



## Karl Fischer Reagents



### RIGHT

Uncompromising Quality

### READY

4 Manufacturing/  
Inventory Locations

### RICCA

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

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 samples 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

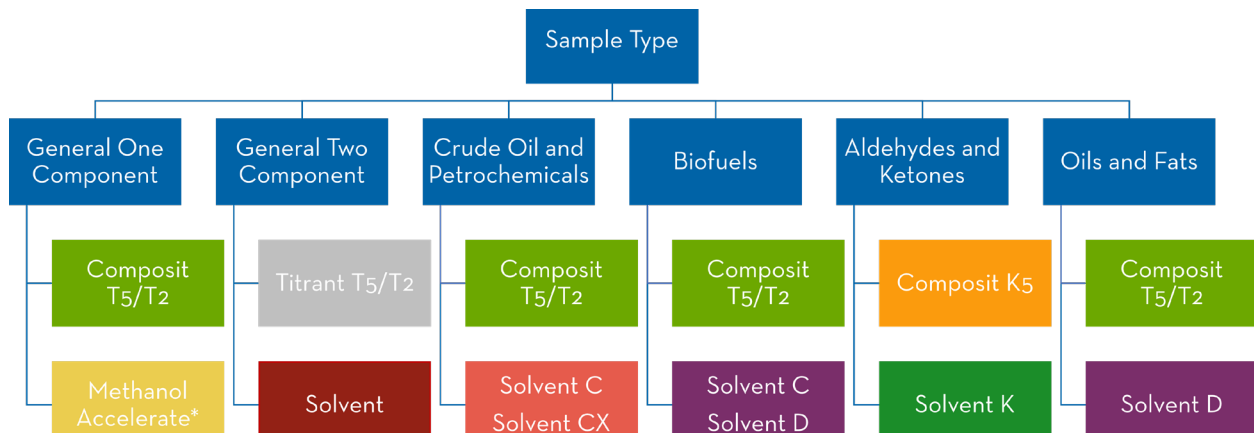
- Reliable, Safe, Pyridine-free Karl Fischer Reagents
- 1 L Bottles have the Industry Standard GL45 Neck Finish for Convenient Connection
- Stable Formulations and Comprehensive Chemical Compatibility
- 5 Year Shelf Life for Most Reagents
- Technical Support Every Step of the Way
- Tight Specifications for More Accurate Results and Low Lot-to-Lot Variability
- Serving Scientists Successfully for over 45 Years



Find it at [fishersci.com](http://fishersci.com) and [fishersci.ca](http://fishersci.ca)

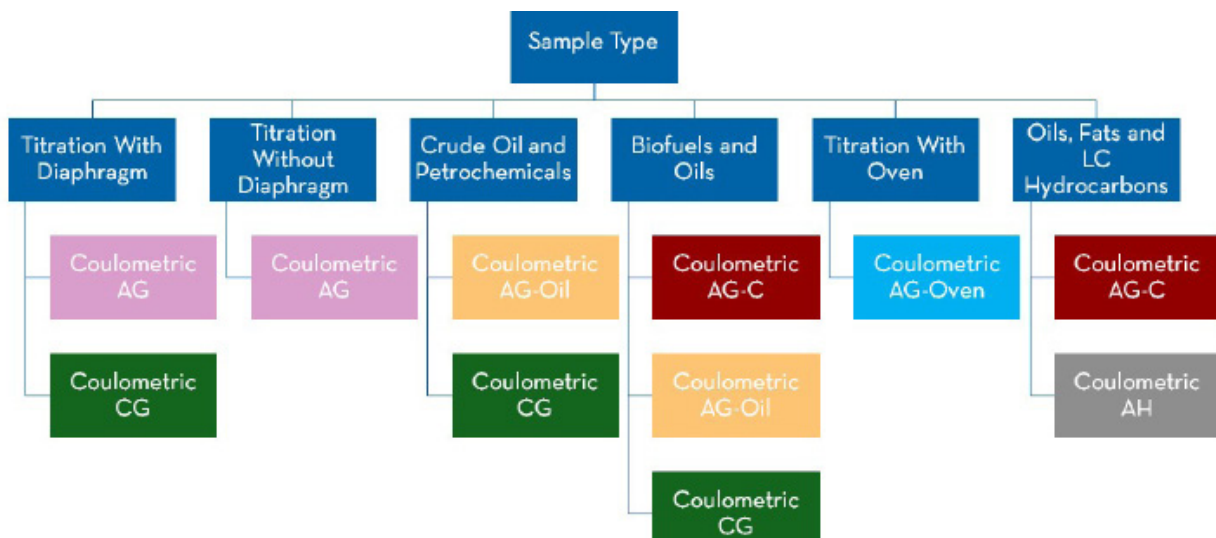
 **fisher scientific**  
part of Thermo Fisher Scientific

**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.



## Coulometric Reagents

RK100000500	Coulometric AG General Purpose Analyte Solution for Cells With or Without Diaphragm	500 mL
RK1000001C	Coulometric AG General Purpose Analyte Solution for Cells With or Without Diaphragm	1 L
RK120000500	Coulometric AH Analyte Solution for Titration of Long-chain Hydrocarbons in Cells With or Without Diaphragm	500 mL
RK1200001C	Coulometric AH Analyte Solution for Titration of Long-chain Hydrocarbons in Cells With or Without Diaphragm	1 L
RK130000500	Coulometric CG Catholyte Solution for Cells with a Diaphragm	500 mL
RK1300001C	Coulometric CG Catholyte Solution for Cells with a Diaphragm	1 L
RK140000500	Coulometric AG Oven Analyte Solution for Titration with an Oven	500 mL
RK1400001C	Coulometric AG Oven Analyte Solution for Titration with an Oven	1 L
RK150000500	Coulometric AG-C Analyte Solution with Chloroform for Cells With or Without Diaphragm	500 mL
RK1500001C	Coulometric AG-C Analyte Solution with Chloroform for Cells With or Without Diaphragm	1 L
RK160000500	Coulometric AG Oil Analyte Solution for Samples Insoluble in Methanol for Cells With or Without Diaphragm	500 mL
RK1600001C	Coulometric AG Oil Analyte Solution for Samples Insoluble in Methanol for Cells With or Without Diaphragm	1 L

## Volumetric Reagents

RK2000001C	Composit T5 For General Use One Component Volumetric Titrations	1 L
RK2100001C	Composit T2 For One Component Volumetric Titrations with Lower Moisture Content	1 L
RK2200001C	Composit K5 For One Component Volumetric Titrations of Aldehydes and Ketones	1 L
RK2300001C	Titrat T5 For General Use Two Component Volumetric Titrations	1 L
RK2500001C	Titrat T2 For Two Component Volumetric Titrations with Lower Moisture Content	1 L

## Buffers

RK5000001C	Acid Buffer, for titrating strong acids with Volumetric Solutions	1 L
RK5100001C	Base Buffer, for titrating strong bases with Volumetric and Coulometric Solutions	1 L

## Specialized Solvents

RK3000001C	Methanol Accelerate Medium for One Component Volumetric Titrations	1 L
RK3100001C	Solvent D Medium for One and Two Component Volumetric Titrations of Oils, Fats and Long-chain Hydrocarbons	1 L
RK3200001C	Solvent CX Medium for One and Two Component Volumetric Titrations with Chloroform and Xylene	1 L
RK3300001C	Solvent C Medium for One and Two Component Volumetric Titrations with Chloroform	1 L
RK3400001C	Solvent K Medium for One and Two Component Volumetric Titrations of Aldehydes and Ketones	1 L
RK3500001C	Solvent Medium for Two Component Volumetric Titrations	1 L

## Water Standards

K410000105R	Water Standard, 0.10 mg/g Standard for Coulometric Karl Fischer Titration	10 x 5 mL
K420000105R	Water Standard, 1.00 mg/g Standard for Coulometric Karl Fischer Titration	10 x 5 mL
K430000105R	Water Standard, 10.0 mg/g Standard for Coulometric Karl Fischer Titration	10 x 5 mL

# 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

## 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)

## In-Vitro Diagnostics

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

\* Tested in an ISO 17025 accredited laboratory options available  
\* Certified Reference Material  
ISO 17034 options available

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