SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture: YSI 1530-2327-2328 Lactate Standards
Registration number: -
Synonyms: None.
Product code: YSI 1530-2327-2328
Issue date: 20-March-2015
Version number: 01
Revision date: -
Supersedes date: -

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

Identified uses: Analysis Standard/Reagent
Uses advised against: None known.

1.3. Details of the supplier of the safety data sheet

Supplier
Company name: YSI, a Xylem brand
Address: 1700/1725 Brannum Lane
Yellow Springs, Ohio 45387
United States
Division:
Telephone: (937) 767-7241

e-mail: MSDSinfo@ysi.com
Contact person: Not available.

1.4. Emergency telephone number

CHEMTREC (US/Canada): (800) 424-9300
CHEMTREC (International): 011 703-527-3887 (Collect calls accepted)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended
This preparation does not meet the criteria for classification according to Directive 1999/45/EC as amended.

Classification according to Regulation (EC) No 1272/2008 as amended
This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary
Physical hazards: Not classified for physical hazards.
Health hazards: Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.
Environmental hazards: Not classified for hazards to the environment.
Specific hazards: No hazards resulting from the material as supplied.
Main symptoms: Direct contact with eyes may cause temporary irritation.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended
Hazard pictograms: None.
Signal word: None.
Hazard statements: The mixture does not meet the criteria for classification.

Precautionary statements
Prevention: Observe good industrial hygiene practices.
Response
Wash hands after handling.

Storage
Store away from incompatible materials.

Disposal
Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information
Not applicable.

2.3. Other hazards
None known. Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>INDEX No.</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Glycine, N,N'-1,2-ethanediylbis(N-carboxymethyl) dipotassium salt, dihydrate</td>
<td>&lt; 1</td>
<td>25102-12-9</td>
<td>-</td>
<td>-</td>
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<tr>
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<tr>
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<td>Xn;R20</td>
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<tr>
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<td>Acute Tox. 4;H332</td>
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<tr>
<td>Lithium (S)-lactate</td>
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<td>-</td>
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<tr>
<td>Sodium Benzoate</td>
<td>&lt; 1</td>
<td>532-32-1</td>
<td>208-534-8</td>
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<td>CLP:</td>
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</tbody>
</table>

List of abbreviations and symbols that may be used above

- DSD: Directive 67/548/EEC.
- vPvB: very persistent and very bioaccumulative substance.
- PBT: persistent, bioaccumulative and toxic substance.

SECTION 4: First aid measures

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact
Rinse with water. Get medical attention if irritation develops and persists.

Ingestion
Rinse mouth. Get medical attention if symptoms occur.

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

Direct contact with eyes may cause temporary irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards
No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture
During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters
- Special protective equipment for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
- Special fire fighting procedures
Move containers from fire area if you can do so without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
- For non-emergency personnel
No special precautions.
- For emergency responders
Keep unnecessary personnel away.

6.2. Environmental precautions
For good industrial practice avoid release to the environment.

6.3. Methods and material for containment and cleaning up
- 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.

6.4. Reference to other sections
For personal protection, see section 8. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities
Store in tightly closed original container in a well-ventilated place. Store away from incompatible materials (See Section 10).

7.3. Specific end use(s)
Analysis Standard/Reagent

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
Sweden. Occupational Exposure Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium (S)-lactate (CAS 27848-80-2)</td>
<td>Ceiling</td>
<td>0.02 mg/m3</td>
<td>Inhalable dust.</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures
Follow standard monitoring procedures.

Derived no-effect level (DNEL)
Not available.

Predicted no effect concentrations (PNECs)
Not available.

8.2. Exposure controls

Appropriate 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.

Individual protection measures, such as personal protective equipment

- General information
Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

- Eye/face protection
If contact is likely, safety glasses with side shields are recommended.

- Skin protection
  - Hand protection
For prolonged or repeated skin contact use suitable protective gloves.
  - Other
Wear suitable protective clothing.
## Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

## Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

## Hygiene measures
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## Environmental exposure controls
For good industrial practise contain spills and prevent releases and observe national regulations on emissions.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance
- **Physical state**: Liquid.
- **Form**: Liquid.
- **Colour**: Clear and colorless.
- **Odour**: Odourless.
- **Odour threshold**: Not available.
- **pH**: 6.5 - 7.5
- **Melting point/freezing point**: Not available.
- **Initial boiling point and boiling range**: 100 °C (212 °F)
- **Flash point**: Not available.
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not available.

#### Upper/lower flammability or explosive limits
- **Flammability limit - lower (%)**: Not available.
- **Flammability limit - upper (%)**: Not available.

#### Vapour pressure
- Equivalent to water

#### Vapour density
- Equivalent to water vapor

#### Relative density
- 1 g/cm³

#### Solubility(ies)
- Infinitely soluble in water.

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

#### Auto-ignition temperature
- Not available.

#### Decomposition temperature
- Not available.

#### Viscosity
- Not available.

#### Explosive properties
- Not available.

#### Oxidizing properties
- Not available.

### 9.2. Other information
No relevant additional information available.

## SECTION 10: Stability and reactivity

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

### 10.2. Chemical stability
Material is stable under normal conditions.

### 10.3. Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.

### 10.4. Conditions to avoid
Contact with incompatible materials.

### 10.5. Incompatible materials
None known.

### 10.6. Hazardous decomposition products
No hazardous decomposition products are known.

## SECTION 11: Toxicological information

### General information
Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

#### Inhalation
Health injuries are not known or expected under normal use.

#### Skin contact
Health injuries are not known or expected under normal use.
Eye contact
Ingestion

Health injuries are not known or expected under normal use.

Symptoms
Direct contact with eyes may cause temporary irritation.

11.1. Information on toxicological effects

Acute toxicity
Not expected to be acutely toxic.

Skin corrosion/irritation
Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation
Based on available data, the classification criteria are not met.

Respiratory sensitisation
Due to lack of data the classification is not possible.

Skin sensitisation
Based on available data, the classification criteria are not met.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
Based on available data, the classification criteria are not met.

Reproductive toxicity
Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure
Due to lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure
Based on available data, the classification criteria are not met.

Aspiration hazard
Due to lack of data the classification is not possible.

Mixture versus substance information
Not available.

Other information
This product has no known adverse effect on human health.

SECTION 12: Ecological information

12.1. Toxicity
Not expected to be harmful to aquatic organisms.

12.2. Persistence and degradability
No data is available on the degradability of this product.

12.3. Bioaccumulative potential
No data available for this product.

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

Bioconcentration factor (BCF)
Not available.

12.4. Mobility in soil
This product is water soluble and may disperse in soil.

12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste
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.

EU waste code
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information
Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

SECTION 14: Transport information

ADR
Not regulated as dangerous goods.

RID
Not regulated as dangerous goods.

ADN
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.
IMDG
   Not regulated as dangerous goods.

14.7. Transport in bulk  Not applicable.
   according to Annex II of
   MARPOL 73/78 and the IBC
   Code

SECTION 15: Regulatory information

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

EU regulations
   Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I
      Not listed.
   Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
      Not listed.
      Not listed.
   Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
      Not listed.
   Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
      Not listed.
   Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended
      Not listed.
   Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended
      Not listed.
   Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry
      Not listed.
   Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
      Not listed.

Authorisations
   Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended
      Not listed.

Restrictions on use
   Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
      Not listed.
   Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work
      Not listed.
   Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding
      Not listed.

Other EU regulations
   Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances
      Not listed.
   Directive 94/33/EC on the protection of young people at work
      Not listed.

Other regulations
   The product is classified and labelled in accordance with EC directives or respective national laws.
   This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations
   Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment
   No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations  Not available.
References  Not available.
Information on evaluation method leading to the classification of mixture
   The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R20 Harmful by inhalation.
R36 Irritating to eyes.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

Training information
Follow training instructions when handling this material.

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