazard</td>
<td>NO</td>
</tr>
<tr>
<td>Fire hazard</td>
<td>NO</td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>NO</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>NO</td>
</tr>
</tbody>
</table>

**Clean Water Act**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.
International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA (United States)</th>
<th>DSL (Canada)</th>
<th>EINECS/EL INCS (Europe)</th>
<th>ENCS (Japan)</th>
<th>China (IECSC)</th>
<th>KECL (Korea)</th>
<th>PICCS (Philippines)</th>
<th>AICS (Australia)</th>
<th>NZIoC (New Zealand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorbitan monooleate, ethoxylated 9005-65-6 (2-4)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lecithin 8002-43-5 (20-30)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sodium Benzoate 532-32-1 (2-4)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Mexico - Grade
Minimum risk, Grade 0

CANADA

WHMIS Hazard Class
Non-controlled

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards 1</th>
<th>Flammability 0</th>
<th>Stability 0</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>Health Hazards 1</td>
<td>Flammability 0</td>
<td>Physical hazard 0</td>
<td>Special precautions</td>
</tr>
</tbody>
</table>

NFPA/HMIS Ratings Legend
Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2015-07-22
Revision note: Initial Release
Issuing Date: 2015-07-14

Disclaimer
PeroxyChem believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use are beyond the control of PeroxyChem, PeroxyChem expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

Prepared By:

PeroxyChem
© 2015 PeroxyChem. All Rights Reserved.

End of Safety Data Sheet