RICCA®

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

RIGHT
Uncompromising Quality

•

READY
3 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
- UPS/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 chemical

RICCA
- Over 40 years of successfully serving you, our customer

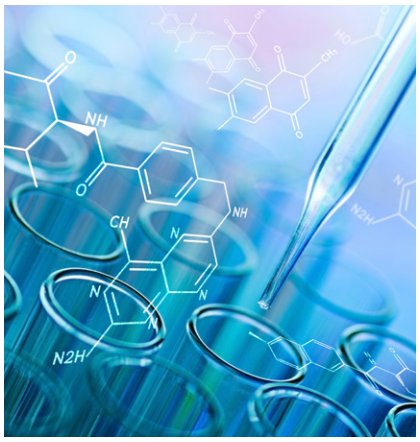
Water Solutions

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 DEPC, are used in our purification methods

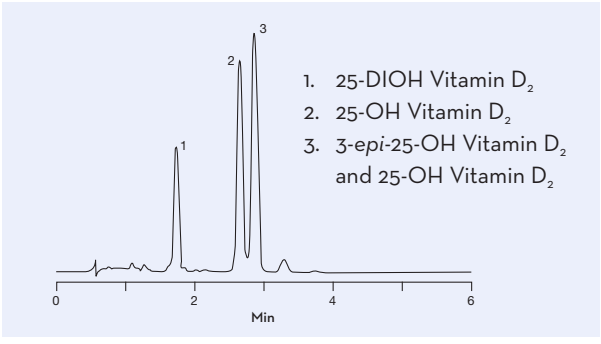


RICCA Part Number	Product	Sizes
R9145000-1G	Water, Molecular Biology Grade Sterile, RNase Free, DNAse Free, Protease Free, DEPC Free, PETG	1L

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

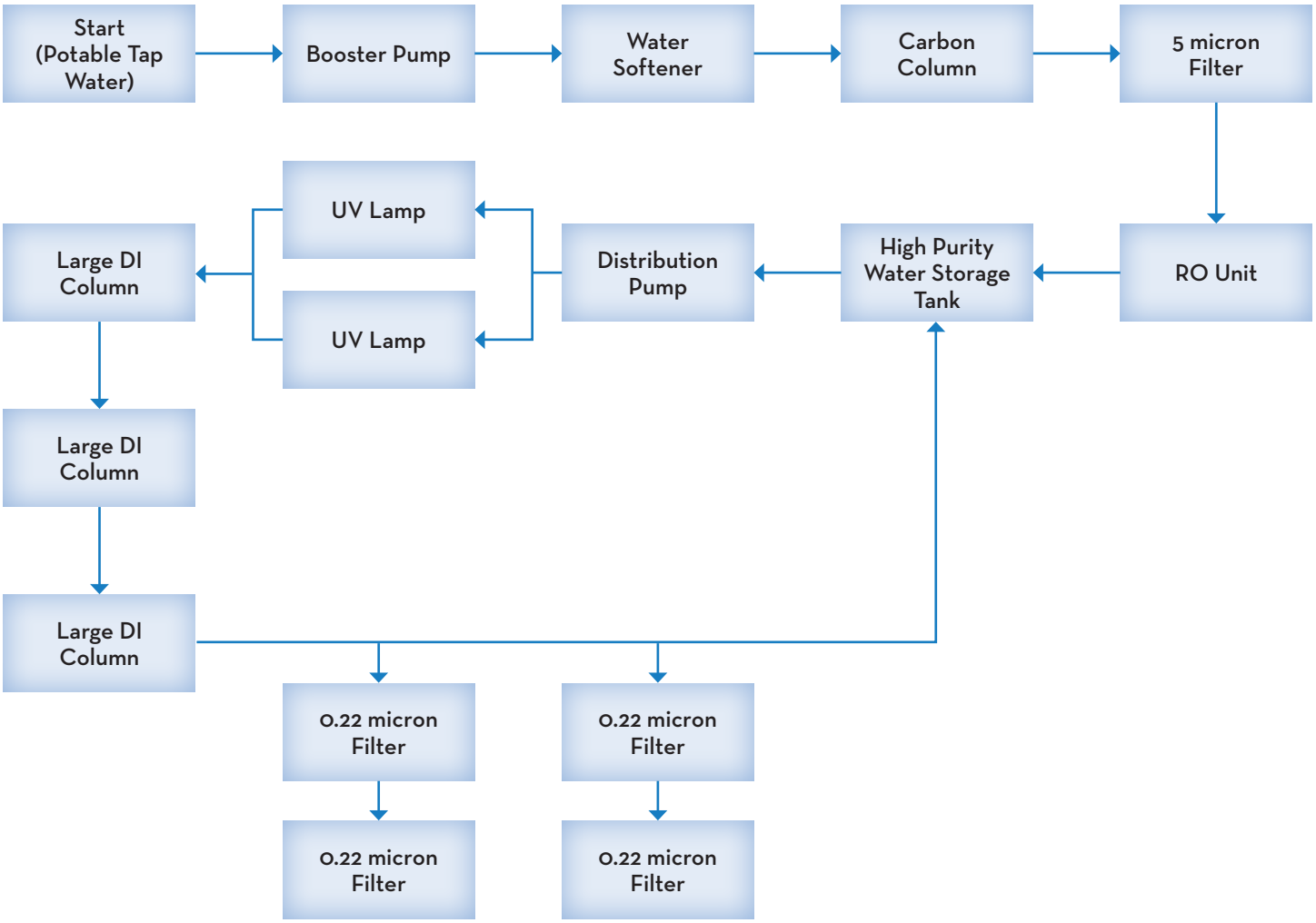
RICCA Part Number	Product	Sizes
R9180000-100C	Water, Distilled, Reagent Grade, Glass Amber	100mL
R9180000-1C	Water, Distilled, Reagent Grade, Glass Amber	1L
R9180000-4C	Water, Distilled, Reagent Grade, Glass Amber	4L
R9180000-20F	Water, Distilled, Reagent Grade, Cubitainer®	20L
R9180000-55E	Water, Distilled,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

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 (Absorabance)				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

Product Offerings

New Products Highlighted in Blue

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

ICCA®

CERTIFIED ISO 9001:2008 COMPANY