

Safety Data Sheet

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: Britton-Robinson Buffer, pH 4.10, adjusted to 0.1 M Ionic Strength

Product Number: 1154.41

Other Identifying Product Numbers: 1154.41-16

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 hr)

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

SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture (in accordance with OSHA HCS 29 CFR 1910.1200)

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

Hazard Class	Category	Hazard	
		Statement	Precautionary Statements
Respiratory Sensitizer	Category 1	H334	P261, P285, P304+P341, P342+P311, P501
Reproductive Toxicity	Category 1	H360	P201, P202, P280, P308+P313, P405, P501
Hazardous to the Aquatic Environment (Acute)	Category 3	H402	P273, P501

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

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Hazard Statements:

Hazard Number	Hazard Statement
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H360	May damage fertility or the unborn child.
H402	Harmful to aquatic life.

Precautionary Statements:

Precautionary Number	Precautionary Statement
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust, fumes or mist.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P285	In case of inadequate ventilation wear respiratory protection.
P304+P341	IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or physician.
P405	Store locked up.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

2.3. WHMIS Classification

WHMIS classification is not included based on the recommended option (Option 4) found in the Canada Gazette Part II, Vol. 149, No.3, page 458

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

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Water	H ₂ O	18.01 g/mol	7732-18-5	98.71%
Potassium Chloride	KCl	74.55 g/mol	7447-40-7	0.45%
Phosphoric Acid	H ₃ PO ₄	97.99 g/mol	7664-38-2	0.30%
Boric Acid	H ₃ BO ₃	61.83 g/mol	10043-35-3	0.19%
Acetic Acid	CH ₃ COOH	60.05 g/mol	64-19-7	0.19%
Sodium Hydroxide	NaOH	39.99 g/mol	1310-73-2	0.15%

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SECTION 4: First-Aid Measures

4.1. General First Aid Information

Eye Contact: May cause slight irritation.

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

Skin Contact: May cause slight irritation.

Ingestion: Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Does not present any significant health hazards. Wash areas of contact with water. EYE CONTACT: May cause slight irritation. SKIN CONTACT: May cause slight irritation.

4.3. Medical Attention or Special Treatment Needed

Not expected to require special treatment.

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.

6.2. Cleanup and Containment Methods and Materials

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

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.



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SECTION 8: Exposure Controls / Personal Protection

8.1. Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Acetic Acid (64-19-7)	TWA	USA	10 ppm TWA 25 mg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Acetic Acid (64-19-7)	TLV-STEL	USA	15 ppm STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Acetic Acid (64-19-7)	TLV-TWA	USA	10 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Boric Acid (10043-35-3)	TLV-STEL	USA	6 mg/m ³ STEL (inhalable fraction, listed under Borate compounds, inorganic)	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Boric Acid (10043-35-3)	TLV-STEL	USA	6 mg/m ³ STEL (inhalable fraction)	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Boric Acid (10043-35-3)	TLV-TWA	USA	2 mg/m ³ TWA (inhalable fraction)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Boric Acid (10043-35-3)	TLV-TWA	USA	2 mg/m ³ TWA (inhalable fraction, listed under Borate compounds, inorganic)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Phosphoric Acid (7664-38-2)	TWA	USA	1 mg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Phosphoric Acid (7664-38-2)	TLV-STEL	USA	3 mg/m ³ STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Phosphoric Acid (7664-38-2)	TLV-TWA	USA	1 mg/m ³ TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Sodium Hydroxide (1310-73-2)	TWA	USA	2 mg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Sodium Hydroxide (1310-73-2)	TLV-Ceiling	USA	2 mg/m ³ Ceiling	ACGIH - Threshold Limit Values - Ceilings (TLV-C)

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.



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SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Appearance: Colorless liquid

Physical State: Liquid

Odor: Data not available.

Odor Threshold: Data not available.

pH: 4.1

Melting/Freezing Point: 0.0°C

Initial Boiling Point /Range: 100°C - 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: 1.02

Solubility: Miscible

Partition Coefficient (n-Octanol/Water): 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

Bromine Trifluoride, Potassium Permanganate plus Sulfuric Acid.

10.4. Hazardous Decomposition Products

Will not occur.



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SECTION 11: Toxicological Information

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: (Potassium Chloride) 2600 mg/kg; Irritation: eye, rabbit (500mg/24 hr mild). LD50, Oral, Rat: (Phosphoric Acid) 1530 mg/kg, behavioral, kidney, bladder, hair effects noted. LD50, Dermal, Rat: 2740 mg/kg (Phosphoric Acid), behavioral effects noted. LD50, Oral, Rat (Acetic Acid): 3310 mg/kg; LD50, Dermal, Rabbit (Acetic Acid): 1.06 g/kg; LC50, Inhalation, Mouse (Acetic Acid): 5620 ppm/1 hr. LD50, Oral, Rat: (Boric Acid) 2660 mg/kg, details of toxic effects not reported other than lethal dose value; LdLo, Oral, Woman: 200 mg/kg (Boric Acid), behavioral and gastrointestinal effects noted.

Skin Corrosion and Irritation:

Not applicable.

Serious Eye Damage and Irritation:

Not applicable.

Respiratory Sensitization:

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Avoid breathing dust, fumes or mist. 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:

May damage fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Specific Target Organ Toxicity from Single Exposure:

Not applicable.



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Specific Target Organ Toxicity from Repeated Exposure:

Not applicable.

Aspiration Hazard:

Not applicable.

Additional Toxicology Information:

Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Harmful to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

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.

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Not regulated according to IATA 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

Phosphoric Acid (CAS # 7664-38-2): 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

Phosphoric Acid (CAS # 7664-38-2): 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

Phosphoric Acid (CAS # 7664-38-2): Environmental hazard

Phosphoric Acid (CAS # 7664-38-2): Present

Water (CAS # 7732-18-5): Present

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

Boric Acid (CAS # 10043-35-3): sn 0240
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
Phosphoric Acid (CAS # 7664-38-2): corrosive
Phosphoric Acid (CAS # 7664-38-2): sn 1516

15.8. California Proposition 65

Not listed.

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

Boric Acid (CAS # 10043-35-3): Present (DSL)
Sodium Hydroxide (CAS # 1310-73-2): Present (DSL)
Acetic Acid (CAS # 64-19-7): Present (DSL)
Acetic Acid (CAS # 64-19-7): Present (NDSL)
Potassium Chloride (CAS # 7447-40-7): Present (DSL)
Phosphoric Acid (CAS # 7664-38-2): Present (DSL)
Water (CAS # 7732-18-5): Present (DSL)

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

Boric Acid (CAS # 10043-35-3): Present
Sodium Hydroxide (CAS # 1310-73-2): Present
Acetic Acid (CAS # 64-19-7): Present
Potassium Chloride (CAS # 7447-40-7): Present
Phosphoric Acid (CAS # 7664-38-2): 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.

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SECTION 16: Other Information

16.1. Full Text of Hazard Statements and Precautionary Statements

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May damage fertility or the unborn child. Harmful to aquatic life.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust, fumes or mist. Avoid release to the environment. Wear protective gloves and eye protection. 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 exposed or concerned: Get medical attention. If experiencing respiratory symptoms: Call a POISON CENTER or physician.

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.

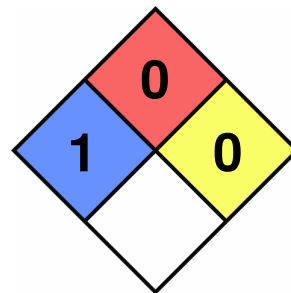
Physical Hazards Not Otherwise Classified (PHNOC): Not Applicable.

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

Not Applicable.

16.3. National Fire Protection Association (NFPA) Rating

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



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16.4. Document Revision

Last Revision Date: 5/1/2015

DISCLAIMER

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.