MSDS for Gempler’s Product:

RGM250  Professional Soil Quality Test Kit
RGM350  Basic Soil Quality Test Kit
Because of shipping restrictions, the hypodermic needles that are used for the soil respiration test are no longer included in the RGM250 Soil Quality Test Kit. The needles will need to be purchased locally. They are an 18-gauge, stainless steel needle with a length of 1.5 inches.
Date of issue: 20 September 2004

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY
Product name: HI 7031 Conductivity Calibration Solution, 1413 µS/cm @ 25°C/77°F.
Application: For calibrating electrodes.

Manufacturer identification: Hanna Instruments Italia s.r.l.
viale delle Industrie, 12/A
35010 Villafranca Padovana, Italy
tel. n°.:+39-049-9070211

Emergency Telephone n. °: No hazardous product

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS
Aqueous solution.

SECTION 3 - HAZARD IDENTIFICATION
No hazardous product as specified in Directive 67/548/EEC.

SECTION 4 - FIRST AID MEASURES
• After inhalation: if inhaled remove to fresh air. If breathing becomes difficult, call a physician.
• After skin contact: wash off with water and soap.
• After eye contact: rinse out with plenty of water for at least 15 minutes. If pain persists, summon medical advice.
• After swallowing: wash out mouth with plenty of water, provided person is conscious. Obtain medical attention if feeling unwell.

SECTION 5 – FIRE-FIGHTING MEASURES
• Suitable extinguishing media - Water spray, foam, dry powder or carbon dioxide.
• Special risks: - Non combustible.
• Special protective equipment for fire fighting: - Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.
• Additional information: - Contain escaping vapors with water.

SECTION 6 - ACCIDENTAL RELEASE MEASURES
• Personal precautions: - None
• Environmental precautions: - None

SECTION 7 - HANDLING AND STORAGE
• Handling: - No restrictions
• Storage: - Keep container closed and protected from direct sunlight.
- Store at room temperature (+15°C to +25°C).

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION
• Personal protective equipment: - As appropriate to quantity handled.
• Respiratory protection: - Required when vapors/aerosols are generated.
• Protective gloves: - Rubber or plastic.
• Eye protection: - Goggles or face mask.
HI 7031 Conductivity Calibration Solution
1413 µS/cm @ 25°C/77°F

Health & Safety data sheet
According to EC Directive 91/155/EC and following amendments

SECTION 9 - PHYSICAL/CHEMICAL PROPERTIES
- Appearance: colorless liquid
- Odor: odorless
- Solubility in water: soluble
- Melting point: NA
- Boiling point: > 100 °C
- pH value at 20°C: ~7
- density at 20°C: ~1 g/cm³
- flash point: NA
- explosive properties: NA
- explosion limits: NA
- ignition temperature: NA

SECTION 10 - STABILITY AND REACTIVITY
- Conditions to be avoided:
  - Strong heating (above boiling point).
  - Stable in the recommended storage conditions.
- Hazardous decomposition products:
  - In the event of fire: see section 5.
- Substances to be avoided:
  - The generally known reaction partners of water.
- Hazardous Polymerization:
  - Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION
Acute toxicity
Quantitative data on the toxicity of this product are not available.

Further toxicological information
Hazardous properties cannot be excluded, but are relatively unlikely because of the low concentration of the dissolved substances and to the data of the components, when the product is handled appropriately.

Further data
The product should be handled with the care usual when dealing with chemicals.

SECTION 12 - ECOLOGICAL INFORMATION
Ecotoxic effects:
Quantitative data on the ecological effect of this product are not available.

Further ecological data:
No ecological problems are to be expected when the product is handled and used with due care and attention.

SECTION 13 - DISPOSAL CONSIDERATIONS
- Waste disposal:
  - Can be safely disposed off as an ordinary refuse.

SECTION 14 - TRANSPORT INFORMATION
Not subject to transport regulations.

SECTION 15 - REGULATORY INFORMATION
Labeling according to EC Directives:
Symbol: -
R-phrases: -
S-phrases: -
Contains: -

SECTION 16 - OTHER INFORMATION
- Supersedes edition of: June 2002
- Reason for revision: general update
- Legend: NA Not Applicable
          ND Not Determined

THE INFORMATION CONTAINED HEREIN IS BASED ON THE PRESENT STATE OF OUR KNOWLEDGE. IT CHARACTERIZES THE PRODUCT WITH REGARD TO THE APPROPRIATE SAFETY PRECAUTIONS. IT DOES NOT REPRESENT A GUARANTEE OF THE PROPERTIES OF THE PRODUCT.
Section 1. Chemical Product and Company Identification
Catalog Number(s)
00654-00, 05942-21, 05942-22, 05942-24, 05942-25, 05942-26, 05942-27, 35653-01, 35654-00

Product Identity
BUFFER, Standard, pH 4.01; BUFFER, High Accuracy, pH 4.000 (Color Coded Red)

Manufacturer’s Name
RICCA CHEMICAL COMPANY

Address (Number, Street, City, State, and ZIP Code)
P.O. Box 13090
Arlington, Texas 76094

Date Prepared
3-7-2000

Section 2. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Registry #</th>
<th>Percent Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Concentration</td>
</tr>
<tr>
<td>Potassium Acid Phthalate</td>
<td>877-24-7</td>
<td>0.95 – 1.05</td>
</tr>
<tr>
<td>Preservative*</td>
<td>proprietary</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>*(No Mercury compounds or Formaldehyde)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inert Dye</td>
<td>proprietary</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Water, Deionized</td>
<td>7732-18-5</td>
<td>Balance</td>
</tr>
</tbody>
</table>

Section 3. Hazards Identification

EMERGENCY OVERVIEW
Non-flammable, non-toxic, non-corrosive. Does not present any significant health hazards. Wash areas of contact with water.

POTENTIAL HEALTH EFFECTS:
TARGET ORGANS: eyes, skin.

EYE CONTACT: May cause slight irritation.

INHALATION: Not likely to be hazardous by inhalation.

SKIN CONTACT: May cause slight irritation.

INGESTION: Large doses may cause nausea, vomiting, diarrhea and cramps.

CHRONIC EFFECTS / CARCINOGENICITY:
IARC – No
NTP – No
OSHA – No

TERATOLOGY (BIRTH DEFECT) INFORMATION:
No information found in “Registry of Toxic Effects of Chemical Substances” or other information sources.

REPRODUCTION INFORMATION:
No information found in “Registry of Toxic Effects of Chemical Substances” or other information sources.
Section 4. First Aid Measures – In all cases, seek qualified evaluation.

EYE CONTACT: Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops.

INHALATION: Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

SKIN CONTACT: Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops.

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

Section 5. Fire Fighting Measures

FLAMMABLE PROPERTIES:

FLASH POINT: N/A

METHOD USED: N/A

FLAMMABLE LIMITS

LFL: N/A

UFL: N/A

EXTINGUISHING MEDIA: Use any means suitable for extinguishing surrounding fire.

FIRE & EXPLOSION HAZARDS: Not considered to be a fire or explosion hazard.

FIRE FIGHTING INSTRUCTIONS: Use normal procedures/instructions.

FIRE FIGHTING EQUIPMENT: Use protective clothing and breathing equipment appropriate for the surrounding fire.

Section 6. Accidental Release Measures

Absorb with suitable material and dispose of in accordance with local regulations.

Section 7. Handling and Storage

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. SAFETY STORAGE CODE: GENERAL

Section 8. Exposure Controls / Personal Protection

ENGINEERING CONTROLS: No specific controls are needed. Normal room ventilation is adequate.

RESPIRATORY PROTECTION: Normal room ventilation is adequate.

SKIN PROTECTION: Chemical resistant gloves.

EYE PROTECTION: Safety glasses or goggles.

Section 9. Physical and Chemical Properties

APPEARANCE: Clear, red colored liquid

ODOR: Odorless

SOLUBILITY IN WATER: Infinite

SPECIFIC GRAVITY: Approximately 1

pH: 4

BOILING POINT (°C): Approximately 100

MELTING POINT (°C): Approximately 0

VAPOR PRESSURE: N/A

Section 10. Stability and Reactivity

CHEMICAL STABILITY: Stable under normal conditions of use and storage.

INCOMPATIBILITY: Nitric Acid
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Carbon and Potassium.

HAZARDOUS POLYMERIZATION: Will not occur.

Section 11. Toxicological Information
LD50, Oral, Rat: >3200 mg/kg (Potassium Phthalate), details of toxic effects not reported other than lethal dose value.

Section 12. Ecological Information
ECOTOXICOLOGICAL INFORMATION: No information found.
CHEMICAL FATE INFORMATION: No information found.

Section 13. Disposal Considerations
Dilute with water, neutralize with weak sodium hydroxide solution, and then flush to sewer if local regulations allow. If not allowed, save for recovery or recycling in an approved waste disposal facility. Always dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information (Not meant to be all inclusive)

<table>
<thead>
<tr>
<th>D.O.T. SHIPPING NAME:</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.O.T. HAZARD CLASS:</td>
<td>None</td>
</tr>
<tr>
<td>U.N. / N.A. NUMBER:</td>
<td>None</td>
</tr>
<tr>
<td>PACKING GROUP:</td>
<td>None</td>
</tr>
<tr>
<td>D.O.T. LABEL:</td>
<td>None</td>
</tr>
</tbody>
</table>

Section 15. Regulatory Information (Not meant to be all inclusive - selected regulation represented)
OSHA STATUS: The above items either do not contain any specifically hazardous material or the potentially hazardous material is present in such low concentration that the items do not present any immediate threat to health and safety. These items do not meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.
TSCA STATUS: All components of this solution are listed on the TSCA Inventory.
CERCLA REPORTABLE QUANTITY: Not reportable
SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: No
SECTION 311/312 HAZARDOUS CATEGORIES: No
SECTION 313 TOXIC CHEMICALS: No
RCRA STATUS: No

CALIFORNIA PROPOSITION 65: Not listed

Section 16. Other Information

<table>
<thead>
<tr>
<th>NFPA® Ratings:</th>
<th>Health: 1</th>
<th>Flammability: 0</th>
<th>Reactivity: 0</th>
<th>Special Notice Key: None</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS® Ratings:</td>
<td>Health: 1</td>
<td>Flammability: 0</td>
<td>Reactivity: 0</td>
<td>Protective Equipment: B</td>
</tr>
</tbody>
</table>

(Protective eyewear, gloves)

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.
Section 1. Chemical Product and Company Identification

Catalog Number(s)
05942-46, 05942-47

Product Identity
BUFFER, High Accuracy, pH 7.000 (Color Coded Yellow)

Manufacturer’s Name
RICCA CHEMICAL COMPANY

Address (Number, Street, City, State, and Zip Code)
P.O. Box 13090
Arlington, Texas 76094

Date Prepared
3-8-2000

Section 2. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Registry #</th>
<th>Percent Concentration</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Phosphate, Dibasic</td>
<td>7558-79-4</td>
<td>&lt; 1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Potassium Phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>&lt; 1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Preservative*</td>
<td>Proprietary</td>
<td>&lt; 0.1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>*(No Mercury Compounds or Formaldehyde)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inert Dye</td>
<td>Proprietary</td>
<td>&lt; 0.1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Water, Deionized</td>
<td>7732-18-5</td>
<td>Balance</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 3. Hazards Identification

EMERGENCY OVERVIEW
Non-flammable, non-toxic, non-corrosive. Does not present any significant health hazards. May cause irritation. Wash areas of contact with water

POTENTIAL HEALTH EFFECTS:

TARGET ORGANS: eyes, skin.

EYE CONTACT: May cause slight irritation.

INHALATION: May cause allergic respiratory reaction to those allergic to phosphates.

SKIN CONTACT: May cause slight irritation to those allergic to phosphates.

INGESTION: Large doses may cause stomach upset.

CHRONIC EFFECTS / CARCINOGENICITY:
IARC – No
NTP – No
OSHA – No

TERATOLOGY (BIRTH DEFECT) INFORMATION:
No information found in “Registry of Toxic Effects of Chemical Substances” or other information sources.

REPRODUCTION INFORMATION:
No information found in “Registry of Toxic Effects of Chemical Substances” or other information sources.
Section 4. First Aid Measures – In all cases, seek qualified evaluation.

EYE CONTACT: Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops.

INHALATION: Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

SKIN CONTACT: Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops.

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

Section 5. Fire Fighting Measures

FLAMMABLE PROPERTIES:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLASH POINT</td>
<td>N/A</td>
</tr>
<tr>
<td>METHOD USED</td>
<td>N/A</td>
</tr>
</tbody>
</table>

FLAMMABLE LIMITS

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFL</td>
<td>N/A</td>
</tr>
<tr>
<td>UFL</td>
<td>N/A</td>
</tr>
</tbody>
</table>

EXTINGUISHING MEDIA: Use any means suitable for extinguishing surrounding fire.

FIRE & EXPLOSION HAZARDS: Not considered to be a fire or explosion hazard.

FIRE FIGHTING INSTRUCTIONS: Use normal procedures/instructions.

FIRE FIGHTING EQUIPMENT: Use protective clothing and breathing equipment appropriate for the surrounding fire.

Section 6. Accidental Release Measures

Absorb with suitable material (vermiculite, clay, etc.) and dispose of in accordance with local regulations. Check with local agencies for the proper disposal of phosphate containing solutions.

Section 7. Handling and Storage

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. SAFETY STORAGE CODE: GENERAL

Section 8. Exposure Controls / Personal Protection

ENGINEERING CONTROLS: No specific controls are needed. Normal room ventilation is adequate.

RESPIRATORY PROTECTION: Normal room ventilation is adequate.

SKIN PROTECTION: Chemical resistant gloves.

EYE PROTECTION: Safety glasses or goggles.

Section 9. Physical and chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPEARANCE</td>
<td>Clear, yellow liquid</td>
</tr>
<tr>
<td>ODOR</td>
<td>Odorless</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td>Infinite</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY</td>
<td>approximately 1</td>
</tr>
<tr>
<td>pH</td>
<td>7</td>
</tr>
<tr>
<td>BOILING POINT (°C)</td>
<td>approximately 100</td>
</tr>
<tr>
<td>MELTING POINT (°C)</td>
<td>approximately 0</td>
</tr>
<tr>
<td>VAPOR PRESSURE</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

CHEMICAL STABILITY: Stable under normal conditions of use and storage.

INCOMPATIBILITY: None identified.

HAZARDOUS DECOMPOSITION PRODUCTS: Phosphorus oxides may form when heated to decomposition.
HAZARDOUS POLYMERIZATION: Will not occur.

Section 11. Toxicological Information
LD50, Oral, Rat: (Sodium Phosphate Dibasic) 17 gm/kg; LD50, Dermal, Rabbit: (Potassium Phosphate Monobasic) >4640 mg/kg; details of toxic effects not reported other than lethal dose value.

Section 12. Ecological Information
ECOTOXICOLOGICAL INFORMATION: No information found.
CHEMICAL FATE INFORMATION: No information found.

Section 13. Disposal Considerations
Dilute with water, then flush to sewer if local regulations allow for the flushing of phosphate containing solutions. If not allowed, save for recovery or recycling in an approved waste disposal facility. Always dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information (Not meant to be all inclusive)
D.O.T. SHIPPING NAME: Not regulated
D.O.T. HAZARD CLASS: None
U.N. / N.A. NUMBER: None
PACKING GROUP: None
D.O.T. LABEL: None

Section 15. Regulatory Information (Not meant to be all inclusive - selected regulation represented)
OSHA STATUS: The above items either do not contain any specifically hazardous material or the potentially hazardous material is present in such low concentration that the items do not present any immediate threat to health and safety. These items do not meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.

TSCA STATUS: All components of this solution are listed on the TSCA Inventory or are mixtures (hydrates) of items listed on the TSCA Inventory.
CERCLA REPORTABLE QUANTITY: Sodium Phosphate, Dibasic - 5,000 pounds.
SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: No
SECTION 311/312 HAZARDOUS CATEGORIES: No
SECTION 313 TOXIC CHEMICALS: No
RCRA STATUS: No

CALIFORNIA PROPOSITION 65: Not listed.
PENNSYLVANIA: Sodium Phosphate Dibasic is listed as an environmental hazard on the state Hazardous Substance list.

Section 16. Other Information
NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 0 Special Notice Key: None
HMIS® Ratings: Health: 1 Flammability: 0 Reactivity: 0 Protective Equipment: B (Protective eyewear, gloves)

Rev 1, 8-25-2000: (Section 2) corrected concentration of preservative from 1 – 2 to < 0.1%.
Rev 2, 03-25-2003: Reviewed and approved. (Section 15) added CERCLA reportable quantity.
Rev 3, 03-20-2006: Reviewed and approved.

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.
Section 1. Chemical Product and Company Identification

Catalog Number(s)
00654-08, 35654-08, 05942-61, 05942-62, 05942-64, 05942-65, 05942-66, 05942-67, 35653-03

Product Identity
BUFFER, Standard, pH 10.00; BUFFER, High Accuracy, pH 10.000 (Color Coded Blue)

Manufacturer’s Name
RICCA CHEMICAL COMPANY

Address (Number, Street, City, State, and ZIP Code)
P.O. Box 13090

Emergency Telephone Number (24 hr)
CHEMTREC®: 800-424-9300

Telephone Number For Information
817-461-5601

Date Prepared
3-8-2000

Arlington, Texas 76094

Section 2. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Registry #</th>
<th>Percent</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Carbonate</td>
<td>497-19-8</td>
<td>&lt; 1</td>
<td>N/A</td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>144-55-8</td>
<td>&lt; 1</td>
<td>N/A</td>
</tr>
<tr>
<td>Preservative*</td>
<td>proprietary</td>
<td>&lt; 0.1</td>
<td>N/A</td>
</tr>
<tr>
<td>*(No Mercury compounds or Formaldehyde)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inert Dye</td>
<td>proprietary</td>
<td>&lt; 0.1</td>
<td>N/A</td>
</tr>
<tr>
<td>Water, Deionized</td>
<td>7732-18-5</td>
<td>Balance</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 3. Hazards Identification

EMERGENCY OVERVIEW
Non-flammable, non-toxic, non-corrosive. Does not present any significant health hazards. Wash areas of contact with water.

POTENTIAL HEALTH EFFECTS:

TARGET ORGANS: eyes, skin.

EYE CONTACT: May cause slight irritation.

INHALATION: Not likely to be hazardous by inhalation.

SKIN CONTACT: May cause slight irritation.

INGESTION: Large doses may cause nausea, vomiting, diarrhea and cramps.

CHRONIC EFFECTS / CARCINOGENICITY:
IARC – No
NTP – No
OSHA – No

TERATOLOGY (BIRTH DEFECT) INFORMATION:
Mutation data cited in “Registry of Toxic Effects of Chemical Substances” for Sodium Bicarbonate in rats.
## Section 4. First Aid Measures – In all cases, seek qualified evaluation.

**EYE CONTACT:** Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops.

**INHALATION:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**SKIN CONTACT:** Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops.

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

### Section 5. Fire Fighting Measures

**FLAMMABLE PROPERTIES:**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABLE POINT</td>
<td>N/A</td>
</tr>
<tr>
<td>METHOD USED</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**FLAMMABLE LIMITS**

<table>
<thead>
<tr>
<th>Limit Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFL</td>
<td>N/A</td>
</tr>
<tr>
<td>UFL</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**EXTINGUISHING MEDIA:** Use any means suitable for extinguishing surrounding fire.

**FIRE & EXPLOSION HAZARDS:** Not considered to be a fire or explosion hazard.

**FIRE FIGHTING INSTRUCTIONS:** Use normal procedures/instructions.

**FIRE FIGHTING EQUIPMENT:** Use protective clothing and breathing equipment appropriate for the surrounding fire.

### Section 6. Accidental Release Measures

Absorb with suitable material and treat as normal refuse. Small amounts of the liquid may be flushed to the drain with excess water. Always dispose of in accordance with local regulations.

### Section 7. Handling and Storage

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. **SAFETY STORAGE CODE:** GENERAL

### Section 8. Exposure Controls / Personal Protection

**ENGINEERING CONTROLS:** No specific controls are needed. Normal room ventilation is adequate.

**RESPIRATORY PROTECTION:** Normal room ventilation is adequate.

**SKIN PROTECTION:** Chemical resistant gloves.

**EYE PROTECTION:** Safety glasses or goggles.

### Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPEARANCE:</strong></td>
<td>Clear, blue colored liquid</td>
</tr>
<tr>
<td><strong>ODOR:</strong></td>
<td>Odorless</td>
</tr>
<tr>
<td><strong>SOLUBILITY IN WATER:</strong></td>
<td>Odorless</td>
</tr>
<tr>
<td><strong>SPECIFIC GRAVITY:</strong></td>
<td>Approximately 1</td>
</tr>
<tr>
<td><strong>PH:</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>BOILING POINT (°C):</strong></td>
<td>Approximately 100</td>
</tr>
<tr>
<td><strong>MELTING POINT (°C):</strong></td>
<td>Approximately 0</td>
</tr>
<tr>
<td><strong>VAPOR PRESSURE:</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>
Section 10. Stability and Reactivity
CHEMICAL STABILITY: Stable under normal conditions of use and storage.

INCOMPATIBILITY: Acids

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Sodium.

HAZARDOUS POLYMERIZATION: Will not occur.

Section 11. Toxicological Information
LD50, Oral, Rat: 4090 mg/kg (Sodium Carbonate), 4220 mg/kg (Sodium Bicarbonate), details of toxic effects not reported other than lethal dose value.

Section 12. Ecological Information
ECOTOXICOLOGICAL INFORMATION: No information found.

CHEMICAL FATE INFORMATION: No information found.

Section 13. Disposal Considerations
Dilute with water, then flush to sewer if local regulations allow. If not allowed, save for recovery or recycling in an approved waste disposal facility. Always dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information (Not meant to be all inclusive)
D.O.T. SHIPPING NAME: Not regulated
D.O.T. HAZARD CLASS: None
U.N. / N.A. NUMBER: None
PACKING GROUP: None
D.O.T. LABEL: None

Section 15. Regulatory Information (Not meant to be all inclusive - selected regulation represented)
OSHA STATUS: The above items either do not contain any specifically hazardous material or the potentially hazardous material is present in such low concentration that the items do not present any immediate threat to health and safety. These items do not meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.

TSCA STATUS: All components of this solution are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY: Not reportable

SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: No
SECTION 311/312 HAZARDOUS CATEGORIES: No
SECTION 313 TOXIC CHEMICALS: No

RCRA STATUS: No

CALIFORNIA PROPOSITION 65: Not listed.

Section 16. Other Information
NFPA® Ratings: Health: 1 Flammability: 0 Reactivity: 0 Special Notice Key: None
HMIS® Ratings: Health: 1 Flammability: 0 Reactivity: 0 Protective Equipment: B (Protective eyewear, gloves)

Rev 1, 01-15-2003: added catalog number 35653-03.
Rev 2, 03-25-2003: Reviewed and approved.
Rev 3, 03-20-2006: Reviewed and approved.

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.
Section 1. Chemical Product and Company Identification

Catalog Number(s)
00654-04, 35654-04, 05942-41, 05942-42, 05942-44, 05942-45, 35653-02

Product Identity
BUFFER, Standard, pH 7.00 (Color Coded Green)

Manufacturer's Name
RICCA CHEMICAL COMPANY

Emergency Telephone Number (24 hr)
CHEMTREC®: 800-424-9300

Address (Number, Street, City, State, and ZIP Code)
P.O. Box 13090
Arlington, Texas 76094

Date Prepared
3-8-2000

Section 2. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Registry #</th>
<th>Percent Exposure Limits</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Phosphate, Dibasic</td>
<td>7558-79-4</td>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Potassium Phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Preservative*</td>
<td>Proprietary</td>
<td>0.1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>*(No Mercury Compounds or Formaldehyde)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inert Dye</td>
<td>Proprietary</td>
<td>0.1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Water, Deionized</td>
<td>7732-18-5</td>
<td>Balance</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 3. Hazards Identification

**EMERGENCY OVERVIEW**
Non-flammable, non-toxic, non-corrosive. Does not present any significant health hazards. May cause irritation. Wash areas of contact with water

**POTENTIAL HEALTH EFFECTS:**

**TARGET ORGANS:** eyes, skin.

**EYE CONTACT:** May cause slight irritation.

**INHALATION:** May cause allergic respiratory reaction to those allergic to phosphates.

**SKIN CONTACT:** May cause slight irritation to those allergic to phosphates.

**INGESTION:** Large doses may cause stomach upset.

**CHRONIC EFFECTS / CARCINOGENICITY:**
IARC – No
NTP – No
OSHA – No

**TERATOLOGY (BIRTH DEFECT) INFORMATION:**
No information found in “Registry of Toxic Effects of Chemical Substances” or other information sources.

**REPRODUCTION INFORMATION:**
No information found in “Registry of Toxic Effects of Chemical Substances” or other information sources.
Section 4. First Aid Measures – In all cases, seek qualified evaluation.

**EYE CONTACT:** Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops.

**INHALATION:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**SKIN CONTACT:** Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops.

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

Section 5. Fire Fighting Measures

**FLAMMABLE PROPERTIES:**
- **FLASH POINT:** N/A
- **METHOD USED:** N/A

**FLAMMABLE LIMITS**
- **LFL:** N/A
- **UFL:** N/A

**EXTINGUISHING MEDIA:** Use any means suitable for extinguishing surrounding fire.

**FIRE & EXPLOSION HAZARDS:** Not considered to be a fire or explosion hazard.

**FIRE FIGHTING INSTRUCTIONS:** Use normal procedures/instructions.

**FIRE FIGHTING EQUIPMENT:** Use protective clothing and breathing equipment appropriate for the surrounding fire.

Section 6. Accidental Release Measures

Absorb with suitable material (vermiculite, clay, etc.) and dispose of in accordance with local regulations. Check with local agencies for the proper disposal of phosphate containing solutions.

Section 7. Handling and Storage

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. SAFETY STORAGE CODE: GENERAL

Section 8. Exposure Controls / Personal Protection

**ENGINEERING CONTROLS:** No specific controls are needed. Normal room ventilation is adequate.

**RESPIRATORY PROTECTION:** Normal room ventilation is adequate.

**SKIN PROTECTION:** Chemical resistant gloves.

**EYE PROTECTION:** Safety glasses or goggles.

Section 9. Physical and chemical Properties

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPEARANCE</strong></td>
<td>Clear, green liquid</td>
</tr>
<tr>
<td><strong>ODOR</strong></td>
<td>Odorless</td>
</tr>
<tr>
<td><strong>SOLUBILITY IN WATER</strong></td>
<td>Infinite</td>
</tr>
<tr>
<td><strong>SPECIFIC GRAVITY</strong></td>
<td>approximately 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PH</strong></td>
<td>7</td>
</tr>
<tr>
<td><strong>BOILING POINT (°C)</strong></td>
<td>approximately 100</td>
</tr>
<tr>
<td><strong>MELTING POINT (°C)</strong></td>
<td>approximately 0</td>
</tr>
<tr>
<td><strong>VAPOR PRESSURE</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

**CHEMICAL STABILITY:** Stable under normal conditions of use and storage.

**INCOMPATIBILITY:** None identified.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Phosphorus oxides may form when heated to decomposition.
HAZARDOUS POLYMERIZATION: Will not occur.

Section 11. Toxicological Information
LD50, Oral, Rat: (Sodium Phosphate Dibasic) 17 gm/kg; LD50, Dermal, Rabbit: (Potassium Phosphate Monobasic) >4640 mg/kg; details of toxic effects not reported other than lethal dose value.

Section 12. Ecological Information
ECOTOXICOLOGICAL INFORMATION: No information found.
CHEMICAL FATE INFORMATION: No information found.

Section 13. Disposal Considerations
Dilute with water, then flush to sewer if local regulations allow for the flushing of phosphate containing solutions. If not allowed, save for recovery or recycling in an approved waste disposal facility. Always dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information (Not meant to be all inclusive)
D.O.T. SHIPPING NAME: Not regulated
D.O.T. HAZARD CLASS: None
U.N. / N.A. NUMBER: None
PACKING GROUP: None
D.O.T. LABEL: None

Section 15. Regulatory Information (Not meant to be all inclusive - selected regulation represented)
OSHA STATUS: The above items either do not contain any specifically hazardous material or the potentially hazardous material is present in such low concentration that the items do not present any immediate threat to health and safety. These items do not meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.
TSCA STATUS: All components of this solution are listed on the TSCA Inventory or are mixtures (hydrates) of items listed on the TSCA Inventory.
CERCLA REPORTABLE QUANTITY: Sodium Phosphate, Dibasic - 5,000 pounds.
SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: No
SECTION 311/312 HAZARDOUS CATEGORIES: No
SECTION 313 TOXIC CHEMICALS: No
RCRA STATUS: No
CALIFORNIA PROPOSITION 65: Not listed.
PENNSYLVANIA: Sodium Phosphate Dibasic is listed as an environmental hazard on the state Hazardous Substance list.

Section 16. Other Information
NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 0
HMIS® Ratings: Health: 1 Flammability: 0 Reactivity: 0
Special Notice Key: None
Protective Equipment: B (Protective eyewear, gloves)

Rev 1, 8-25-2000: (Section 2) corrected concentration of preservative from 1 – 2 to < 0.1%.
Rev 2, 03-25-2003: Reviewed and approved. (Section 15) added CERCLA reportable quantity.
Rev 3, 03-20-2006: Reviewed and approved.

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.