



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Product identifier** YSI 7170-7179-2970 Ammonium-Potassium  
**Buffer Version #** 01  
**Issue date** 15-July-2014  
**Revision date** -  
**Supersedes date** -  
**CAS #** Mixture  
**Product code** 7170-2970  
**Product use** Analysis Standard/Reagent  
**Manufacturer information** YSI, Inc  
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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. Skin contact.  
**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.  
**Signs and symptoms** Direct contact with eyes may cause temporary irritation.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
Ammonium chloride	12125-02-9	< 1
Benzoic acid	65-85-0	< 1
Ethylenediamine tetraacetic acid	60-00-4	< 1
Lithium Acetate Dihydrate	6108-17-4	< 1
Potassium chloride	7447-40-7	< 1
Water	7732-18-5	> 95

## 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

<b>Flammable properties</b>	Not flammable by WHMIS criteria.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Protective equipment for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>Explosion data</b>	
<b>Sensitivity to static discharge</b>	Not sensitive.
<b>Sensitivity to mechanical impact</b>	Not sensitive.
<b>Hazardous combustion products</b>	None known.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Keep unnecessary personnel away. For personal protection, see section 8 of the MSDS.
<b>Environmental precautions</b>	Do not contaminate water.
<b>Methods for containment</b>	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
<b>Methods for cleaning up</b>	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. 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.  Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.

## 7. Handling and Storage

<b>Handling</b>	Use care in handling/storage. Handle and open container with care. Observe good industrial hygiene practices.
<b>Storage</b>	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

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m <sup>3</sup>	Fume.
	TWA	10 mg/m <sup>3</sup>	Fume.

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m <sup>3</sup>	Fume.
	TWA	10 mg/m <sup>3</sup>	Fume.

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

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m <sup>3</sup>	Fume.
	TWA	10 mg/m <sup>3</sup>	Fume.

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

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m <sup>3</sup>	Fume.
	TWA	10 mg/m <sup>3</sup>	Fume.

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

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m <sup>3</sup>	Fume.
	TWA	10 mg/m <sup>3</sup>	Fume.

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

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m <sup>3</sup>	Fume.
	TWA	10 mg/m <sup>3</sup>	Fume.

**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.

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

**Other data**

**Flammability (solid, gas)** Not applicable.

## 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)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Rat	1650 mg/kg
Benzoic acid (CAS 65-85-0)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 0.026 mg/l, 1 Hours
<i>Oral</i>		
LD50	Rat	1700 mg/kg
Potassium chloride (CAS 7447-40-7)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Rat	2600 mg/kg
<b>Acute effects</b>	Not classified.	
<b>Sensitization</b>	Not expected to be a skin sensitizer.	
<b>Local effects</b>	Direct contact with eyes may cause temporary irritation. Prolonged skin contact may cause temporary irritation.	
<b>Chronic effects</b>	Not expected to be hazardous by WHMIS criteria.	
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.	
<b>Serious eye damage/irritation</b>	Direct contact with eyes may cause temporary irritation.	
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
<b>Reproductive effects</b>	This product is not expected to cause reproductive or developmental effects.	
<b>Teratogenicity</b>	Not available.	
<b>Symptoms and target organs</b>	Direct contact with eyes may cause temporary irritation.	
<b>Synergistic materials</b>	Not available.	
<b>Further information</b>	This product has no known adverse effect on human health.	

## 12. Ecological Information

### Ecotoxicological data

Components		Species	Test Results
Ammonium chloride (CAS 12125-02-9)			
<b>Aquatic</b>			
Fish	LC50	Lake trout, siscowet ( <i>Salvelinus namaycush</i> )	0.28 mg/l, 96 hours
Benzoic acid (CAS 65-85-0)			
<b>Aquatic</b>			
Fish	LC50	Western mosquitofish ( <i>Gambusia affinis</i> )	180 mg/l, 96 hours
Ethylenediamine tetraacetic acid (CAS 60-00-4)			
<b>Aquatic</b>			
Crustacea	EC50	Water flea ( <i>Daphnia magna</i> )	113 mg/l, 48 hours
Fish	LC50	Bluegill ( <i>Lepomis macrochirus</i> )	34 - 62 mg/l, 96 hours
Potassium chloride (CAS 7447-40-7)			
<b>Aquatic</b>			
Crustacea	EC50	Water flea ( <i>Daphnia magna</i> )	83 mg/l, 48 hours
Fish	LC50	Western mosquitofish ( <i>Gambusia affinis</i> )	435 mg/l, 96 hours
<b>Ecotoxicity</b>	Not expected to be harmful to aquatic organisms.		
<b>Environmental effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.		
<b>Aquatic toxicity</b>	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.		
<b>Persistence and degradability</b>	Not available.		
<b>Partition coefficient</b>			
Benzoic acid (CAS 65-85-0)		1.87	

## 13. Disposal Considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
<b>Waste from residues / unused products</b>	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).
<b>Contaminated packaging</b>	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

<b>TDG</b>	Not regulated as dangerous goods.
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.

## 15. Regulatory Information

<b>Canadian regulations</b>	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.	
<b>WHMIS status</b>	Non-controlled	
<b>International Inventories</b>		
<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*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.