1. Product and Company Identification

Product identifier  YSI Lactose Standard- All Concentrations
Version #  01
Issue date  22-April-2014
Revision date  -
Supersedes date  -
CAS #  Mixture
Product code  2783, 2784
Product use  Analysis Standard/Reagent
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

Potential health effects
   Eyes  Health injuries are not known or expected under normal use.
   Skin  Health injuries are not known or expected under normal use.
   Inhalation  Health injuries are not known or expected under normal use.
   Ingestion  Health injuries are not known or expected under normal use.

Target organs  No specific target organs noted.

Signs and symptoms  Direct contact with eyes may cause temporary irritation.

Potential environmental effects  Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium EDTA</td>
<td>25102-12-9</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Lactose, monohydrate</td>
<td>64044-51-5</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Gentamicin, sulfate</td>
<td>1405-41-0</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>&gt; 98</td>
</tr>
</tbody>
</table>

4. First Aid Measures

First aid procedures
   Eye contact  Rinse with water. Get medical attention if irritation develops and persists.
   Skin contact  Rinse skin with water/shower. Get medical attention if irritation develops and persists.
   Inhalation  If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
   Ingestion  Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
General advice  If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties  Not flammable by WHMIS criteria.
Extinguishing media
Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Protection of firefighters
Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.
Protective equipment for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.

Explosion data
Sensitivity to static discharge: Not available.
Sensitivity to mechanical impact: Not available.

6. Accidental Release Measures
Personal precautions: Keep unnecessary personnel away. For personal protection, see section 8 of the MSDS.
Environmental precautions: Do not contaminate water.
Methods for containment: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
Methods for 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. 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.

7. Handling and Storage
Handling: Do not breathe mist/vapors/spray. Avoid contact with skin, eyes and clothing. Observe good industrial hygiene practices.
Storage: Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the MSDS).

8. Exposure Controls / Personal Protection
Occupational exposure limits: No exposure limits noted for ingredient(s).
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.

Personal protective equipment
Eye / face protection: If contact is likely, safety glasses with side shields are recommended.
Skin protection: Wear suitable protective clothing.
Respiratory protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

9. Physical & Chemical Properties
Appearance: Not available.
Physical state: Liquid.
Form: Liquid.
Color: Clear and colorless.
Odor: None.
Odor threshold: Not available.
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>6.5 - 7.5</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Equivalent to water.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Equal to water vapor.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>212 °F (100 °C)</td>
</tr>
<tr>
<td>Melting point/Freezing point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Infinitely soluble</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limits in air, upper, % by volume</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limits in air, lower, % by volume</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

10. Chemical Stability & Reactivity Information

- **Chemical stability**: Material is stable under normal conditions.
- **Conditions to avoid**: Contact with incompatible materials.
- **Incompatible materials**: Strong oxidizing agents.
- **Hazardous decomposition products**: No hazardous decomposition products are known.
- **Possibility of hazardous reactions**: No dangerous reaction known under conditions of normal use.

11. Toxicological Information

- **Acute effects**: Not classified.
- **Sensitization**: This product is not expected to cause skin sensitization.
- **Local effects**: Direct contact with eyes may cause temporary irritation.
- **Chronic effects**: Not expected to be hazardous by WHMIS criteria.
- **Carcinogenicity**: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
- **Mutagenicity**: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
- **Reproductive effects**: This product is not expected to cause reproductive or developmental effects.
- **Symptoms and target organs**: Direct contact with eyes may cause temporary irritation.

12. Ecological Information

- **Ecotoxicity**: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
- **Environmental effects**: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
- **Persistence and degradability**: Not available.

13. Disposal Considerations

- **Disposal instructions**: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
- **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

- **TDG**: Not regulated as dangerous goods.
IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

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
Non-controlled

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>No</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>Yes</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>Yes</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>No</td>
</tr>
</tbody>
</table>

* A "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

NFPA ratings
Health: 0
Flammability: 0
Instability: 0

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