

Titration



RIGHT

Uncompromising Quality

READY

3 Manufacturing/
Inventory Locations

RICCA

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

Ricca offers a wide variety of Titrants to suit most applications. Options include Standardized Acids and Bases, Oxidation-Reduction, Non-aqueous and General Titrants. We also offer Karl Fischer Reagents for Moisture Analysis, including both Coulometric and Volumetric Reagents, as well as our full line of Chemical Indicators to accompany your titration(s).

Don't see the Titrant, size or concentration 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 from 120 mL to 55 gallons
- Both Aqueous and Nonaqueous Titrants

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 available for 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



Contact Us At:

customerservice@riccachemical.com
(888) GO-RICCA (467-4222)

Visit Us Online:

www.riccachemical.com



Titrants

Standardized Acids

RICCA Part Number	Product , Packaging	Sizes
R0150000-500A	Acetic Acid, 1N, Natural Poly	500mL
R0150000-1A	Acetic Acid, 1N, Natural Poly	1L
R0150000-4A	Acetic Acid, 1N, Natural Poly	4L
R3590000-120A	Hydrochloric Acid, 0.01N, Natural Poly	120mL
R3590000-500A	Hydrochloric Acid, 0.01N, Natural Poly	500mL
R3590000-1A	Hydrochloric Acid, 0.01N, Natural Poly	1L
R3590000-4A	Hydrochloric Acid, 0.01N, Natural Poly	4L
R3590000-20F	Hydrochloric Acid, 0.01N, Cubitainer®	20L
R3600000-120A	Hydrochloric Acid, 0.1N, Natural Poly	120mL
R3600000-500A	Hydrochloric Acid, 0.1N, Natural Poly	500mL
R3600000-1A	Hydrochloric Acid, 0.1N, Natural Poly	1L
R3600000-4A	Hydrochloric Acid, 0.1N, Natural Poly	4L
R3600000-20F	Hydrochloric Acid, 0.1N, Cubitainer®	20L
R3600200-1A	Hydrochloric Acid, 0.1N, made from NF/USP materials, Natural Poly	1L
R3650000-500A	Hydrochloric Acid, 0.5N, Natural Poly	500mL
R3650000-1A	Hydrochloric Acid, 0.5N, Natural Poly	1L
R3650000-4A	Hydrochloric Acid, 0.5N, Natural Poly	4L
R3650000-10F	Hydrochloric Acid, 0.5N, Cubitainer®	10L
R3650000-20F	Hydrochloric Acid, 0.5N, Cubitainer®	20L
R3650000-55E	Hydrochloric Acid, 0.5N, Poly Drum	55 Gallon
R3700000-500A	Hydrochloric Acid, 1N, Natural Poly	500mL
R3700000-1A	Hydrochloric Acid, 1N, Natural Poly	1L
R3700000-4A	Hydrochloric Acid, 1N, Natural Poly	4L
R3700000-10F	Hydrochloric Acid, 1N, Cubitainer®	10L
R3700000-20F	Hydrochloric Acid, 1N, Cubitainer®	20L
R3700000-55E	Hydrochloric Acid, 1N, Poly Drum	55 Gallon
R3700100-120A	Hydrochloric Acid, 1N, made from NF/USP materials, Natural Poly	120mL
R5400000-500A	Nitric Acid, 0.1N, Natural Poly	500mL
R5400000-1A	Nitric Acid, 0.1N, Natural Poly	1L
R5400000-4A	Nitric Acid, 0.1N, Natural Poly	4L
R5400000-20F	Nitric Acid, 0.1N, Cubitainer®	20L
R5430000-500A	Nitric Acid, 1N, Natural Poly	500mL
R5430000-1A	Nitric Acid, 1N, Natural Poly	1L
R5430000-2.5D	Nitric Acid, 1N, Safety Coated Amber Glass	2.5L

Standardized Acids

RICCA Part Number	Product , Packaging	Sizes
R5430000-4A	Nitric Acid, 1N, Natural Poly	4L
R5430000-20F	Nitric Acid, 1N, Cubitainer®	20L
R8196000-120A	Sulfuric Acid, 0.01N, Natural Poly	120mL
R8196000-500A	Sulfuric Acid, 0.01N, Natural Poly	500mL
R8196000-1A	Sulfuric Acid, 0.01N, Natural Poly	1L
R8196000-4A	Sulfuric Acid, 0.01N, Natural Poly	4L
R8196000-20F	Sulfuric Acid, 0.01N, Cubitainer®	20L
R8200000-120A	Sulfuric Acid, 0.02N, Natural Poly	120mL
R8200000-500A	Sulfuric Acid, 0.02N, Natural Poly	500mL
R8200000-1A	Sulfuric Acid, 0.02N, Natural Poly	1L
R8200000-4A	Sulfuric Acid, 0.02N, Natural Poly	4L
R8200000-10F	Sulfuric Acid, 0.02N, Cubitainer®	10L
R8200000-20F	Sulfuric Acid, 0.02N, Cubitainer®	20L
R8250000-500A	Sulfuric Acid, 0.1N, Natural Poly	500mL
R8250000-1A	Sulfuric Acid, 0.1N, Natural Poly	1L
R8250000-4A	Sulfuric Acid, 0.1N, Natural Poly	4L
R8250000-10F	Sulfuric Acid, 0.1N, Cubitainer®	10L
R8250000-20F	Sulfuric Acid, 0.1N, Cubitainer®	20L
R8260000-500A	Sulfuric Acid, 0.2N, Natural Poly	500mL
R8260000-1A	Sulfuric Acid, 0.2N, Natural Poly	1L
R8260000-4A	Sulfuric Acid, 0.2N, Natural Poly	4L
R8260000-10F	Sulfuric Acid, 0.2N, Cubitainer®	10L
R8260000-20F	Sulfuric Acid, 0.2N, Cubitainer®	20L
R8272000-20F	Sulfuric Acid, 0.255N, Cubitainer®	20L
R8280000-500A	Sulfuric Acid, 0.5N, Natural Poly	500mL
R8280000-1A	Sulfuric Acid, 0.5N, Natural Poly	1L
R8280000-4A	Sulfuric Acid, 0.5N, Natural Poly	4L
R8280000-10F	Sulfuric Acid, 0.5N, Cubitainer®	10L
R8280000-20F	Sulfuric Acid, 0.5N, Cubitainer®	20L
R8300000-500A	Sulfuric Acid, 1N, Natural Poly	500mL
R8300000-1A	Sulfuric Acid, 1N, Natural Poly	1L
R8300000-4A	Sulfuric Acid, 1N, Natural Poly	4L
R8300000-10F	Sulfuric Acid, 1N, Cubitainer®	10L
R8300000-20F	Sulfuric Acid, 1N, Cubitainer®	20L



Standardized Bases

RICCA Part Number	Product , Packaging	Sizes
R0642000-500A	Ammonium Hydroxide, 1N, Natural Poly	500mL
R0642000-1A	Ammonium Hydroxide, 1N, Natural Poly	1L
R0642000-4A	Ammonium Hydroxide, 1N, Natural Poly	4L
R6200000-1A	Potassium Hydroxide, 0.1N, Natural Poly	1L
R6200000-4A	Potassium Hydroxide, 0.1N, Natural Poly	4L
R6200000-20F	Potassium Hydroxide, 0.1N, Cubitainer®	20L
R6230000-500A	Potassium Hydroxide, 0.5N, Natural Poly	500mL
R6230000-1A	Potassium Hydroxide, 0.5N, Natural Poly	1L
R6230000-4A	Potassium Hydroxide, 0.5N, Natural Poly	4L
R6230000-20F	Potassium Hydroxide, 0.5N, Cubitainer®	20L
R6247000-500A	Potassium Hydroxide, 0.9M, Natural Poly	500mL
R6250000-500A	Potassium Hydroxide, 1N, Natural Poly	500mL
R6250000-1A	Potassium Hydroxide, 1N, Natural Poly	1L
R6250000-4A	Potassium Hydroxide, 1N, Natural Poly	4L
R6250000-20F	Potassium Hydroxide, 1N, Cubitainer®	20L
R7175000-500A	Sodium Carbonate, 0.02N, Natural Poly	500mL
R7175000-1A	Sodium Carbonate, 0.02N, Natural Poly	1L
R7175000-4A	Sodium Carbonate, 0.02N, Natural Poly	4L
R7190000-500A	Sodium Carbonate, 1N, Natural Poly	500mL
R7190000-1A	Sodium Carbonate, 1N, Natural Poly	1L
R7190000-4A	Sodium Carbonate, 1N, Natural Poly	4L
R7190000-20F	Sodium Carbonate, 1N, Cubitainer®	20L
R7295000-500A	Sodium Hydroxide, 0.01N, Natural Poly	500mL
R7295000-1A	Sodium Hydroxide, 0.01N, Natural Poly	1L
R7295000-4A	Sodium Hydroxide, 0.01N, Natural Poly	4L
R7295000-20F	Sodium Hydroxide, 0.01N, Cubitainer®	20L
R7300000-500A	Sodium Hydroxide, 0.02N, Natural Poly	500mL
R7300000-1A	Sodium Hydroxide, 0.02N, Natural Poly	1L
R7300000-4A	Sodium Hydroxide, 0.02N, Natural Poly	4L
R7300000-20F	Sodium Hydroxide, 0.02N, Cubitainer®	20L
R7330000-500A	Sodium Hydroxide, 0.05N, Natural Poly	500mL
R7330000-1A	Sodium Hydroxide, 0.05N, Natural Poly	1L
R7330000-4A	Sodium Hydroxide, 0.05N, Natural Poly	4L
R7330000-20F	Sodium Hydroxide, 0.05N, Cubitainer®	20L
R7350000-500A	Sodium Hydroxide, 0.1N, Natural Poly	500mL
R7350000-1A	Sodium Hydroxide, 0.1N, Natural Poly	1L



Standardized Bases

RICCA Part Number	Product , Packaging	Sizes
R7350000-4A	Sodium Hydroxide, 0.1N, Natural Poly	4L
R7350000-10F	Sodium Hydroxide, 0.1N, Cubitainer®	10L
R7350000-20F	Sodium Hydroxide, 0.1N, Cubitainer®	20L
R7350005-1A	Sodium Hydroxide, 0.1N, made from NF/USP materials, Natural Poly	1L
R7370000-500A	Sodium Hydroxide, 0.25N, Natural Poly	500mL
R7370000-1A	Sodium Hydroxide, 0.25N, Natural Poly	1L
R7370000-4A	Sodium Hydroxide, 0.25N, Natural Poly	4L
R7370000-10F	Sodium Hydroxide, 0.25N, Cubitainer®	10L
R7370000-20F	Sodium Hydroxide, 0.25N, Cubitainer®	20L
R7374000-1A	Sodium Hydroxide, 0.3125N, Natural Poly	1L
R7374000-4A	Sodium Hydroxide, 0.3125N, Natural Poly	4L
R7374000-10F	Sodium Hydroxide, 0.3125N, Cubitainer®	10L
R7374000-20F	Sodium Hydroxide, 0.3125N, Cubitainer®	20L
R7375000-1A	Sodium Hydroxide, 0.313N, Natural Poly	1L
R7375000-4A	Sodium Hydroxide, 0.313N, Natural Poly	4L
R7375000-20F	Sodium Hydroxide, 0.313N, Cubitainer®	20L
R7400000-500A	Sodium Hydroxide, 0.5N, Natural Poly	500mL
R7400000-1A	Sodium Hydroxide, 0.5N, Natural Poly	1L
R7400000-4A	Sodium Hydroxide, 0.5N, Natural Poly	4L
R7400000-20F	Sodium Hydroxide, 0.5N, Cubitainer®	20L
R7450000-120A	Sodium Hydroxide, 1N, Natural Poly	120mL
R7450000-500A	Sodium Hydroxide, 1N, Natural Poly	500mL
R7450000-1A	Sodium Hydroxide, 1N, Natural Poly	1L
R7450000-4A	Sodium Hydroxide, 1N, Natural Poly	4L
R7450000-10F	Sodium Hydroxide, 1N, Cubitainer®	10L
R7450000-20F	Sodium Hydroxide, 1N, Cubitainer®	20L
R7450200-20E1	Sodium Hydroxide, 1.2N, Ropak®	20L
R7450200-20F	Sodium Hydroxide, 1.2N, Cubitainer®	20L

Calcium Titrants

RICCA Part Number	Product , Packaging	Sizes
R1780000-120A	Calcium Chloride Standard, 1000 ppm CaCO ₃ (400 ppm Ca), Natural Poly	120mL
R1780000-500A	Calcium Chloride Standard, 1000 ppm CaCO ₃ (400 ppm Ca), Natural Poly	500mL
R1780000-1A	Calcium Chloride Standard, 1000 ppm CaCO ₃ (400 ppm Ca), Natural Poly	1L
R1780000-4A	Calcium Chloride Standard, 1000 ppm CaCO ₃ (400 ppm Ca), Natural Poly	4L

EDTA Titrants

RICCA Part Number	Product , Packaging	Sizes
R2700000-500A	EDTA Titrant, 0.01M, Natural Poly	500mL
R2700000-1A	EDTA Titrant, 0.01M, Natural Poly	1L
R2700000-4A	EDTA Titrant, 0.01M, Natural Poly	4L
R2700000-10F	EDTA Titrant, 0.01M, Cubitainer®	10L
R2700000-20F	EDTA Titrant, 0.01M, Cubitainer®	20L
R2705000-500A	EDTA Titrant, 0.05M, Natural Poly	500mL
R2705000-1A	EDTA Titrant, 0.05M, Natural Poly	1L
R2705000-4A	EDTA Titrant, 0.05M, Natural Poly	4L
R2705000-10F	EDTA Titrant, 0.05M, Cubitainer®	10L
R2705000-20F	EDTA Titrant, 0.05M, Cubitainer®	20L
R2710000-1A	EDTA Titrant, 0.0575M, Natural Poly	1L
R2710000-4A	EDTA Titrant, 0.0575M, Natural Poly	4L
R2710000-20F	EDTA Titrant, 0.0575M, Cubitainer®	20L
R2730000-500A	EDTA Titrant, 0.1M, Natural Poly	500mL
R2730000-1A	EDTA Titrant, 0.1M, Natural Poly	1L
R2730000-4A	EDTA Titrant, 0.1M, Natural Poly	4L
R2730000-10F	EDTA Titrant, 0.1M, Cubitainer®	10L
R2730000-20F	EDTA Titrant, 0.1M, Cubitainer®	20L
R2733000-500A	EDTA Titrant, 0.25M, Natural Poly	500mL
R2733000-4A	EDTA Titrant, 0.25M, Natural Poly	4L
R2733000-20F	EDTA Titrant, 0.25M, Cubitainer®	20L

Mercuric Nitrate Titrants

RICCA Part Number	Product , Packaging	Sizes
R4740000-500C	Mercuric Nitrate, 0.141N, Amber Glass	500mL
R4740000-1C	Mercuric Nitrate, 0.141N, Amber Glass	1L
R4740000-4C	Mercuric Nitrate, 0.141N, Amber Glass	4L

Silver Nitrate Titrants

RICCA Part Number	Product, Packaging	Sizes
R6850000-500B	Silver Nitrate, 0.01N, Amber Poly	500mL
R6850000-1B	Silver Nitrate, 0.01N, Amber Poly	1L
R6850000-4B	Silver Nitrate, 0.01N, Amber Poly	4L
R6850000-10F	Silver Nitrate, 0.01N, Cubitainer®	10L
R6860000-500B	Silver Nitrate, 0.0141N, Amber Poly	500mL

Silver Nitrate Titrants

RICCA Part Number	Product, Packaging	Sizes
R6860000-1B	Silver Nitrate, 0.0141N, Amber Poly	1L
R6860000-4B	Silver Nitrate, 0.0141N, Amber Poly	4L
R6860000-10F	Silver Nitrate, 0.0141N, Cubitainer®	10L
R6950000-500B	Silver Nitrate, 0.0282N, Amber Poly	500mL
R6950000-1B	Silver Nitrate, 0.0282N, Amber Poly	1L
R6950000-4B	Silver Nitrate, 0.0282N, Amber Poly	4L
R6970000-500B	Silver Nitrate, 0.05N, Amber Poly	500mL
R6970000-1B	Silver Nitrate, 0.05N, Amber Poly	1L
R6970000-4B	Silver Nitrate, 0.05N, Amber Poly	4L
R6970000-20F	Silver Nitrate, 0.05N, Cubitainer®	20L
R6975000-1C	Silver Nitrate, 0.153N, Amber Glass	1L
R6975000-4C	Silver Nitrate, 0.153N, Amber Glass	4L
R6975000-20F	Silver Nitrate, 0.153N, Cubitainer®	20L
R6980000-1B	Silver Nitrate, 0.0855N, Amber Poly	1L
R6980000-4B	Silver Nitrate, 0.0855N, Amber Poly	4L
R6980000-20F	Silver Nitrate, 0.0855N, Cubitainer®	20L
R7000000-500B	Silver Nitrate, 0.1N, Amber Poly	500mL
R7000000-1B	Silver Nitrate, 0.1N, Amber Poly	1L
R7000000-4B	Silver Nitrate, 0.1N, Amber Poly	4L
R7000000-20F	Silver Nitrate, 0.1N, Cubitainer®	20L
R7002000-500B	Silver Nitrate, 0.141N, Amber Poly	500mL
R7002000-1B	Silver Nitrate, 0.141N, Amber Poly	1L
R7002000-4B	Silver Nitrate, 0.141N, Amber Poly	4L
R7003000-1B	Silver Nitrate, 0.171N, Amber Poly	1L
R7003000-4B	Silver Nitrate, 0.171N, Amber Poly	4L
R7003000-20F	Silver Nitrate, 0.171N, Cubitainer®	20L
R7011000-500B	Silver Nitrate, 0.282N, Amber Poly	500mL
R7011000-1B	Silver Nitrate, 0.282N, Amber Poly	1L
R7011000-4B	Silver Nitrate, 0.282N, Amber Poly	4L
R7020000-500B	Silver Nitrate, 0.5N, Amber Poly	500mL
R7020000-1B	Silver Nitrate, 0.5N, Amber Poly	1L
R7020000-4B	Silver Nitrate, 0.5N, Amber Poly	4L
R7020000-20F	Silver Nitrate, 0.5N, Cubitainer®	20L
R7025000-500B	Silver Nitrate, 1N, Amber Poly	500mL
R7025000-1B	Silver Nitrate, 1N, Amber Poly	1L

Sodium Chloride Titrants

RICCA Part Number	Product, Packaging	Sizes
R7227100-1A	Sodium Chloride, 1M, Natural Poly	1L
R7227100-4A	Sodium Chloride, 1M, Natural Poly	4L

Thiocyanate Titrants

RICCA Part Number	Product, Packaging	Sizes
R0695000-500A	Ammonium Thiocyanate, 0.1N, Natural Poly	500mL
R0695000-1A	Ammonium Thiocyanate, 0.1N, Natural Poly	1L
R0695000-4A	Ammonium Thiocyanate, 0.1N, Natural Poly	4L
R6580000-500A	Potassium Thiocyanate, 0.1N, Natural Poly	500mL
R6580000-1A	Potassium Thiocyanate, 0.1N, Natural Poly	1L
R6580000-4A	Potassium Thiocyanate, 0.1N, Natural Poly	4L

Zinc Sulfate Titrants

RICCA Part Number	Product, Packaging	Sizes
R9660000-500A	Zinc Sulfate, 0.05M, Natural Poly	500mL
R9660000-1A	Zinc Sulfate, 0.05M, Natural Poly	1L
R9660000-4A	Zinc Sulfate, 0.05M, Natural Poly	4L
R9660000-20F	Zinc Sulfate, 0.05M, Cubitainer®	20L
R9662000-120A	Zinc Sulfate, 0.1M, Natural Poly	120mL
R9662000-1A	Zinc Sulfate, 0.1M, Natural Poly	1L

Nonaqueous Titrants

RICCA Part Number	Product, Packaging	Sizes
R3800000-1A	Hydrochloric Acid, 0.1N in IPA, Natural Poly	1L
R3800000-4A	Hydrochloric Acid, 0.1N in IPA, Natural Poly	4L
R3800000-20F	Hydrochloric Acid, 0.1N in IPA, Cubitainer®	20L
R3805000-500A	Hydrochloric Acid, 0.5N in IPA, Natural Poly	500mL
R3805000-1A	Hydrochloric Acid, 0.5N in IPA, Natural Poly	1L
R3805000-4A	Hydrochloric Acid, 0.5N in IPA, Natural Poly	4L
R7026000-1B	Silver Nitrate, 0.01N in IPA, Amber Poly	1L
R7026000-4B	Silver Nitrate, 0.01N in IPA, Amber Poly	4L

Nonaqueous Titrants

RICCA Part Number	Product, Packaging	Sizes
R5514000-1C	Perchloric Acid, 0.02N in Glacial Acetic Acid, Amber Glass	1L
R5515000-500C	Perchloric Acid, 0.1N in Glacial Acetic Acid, Amber Glass	500mL
R5515000-1C	Perchloric Acid, 0.1N in Glacial Acetic Acid, Amber Glass	1L
R5515000-2.5D	Perchloric Acid, 0.1N in Glacial Acetic Acid, Safety Coated Amber Glass	2.5L
R5515000-4C	Perchloric Acid, 0.1N in Glacial Acetic Acid, Amber Glass	4L
R6253000-1A	Potassium Hydroxide, 0.01N in IPA, Natural Poly	1L
R6253000-4A	Potassium Hydroxide, 0.01N in IPA, Natural Poly	4L
R6257000-1A	Potassium Hydroxide, 0.1N in IPA, Natural Poly	1L
R6257000-4A	Potassium Hydroxide, 0.1N in IPA, Natural Poly	4L
R6257000-20F	Potassium Hydroxide, 0.1N in IPA, Cubitainer®	20L
R6260000-500A	Potassium Hydroxide, 0.1N in Methanol, Natural Poly	500mL
R6260000-1A	Potassium Hydroxide, 0.1N in Methanol, Natural Poly	1L
R6260000-4A	Potassium Hydroxide, 0.1N in Methanol, Natural Poly	4L
R6260000-20F	Potassium Hydroxide, 0.1N in Methanol, Cubitainer®	20L
R6261000-500A	Potassium Hydroxide, 0.5N in Methanol, Natural Poly	500mL
R6261000-1A	Potassium Hydroxide, 0.5N in Methanol, Natural Poly	1L
R6261000-4A	Potassium Hydroxide, 0.5N in Methanol, Natural Poly	4L
R6261000-20F	Potassium Hydroxide, 0.5N in Methanol, Cubitainer®	20L
R6264500-1A	Potassium Hydroxide, 0.1N in Denatured Alcohol, Natural Poly	1L
R6264500-4A	Potassium Hydroxide, 0.1N in Denatured Alcohol, Natural Poly	4L
R6265000-1A	Potassium Hydroxide, 0.5N in Denatured Alcohol, Natural Poly	1L
R6265000-4A	Potassium Hydroxide, 0.5N in Denatured Alcohol, Natural Poly	4L
R6265000-20F	Potassium Hydroxide, 0.5N in Denatured Alcohol, Cubitainer®	20L
R7472000-1A	Potassium Hydroxide, 0.1N in Methanol, Natural Poly	1L
R7472000-4A	Potassium Hydroxide, 0.1N in Methanol, Natural Poly	4L
R7472000-20F	Potassium Hydroxide, 0.1N in Methanol, Cubitainer®	20L
R7473000-1A	Potassium Hydroxide, 0.5N in Methanol, Natural Poly	1L
R7473000-4A	Potassium Hydroxide, 0.5N in Methanol, Natural Poly	4L
R8384000-500C	TBAH, 0.1N in Methanol, Amber Glass	500mL
R8384000-1C	TBAH, 0.1N in Methanol, Amber Glass	1L

Oxidation-Reduction Titrants

RICCA Part Number	Product, Packaging	Sizes
R1166000-1C	Bromate-Bromide, 0.025N, Amber Glass	1L
R1166000-4C	Bromate-Bromide, 0.025N, Amber Glass	4L
R1170000-500C	Bromate-Bromide, 0.1N, Amber Glass	500mL
R1170000-1C	Bromate-Bromide, 0.1N, Amber Glass	1L
R1170000-4C	Bromate-Bromide, 0.1N, Amber Glass	4L
R1172000-500C	Bromate-Bromide, 0.5N, Amber Glass	500mL
R1172000-1C	Bromate-Bromide, 0.5N, Amber Glass	1L
R1172000-4C	Bromate-Bromide, 0.5N, Amber Glass	4L
R1890000-500A	Ceric Ammonium Sulfate, 0.1N, in 1N Sulfuric Acid, Natural Poly	500mL
R1890000-1A	Ceric Ammonium Sulfate, 0.1N, in 1N Sulfuric Acid, Natural Poly	1L
R1890000-4A	Ceric Ammonium Sulfate, 0.1N, in 1N Sulfuric Acid Natural Poly	4L
R1900000-500A	Ceric Sulfate, 0.1N, in 2N Sulfuric Acid, Natural Poly	500mL
R1900000-1A	Ceric Sulfate, 0.1N, in 2N Sulfuric Acid, Natural Poly	1L
R1900000-4A	Ceric Sulfate, 0.1N, in 2N Sulfuric Acid, Natural Poly	4L
R1900000-20F	Ceric Sulfate, 0.1N, in 2N Sulfuric Acid, Cubitainer®	20L
R1907000-4A	Ceric Sulfate, 0.25N, in approximately 2N Sulfuric Acid, Natural Poly	4L
R3144000-500C	Ferrous Ammonium Sulfate, 0.00282N, Amber Glass	500mL
R3144000-1C	Ferrous Ammonium Sulfate, 0.00282N, Amber Glass	1L
R3144000-4C	Ferrous Ammonium Sulfate, 0.00282N, Amber Glass	4L
R3145000-500C	Ferrous Ammonium Sulfate, 0.1N, Amber Glass	500mL
R3145000-1C	Ferrous Ammonium Sulfate, 0.1N, Amber Glass	1L
R3145000-4C	Ferrous Ammonium Sulfate, 0.1N, Amber Glass	4L
R3150000-500C	Ferrous Ammonium Sulfate, 0.25N, Amber Glass	500mL
R3150000-1C	Ferrous Ammonium Sulfate, 0.25N, Amber Glass	1L
R3150000-4C	Ferrous Ammonium Sulfate, 0.25N, Amber Glass	4L
R3971000-500C	Iodine, 0.01N, Amber Glass	500mL
R3971000-1C	Iodine, 0.01N, Amber Glass	1L
R3971000-4C	Iodine, 0.01N, Amber Glass	4L
R3973000-500C	Iodine, 0.02N, Amber Glass	500mL
R3973000-1C	Iodine, 0.02N, Amber Glass	1L
R3973000-4C	Iodine, 0.02N, Amber Glass	4L
R3990000-4C	Iodine, 0.0473N, ASTM D 1510, Amber Glass	4L
R4000000-500C	Iodine, 0.1N, Amber Glass	500mL
R4000000-1C	Iodine, 0.1N, Amber Glass	1L
R4000000-4C	Iodine, 0.1N, Amber Glass	4L

Oxidation-Reduction Titrants

RICCA Part Number	Product, Packaging	Sizes
R5750000-500C	Phenylarsine Oxide, 0.00564N, Amber Glass	500mL
R5750000-1C	Phenylarsine Oxide, 0.00564N, Amber Glass	1L
R5750000-4C	Phenylarsine Oxide, 0.00564N, Amber Glass	4L
R5875000-1C	Potassium Biiodate, 0.025N, Amber Glass	1L
R6050000-4A	Potassium Dichromate, 0.025N, Natural Poly	4L
R6060000-1A	Potassium Dichromate, 0.1N, Natural Poly	1L
R6060000-4A	Potassium Dichromate, 0.1N, Natural Poly	4L
R6060000-20F	Potassium Dichromate, 0.1N, Cubitainer®	20L
R6280000-500C	Potassium Iodate-Iodide, 0.0125N, Amber Glass	500mL
R6280000-1C	Potassium Iodate-Iodide, 0.0125N, Amber Glass	1L
R6280000-4C	Potassium Iodate-Iodide, 0.0125N, Amber Glass	4L
R6280000-10F	Potassium Iodate-Iodide, 0.0125N, Cubitainer®	10L
R6280000-20F	Potassium Iodate-Iodide, 0.0125N, Cubitainer®	20L
R6285000-500C	Potassium Iodate-Iodide, 0.1N, Amber Glass	500mL
R6285000-1C	Potassium Iodate-Iodide, 0.1N, Amber Glass	1L
R6285000-4C	Potassium Iodate-Iodide, 0.1N, Amber Glass	4L
R6285000-20F	Potassium Iodate-Iodide, 0.1N, Cubitainer®	20L
R6354300-500C	Potassium Permanganate, 891 mg/L, Amber Glass	500mL
R6354300-1C	Potassium Permanganate, 891 mg/L, Amber Glass	1L
R6400000-500C	Potassium Permanganate, 0.1N, Amber Glass	500mL
R6400000-1C	Potassium Permanganate, 0.1N, Amber Glass	1L
R6400000-4C	Potassium Permanganate, 0.1N, Amber Glass	4L
R6400000-10F	Potassium Permanganate, 0.1N, Cubitainer®	10L
R6400000-20F	Potassium Permanganate, 0.1N, Cubitainer®	20L
R6405000-500C	Potassium Permanganate, 0.2N, Amber Glass	500mL
R6405000-1C	Potassium Permanganate, 0.2N, Amber Glass	1L
R6405000-4C	Potassium Permanganate, 0.2N, Amber Glass	4L
R6405000-20F	Potassium Permanganate, 0.2N, Cubitainer®	20L
R6410000-1C	Potassium Permanganate, 0.5N, Amber Glass	1L
R6410000-4C	Potassium Permanganate, 0.5N, Amber Glass	4L
R6410000-20F	Potassium Permanganate, 0.5N, Cubitainer®	20L
R6420000-500C	Potassium Permanganate, 1N, Amber Glass	500mL

Oxidation-Reduction Titrants

RICCA Part Number	Product, Packaging	Sizes
R6420000-1C	Potassium Permanganate, 1N, Amber Glass	1L
R6420000-4C	Potassium Permanganate, 1N, Amber Glass	4L
R7879000-1C	Sodium Thiosulfate, 0.002N, Amber Glass	1L
R7879000-4C	Sodium Thiosulfate, 0.002N, Amber Glass	4L
R7890000-500A	Sodium Thiosulfate, 0.01N, Natural Poly	500mL
R7890000-1A	Sodium Thiosulfate, 0.01N, Natural Poly	1L
R7890000-4A	Sodium Thiosulfate, 0.01N, Natural Poly	4L
R7900000-500A	Sodium Thiosulfate, 0.025N, Natural Poly	500mL
R7900000-1A	Sodium Thiosulfate, 0.025N, Natural Poly	1L
R7900000-4A	Sodium Thiosulfate, 0.025N, Natural Poly	4L
R7930000-1A	Sodium Thiosulfate, 0.0394N, ASTM D 1510, Natural Poly	1L
R7930000-4A	Sodium Thiosulfate, 0.0394N, ASTM D 1510, Natural Poly	4L
R7930000-20F	Sodium Thiosulfate, 0.0394N, ASTM D 1510, Cubitainer®	20L
R7940000-1A	Sodium Thiosulfate, 0.05N, Natural Poly	1L
R7940000-4A	Sodium Thiosulfate, 0.05N, Natural Poly	4L
R7940000-20F	Sodium Thiosulfate, 0.05N, Cubitainer®	20L
R7950000-120A	Sodium Thiosulfate, 0.1N, Natural Poly	120mL
R7950000-500A	Sodium Thiosulfate, 0.1N, Natural Poly	500mL
R7950000-1A	Sodium Thiosulfate, 0.1N, Natural Poly	1L
R7950000-4A	Sodium Thiosulfate, 0.1N, Natural Poly	4L
R7950000-10F	Sodium Thiosulfate, 0.1N, Cubitainer®	10L
R7950000-20F	Sodium Thiosulfate, 0.1N, Cubitainer®	20L
R7960000-500A	Sodium Thiosulfate, 0.2N, Natural Poly	500mL
R7960000-1A	Sodium Thiosulfate, 0.2N, Natural Poly	1L
R7960000-4A	Sodium Thiosulfate, 0.2N, Natural Poly	4L
R7960000-10F	Sodium Thiosulfate, 0.2N, Cubitainer®	10L
R7960000-20F	Sodium Thiosulfate, 0.2N, Cubitainer®	20L
R7970000-500A	Sodium Thiosulfate, 1N, Natural Poly	500mL
R7970000-1A	Sodium Thiosulfate, 1N, Natural Poly	1L
R7970000-4A	Sodium Thiosulfate, 1N, Natural Poly	4L
R7970000-20F	Sodium Thiosulfate, 1N, Cubitainer®	20L

Karl Fischer Reagents

RICCA Chemical Company offers a full line of Karl Fischer Reagents for Moisture Analysis. Our product line includes both Coulometric and Volumetric Reagents, all formulated for high performance and reliable results. Our Reagents support a wide range of sample types from Ethanol and Fuels to Fats and Oils and General Organic Chemicals. Volumetric Reagents are available for both one- and two-component titrations, and also include solvents compatible with a variety of sample types. Coulometric Reagents are available for titration cells with or without a diaphragm. Specialized Reagents are designed to better analyze samples insoluble in Methanol to ensure fast, reliable, and reproducible results. Ricca also offers a full line of NIST Traceable Water Standards to monitor instrument performance.



HydroSpec®



Have Confidence in Your Analyses

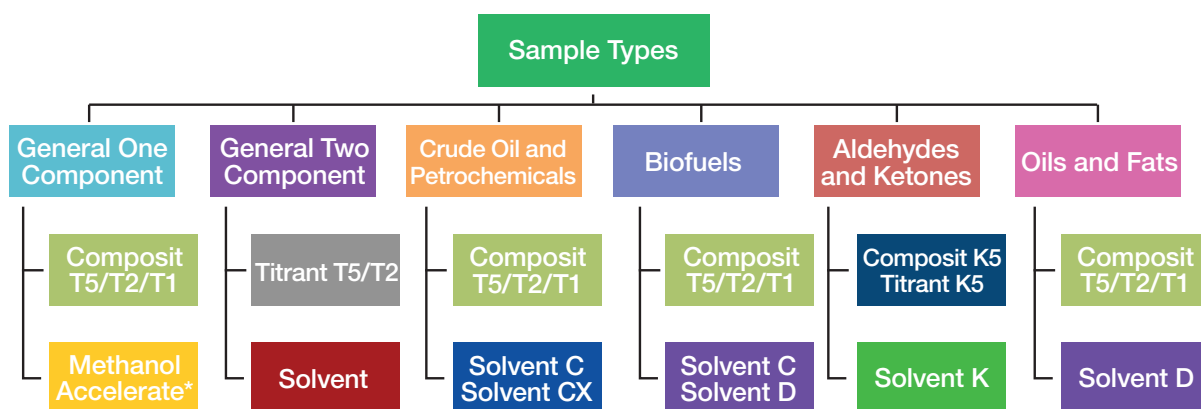
- Reliable, safe, pyridine-free Karl Fischer Reagents
- Reagents available in 500 mL and 1 L Sizes
- 1 L Bottles have the Industry Standard GL45 Neck Finish for Convenient Connection
- Stable Formulations and Comprehensive Chemical Compatibility
- 5 Year Shelf Life for Most Reagents
- Technical Support Every Step of the Way
- Tight Specifications for More Accurate Results and Low Lot-to-Lot Variability
- Serving Scientists Successfully for Over 45 Years
- Samples Available to Try Before You Buy*
- **Contact us today for your FREE Sample!**
1-888-GO-RICCA or customerservice@riccachemical.com



*Sample Size is 220 mL

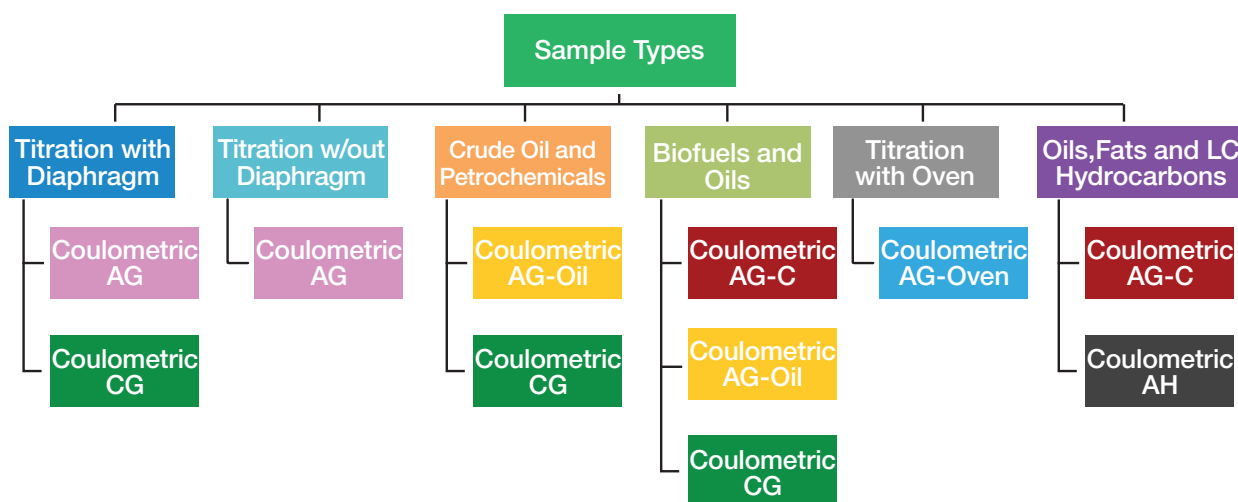
See Complete Karl Fischer Product Brochure at
www.riccachemical.com/catalog/categories/karl_fischer_reagents

Volumetric determination of water content is performed with either a One Component or Two Component Titration. In One Component Titrations, all the necessary reactants are present in a single reagent. For Two Component Titrations, the process uses two solutions – a solvent and a titrant in which Iodine is present. In either titration, the sample will be dissolved in the solvent contained in the titration cell before the test begins. The titrant is then added by a dosing pump. The amount of water present in the sample is then calculated based upon the volume of titrant needed to complete the reaction. RICCA's HydroSpec® Line of Reagents for Volumetric Titrations includes products for One and Two Component Titrations as well as specialty formulas created for specific sample types.



*Add to titration cell to accelerate the reaction and increase end point precision

Coulometric Titrations measure water content by generating free Iodine with an electrochemical current. The amount of current used to complete the titration is then used to determine water content. This test is performed one of two ways: In a cell with a diaphragm or without a diaphragm. Titrations with a diaphragm require two reagents: an anolyte solution for the anodic chamber and a catholyte solution for the cathodic chamber. Titrations without a diaphragm only use one reagent, an anolyte solution, as the cathodic chamber of the cell is designed not to need a reagent. RICCA's HydroSpec® Line of Reagents for Coulometric Titrations covers both cell types; HydroSpec® Coulometric AG and HydroSpec® Coulometric AH are versatile and can be used with or without a diaphragm.



See Complete Karl Fischer Product Brochure at www.riccachemical.com/catalog/categories/karl_fischer_reagents

Choosing the Best Reagents for Your Karl Fischer Titration:

Coulometric	
HydroSpec Coulometric AG	Most commonly used KF reagent for general purpose coulometric titrations. Can be used in titration cells with or without a diaphragm.
HydroSpec Coulometric AH	For samples that contain hydrocarbons.
HydroSpec Coulometric CG	Catholyte Solution.
HydroSpec Coulometric AG-C	For samples that are poorly soluble in methanol and require the addition of chloroform. Typically used to analyze fuel.
HydroSpec Coulometric AG Oil	For samples insoluble in Methanol and the addition of chloroform is insufficient to properly dissolve sample. Typically used to analyze crude oil or heavy hydrocarbons.
HydroSpec Coulometric AG-Oven	For samples that have poor solubility in methanol or other commonly used solvents. Formulated for KF titration using an oven.

Volumetric	
HydroSpec Composit T5	Most commonly used KF reagent for one-component volumetric titrations.
HydroSpec Composit T1	Reagent for one-component Volumetric Titration and has a titer between 0.9 and 1.2mg/mL. For use with samples that have a low moisture content.
HydroSpec Composit T2	Reagent for one- component Volumetric Titration and has a titer between 1.8 and 2.3mg/mL. For use with samples that have a lower moisture content.
HydroSpec Composit K5	Reagent for one-component Volumetric Titration for samples containing Ketones and Aldehydes.
HydroSpec Titrant T5	Reagent for two-component Volumetric Titration and has a titer between 4.8 and 5.3 mg/mL.
HydroSpec Titrant T2	Reagent for two-component Volumetric Titration and has a titer between 1.8 and 2.3 mg/mL.
HydroSpec Titrant K5	Reagent for two-component Volumetric Titration for ketone and aldehydes.
HydroSpec Titrant K2	Reagent for two-component Volumetric Titration for ketone and aldehydes with lower moisture content.

Specialized Solvents	
HydroSpec Methanol Accelerate Medium	For use in one-component volumetric titrations. Increases reaction speed as compared to pure methanol.
HydroSpec Solvent D	For samples containing Oils, Fats, and Hydrocarbons.
HydroSpec Solvent CX	For use in one or two component Volumetric Titrations with samples that are poorly soluble in methanol and requires Chloroform and Xylene. Typically used for samples containing fuel, crude oil or heavy hydrocarbons.
HydroSpec Solvent C	For use in one or two component Volumetric Titrations with samples that are poorly soluble in methanol and requires the addition of Chloroform.
HydroSpec Solvent K	Working medium for one or two component Volumetric Titrations for samples containing Aldehydes and Ketones.
HydroSpec Solvent	General Purpose working medium for two-component Volumetric Titration for samples that are soluble in methanol.
HydroSpec Acid Buffer	Maintains proper pH of the reaction for samples of strong acid.
HydroSpec Base Buffer	Maintains proper pH of the reaction for samples of strong base.

See Complete Karl Fischer Product Brochure at www.riccachemical.com/catalog/categories/karl_fischer_reagents

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

Titriments

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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