SAFETY DATA SHEET
ELS® Liquid Concentrate

SDS # : ELSC-C
Revision date: 2018-12-11
Version 1.02


1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

Product Name ELS® Liquid Concentrate
Alternate Commercial Name ELS® Concentrate
REACH registration number Not applicable
Pure substance/mixture Mixture

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use: Bioremediation product for the remediation of contaminated soil and groundwater
Restrictions on Use Use as recommended by the label: For groundwater treatment.

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier PeroxyChem LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
267/422-2400 (General Information)
sdsinfo@peroxychem.com (E-Mail General Information)

1.4. Emergency telephone numbers

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

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

The preparation is not classified in accordance with Directive 1272/2008.

Occupational exposure limits, if available, are listed in section 8.

2.2. Label Elements

Not classified as a dangerous substances or preparation according to Regulation (EC) 1272/2008.

2.3. OTHER INFORMATION

General Hazards

Warning! Product can make the ground slippery

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>EC-No</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH registration number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorbitan monooleate, ethoxylated</td>
<td>-</td>
<td>9005-65-6</td>
<td>5 - 15</td>
<td>-</td>
<td>01-2120057650-60-XX</td>
</tr>
<tr>
<td>9005-65-6 (5 - 15)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecithin</td>
<td>Present</td>
<td>8002-43-5</td>
<td>70 - 90</td>
<td>-</td>
<td>NA</td>
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<tr>
<td>8002-43-5 (70 - 90)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Occupational exposure limits, if available, are listed in section 8.

4. FIRST AID MEASURES

4.1. Description of first-aid measures

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

Eye Contact
In case of contact, immediately flush eyes with plenty of 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
If swallowed, do not induce vomiting - seek medical advice. Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

None known

4.3. Indication of immediate medical attention and special treatment needed, if necessary

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

Treat symptomatically.

5. FIRE-FIGHTING MEASURES
5.1. **Extinguishing media**

**Suitable Extinguishing Media**
Carbon dioxide (CO$_2$), Dry chemical, Dry powder

5.2. **Special hazards arising from the substance or mixture**

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
Not easily combustible. Dried product is capable of burning.

5.3. **Advice for firefighters**

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

6. **ACCIDENTAL RELEASE MEASURES**

6.1. **Personal precautions, protective equipment and emergency procedures**

For personal protection see Section 8.

6.2. **Environmental Precautions**

Prevent undiluted spillage from entering sewers, basements or watercourses.

6.3. **Methods and materials for containment and cleaning up**

Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4. **Reference to other sections.**

See section 13 for disposal information.

7. **HANDLING AND STORAGE**

7.1. **Precautions for Safe Handling**

Handle in accordance with good industrial hygiene and safety practice.

7.2. **Conditions for safe storage, including any incompatibilities**

**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.

**Materials to avoid**
Strong oxidizing agents, Alkalis, Water.

7.3. **Specific end uses**

See subsection 1.2. Relevant identified uses of the substance or mixture and uses advised against

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1. **Control parameters**

**Exposure Limits**
Contains no substances with occupational exposure limit values
8.2. Exposure Controls
Engineering measures
None under normal use conditions.

Personal protective equipment

- **Respiratory Protection**: In case of insufficient ventilation wear suitable respiratory equipment.
- **Eye/Face Protection**: Safety glasses with side-shields
- **Skin and Body Protection**: Wear suitable protective clothing.
- **Hand Protection**: Protective gloves

Hygiene measures
Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of workday.

Environmental exposure controls
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Amber viscous liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Amber</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>6.5 - 6.9</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 200 °F</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Dispersible in water</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
</tbody>
</table>

9.2. OTHER INFORMATION

- **Bulk Density**: 

10. STABILITY AND REACTIVITY

10.1. Reactivity
None under normal use conditions

10.2. Chemical Stability
Stable under recommended storage conditions.

10.3. Possibility of Hazardous Reactions
None under normal processing.
10.4. Conditions to avoid
Temperatures above 71°C.

10.5. incompatible materials
Strong oxidizing agents, Alkalis, Water.

10.6. Hazardous Decomposition Products
May emit toxic fumes under fire conditions: Carbon oxides (COx)

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

LD50 Dermal  
LD50 Oral  
LC50 Inhalation  

Skin Contact  
Eye Contact  
Inhalation  
Ingestion  

Chronic toxicity

Sensitization  
Carcinogenicity  
Mutagenicity  
Reproductive toxicity  

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Not dangerous to the environment according to Regulation (CE) No 1272/2008 and its amendments.

12.2. Persistence and degradability

Expected to biodegrade, based on component information.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely.

12.4. Mobility in soil

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

12.5. Results of PBT and vPvB assessment
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

12.6. Other Adverse Effects

None known.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products: Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

Product / Packaging disposal: Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADR/RID: NOT REGULATED

IMDG/IMO: NOT REGULATED

ICAO/IATA: NOT REGULATED

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>TSCA (United States)</th>
<th>DSL (Canada)</th>
<th>EINECS/ELINCS (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</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</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Directive 2008/98/EC on waste
Not applicable

Major Accidents (Directive 2012/18/EU)
Not applicable

CWC (Chemical Weapons Convention) - Annex on Chemicals
Not applicable

EU Export and import of dangerous chemicals (Regulation (EC) No 304/2003)
Not Applicable

15.2. Chemical Safety Report

Not Applicable.

16. OTHER INFORMATION

Full text of H-phrases referred to in sections 2 and 3
Restrictions on Use

This product's foreseen or recommended applications are: Bioremediation product for the remediation of contaminated soil and groundwater

Revision date: 2018-12-11
Revision note: Qualify trade name.

List of Abbreviations and Acronyms

ATE Acute Toxicity Estimate
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
AND European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CE50 Concentración Efectiva Media
CEN European Committee for Standardisation
C&L Classification and Labelling
CLP Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CLV Ceiling Limit Value Par CAS# Chemical Abstracts Service number
CMR Carcinogen, Mutagen, or Reproductive Toxicant
CSA Chemical Safety Assessment
CSR Chemical Safety Report
DNEL Derived No Effect Level
DOT Department of Transportation
DPD Dangerous Preparations Directive 1999/45/EC
DSD Dangerous Substances Directive 67/548/EEC
DU Downstream User
EC European Community
ECHP European Chemicals Agency
EC-Number EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA European Economic Area (EU + Iceland, Liechtenstein and Norway)
ECC European Economic Community
EINECS European Inventory of Existing Commercial Substances
ELINCS European List of notified Chemical Substances
EN European Standard
EQS Environmental Quality Standard
EC European Union
Euphrac European Phrase Catalogue EWC
European Waste Catalogue (replaced by LoW – see below)
FDS Ficha de Datos de Seguridad
GES Generic Exposure Scenario
GHS Globally Harmonized System
IATA International Air Transport Association
ICAO-TI Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG International Maritime Dangerous Goods
IMO International Maritime Organization
IMSBC International Maritime Solid Bulk Cargoes
IT Information Technology
IUCLID International Uniform Chemical Information Database
IUPAC International Union for Pure Applied Chemistry
JRC Joint Research Centre
Kow octanol-water partition coefficient
LC50 Lethal Concentration to 50% of a test population Lethal Dose to 50% of a test population (Median Lethal Dose)
LE Legal Entity
LLV Level Limit Value
LoW List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm)
LR Lead Registrant/MI Manufacturer / Importer MS Member States
MSDS Material Safety Data Sheet
NOEC No observed effect concentration
OC Operational Conditions
OECD Organization for Economic Co-operation and Development
OEL Occupational Exposure Limit
OJ Official Journal
OR Only Representative
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Prepared By:

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End of Safety Data Sheet