1. Product and Company Identification

Product identifier: YSI 7172-2972 Ammonium Calibrator
Version #: 01
Issue date: 15-July-2014
Revision date: -
Supersedes date: -
CAS #: Mixture
Product code: 7172-2972
Product use: Analysis Standard/Reagent

Manufacturer information:
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)

Supplier: Not available.

2. Hazards Identification

Emergency overview: Health injuries are not known or expected under normal use.

Potential health effects:

Routes of exposure:
- Eye contact: Health injuries are not known or expected under normal use.
- Skin contact: 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.

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

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride</td>
<td>12125-02-9</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Benzoic acid</td>
<td>65-85-0</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Ethylenediamine tetraacetic acid</td>
<td>60-00-4</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Lithium Acetate Dihydrate</td>
<td>6108-17-4</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>7447-40-7</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>&gt; 95</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
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.

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
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

Explosion data
Sensitivity to static discharge
Not sensitive.

Sensitivity to mechanical impact
Not sensitive.

Hazardous combustion products
None known.

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
Should not be released into the environment. This product is miscible in water.

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 to original containers for re-use. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

Handling
Use care in handling/storage. Handle and open container with care. 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

US. ACGIH Threshold Limit Values

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<th>Components</th>
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<tr>
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Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

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

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

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

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

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<td>Fume.</td>
</tr>
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</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.

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
No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

9. Physical & Chemical Properties

Appearance
Physical state
Liquid.

Form
Liquid.

Color
Clear and colorless.

Odor
None.

Odor threshold
Not available.

pH
5.2 - 5.5

Vapor pressure
Equivalent to water

Vapor density
Equal to water vapor.

Boiling point
212 °F (100 °C)

Melting point/Freezing point
Not available.

Solubility (water)
Infinitely soluble

Specific gravity
1

Flash point
None.

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.
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.

Incompatible materials
None known.

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

Components | Species | Test Results
--- | --- | ---
Ammonium chloride (CAS 12125-02-9) |  
Acute  
Oral  
LD50  
Rat  
1650 mg/kg

Benzoic acid (CAS 65-85-0) |  
Acute  
Dermal  
LD50  
Rabbit  
> 5000 mg/kg  
Inhalation  
LC50  
Rat  
> 0.026 mg/l, 1 Hours  
Oral  
LD50  
Rat  
1700 mg/kg

Potassium chloride (CAS 7447-40-7) |  
Acute  
Oral  
LD50  
Rat  
2600 mg/kg

Acute effects
Not classified.

Sensitization
Not expected to be a skin sensitizer.

Local effects
Direct contact with eyes may cause temporary irritation. Prolonged skin contact 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.

Skin corrosion/irritation
Prolonged skin contact may cause temporary irritation.

Serious eye damage/irritation
Direct contact with eyes may cause temporary irritation.

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.

Teratogenicity
Not available.

Symptoms and target organs
Direct contact with eyes may cause temporary irritation.

Synergistic materials
Not available.

Further information
This product has no known adverse effect on human health.
12. Ecological Information

Ecotoxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride (CAS 12125-02-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td>Fish</td>
<td>LC50</td>
</tr>
<tr>
<td>Benzoic acid (CAS 65-85-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td>Fish</td>
<td>LC50</td>
</tr>
<tr>
<td>Ethylenediamine tetraacetic acid (CAS 60-00-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td>Crustacea</td>
<td>EC50</td>
</tr>
<tr>
<td></td>
<td>Fish</td>
<td>LC50</td>
</tr>
<tr>
<td>Potassium chloride (CAS 7447-40-7)</td>
<td></td>
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</tr>
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</tr>
<tr>
<td></td>
<td>Fish</td>
<td>LC50</td>
</tr>
</tbody>
</table>

**Ecotoxicity**
Not expected to be harmful to aquatic organisms.

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

**Aquatic toxicity**
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.

**Persistence and degradability**
Not available.

**Partition coefficient**
Benzoic acid (CAS 65-85-0) 1.87

13. Disposal Considerations

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**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

**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>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>Country(s) or region</td>
<td>Inventory name</td>
<td>On inventory (yes/no)*</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>------------------------</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>Yes</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: 0
- Flammability: 0
- Physical hazard: 0

Disclaimer

YSI, Inc 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.

Prepared by

Not available.