RICCA CHEMICAL COMPANY®

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: Buffer Solution, for Water Hardness, ASTM Formulation

Product Number: 1472

Other Identifying Product Numbers: 1472-16, 1472-32

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.

Hazard Class	Category	Hazard Statements	Precautionary Statements:
Skin Corrosion / Irritation	Category 1	H314	P260, P264, P280, P301+P330+P331, P303+P361+P353, P363, P304+P340, P310, P321, P305+P351+P338, P405, P501
Reproductive Toxicity	Category 1	H360	P201, P202, P280, P308+P313, P405, P501
Hazardous to the Aquatic Environment (Acute)	Category 3	H402	P273, P501

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2.2. GHS Label Elements

Pictograms:

Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H314	Causes severe skin burns and eye damage.
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.
P260	Do not breathe fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical attention.
P310	Immediately call a POISON CENTER or physician.
P321	Specific treatment (Wash areas of contact with water immediately).
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

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_2O	18.01 g/mol	7732-18-5	93.17
Sodium Tetraborate Decahydrate	$Na_2B_4O_7 \cdot 10H_2O$	381.37 g/mol	1303-96-4	3.85
Potassium Sodium Tartrate Tetrahydrate	$KNaC_4H_4O_6 \cdot 4H_2O$	282.22 g/mol	6381-59-5	0.96
Sodium Sulfide Nonahydrate	$Na_2S \cdot 9H_2O$	240.18 g/mol	1313-84-4	0.96
Sodium Hydroxide	NaOH	39.99 g/mol	1310-73-2	0.96
Magnesium Disodium EDTA	$(NaOOCCH_2)_2NCH_2CH_2N(CH_2COO)_2Mg \cdot xH_2O$	358.49 g/mol	14402-88-1	0.10

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. May cause irritation, redness, pain, and tearing.

Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. May cause slight irritation.

Ingestion: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Dilute with water or milk. Call a physician if necessary.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes severe skin burns and eye damage. May damage fertility or the unborn child. Mildly corrosive liquid. Does not present any significant health hazards. May cause irritation. Wash areas of contact with water. EYE CONTACT: May cause irritation, redness, pain, and tearing. SKIN CONTACT: May cause slight irritation.

4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Wash areas of contact with soap and water for at least 15 minutes. Call a physician if irritation develops. Dilute with water or milk. Call a physician if necessary.

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.

6.2. Cleanup and Containment Methods and Materials

Absorb with suitable material (vermiculite, clay, etc.) and dispose of in accordance with local regulations. Do not use acid to neutralize. Contact with acid may release toxic Hydrogen Sulfide.

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
Sodium Tetraborate Decahydrate (130	TLV-TWA	USA	2 mg/m³ TWA (inhalable particulate matter, listed under Borate compounds, inorganic)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Sodium Tetraborate Decahydrate (130	TLV-STEL	USA	6 mg/m³ STEL (inhalable particulate matter, listed under Borate compounds, inorganic)	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Sodium Tetraborate Decahydrate (130	TLV-TWA	USA	2 mg/m³ TWA (inhalable particulate matter, listed under Borate compounds, inorganic)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Sodium Tetraborate Decahydrate (130	TLV-STEL	USA	6 mg/m³ STEL (inhalable particulate matter, listed under Borate compounds, inorganic)	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Sodium Tetraborate Decahydrate (130	TLV-TWA	USA	2 mg/m³ TWA (inhalable particulate matter)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Sodium Tetraborate Decahydrate (130	TLV-STEL	USA	6 mg/m³ STEL (inhalable particulate matter)	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Sodium Hydroxide (1310-73-2)	TWA	USA	2 mg/m³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Sodium Hydroxide (1310-73-2)	TLV-Ceiling	USA	2 mg/m³ 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: 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. 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 to light yellow liquid
Physical State: Liquid
Odor: Data not available.
Odor Threshold: Data not available.
pH: approximately 12.5
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: 1.04
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

Acids, alkaloids and metallic salts.

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: (Sodium Borate Decahydrate) 2660 mg/kg; details of toxic effects not reported other than lethal dose value.

Skin Corrosion and Irritation:

Causes severe skin burns and eye damage. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Serious Eye Damage and Irritation:

Not applicable.

Respiratory Sensitization:

Not applicable.

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.

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.

14.2. Transportation by Air - International Air Transport Association (IATA)

Not regulated according to IATA Dangerous Goods Regulations.

14.3 Transportation of Dangerous Goods (TDG, Canada)

Not regulated according to TDG 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

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

Not listed.

15.5. Massachusetts Right-to-Know Substance List

Sodium Tetraborate Decahydrate (CAS # 1303-96-4): Present
Sodium Hydroxide (CAS # 1310-73-2): Present
Sodium Sulfide Nonahydrate (CAS # 1313-84-4): Present

15.6. Pennsylvania Right-to-Know Hazardous Substances

Sodium Tetraborate Decahydrate (CAS # 1303-96-4): Present
Sodium Hydroxide (CAS # 1310-73-2): Environmental hazard
Sodium Hydroxide (CAS # 1310-73-2): Present
Water (CAS # 7732-18-5): "Present" As Ethyl alcohol and water [RR-00802-6]
Water (CAS # 7732-18-5): Present

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

Sodium Tetraborate Decahydrate (CAS # 1303-96-4): "sn 0241" As Borate compounds, inorganic [RR-33876-1]
Sodium Tetraborate Decahydrate (CAS # 1303-96-4): sn 0241
Sodium Hydroxide (CAS # 1310-73-2): corrosive
Sodium Hydroxide (CAS # 1310-73-2): sn 1706
Sodium Sulfide Nonahydrate (CAS # 1313-84-4): corrosive
Sodium Sulfide Nonahydrate (CAS # 1313-84-4): sn 1728

15.8. California Proposition 65

Not listed.

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

Sodium Tetraborate Decahydrate (CAS # 1303-96-4): Present (DSL)
Sodium Hydroxide (CAS # 1310-73-2): Present (DSL)
Sodium Sulfide Nonahydrate (CAS # 1313-84-4): Present (DSL)
Magnesium Disodium EDTA (CAS # 14402-88-1): Present (DSL)
Potassium Sodium Tartrate Tetrahydrate (CAS # 6381-59-5): Present (DSL)
Water (CAS # 7732-18-5): Present (DSL)

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

All components of this solution are listed as active on the TSCA Inventory or are mixtures (hydrates) of active items listed on the TSCA Inventory.

Sodium Tetraborate Decahydrate (CAS # 1303-96-4): Present (ACTIVE)
Sodium Hydroxide (CAS # 1310-73-2): Present (ACTIVE)
Sodium Sulfide Nonahydrate (CAS # 1313-84-4): Present (ACTIVE)
Magnesium Disodium EDTA (CAS # 14402-88-1): Present (ACTIVE)
Potassium Sodium Tartrate Tetrahydrate (CAS # 6381-59-5): Present (ACTIVE)
Water (CAS # 7732-18-5): Present (ACTIVE)

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

Sodium Tetraborate Decahydrate (CAS # 1303-96-4): 215-540-4
Sodium Hydroxide (CAS # 1310-73-2): 215-185-5
Sodium Sulfide Nonahydrate (CAS # 1313-84-4): 215-211-5
Magnesium Disodium EDTA (CAS # 14402-88-1): 238-372-3
Potassium Sodium Tartrate Tetrahydrate (CAS # 6381-59-5): 206-156-8
Water (CAS # 7732-18-5): 231-791-2

SECTION 16: Other Information

16.1. Full Text of Hazard Statements and Precautionary Statements

Causes severe skin burns and eye damage. 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. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Avoid release to the environment. Wear protective gloves and eye protection.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: 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 or concerned: Get medical attention. Specific treatment (Wash areas of contact with water immediately). Wash contaminated clothing 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.

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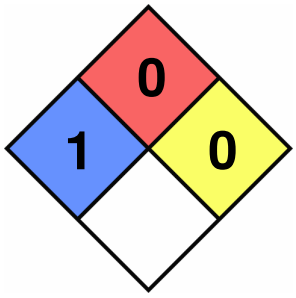
16.3. National Fire Protection Association (NFPA) Rating

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



16.4. Document Revision

Last Revision Date: 2023-11-13

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.