1. Product and Company Identification

Product identifier: YSI 2372 Blood Lactate Preservative
Version #: 01
Issue date: 12-November-2014
Revision date: -
Supersedes date: -
CAS #: Mixture
Product code: 2315
Product use: Analysis Standard/Reagent

Manufacturer information:
YSI, a Xylem brand
1700/1725 Brannum Lane
Yellow Springs, Ohio 45387
YSI 2372 Blood Lactate Preservative MSDS Canada
923286     Version #: 01     Revision date: -     Issue date: 12-November-2014

2. Hazards Identification

Emergency overview
DANGER

Toxic if swallowed. Irritating to eyes and skin. May cause irritation to the respiratory system. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Possible reproductive hazard.

Potential health effects

Routes of exposure
Inhalation. Ingestion. Skin contact. Eye contact.

Eyes
Irritating to eyes.

Skin
Irritating to skin. May cause allergic skin reaction.

Inhalation
May cause irritation of respiratory tract. May cause allergic respiratory reaction. Prolonged inhalation may be harmful.

Ingestion
Toxic if swallowed. Irritating. May cause nausea, stomach pain and vomiting.

Chronic effects
Prolonged overexposure to fluorides may increase fluoride content of bones and teeth, and may result in fluorosis, and brittleness of bones. Repeated or prolonged exposure to high concentrations may cause kidney and liver damage. May cause damage to the heart.

Signs and symptoms
Irritant effects. Rash. Upper respiratory tract irritation. Difficulty in breathing. Symptoms are prostration, gasping, pallor, and uncoordinated movements. Irritating to mouth, throat, and stomach. Prolonged exposure may cause chronic effects.

Potential environmental effects
 Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride</td>
<td>7681-49-4</td>
<td>31 - 39</td>
</tr>
<tr>
<td>Sodium phosphate dibasic</td>
<td>7558-79-4</td>
<td>33 - 36</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>11 - 14</td>
</tr>
<tr>
<td>Sodium acid phosphate</td>
<td>7558-80-7</td>
<td>7 - 10</td>
</tr>
<tr>
<td>Glycine, N,N’-1,2-ethane diybisN (carboxymethyl)-,dipotassium salt, dihydrate</td>
<td>25102-12-9</td>
<td>&lt; 7</td>
</tr>
<tr>
<td>Sodium Benzoate</td>
<td>532-32-1</td>
<td>&lt; 7</td>
</tr>
<tr>
<td>Gentamicin sulfate</td>
<td>1405-41-0</td>
<td>&lt; 0.7</td>
</tr>
</tbody>
</table>
4. First Aid Measures

First aid procedures

**Inhalation**
If dust from the material is inhaled, remove the affected person immediately to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.

**Skin contact**
Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. 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. Get medical attention if irritation develops and persists.

**Ingestion**
Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn’t get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

*Notes to physician*
Symptoms may be delayed.

*General advice*
Immediate medical attention is required. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. 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**
Firefighters should wear full protective clothing including self contained breathing apparatus.

**Fire fighting equipment/instructions**
Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

**Explosion data**
- Sensitivity to static discharge: Not sensitive.
- Sensitivity to mechanical impact: Not sensitive.

**Hazardous combustion products**
During fire, gases hazardous to health may be formed.

6. Accidental Release Measures

**Personal precautions**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Avoid inhalation of dust from the spilled material. Wear a dust mask if dust is generated above exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the MSDS.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not contaminate water.

**Methods for containment**
Stop leak if you can do so without risk. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.

**Methods for cleaning up**
Minimize dust generation and accumulation. Should not be released into the environment. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid the generation of dusts during clean-up. Following product recovery, flush area with water. Clean up in accordance with all applicable regulations. For waste disposal, see section 13 of the MSDS.

**Other information**
Clean up in accordance with all applicable regulations.
7. Handling and Storage

Handling
Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Do not breathe dust. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. When using do not eat or drink. Wash thoroughly after handling. Avoid release to the environment. Practice good housekeeping.

Storage
Keep locked up. Store in a closed container away from incompatible materials. Store in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Store away from incompatible materials (see Section 10 of the MSDS).

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>BEI</td>
<td>3 mg/l</td>
</tr>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td></td>
<td>2 mg/l</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
</tr>
</tbody>
</table>

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
</tr>
</tbody>
</table>

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
</tr>
</tbody>
</table>

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
</tr>
</tbody>
</table>

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>PEL</td>
<td>2.5 mg/m3</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-2 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
<td>Dust.</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. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Provide easy access to water supply and eye wash facilities.

Personal protective equipment

Eye / face protection
Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.

Skin protection
Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Respiratory protection
Wear respirator with dust filter.

9. Physical & Chemical Properties

Appearance

Physical state
Solid.

Form
Powder.

Color
White

Odor
Mild.

Odor threshold
Not available.

pH
6.5 - 7.5

Vapor pressure
Not applicable

Vapor density
Not applicable

Boiling point
Not available.

Melting point/Freezing point
> 500 °F (> 260 °C)

Solubility (water)
Soluble in water

Specific gravity
Not available.

Flash point
Not applicable

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

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

Auto-ignition temperature
Not available.

Evaporation rate
Not available.

Partition coefficient (n-octanol/water)
Not available.

10. Chemical Stability & Reactivity Information

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Material is stable under normal conditions.

Conditions to avoid
Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

Incompatible materials
Strong oxidizing agents. Do not mix with other chemicals.

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

Toxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride (CAS 7647-14-5)</td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td></td>
</tr>
<tr>
<td>Rat</td>
<td>3000 mg/kg</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

**Acute effects**
Toxic if swallowed.

**Sensitization**
May cause sensitization by skin contact. May cause sensitization by inhalation.

**Local effects**
Causes skin, eye and respiratory tract irritation.

**Chronic effects**
May cause damage to organs through prolonged or repeated exposure.

**Carcinogenicity**

<table>
<thead>
<tr>
<th>ACGIH Carcinogens</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoride (CAS 7681-49-4)</td>
<td>A4 Not classifiable as a human carcinogen.</td>
</tr>
</tbody>
</table>

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| Sodium fluoride (CAS 7681-49-4) | 3 Not classifiable as to carcinogenicity to humans. |

**Skin corrosion/irritation**
Causes skin irritation.

**Serious eye damage/irritation**
Causes serious eye irritation.

**Mutagenicity**
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Reproductive effects**
Not available.

**Teratogenicity**
Not available.

**Symptoms and target organs**
Irritant effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Rash. Upper respiratory tract irritation. Difficulty in breathing. Prolonged exposure may cause chronic effects. Toxic if swallowed. May cause an allergic skin reaction. May cause allergic respiratory reaction. Causes damage to organs (liver, kidney, heart, teeth) through prolonged or repeated exposure.

**Synergistic materials**
Not available.

12. Ecological Information

Ecotoxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride (CAS 7647-14-5)</td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td></td>
</tr>
<tr>
<td>EC50</td>
<td>874 mg/l, 48 hours</td>
</tr>
</tbody>
</table>

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

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

**Aquatic toxicity**
Not available.

**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
Controlled

WHMIS classification
D1B - Immediate/Serious-TOXIC
D2A - Other Toxic Effects-VERY TOXIC
D2B - Other Toxic Effects-TOXIC

WHMIS labeling

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>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

HMIS® ratings
Health: 2*
Flammability: 0
Physical hazard: 0

Disclaimer
YSI, a Xylem brand cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Prepared by
Not available.