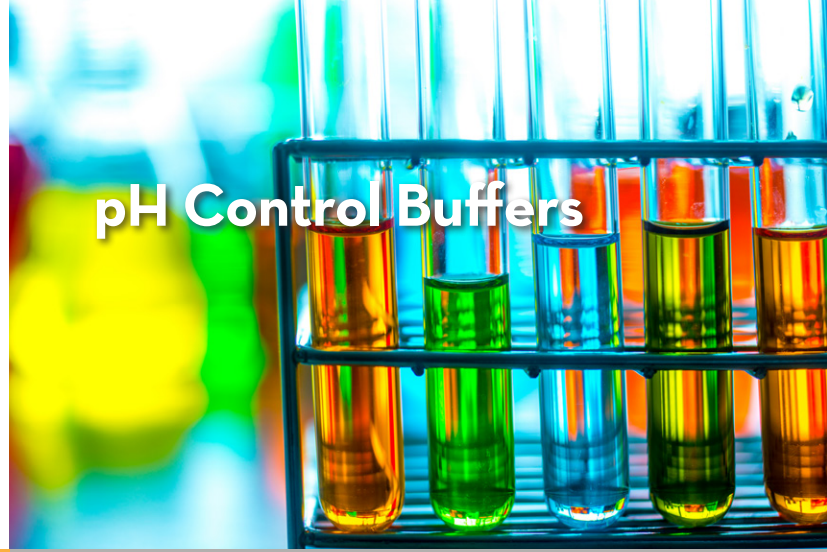




pH Control Buffers



RIGHT

Uncompromising Quality

READY

3 Manufacturing/
Inventory Locations

RICCA

Tightest Tolerances in the Industry,
Lowest Lot-to-Lot Variability

Ricca has been the leading name in high quality Buffers for pH Control for over 40 years. Ricca pH buffer specifications will ensure the highest accuracy every time. The quality is in the specifications.

Don't see the pH, concentration or packaging you are looking for? No problem! Just contact us at technicalservices@riccachemical.com. With multiple facilities and many products in stock ready to ship, we can meet your needs with rapid delivery to anywhere in North America. *We offer fast, cost-effective Custom Blending Services to your specifications.*

- Certified Traceable to NIST Standard Reference Material, when available
- Packaging sizes ranging from 120 mL to 20 L
- Variety of buffer capacities and buffer ranges
- Compendial Buffer Solutions available



Why Source with RICCA?

RIGHT

- Tightest Specifications in the industry, lowest lot-to-lot variability
- ISO 17025 Accredited Laboratories, FDA, cGMP compliant facilities
- All products Certified Traceable to NIST Standards when available

READY

- Nationwide manufacturing/inventory locations
- Full documentation with each product - Certificate of Analysis
- Chemists ready to assist you in selecting the right chemical

RICCA

- Over 40 years of successfully serving you, our customer



pH Control Buffers

With the tightest specifications in the industry, Ricca pH Control Buffers help you maintain a constant pH for a wide range of applications. Ricca Buffers have the stability, purity, and consistency you can trust.

Acetate Buffers

RICCA Part Number	Product, Packaging	Sizes
R0062000-500A	Acetate Buffer TS, Natural Poly	500mL
R0060100-120A	Acetate Buffer, pH 3.5, for USP Trace Metals, Natural Poly	120mL
R0060100-250A	Acetate Buffer, pH 3.5, for USP Trace Metals, Natural Poly	250mL
R0060100-500A	Acetate Buffer, pH 3.5, for USP Trace Metals, Natural Poly	500mL
R0060100-1A	Acetate Buffer, pH 3.5, for USP Trace Metals, Natural Poly	1L
R0050000-500A	Acetate Buffer, pH 4.0, for Residual Chlorine, Natural Poly	500mL
R0050000-1A	Acetate Buffer, pH 4.0, for Residual Chlorine, Natural Poly	1L
R0050000-4A	Acetate Buffer, pH 4.0, for Residual Chlorine, Natural Poly	4L
R0050000-10F	Acetate Buffer, pH 4.0, for Residual Chlorine, Cubitainer®	10L
R0050000-20F	Acetate Buffer, pH 4.0, for Residual Chlorine, Cubitainer®	20L
R0052000-500A	Acetate Buffer, pH 4.5, for Cyanide, Natural Poly	500mL
R0052000-1A	Acetate Buffer, pH 4.5, for Cyanide, Natural Poly	1L
R0055000-20F	Acetate Buffer, pH 4.5, Cubitainer®	20L
R0052500-1A	Acetate Buffer, pH 4.5, USP, Natural Poly	1L
R0054000-500A	Acetate Buffer, pH 4.6, for Bromide, Natural Poly	500mL
R0054000-1A	Acetate Buffer, pH 4.6, for Bromide, Natural Poly	1L
R0065000-1A	Acetate Buffer, pH 5.5, Natural Poly	1L
R0063000-500A	Acetate Buffer, pH 5.5, APHA for Arsenic, Natural Poly	500mL
R0063000-1A	Acetate Buffer, pH 5.5, APHA for Arsenic, Natural Poly	1L
R0063000-4A	Acetate Buffer, pH 5.5, APHA for Arsenic, Natural Poly	4L
R0064000-500A	Acetate Buffer, pH 6.0, EP Solution 4002200, Natural Poly	500mL
R0064000-1A	Acetate Buffer, pH 6.0, EP Solution 4002200, Natural Poly	1L
R0060000-500A	Acetate Buffer, for Iron, Natural Poly	500mL
R0060000-1A	Acetate Buffer, for Iron, Natural Poly	1L
R0060000-4A	Acetate Buffer, for Iron, Natural Poly	4L
R0070000-500A	Acetate Buffer, Purified, for Zinc, Natural Poly	500mL
R0070000-1A	Acetate Buffer, Purified, for Zinc, Natural Poly	1L
R0618000-500A	Ammonium Acetate TS, 10% w/v, Natural Poly	500mL
R0618000-1A	Ammonium Acetate TS, 10% w/v, Natural Poly	1L
R0620000-500A	Ammonium Acetate, 40% w/w, Natural Poly	500mL

Acetate Buffers

RICCA Part Number	Product, Packaging	Sizes
R0620000-1A	Ammonium Acetate, 40% w/w, Natural Poly	1L
R0620000-4A	Ammonium Acetate, 40% w/w, Natural Poly	4L
R7125200-20F	Sodium Acetate, 0.1M, pH 6.0, HPLC, Cubitainer®	20L
R7126700-1A	Sodium Acetate Buffer, Natural Poly	1L

Acetic Acid-Ammonium Buffers

RICCA Part Number	Product, Packaging	Sizes
R0170000-500A	Acetic Acid-Ammonium Acetate Buffer TS, Natural Poly	500mL
R0170000-1A	Acetic Acid-Ammonium Acetate Buffer TS, Natural Poly	1L

Ammonium Buffers

RICCA Part Number	Product, Packaging	Sizes
R0616000-4A	Ammonia Buffer, for Hardness, Natural Poly	4L
R0616500-1A	Ammoniacal Buffer, pH 10.0, Natural Poly	1L
R0627400-1A	Ammonium Chloride/Hydroxide, 4M, Natural Poly	1L
R0627400-20F	Ammonium Chloride/Hydroxide, 4M, Cubitainer®	20L
R0655000-4A	Ammonium Hydroxide-Chloride Buffer, 8.7M/1.3M, Natural Poly	4L

Borate Buffers

RICCA Part Number	Product, Packaging	Sizes
R1040000-500A	Borate Buffer, pH 9.5, for Ammonia and Organic Nitrogen, Natural Poly	500mL
R1040000-1A	Borate Buffer, pH 9.5, for Ammonia and Organic Nitrogen, Natural Poly	1L
R1040000-4A	Borate Buffer, pH 9.5, for Ammonia and Organic Nitrogen, Natural Poly	4L
R1040000-20F	Borate Buffer, pH 9.5, for Ammonia and Organic Nitrogen, Cubitainer®	20L
R2105100-500A	Borate Buffer, pH 10.00, Natural Poly	500mL
R1048000-500A	Borate Buffer, pH 10.5, Natural Poly	500mL
R1048000-20F	Borate Buffer, pH 10.5, Cubitainer®	20L

Citrate Buffers

RICCA Part Number	Product, Packaging	Sizes
R2105060-1A	Citrate Buffer, pH 6.00, Natural Poly	1L
R2111000-20F	Citrate Buffer, 0.05M, pH 6.0, Cubitainer®	20L
R2105062-500A	Citrate Buffer, 2M, pH 6.00, Natural Poly	500mL
R2105062-1A	Citrate Buffer, 2M, pH 6.00, Natural Poly	1L
R2110200-120A	Sodium Citrate, 20mM, pH 4.5, Natural Poly	120mL
R2113800-4A	Citric/Phosphate Buffer, pH 3.0, Natural Poly	4L
R2113800-10F	Citric/Phosphate Buffer, pH 3.0, Cubitainer®	10L
R2114000-4A	Citric/Phosphate Buffer, McIlvaine, pH 3.20, Natural Poly	4L
R2114000-10F	Citric/Phosphate Buffer, McIlvaine, pH 3.20, Cubitainer®	10L
R2114000-20F	Citric/Phosphate Buffer, McIlvaine, pH 3.20, Cubitainer®	20L

Copper Buffers

RICCA Part Number	Product, Packaging	Sizes
R2265000-1A	Copper Buffer, Natural Poly	1L
R2265000-20E1	Copper Buffer, Ropak®	20L
R2265000-20F	Copper Buffer, Cubitainer®	20L

Dissolution Buffers

RICCA Part Number	Product, Packaging	Sizes
R1154200-500A	Britton-Robinson, pH 1.98, 0.1M, Natural Poly	500mL
R1154200-1A	Britton-Robinson, pH 1.98, 0.1M, Natural Poly	1L
R1154290-500A	Britton-Robinson, pH 2.87, 0.1M, Natural Poly	500mL
R1154410-500A	Britton-Robinson, pH 4.10, 0.1M, Natural Poly	500mL
R1154410-1A	Britton-Robinson, pH 4.10, 0.1M, Natural Poly	1L
R1154500-500A	Britton-Robinson, pH 5.02, 0.1M, Natural Poly	500mL
R1154610-500A	Britton-Robinson, pH 6.09, 0.1M, Natural Poly	500mL
R1154700-500A	Britton-Robinson, pH 7.00, 0.1M, Natural Poly	500mL
R1154800-500A	Britton-Robinson, pH 7.96, 0.1M, Natural Poly	500mL
R1154900-500A	Britton-Robinson, pH 8.95, 0.1M, Natural Poly	500mL
R1154990-500A	Britton-Robinson, pH 9.91, 0.1M, Natural Poly	500mL
R1155090-500A	Britton-Robinson, pH 10.88, 0.1M, Natural Poly	500mL
R1155200-500A	Britton-Robinson, pH 11.96, 0.1M, Natural Poly	500mL
R2628000-20F	Dissolution Medium, 3% SLS/ 0.5% NaCl, Cubitainer®	20L

Dissolution Buffers

RICCA Part Number	Product, Packaging	Sizes
R7108000-500A	Simulated Gastric Fluid w/o Pepsin, Natural Poly	500mL
R7108000-1A	Simulated Gastric Fluid w/o Pepsin, Natural Poly	1L
R7108000-10F	Simulated Gastric Fluid w/o Pepsin, Cubitainer®	10L
R7108000-20F	Simulated Gastric Fluid w/o Pepsin, Cubitainer®	20L
R7109750-500A	Simulated Intestinal Fluid w/o Pancreatin, USP XXII, Natural Poly	500mL
R7109750-20F	Simulated Intestinal Fluid w/o Pancreatin, USP XXII, Cubitainer®	20L

Phosphate Buffers

RICCA Part Number	Product, Packaging	Sizes
R5794000-20F	Phosphate Buffer, 0.05M, pH 5.80, Cubitainer®	20L
R5797111-4A	Phosphate Buffer, 1.11M, pH 6.8, Natural Poly	4L
R5797500-4C	Phosphate Buffer, 50mM, pH 6.50, Amber Glass	4L
R5799200-20F	Phosphate Buffer, 0.1M, pH 6.20, Cubitainer®	20L
R5800000-500A	Phosphate Buffer, pH 7.2, for BOD, Natural Poly	500mL
R5800000-1A	Phosphate Buffer, pH 7.2, for BOD, Natural Poly	1L
R5800000-4A	Phosphate Buffer, pH 7.2, for BOD, Natural Poly	4L
R5803000-500A	Phosphate Buffer, pH 7, for Residual Chlorine and Chlorine Dioxide (Amperometric), Natural Poly	500mL
R5803000-1A	Phosphate Buffer, pH 7, for Residual Chlorine and Chlorine Dioxide (Amperometric), Natural Poly	1L
R5803000-4A	Phosphate Buffer, pH 7, for Residual Chlorine and Chlorine Dioxide (Amperometric), Natural Poly	4L
R5805000-500A	Phosphate Buffer, APHA, for Chlorine (DPD Method), Natural Poly	500mL
R5805000-1A	Phosphate Buffer, APHA, for Chlorine (DPD Method), Natural Poly	1L
R5805000-4A	Phosphate Buffer, APHA, for Chlorine (DPD Method), Natural Poly	4L



Phosphate Buffers

RICCA Part Number	Product, Packaging	Sizes
R5806000-100A	Phosphate Buffer, 0.05M, pH 7.2, Natural Poly	100mL
R5806150-4A	Phosphate Buffer, 0.02M, pH 3.5, Natural Poly	4L
R5806200-100A	Phosphate Buffer, 0.02M, pH 7.2, Natural Poly	100mL
R5806500-20F	Phosphate Buffer, 0.05M, pH 7.4, Cubitainer®	20L
R5807000-500A	Phosphate Buffer, pH 6.8, APHA, for Phenols, Natural Poly	500mL
R5807000-1A	Phosphate Buffer, pH 6.8, APHA, for Phenols, Natural Poly	1L
R5808000-500A	Phosphate Buffer, pH 7, ASTM D1253, Natural Poly	500mL
R5808000-4A	Phosphate Buffer, pH 7, ASTM D1253, Natural Poly	4L
R5808200-1A	Phosphate Buffer, pH 7, ASTM D1094, Natural Poly	1L
R5808200-20F	Phosphate Buffer, pH 7, ASTM D1094, Cubitainer®	20L



Water Hardness Buffers

RICCA Part Number	Product, Packaging	Sizes
R9200000-500A	Water Hardness Buffer, with Magnesium EDTA, Natural Poly	500mL
R9200000-1A	Water Hardness Buffer, with Magnesium EDTA, Natural Poly	1L
R9200000-4A	Water Hardness Buffer, with Magnesium EDTA, Natural Poly	4L
R9201000-500A	Water Hardness Buffer, without Magnesium EDTA, Natural Poly	500mL
R9201000-1A	Water Hardness Buffer, without Magnesium EDTA, Natural Poly	1L
R9205000-500A	Water Hardness Buffer, Odorless, Natural Poly	500mL
R9205000-1A	Water Hardness Buffer, Odorless, Natural Poly	1L
R9205000-4A	Water Hardness Buffer, Odorless, Natural Poly	4L
R1472000-500A	Buffer Solution, for Water Hardness, ASTM Formulation, Natural Poly	500mL
R1472000-1A	Buffer Solution, for Water Hardness, ASTM Formulation, Natural Poly	1L

Wright's Buffer

RICCA Part Number	Product, Packaging	Sizes
R1450000-500A	Buffer, Giordano, pH 6.4 (M/15), for Wright Staining, Natural Poly	500mL
R1450000-1A	Buffer, Giordano, pH 6.4 (M/15), for Wright Staining, Natural Poly	1L
R1450000-4A	Buffer, Giordano, pH 6.4 (M/15), for Wright Staining, Natural Poly	4L

Ricca Custom Blending Services

Ricca offers over 40 years of successful chemical blending, bottle filling, packaging and on-site product testing to provide reliable and efficient solutions. Our Technical Support Chemists are available to assist you with formulations, packaging compatibility and regulatory questions. We offer personalized customer service to meet your specific needs at every step.

Ricca's ISO 9001:2015 certification and compliance to 21 CFR 820 ensures consistent quality of every blend. Testing is performed in our ISO 17025 accredited laboratories (See scope for details). We use a wide range of production and filling options to meet your requirements. Our 3 manufacturing facilities are geographically positioned to provide 2 to 3 day shipping nationwide.

Our capabilities include:

- Custom, contract blending
 - Solvent Blends
 - Mobile Phases
 - Cleaning Solutions
 - Compendial Blends
- Wide range of packaging options 4oz to bulk totes
- Custom label design, kitting capabilities, warehousing and distribution services
- Full custom documentation package, including SDS, Certificate of Analysis and packing slip
- Our highspeed liquid fill production line can produce 1,000's of bottles in a single run
- All labels, packaging and documentation fully compliant according to OSHA GHS and DOT Hazardous Materials regulations.



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 Pocomoke City, MD 21851
 Batesville, IN 47006
<http://www.riccachemical.com>
 1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Reagent Alcohol, ACS Reagent Grade Anhydrous, Absolute
Lot Number: 1705C76 **Product Number:** 6590 **Manufacture Date:** MAY 04, 2017
Expiration Date: JAN 2020

Name	CAS#	Grade
Ethyl Alcohol	64-17-5	ACS
Isopropyl Alcohol	67-63-0	ACS
Methyl Alcohol	67-56-1	ACS

Test	Specification	Result
Appearance	Colorless liquid	Passed
Color (APHA)	max 10	5.1
Ethanol (Ethyl Alcohol)	89.5-91.5 % (v/v)	90.4 % (v/v)
Isopropyl Alcohol	4.0-6.0 % (v/v)	5.2 % (v/v)
Methanol (Methyl Alcohol)	4.0-5.0 % (v/v)	4.4 % (v/v)
Residue after evaporation (Non Volatile Matter)	max 0.001 %	< 0.001 %
Water (H ₂ O)	max 0.5 %	0.03 %

Specification	Reference
Reagent Alcohol	ACS (N/A)

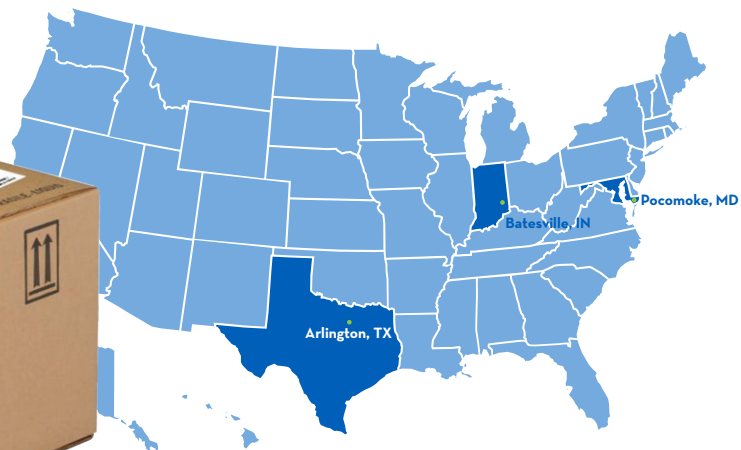
Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434. It is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
6590-2.5	10 L Cubitainer®	36 months
6590-16	500 ml, natural poly	36 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Israel Alamudun
 Quality Control Supervisor
 *This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials - Contents of Certificates and Labels."

Version: 1.3
Lot Number: 1705C76 Product Number: 6590
Page 1 of 1



Buffers

pH Calibration ISO 17025

- Reference
- Precision reference
- Buffer concentrates

pH Control

- Dissolution
- Phosphate
- Acetate
- Other Buffers

Compendial Solutions

- ASTM
- APHA
- EPA
- USP/EP
- ACS
- AOAC
- TAPPI

Extraction Chemicals

- Ethanol (organic and conventional)
- Acetone
- Isopropanol
- ACS and HPLC grades

General Use

HPLC Reagents Cleaning Solutions

- Electrode
- Surface
- Glassware
- Equipment

Acids

- Hydrochloric Acid
- Sulfuric Acid
- Nitric Acid
- Trichloroacetic Acid
- Acetic Acid
- Boric Acid
- Citric Acid
- Hydrofluoric Acid
- Phosphoric Acid
- Other Acids

Bases

- Sodium Hydroxide
- Potassium Hydroxide
- Ammonium Hydroxide
- Other Bases

Other Aqueous Solutions

Non-Aqueous Solutions

Reagent Grade Chemicals

Solvents

Standards

Conductivity/TDS - ISO 17025

- Potassium Chloride
- Sodium Chloride

Ion Selective Electrode (ISE)

- Ionic strength adjustors
- Filling Solutions
- ISE Standards

Ion Chromatography (IC) ISO 17025/Guide 34

- Eluants
- Standards

Color Standards

- USP Colorimetric
- EP Colorimetric
- Gardner
- Platinum-Cobalt (APHA-Hazen)

UV-VIS Absorbance

Oxidation-Reduction potential

Spectroscopy ISO 17025/Guide 34

ICP/ICP-MS

- Single elements
- Multi-element

Atomic Absorption (AA)

- Single elements
- Ionization Buffer Agents
- GFAA
- Calibration & Spiking Blends
- Matrix Modifiers
- CVAA

Organic Standards ISO 17025/Guide 34 Anions/Nonmetals

- Chlorine equivalent
- Nitrogen/Nitrate/Nitrite
- Ammonia
- Carbon
- BOD/COD
- Chloride
- Fluoride
- Sulfate
- Phosphate

Turbidity

Specific Gravity

High Purity Water

- Molecular biology grade
- ASTM Types I-IV
- HPLC
- USP/EP purified
- LC/MS grade

Proteomics

- Protein Crosslinkers
- Protein Modifiers
- LCMS Mobile Phases
- GC Derivatization Reagents
- Molecular Biology Buffers and Solvents

Terpenes

- Camphene
- Delta-3-Carene
- Beta-Caryophyllene
- D-Limonene
- Linalool

- Myrcene
- Nerol
- Alpha-Phellandrene
- Beta-Pinene
- Alpha-Pinene
- Alpha-Terpinene
- Terpinolene

Titants

Acids (Aqueous, Non-Aqueous)

- Hydrochloric
- Sulfuric
- Nitric
- Acetic
- Perchloric

Bases (Aqueous, Non-Aqueous)

- Sodium Hydroxide
 - Potassium Hydroxide
 - Sodium Carbonate
 - Ammonium Hydroxide
- ### *Oxidation-Reduction (Redox)*
- Sodium Thiosulfate
 - Potassium Permanganate
 - Phenylarsine Oxide
 - Iodate
 - Iodate-Iodide
 - Biiodate
 - Bromate-Bromide
 - Potassium Dichromate
 - Iodine
 - Ferrous Ammonium Sulfate
 - Ceric Sulfate

Other Titants

- EDTA
- Mercuric Nitrate
- Calcium Chloride
- Potassium Thiocyanate
- Sodium Chloride
- Zinc Sulfate
- Silver Nitrate

Karl Fischer Reagents

- Coulometric reagents
- Volumetric reagents
- Solvents
- Water standards

Indicators

pH Indicators

- Mixed Indicators
- Universal Indicators
- Acid-Base Indicators
- Adsorption Indicators
- Hardness Indicators
- Oxidation Reduction Indicators
- Complexometric Indicators
- Other Indicators

