

High Purity Water

RICCA®



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, 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
- USP Sterile Purified (WFI Quality)
- LC/MS
- HPLC
- USP/EP/JP Purified
- ACS Reagent Grade, ASTM Type I, II, III, IV



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 45 years of successfully serving you, our customer



Contact Us At:

sales@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 product!

Sterile Water, Molecular Biology Grade

- Suitable for a wide range of applications including PCR, electrophoresis, DNA sequencing and more
- RNase, DNase, Protease and Endotoxin Free to mitigate biological interference.
- No toxic agents, such as DEPC, are used in purification methods



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

Water, USP Purified Sterile Water (WFI Quality)

- Suitable for pharmaceutical, bio-processing, medical device manufacturing and research applications
- Tested to USP Monograph for Sterile Water for Injection (WFI), USP <71>
- Purified by reverse osmosis and sterile filtration
- No antimicrobial agents or other substances added



RICCA Part Number	Product Name	Package Size
R9192000-20S	Water, USP Purified STERILE Filtered, WFI Quality, Poly Bag in a Box	20 L
R9192000-55S	Water, USP Purified STERILE Filtered, WFI Quality, Poly Bag in a Drum	200 L

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 Name	Package Size
R9154000-1C	Water, LC/MS Grade, Amber Glass Bottle	1 L
R9154000-4C	Water, LC/MS Grade, Amber Glass Bottle	4 L

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HPLC Grade Water

- Suitable for LC/HPLC/UPLC applications, mobile phase preparations, blanks, and sample dilution
- Absorbance and LC Suitability results on C of A
- Packaged in Amber Glass Bottles



RICCA Part Number	Product Name	Package Size
R9153000-1C	Water, HPLC Grade ACS Reagent Grade, Suitable for Liquid Chromatography, Amber Glass Bottle	1 L
R9153000-4C	Water, HPLC Grade ACS Reagent Grade, Suitable for Liquid Chromatography, Amber Glass Bottle	4 L

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 Name	Package Size
R9189000-10F	Water, USP/EP/JP Purified, Cubitainer®	10 L
R9189000-20F	Water, USP /EP/JP Purified, Cubitainer®	20 L
R9189000-20E1	Water, USP/EP/JP Purified, Ropak	20 L
R9190000-4A	Water, USP/EP Purified, Poly Bottle	4 L
R9190000-4C	Water, USP/EP Purified, Amber Glass Bottle	4 L
R9190000-4F	Water, USP/EP Purified, Cubitainer®	4 L
R9190000-10F	Water, USP/EP Purified, Cubitainer®	10 L
R9190000-20F	Water, USP/EP Purified, Cubitainer®	20 L
R9190000-20E1	Water, USP/EP Purified, Ropak	20 L
R9191000-55E	Water, USP Purified, Nonsterile, Poly Drum	55 Gal
R9191000-330E3	Water, USP Purified, Nonsterile, Tote	330 Gal

Distilled Water

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



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

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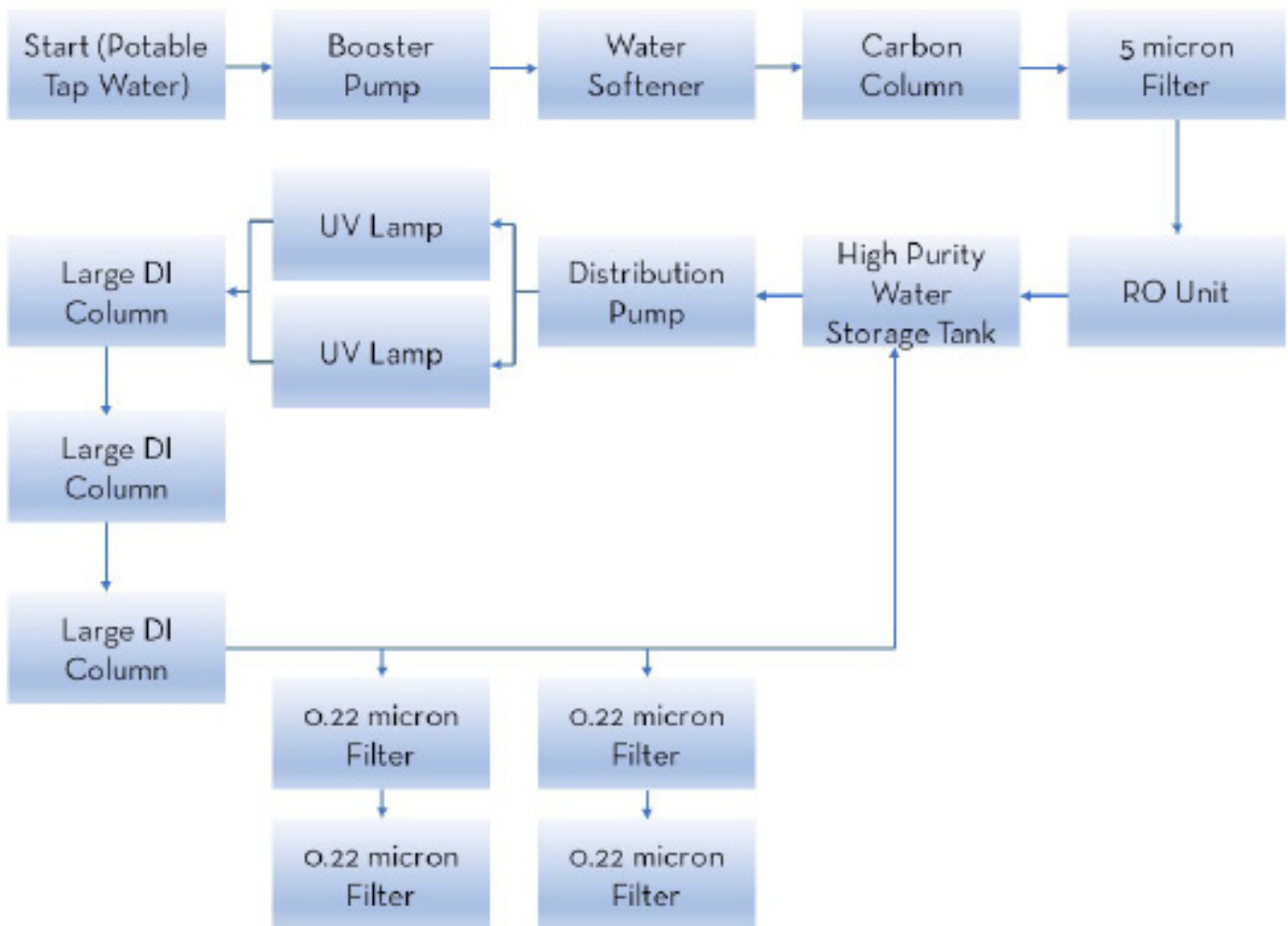
ACS/ASTM Reagent Grade Water

- 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
- Deionized, 18 Megaohm water
- Packaged in glass bottles when very low organic levels are needed

RICCA Part Number	Product Name	Package Size
R9150000-500A	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Poly Bottle	500 mL
R9150000-1A	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Poly Bottle	1 L
R9150000-4A	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Poly Bottle	4 L
R9150000-4F	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Cubitainer®	4 L
R9150000-10F	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Cubitainer®	10 L
R9150000-20F	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Cubitainer®	20 L
R9150000-20E1	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Ropak	20 L
R9150000-55E	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Poly Drum	55 Gal
R9150000-330E3	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Tote	330 Gal
R9151000-4C	Water, ACS Reagent Grade, ASTM Type I, ASTM Type II, Amber Glass	4 L
R9152000-500A	Water, ACS Reagent Grade, ASTM Type II, Poly Bottle	500 mL
R9152000-1A	Water, ACS Reagent Grade, ASTM Type II, Poly Bottle	1 L
R9152000-4A	Water, ACS Reagent Grade, ASTM Type II, Poly Bottle	4 L
R9152000-10F	Water, ACS Reagent Grade, ASTM Type II, Cubitainer®	10 L
R9152000-20F	Water, ACS Reagent Grade, ASTM Type II, Cubitainer®	20 L
R9152000-55E	Water, ACS Reagent Grade, ASTM Type II, Poly Drum	55 Gal
R9152000-330E3	Water, ACS Reagent Grade, ASTM Type II, Tote	330 Gal
R9151300-4A	Water, ASTM Type III, Poly Bottle	4 L
R9151400-1A	Water, ASTM Type IV, Poly Bottle	1 L
R9151400-4A	Water, ASTM Type IV, Poly Bottle	4 L
R9151400-20F	Water, ASTM Type IV, Cubitainer®	20 L
R9151400-55E	Water, ASTM Type IV, Poly Drum	55 Gal

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

	R9145000	R9150000	R9151000	R9152000	R9153000
Acidity					
Alkalinity					
Ammonia (NH ₃)					
Ammonium (NH ₄)					
Appearance	Clear, Colorless Liquid	Colorless Liquid	Colorless Liquid	Colorless Liquid	Colorless Li
Bioburden (no growth)	To Pass test				
Calcium					
Carbon Dioxide (CO ₂)					
Chloride (Cl)		max 1 ppb	max 1 ppb	max 5 ppb	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 µ
Conductivity (Bulk) at 25°C USP <645>					
Conductivity (Packaged) at 25°C USP <645>					
DNase Activity	None detected				
Endotoxin (Chromogenic Determination)					
Endotoxin	None detected				
Heavy Metals (as Pb)		max 0.01 ppm	max 0.01 ppm	max 0.01 ppm	max 0.01 ppm
LC Suitability (Absorbance)					To Pass Test
LC Suitability (Gradient Elution Test)					To Pass Test
LCMS Suitability (neg Mode (As 4-Nitrophenol)					
LCMS Suitability (neg Mode (As Reserpine)					
Lithium					
Magnesium (Mg)					
Microbial Count (at time of manufacture)					
Nitrate (NO ₃)		max 0.4 ppm	max 0.4 ppm	max 0.4 ppm	max 0.4 ppm
Nitrogen (as Nitrite)					
Organic Carbon (TOC)		max 50 ppb	max 50 ppb	max 50 ppb	max 50 ppb
Oxidizable Substances (Permanganate Retention)		To Pass Test	To Pass Test	To Pass Test	To Pass Test
pH at 25°C					
Phosphate (PO ₄)		max 1.0 ppm	max 1.0 ppm	max 1.0 ppm	max 1.0 ppm
Potassium					
Protease Activity	None detected				
Residue after evaporation (non-Volatile Matter)					
RNase Activity	None detected				
Silicate (as SiO ₂)		max 3 ppb	max 3 ppb	max 3 ppb	max 0.01 ppm
Sodium (Na)		max 1 ppb	max 1 ppb	max 5 ppb	
Sterility USP <71>					
Sulfate (SO ₄)		max 1.0 ppm	max 1.0 ppm	max 1.0 ppm	max 1.0 ppm



	R9154000	R9180000	R9189000	R9190000	R9191000	R9192000
			To Pass Test	To Pass Test		
			To Pass Test	To Pass Test		
			max 0.05 ppm	max 0.3 ppm	max 0.3 ppm	
				max 0.2 ppm	max 0.2 ppm	
iquid	Clear, Colorless Liquid	Colorless Liquid	Colorless Liquid	Colorless Liquid	Clear, Colorless Liquid	
	max 10.00 ppb		max 0.5 ppm	max 0.5 ppm	max 0.5 ppm	
			To Pass Test	To Pass Test	To Pass Test	
n	max 0.04 ppm		max 0.1 ppm	max 0.5 ppm	max 0.5 ppm	
S/cm	max 0.056 μS/cm	max 1.5 μS/cm	max 1.0 μS/cm	max 1.0 μS/cm	max 1.0 μS/cm	
						max 1.3 μS/cm
						To Pass Test
			max 0.25 EU/mL	max 0.25 EU/mL		max 0.25 EU/mL
m			max 0.1 ppm	max 0.1 ppm	max 0.1 ppm	
	To Pass Test					
	To Pass Test					
	To Pass Test					
	To Pass Test					
	max 10 ppb					
	max 10 ppb		max 0.5 ppm	max 0.5 ppm	max 0.5 ppm	
			max 100 CFU/mL	max 100 CFU/mL		
n	max 0.4 ppm		max 1 ppb	max 0.2 ppm	max 0.2 ppm	
			max 1 ppb			
	max 50 ppb		max 0.5 ppm	max 0.50 ppm	max 0.50 ppm	max 500 ppb
			To Pass Test	To Pass Test	To Pass Test	
			5.0 - 7.0	5.0 - 7.0	5.0 - 7.0	
			max 0.001%	max 0.001%	max 0.001%	
m						
						No Growth
			max 0.5 ppm	max 0.5 ppm	max 0.5 ppm	

Product Offerings

Buffers

pH Calibration

- Reference*
- Precision Reference*
- Buffer Concentrates*

pH Control

- Dissolution
- Phosphate
- Acetate

Compendial Solutions

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

Solvents

- Alcohol
- Blends
- Extraction Chemicals
- HPLC Grade Reagents
- Hydrocarbon
- Oxygenated
- Surfactant

General Use

Cleaning Solutions

- Electrode
- Surface
- Glassware
- Equipment

Other Aqueous Solutions

Non-Aqueous Solutions

Reagent Grade Chemicals

Acids

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

Bases

- Sodium Hydroxide
- Potassium Hydroxide
- Ammonium Hydroxide

In-Vitro Diagnostics

- Clinical Reagents
- Cytology Reagents
- Fixatives & Stains
- Histology Reagents
- Microbiology Reagents

Standards

Conductivity/TDS*

- Potassium Chloride*
- Sodium Chloride*

Ion Selective Electrodes (ISE)

- Ionic Strength Adjustors
- Filling Solutions
- ISE Standards

Color Standards

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

UV-VIS Absorbance

Oxidation-Reduction Potential

Turbidity

Specific Gravity

Spectroscopy

ICP/ICP-MS*

- Single Elements*
- Multi-element*

Atomic Absorption (AA)*

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

Ion Chromatography (IC)*

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

Titration

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

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

High Purity Water

- ACS/ASTM Type I-IV
- Distilled
- HPLC Grade
- LC/MS Grade
- Sterile Molecular Biology Grade
- USP/EP
- USP Purified, Sterile (WFI Quality)

* Tested in an ISO 17025 accredited laboratory options available

* Certified Reference Material ISO 17034 options available



RICCA[®]