SAFETY DATA SHEET

1. Product and company identification

Material name: YSI 1515 Cell Lysing Agent
Version No.: 01
Issue date: 05-December-2013
Revision date: -
Supersedes: -
CAS No.: Mixture
Manufacturer: YSI, Inc
1700/1725 Brannum Lane
Yellow Springs, Ohio 45387
MSDSinfo@ysi.com
(937) 767-7241
CHEMTREC (US/Canada) (800) 424-9300
CHEMTREC (International) 011 703-527-3887
(Collect calls accepted)

2. Hazards Identification

Emergency overview: WARNING

Potential health effects:
- Routes of exposure: Inhalation. Ingestion. Skin contact. Eye contact.
- Eyes: Causes eye irritation. Do not get this material in contact with eyes.
- Skin: Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Avoid contact with the skin.
- Inhalation: Do not breathe dust/fume/gas/mist/vapors/spray.
- Ingestion: Ingestion may cause irritation and stomach discomfort. Do not ingest.

Chronic effects: None known.

Signs and Symptoms:
Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Potential environmental effects:
May cause long-term adverse effects in the environment.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLYETHYLENE GLYCOL OCTYLPHENOL ETHER</td>
<td>9002-93-1</td>
<td>38 - 44</td>
</tr>
<tr>
<td>1,2-PROPYLENE GLYCOL</td>
<td>57-55-6</td>
<td>58 - 64</td>
</tr>
</tbody>
</table>

4. First aid measures

First aid procedures:
- 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. If eye irritation persists: Get medical advice/attention.
- Skin contact: Wash off with soap and water. Get medical attention if irritation develops and persists.
- Inhalation: Move to fresh air. Oxygen or artificial respiration if needed. Call a physician if symptoms develop or persist.
- Ingestion: Rinse mouth. Do not induce vomiting without advice from poison control centre. Get medical attention if symptoms occur.

Notes to physician:
Provide general supportive measures and treat symptomatically.

General advice:
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire Fighting Measures

Extinguishing media
- Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
- Do not use water jet as an extinguisher, as this will spread the fire.

Protection of firefighters
- During fire, gases hazardous to health may be formed.
- Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
- Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk.

Explosion data
- Not established.
- Not established.

6. Accidental release measures

Personal precautions
- Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Be aware of potential for surfaces to become slippery. For personal protection, see section 8.

Environmental precautions
- Avoid release to the environment. Avoid discharge into drains, water courses or onto the ground.

Methods for containment
- Use water spray to reduce vapours or divert vapour cloud drift. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

Methods for cleaning up
- Should not be released into the environment.

    Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. 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 in original containers for re-use. For waste disposal, see section 13.

7. Handling and storage

Handling
- Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear personal protective equipment. Wash thoroughly after handling.

Storage
- Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Keep away from incompatible material.

8. Exposure controls / personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol (CAS 57-55-6)</td>
<td>TWA</td>
<td>155 mg/m3</td>
<td>Vapor and aerosol, inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td>Aerosol</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 ppm</td>
<td>Vapor and aerosol, inhalable fraction.</td>
</tr>
</tbody>
</table>

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. Provide eyewash station.
Personal protective equipment
- **Eye / face protection**: Wear safety glasses with side shields (or goggles).
- **Skin protection**: Wear suitable protective clothing. For prolonged or repeated skin contact use suitable protective gloves.
- **Respiratory protection**: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

### 9. Physical & Chemical Properties

**Appearance**
- Not available.

**Physical state**
- Liquid.

**Form**
- Liquid.

**Colour**
- Clear green.

**Odour**
- Odourless.

**Odour threshold**
- Not available.

**pH**
- 6.5 - 7.5

**Vapour pressure**
- < 1 mm Hg @ 20°C

**Vapour density**
- > 1

**Boiling point**
- 104.44 °C (220 °F)

**Melting point/freezing point**
- Not available.

**Solubility (water)**
- Infinitely soluble

**Specific gravity**
- Not available.

**Flash point**
- > 100.0 °C (> 212.0 °F)

**Flammability limits in air, upper, % by volume**
- Not available.

**Flammability limits in air, lower, % by volume**
- Not available.

**Auto-ignition temperature**
- Not available.

### 10. Chemical Stability & Reactivity Information

**Chemical stability**
- Material is stable under normal conditions.

**Conditions to avoid**
- Contact with active metals (copper, aluminum, zinc) can generate explosive hydrocarbons.

**Incompatible materials**
- Strong oxidising agents.

**Hazardous decomposition products**

**Possibility of hazardous reactions**
- Polymerization will not occur.

### 11. Toxicological information

**Toxicological data**

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-PROPYLENE GLYCOL (CAS 57-55-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td>Rat</td>
<td>30 g/kg</td>
</tr>
<tr>
<td>LD50</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Local effects</strong></td>
<td></td>
<td>Irritating to eyes.</td>
</tr>
<tr>
<td><strong>Chronic effects</strong></td>
<td></td>
<td>Not expected to be hazardous by WHMIS criteria.</td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td></td>
<td>No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).</td>
</tr>
<tr>
<td><strong>Mutagenicity</strong></td>
<td></td>
<td>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</td>
</tr>
<tr>
<td><strong>Reproductive effects</strong></td>
<td></td>
<td>Due to lack of data the classification is not possible.</td>
</tr>
</tbody>
</table>
12. Ecological information

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-PROPYLENE GLYCOL (CAS 57-55-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fathead minnow (Pimephales promelas)</td>
</tr>
<tr>
<td>POLYETHYLENE GLYCOL OCTYLPHENOL ETHER (CAS 9002-93-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Bluegill (Lepomis macrochirus)</td>
</tr>
</tbody>
</table>

Ecotoxicity
Contains a substance which causes risk of hazardous effects to the environment.

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

Persistence and degradability
Not available.

Partition coefficient
1,2-PROPYLENE GLYCOL (CAS 57-55-6) -0.92

13. Disposal considerations

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

Waste from residues / unused products
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

TDG
Not regulated as dangerous goods.

IATA
UN number UN3082
UN proper shipping name Environmentally hazardous substance, liquid, n.o.s. (POLYETHYLENE GLYCOL OCTYLPHENOL ETHER)
Transport hazard class(es) 9
Packing group III
Environmental hazards Yes
ERG code 9L
Special precautions for user Read safety instructions, MSDS and emergency procedures before handling.

IMDG
UN number UN3082
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (POLYETHYLENE GLYCOL OCTYLPHENOL ETHER)
Transport hazard class(es) 9
Packing group III
Environmental hazards Yes
Marine pollutant F-A, S-F
Special precautions for user Read safety instructions, MSDS and emergency procedures before handling.

15. Regulatory information

Canadian regulations
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status Controlled

WHMIS Classification D2B - Other Toxic Effects-TOXIC
**WHMIS labeling**

**Inventory status**

<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>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</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>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*“Yes” indicates this product complies 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

**HMIS® ratings**

- Health: 1
- Flammability: 1
- Physical Hazard: 0

**NFPA ratings**

- Health: 1
- Flammability: 1
- Instability: 0

**Disclaimer**
The information in the sheet was written based on the best knowledge and experience currently available.