



High Purity Water

Inspections... Deadlines... Budgets...

with all the issues you have to worry about your water shouldn't be one of them!

RIGHT

Uncompromising Quality

READY

4 Manufacturing/
Inventory Locations

RICCA

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

Put the simplicity back into water with RICCA. RICCA is the premier choice for all your water needs. We offer the broadest line of water types, packaging and testing configurations. Our state of the art water and quality systems at multiple facilities means rapid manufacturing and delivery to anywhere in North America.

- Sterile, Molecular Biology Grade
- LC/MS
- HPLC
- ACS Reagent Grade, ASTM Type I, II, III, IV
- USP/EP/JP Purified



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 product

RICCA

- Over 40 years of successfully serving you, our customer



Contact Us At:

customerservice@riccachemical.com

(888) GO-RICCA (467-4222)

Visit Us Online:

www.riccachemical.com



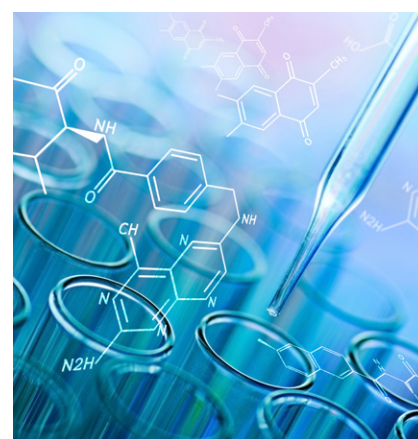
Water Solutions

Our goal is to provide you with the broadest choice of Water Type, Packaging and Test Configuration to ensure that the right quality of water is used for your specific application, while helping you optimize your operating budget. Whether you are preparing samples, mobile phases or solutions, using the right type of water can make the difference in obtaining the best results.

If you don't see the water type, packaging or test configuration you need, contact us for a fast, cost-effective custom solution!

Sterile Water, Molecular Biology Grade

- Suitable for a wide range of applications, PCR, electrophoresis, DNA Sequencing and more
- RNase, DNase, Protease and Endotoxin Free which can interfere in molecular biology processes
- No toxic agents, such as DEPC, are used in our purification methods



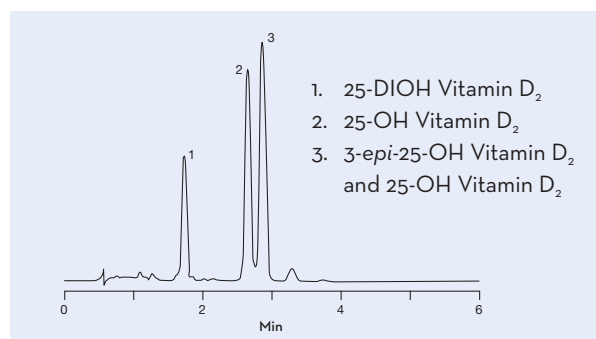
| RICCA Part Number | Product | Sizes |
|-------------------|--|-------|
| R9145000-1G | Water, Molecular Biology Grade Sterile, RNase Free, DNase Free, Protease Free, DEPC Free, PETG | 1L |

LC/MS Grade Water

- Suitable for use with critical LC/MS Applications, mobile phase preparation, blanks and sample dilution
- Low UV Absorptivity to provide the most sensitive detection across all wavelengths
- Specifically purified under our exacting conditions and tested to the tightest tolerances for the lowest lot-to-lot variability, maximizing the quality of your data and life of your equipment



| RICCA Part Number | Product | Sizes |
|-------------------|--|-------|
| R9154000-1C | Water, LC/MS Grade, Amber Glass Bottle | 1L |
| R9154000-4C | Water, LC/MS Grade, Amber Glass Bottle | 4L |



HPLC Grade Water

- For general laboratories for LC/HPLC/UPLC testing
- Suitable for UV Spectrophotometry and Liquid Chromatography
- Absorbance and LC Suitability results on C of A
- Packaged in Amber Glass Bottles

| RICCA Part Number | Product | Sizes |
|-------------------|---|-------|
| R9153000-1C | Water, HPLC Grade, ACS Reagent Grade, Suitable for LC | 1L |
| R9153000-4C | Water, HPLC Grade, ACS Reagent Grade, Suitable for LC | 4L |



USP/EP/JP Purified Water

- Ideal for Pharmaceutical testing laboratories
- Water system validated under cGMP
- Tested to the latest USP/EP Requirements
- Low Microbial Count/Non-Sterile



| RICCA Part Number | Product | Sizes |
|-------------------|---|--------|
| R9189000-20F | Water, USP/EP/JP Purified, Cubitainer® | 20L |
| R9189000-20E1 | Water, USP/EP/JP Purified, Ropak® | 20L |
| R9190000-4A | Water, USP/EP Purified, Poly Natural | 4L |
| R9190000-4C | Water, USP/EP Purified, Glass Amber | 4L |
| R9190000-4F | Water, USP/EP Purified, Cubitainer® | 4L |
| R9190000-10F | Water, USP/EP Purified, Cubitainer® | 10L |
| R9190000-20F | Water, USP/EP Purified, Cubitainer® | 20L |
| R9190000-20E1 | Water, USP/EP Purified, Ropak® | 20L |
| R9191000-55E | Water, USP Purified, Non-Sterile, Poly Drum | 220L |
| R9191000-330E3 | Water, USP Purified, Non-Sterile, Poly Tote | 330Gal |

ACS/ASTM Reagent Grade Water

- For general laboratory requirements where microbial specifications are not a concern
- Tested to latest ACS, ASTM Requirements
- ASTM Types I-IV
 - > Type III Water, lowest laboratory grade water, recommended for glassware washing, heating baths and filling autoclaves or feed Type I lab water systems
 - > Type II Water, general laboratory applications, preparation of reagents, filling incubators or test chambers
 - > Type I Water, required for critical lab applications
- 18 megohm Water
- Packaged in glass bottles is suitable when very low organic levels are needed

| RICCA Part Number | Product | Sizes |
|-------------------|---|-------|
| R9150000-500A | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Poly Natural | 500mL |
| R9150000-1A | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Poly Natural | 1L |
| R9150000-4A | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Poly Natural | 4L |
| R9150000-4F | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Cubitainer® | 4L |
| R9150000-10F | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Cubitainer® | 10L |
| R9150000-4x4A | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Poly Natural | 16L |
| R9150000-20F | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Cubitainer® | 20L |
| R9150000-20E1 | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Ropak® | 20L |
| R9150000-55E | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Poly Drum | 55Gal |
| R9151000-4C | Water, ACS Reagent Grade, ASTM Type 1, ASTM Type II, Amber Glass | 4L |
| R9152000-500A | Water, ACS Reagent Grade, ASTM Type II, Poly Natural | 500mL |
| R9152000-1A | Water, ACS Reagent Grade, ASTM Type II, Poly Natural | 1L |
| R9152000-4A | Water, ACS Reagent Grade, ASTM Type II, Poly Natural | 4L |
| R9152000-10F | Water, ACS Reagent Grade, ASTM Type II, Cubitainer® | 10L |
| R9152000-20F | Water, ACS Reagent Grade, ASTM Type II, Cubitainer® | 20F |
| R9152000-55E | Water, ACS Reagent Grade, ASTM Type II, Poly Drum | 55Gal |
| R9151300-4A | Water, ACS Reagent Grade, ASTM Type III, Poly Natural | 4L |
| R9151400-1A | Water, ACS Reagent Grade, ASTM Type IV, Poly Natural | 1L |
| R9151400-20F | Water, ACS Reagent Grade, ASTM Type IV, Cubitainer® | 20L |
| R9151400-55E | Water, ACS Reagent Grade, ASTM Type IV, Poly Drum | 55Gal |

Distilled Water

- For methods that require distilled water
- Additional distillation step to further purify high purity water
- Specially cleaned packaging

| RICCA Part Number | Product | Sizes |
|-------------------|--|-------|
| R9180000-100C | Water, Distilled, Reagent Grade, Glass Amber | 100mL |
| R9180000-1C | Water, Distilled, Reagent Grade, Glass Amber | 1L |
| R9180000-4C | Water, Distilled, Reagent Grade, Glass Amber | 4L |
| R9180000-20F | Water, Distilled, Reagent Grade, Cubitainer® | 20L |
| R9180000-55E | Water, Distilled, Reagent Grade, Poly Drum | 55Gal |



Whether you are preparing samples, mobile phases or solutions, using the right type of water can make the difference in obtaining the best results.

If you don't see the water type, packaging or test configuration you need, contact us for a fast, cost-effective custom solution!

Contact Us At:

customerservice@riccachemical.com

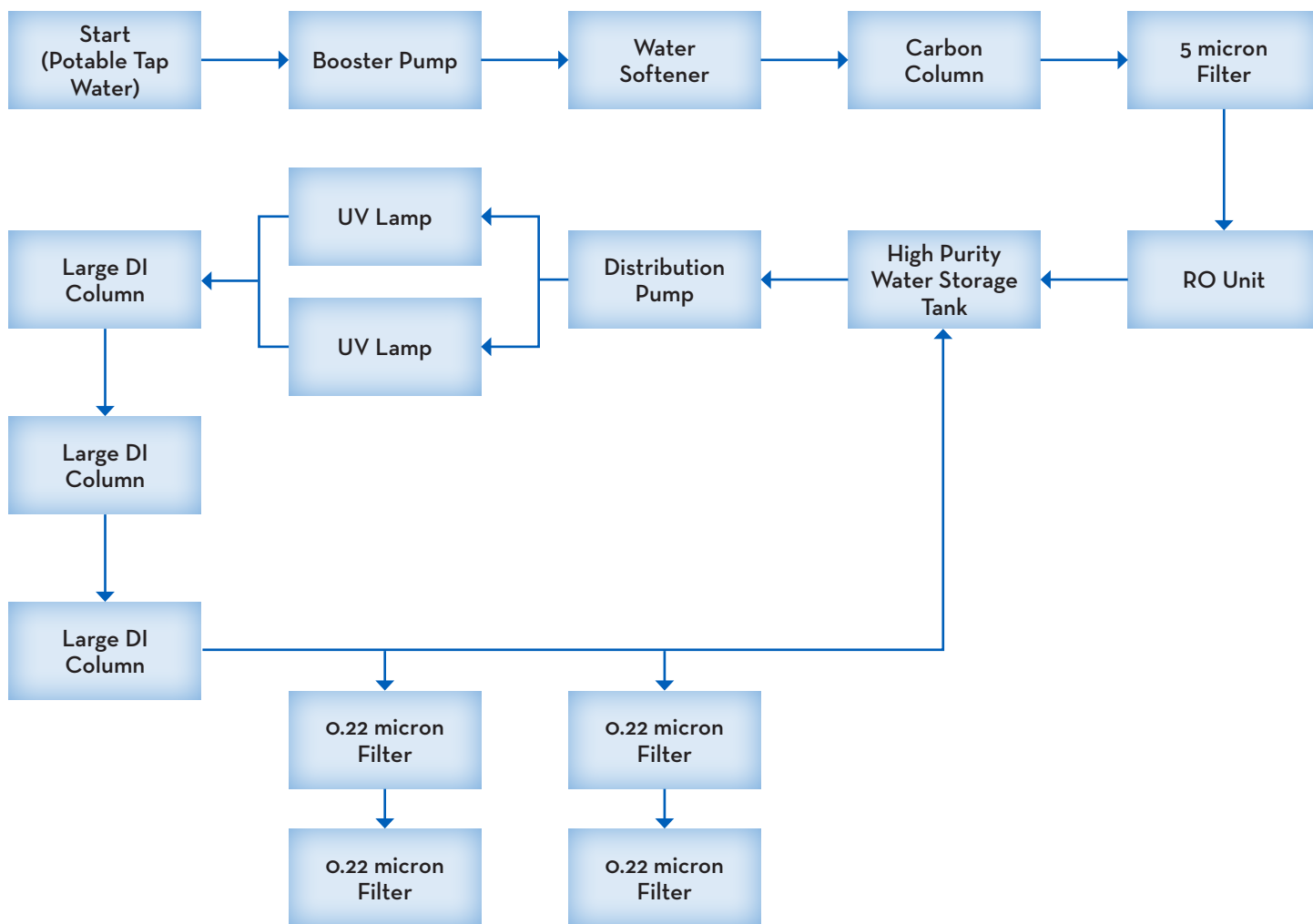
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Schematic of Water System

Ricca's closed loop continuous process water systems at each of our facilities include continual monitoring of TOC (Total Organic Carbon). In addition, our systems use conventional water softening, prefiltration, activated carbon organic adsorption, reverse osmosis, mixed bed triple deionization, ultraviolet light irradiation and 0.2 micron membrane filtration. Our water systems have been validated to meet ACS/ASTM/USP/EP specifications.



Water Specification Chart

| | R9150000 | R9151000 | R9152000 | R9153000 | R9145000 | R9180000 | R9189000 | R9190000 | R9154000 |
|---|------------------|------------------|------------------|------------------|-------------------------|------------------|------------------|-------------------------|-------------------------|
| Acidity | | | | | | | To Pass Test | To Pass Test | |
| Alkalinity | | | | | | | To Pass Test | To Pass Test | |
| Ammonia (NH ₃) | | | | | | | max 0.05 ppm | max 0.3 ppm | |
| Ammonium (NH ₄) | | | | | | | | max 0.2 ppm | |
| Appearance | Colorless liquid | Colorless liquid | Colorless liquid | Colorless liquid | Clear, colorless liquid | Colorless liquid | Colorless liquid | Clear, colorless liquid | Clear, colorless liquid |
| Bioburden (no growth) | | | | | To Pass Test | | | | |
| Calcium | | | | | | | max 0.5 ppm | max 0.5 ppm | max 10 ppb |
| Carbon Dioxide (CO ₂) | | | | | | | To Pass Test | To Pass Test | |
| Chloride (Cl) | max 1 ppb | max 1 ppb | max 5 ppb | max 0.4 ppm | | | max 0.1 ppm | max 0.5 ppm | max 0.4 ppm |
| Conductivity at 25°C | max 0.056 µS/cm | max 0.056 µS/cm | max 1.0 µS/cm | max 0.056 µS/cm | | max 1.5 µS/cm | max 1.0 µS/cm | max 1.0 µS/cm | max 0.056 µS/cm |
| DNase Activity (none detected) | | | | | To Pass Test | | | | |
| Endotoxin (Chromogenic Determination) | | | | | | | max 0.25 EU/mL | max 0.25 EU/mL | |
| Endotoxin (none detected) | | | | | To Pass Test | | | | |
| Heavy Metals (as Pb) | max 0.01 ppm | max 0.01 ppm | max 0.01 ppm | max 0.01 ppm | | | max 0.1 ppm | max 0.1 ppm | |
| LC Suitability (Absorbance) | | | | To Pass Test | | | | | To Pass Test |
| LC Suitability (Gradient Elution Test) | | | | To Pass Test | | | | | To Pass Test |
| LCMS Suitability - neg Mode (as 4-Nitrophenol) | | | | | | | | | To Pass Test |
| LCMS Suitability - pos mode (as Reserpine) | | | | | | | | | To Pass Test |
| Lithium | | | | | | | | | max 10 ppb |
| Magnesium (Mg) | | | | | | | max 0.5 ppm | max 0.5 ppm | max 10 ppb |
| Microbial Count (at time of manufacture) | | | | | | | max 100 CFU/mL | max 100 CFU/mL | |
| Nitrate (NO ₃) | max 0.4 ppm | max 0.4 ppm | max 0.4 ppm | max 0.4 ppm | | | max 1 ppb | max 0.2 ppm | max 0.4 ppm |
| Nitrogen (as Nitrite) | | | | | | | max 1 ppb | | |
| Organic Carbon (TOC) | max 50 ppb | max 50 ppb | max 50 ppb | max 50 ppb | | | max 0.5 ppm | max 0.50 ppm | |
| Oxidizable Substances (Permanganate Retention) | To Pass Test | To Pass Test | To Pass Test | To Pass Test | | | To Pass Test | To Pass Test | |
| pH at 25°C | | | | | | | 5.0-7.0 | 5.0-7.0 | |
| Phosphate (PO ₄) | max 1.0 ppm | max 1.0 ppm | max 1.0 ppm | max 1.0 ppm | | | | | max 1.0 ppm |
| Potassium | | | | | | | | | max 10 ppb |
| Protease Activity (none detected) | | | | | To Pass Test | | | | |
| Residue after evaporation (non-Volatile Matter) | | | | | | | max 0.001% | max 0.001% | max 1.0 ppm |
| RNase Activity (none detected) | | | | | To Pass Test | | | | |
| Silicate (as SiO ₂) | max 3 ppb | max 3 ppb | max 3 ppb | max 0.01 ppm | | | | | max 3 ppb |
| Sodium (Na) | max 1 ppb | max 1 ppb | max 5 ppb | | | | | | max 10 ppb |
| Sulfate (SO ₄) | max 1.0 ppm | max 1.0 ppm | max 1.0 ppm | max 1.0 ppm | | | max 0.5 ppm | max 0.5 ppm | max 1.0 ppm |

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

Titrants

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 Titrants

- 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

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