Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

SECTION 1: Identification

1.1. Product Identifier

**Trade Name or Designation:** Total Ionic Strength Adjustment Buffer (TISAB II), with CDTA for Fluoride Analysis using Ion Selective Electrodes

**Product Number:** 8670

**Other Identifying Product Numbers:** 8670-1, 8670-16, 8670-2.5, 8670-32, 8670-5, 8670-55

1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

1.3. Details of the Supplier of the Safety Data Sheet

**Company:** Ricca Chemical Company

**Address:** 448 West Fork Drive
Arlington, TX 76012 USA

**Telephone:** 888-467-4222

1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA) 800-424-9300
CHEMTREC (International) 1+ 703-527-3887

SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

*For the full text of the Hazard and Precautionary Statements listed below, see Section 16.*

<table>
<thead>
<tr>
<th>Hazard Class/ Precautionary Statements</th>
<th>Hazard Class</th>
<th>Category</th>
<th>Hazard Statement</th>
<th>Precautionary Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corrosion / Irritation</td>
<td>Category 2</td>
<td>H315</td>
<td>P264, P280, P302+P352, P321, P332+P313, P362</td>
<td></td>
</tr>
<tr>
<td>Eye Damage / Irritation</td>
<td>Category 1</td>
<td>H318</td>
<td>P280, P305+P351+P338, P310</td>
<td></td>
</tr>
<tr>
<td>Respiratory Sensitizer</td>
<td>Category 1</td>
<td>H334</td>
<td>P261, P285, P304+P341, P342+P311, P501</td>
<td></td>
</tr>
<tr>
<td>Specific Target Organs/Systemic Toxicity Following Single Exposure</td>
<td>Category 1</td>
<td>H370</td>
<td>P260, P264, P270, P307+P311, P321, P405, P501</td>
<td></td>
</tr>
<tr>
<td>Specific Target Organs/Systemic Toxicity Following Repeated Exposure</td>
<td>Category 2</td>
<td>H373</td>
<td>P260, P314, P501</td>
<td></td>
</tr>
</tbody>
</table>
Safety Data Sheet

2.2. GHS Label Elements

Pictograms:

- [Image of pictograms]

Signal Word:  **Danger**

<table>
<thead>
<tr>
<th>Hazard Statements</th>
<th>Hazard Number</th>
<th>Hazard Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td></td>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td></td>
<td>H334</td>
<td>May cause allergy or asthma symptoms or breathing difficulties if inhaled.</td>
</tr>
<tr>
<td></td>
<td>H370</td>
<td>Causes damage to organs.</td>
</tr>
<tr>
<td></td>
<td>H373</td>
<td>May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
</tbody>
</table>

Precautionary Statements:

<table>
<thead>
<tr>
<th>Precautionary Number</th>
<th>Precautionary Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>P260</td>
<td>Do not breathe fumes, mist, vapors, or spray.</td>
</tr>
<tr>
<td>P261</td>
<td>Avoid breathing fumes, mist, vapors, or spray.</td>
</tr>
<tr>
<td>P264</td>
<td>Wash arms, hands and face thoroughly after handling.</td>
</tr>
<tr>
<td>P270</td>
<td>Do not eat, drink or smoke when using this product.</td>
</tr>
<tr>
<td>P280</td>
<td>Wear protective gloves and eye protection.</td>
</tr>
<tr>
<td>P285</td>
<td>In case of inadequate ventilation wear respiratory protection.</td>
</tr>
<tr>
<td>P302+P352</td>
<td>IF ON SKIN: Wash with plenty of soap and water.</td>
</tr>
<tr>
<td>P304+P341</td>
<td>IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.</td>
</tr>
<tr>
<td>P305+P351+P338</td>
<td>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
<tr>
<td>P307+P311</td>
<td>IF exposed: Call a POISON CENTER or physician.</td>
</tr>
<tr>
<td>P310</td>
<td>Immediately call a POISON CENTER or physician.</td>
</tr>
<tr>
<td>P314</td>
<td>Get medical attention if you feel unwell.</td>
</tr>
<tr>
<td>P321</td>
<td>Specific treatment (Wash areas of contact with water immediately).</td>
</tr>
<tr>
<td>P332+P313</td>
<td>If skin irritation occurs: Get medical attention.</td>
</tr>
<tr>
<td>P342+P311</td>
<td>If experiencing respiratory symptoms: Call a POISON CENTER or physician.</td>
</tr>
<tr>
<td>P362</td>
<td>Take off contaminated clothing and wash it before reuse.</td>
</tr>
<tr>
<td>P405</td>
<td>Store locked up.</td>
</tr>
<tr>
<td>P501</td>
<td>Dispose of contents in accordance with local, state, federal and international regulations.</td>
</tr>
</tbody>
</table>

2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.
SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance or Mixture

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Formula</th>
<th>Molecular Weight</th>
<th>CAS Number</th>
<th>Weight%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>H₂O</td>
<td>18.01 g/mol</td>
<td>7732-18-5</td>
<td>84.24%</td>
</tr>
<tr>
<td>Acetic Acid</td>
<td>CH₃COOH</td>
<td>60.05 g/mol</td>
<td>64-19-7</td>
<td>5.98%</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>NaCl</td>
<td>58.44 g/mol</td>
<td>7647-14-5</td>
<td>5.80%</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>NaOH</td>
<td>39.99 g/mol</td>
<td>1310-73-2</td>
<td>3.58%</td>
</tr>
<tr>
<td>1,2-Cyclohexylenedimaine Tetraacetic Acid (CDTA)</td>
<td>C₁₄H₂₂N₂O₈·H₂O</td>
<td>364.35 g/mol</td>
<td>13291-61-7</td>
<td>0.40%</td>
</tr>
</tbody>
</table>

SECTION 4: First-Aid Measures

4.1. General First Aid Information

**Eye Contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Inhalation:** IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

**Skin Contact:** IF ON SKIN: Wash with plenty of soap and water. May cause irritation, redness, and pain.

**Ingestion:** Dilute with water or milk. Call a physician if necessary.

4.2. Most Important Symptoms and Effects, Acute and Delayed

May cause irritation upon contact. Wash areas of contact with water. Does not present any significant health hazards. EYE CONTACT: May cause irritation, redness, pain, and tearing.

4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately).

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Use any means suitable for extinguishing surrounding fire.

5.2. Specific Hazards Arising from the Substance or Mixture

Not considered to be a fire or explosion hazard.

5.3. Special Protective Equipment for Firefighters

Use protective clothing and breathing equipment appropriate for the surrounding fire.

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.
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6.2. Cleanup and Containment Methods and Materials
Absorb with suitable material (vermiculite, clay, paper towels, etc.). Treat the solid residue as normal refuse. Liquid may be flushed to the sewer with plenty of water.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions
Store locked up. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage.

SECTION 8: Exposure Controls / Personal Protection

Control Parameters

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Limit Type</th>
<th>Country</th>
<th>Exposure Limit</th>
<th>Information Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid (64-19-7)</td>
<td>TWA</td>
<td>USA</td>
<td>10 ppm TWA 25 mg/m³ TWA</td>
<td>U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)</td>
</tr>
<tr>
<td>Acetic Acid (64-19-7)</td>
<td>TLV-STE L</td>
<td>USA</td>
<td>15 ppm STEL</td>
<td>ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STE L)</td>
</tr>
<tr>
<td>Acetic Acid (64-19-7)</td>
<td>TLV-TWA</td>
<td>USA</td>
<td>10 ppm TWA</td>
<td>ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)</td>
</tr>
<tr>
<td>Sodium Hydroxide (1310-73-2)</td>
<td>TWA</td>
<td>USA</td>
<td>2 mg/m³ TWA</td>
<td>U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)</td>
</tr>
<tr>
<td>Sodium Hydroxide (1310-73-2)</td>
<td>TLV-Ceiling</td>
<td>USA</td>
<td>2 mg/m³ Ceiling</td>
<td>ACGIH - Threshold Limit Values - Ceilings (TLV-C)</td>
</tr>
</tbody>
</table>

8.2. Exposure Controls

Engineering Controls: No specific controls are needed. Normal room ventilation is adequate.

Respiratory Protection: In case of inadequate ventilation wear respiratory protection. Normal room ventilation is adequate.

Skin Protection: Wear protective gloves and eye protection. Chemical resistant gloves.

Eye Protection: Wear protective gloves and eye protection. Safety glasses or goggles.

8.3. Personal Protective Equipment
Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection. Normal room ventilation is adequate. Chemical resistant gloves. Safety glasses or goggles.
SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Appearance: Colorless liquid
Physical State: Liquid
Odor: Slight vinegar
Odor Threshold: Data not available.
P: 5.30 - 5.50
Melting/Freezing Point: Approximately 0°C
Initial Boiling Point/Range: Approximately 100°C - Approximately 100°C
Flash Point: Data not available.
Evaporation Rate: Data not available.
Flammability: Data not available.
Flammability/Explosive Limits: Data not available.
Vapor Pressure: Data not available.
Vapor Density: Data not available.
Relative Density: Data not available.
Solubility: Miscible
Partition Coefficient: Data not available.
Auto-Ignition Temperature: Data not available.
Decomposition Temperature: Data not available.
Viscosity: Data not available.
Explosive Properties: Data not available.
Oxidizing Properties: Data not available.

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability
Stable under normal conditions of use and storage.

10.2. Possibility of Hazardous Reactions
Data not available.

10.3. Conditions to Avoid and Incompatible Materials

oxidizing agents.

10.4. Hazardous Decomposition Products
Will not occur.
11.1. Information on Toxicological Effects

**Acute Toxicity - Oral Exposure:**
Not applicable.

**Acute Toxicity - Dermal Exposure:**
Not applicable.

**Acute Toxicity - Inhalation Exposure:**
Not applicable.

**Acute Toxicity - Other Information:**
LD50, Oral, Rat: 3000 mg/kg (Sodium Chloride) No toxic effects noted; 3310 mg/kg (Acetic Acid).

**Skin Corrosion and Irritation:**
Causes skin irritation. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Specific treatment (Wash areas of contact with water immediately). If skin irritation occurs: Get medical attention. Take contaminated clothing and wash it before reuse.

**Serious Eye Damage and Irritation:**
Causes serious eye damage. Wear protective gloves and eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

**Respiratory Sensitization:**
May cause allergy or asthma symptoms or breathing difficulties if inhaled. Avoid breathing fumes, mist, vapors, or spray. In case of inadequate ventilation wear respiratory protection. IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. Dispose of contents in accordance with local, state, federal and international regulations.

**Skin Sensitization:**
Not applicable.

**Germ Cell Mutagenicity:**
Not applicable.

**Carcinogenicity:**
Not applicable.

**Reproductive Toxicity:**
Not applicable.

**Specific Target Organ Toxicity from Single Exposure:**
Causes damage to organs. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF exposed: Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Specific Target Organ Toxicity from Repeated Exposure:**
May cause damage to organs through prolonged or repeated exposure. Do not breathe fumes, mist, vapors, or spray. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.
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Aspiration Hazard:
Not applicable.

Additional Toxicology Information:
Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity
Not applicable.

12.2. Persistence and Degradability
Data not available.

12.3. Bioaccumulative Potential
Data not available.

12.4. Mobility in Soil
Data not available.

12.5. Other Adverse Ecological Effects
Data not available.

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods
Data not available.

SECTION 14: Transportation Information

14.1. Transportation by Land-Department of Transportation (DOT, United States of America)

Not regulated according to DOT Regulations.

SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards
Not listed.
15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Not listed.

15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

- Sodium Hydroxide (CAS # 1310-73-2): 1000 lb final RQ; 454 kg final RQ
- Acetic Acid (CAS # 64-19-7): 5000 lb final RQ; 2270 kg final RQ

15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Not listed.

15.5. Massachusetts Right-to-Know Substance List

- Sodium Hydroxide (CAS # 1310-73-2): Present
- Acetic Acid (CAS # 64-19-7): Present

15.6. Pennsylvania Right-to-Know Hazardous Substances

- Sodium Hydroxide (CAS # 1310-73-2): Environmental hazard
- Sodium Hydroxide (CAS # 1310-73-2): Present
- Acetic Acid (CAS # 64-19-7): Environmental hazard
- Acetic Acid (CAS # 64-19-7): Present
- Water (CAS # 7732-18-5): Present

15.7. New Jersey Worker and Community Right-to-Know Components

- Sodium Hydroxide (CAS # 1310-73-2): corrosive
- Sodium Hydroxide (CAS # 1310-73-2): sn 1706
- Acetic Acid (CAS # 64-19-7): corrosive
- Acetic Acid (CAS # 64-19-7): sn 0004

15.8. California Proposition 65

Not listed.

15.9. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

- Sodium Hydroxide (CAS # 1310-73-2): Present (DSL)
- 1,2-Cyclohexylenedimaine Tetraacetic Acid (CDTA) (CAS # 13291-61-7): Present (DSL)
- Acetic Acid (CAS # 64-19-7): Present (DSL)
- Acetic Acid (CAS # 64-19-7): Present (NDSL)
- Sodium Chloride (CAS # 7647-14-5): Present (DSL)
- Water (CAS # 7732-18-5): Present (DSL)

15.10. United States of America Toxic Substances Control Act (TSCA) List

- Sodium Hydroxide (CAS # 1310-73-2): Present
- 1,2-Cyclohexylenedimaine Tetraacetic Acid (CDTA) (CAS # 13291-61-7): Present [P]
- Acetic Acid (CAS # 64-19-7): Present
- Sodium Chloride (CAS # 7647-14-5): Present
- Water (CAS # 7732-18-5): Present

15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Not listed.
SECTION 16: Other Information

16.1. Full Text of Hazard Statements and Precautionary Statements

Causes skin irritation. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Causes damage to organs. May cause damage to organs through prolonged or repeated exposure.

Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.

IF ON SKIN: Wash with plenty of soap and water. IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed: Call a POISON CENTER or physician. Get medical attention if you feel unwell. Specific treatment (Wash areas of contact with water immediately). If skin irritation occurs: Get medical attention. If experiencing respiratory symptoms: Call a POISON CENTER or physician. Take off contaminated clothing and wash it before reuse.

Store locked up.

Dispose of contents in accordance with local, state, federal and international regulations.

16.2. Miscellaneous Hazard Classes

Canadian Carcinogenicity Hazard Class: Not Applicable.

Physical Hazards Not Otherwise Classified (PHNOC): Not Applicable.

Health Hazards Not Otherwise Classified (HHNOC): Not Applicable.

Biohazardous Infectious Materials Hazard Class: Not Applicable.

16.3. National Fire Protection Association (NFPA) Rating

Health: 1
Flammability: 0
Reactivity: 0
Special Hazard: 1

16.4. Document Revision

Last Revision Date: 5/1/2015
When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.