

# HydroSpec™ Karl Fischer Reagents & VeriSpec™ Certified Reference Materials



RICCA Chemical Company has expanded our product offering to include HydroSpec™ Karl Fischer Reagents and VeriSpec™ AA/ICP and Ion Chromatography Standards certified to ISO 17025 and ISO Guide 34 requirements.



## Karl Fischer Reagents

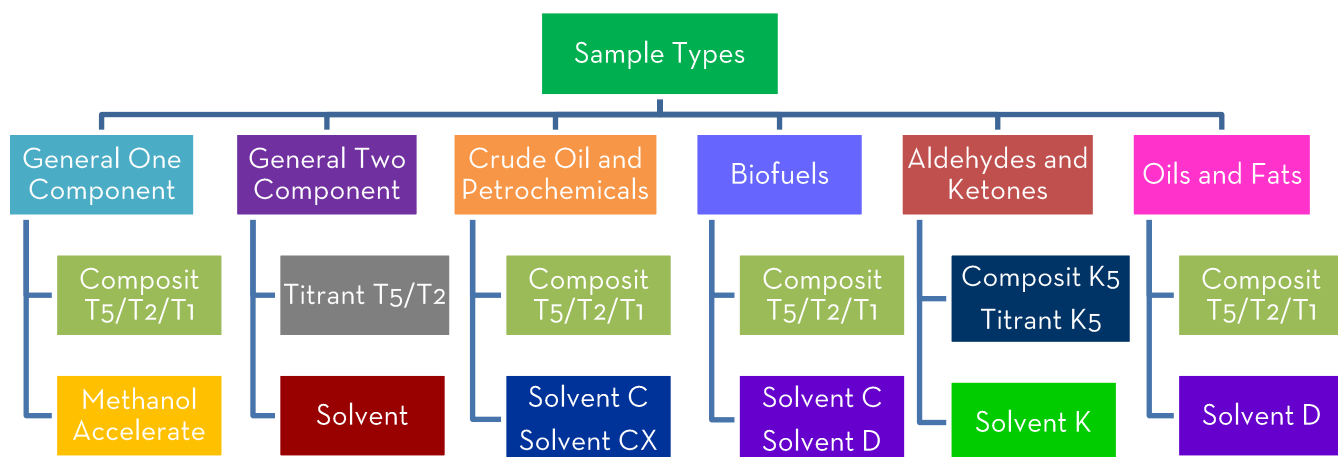


## ISO 17025/Guide 34 AA/ICP and Ion Chromatography

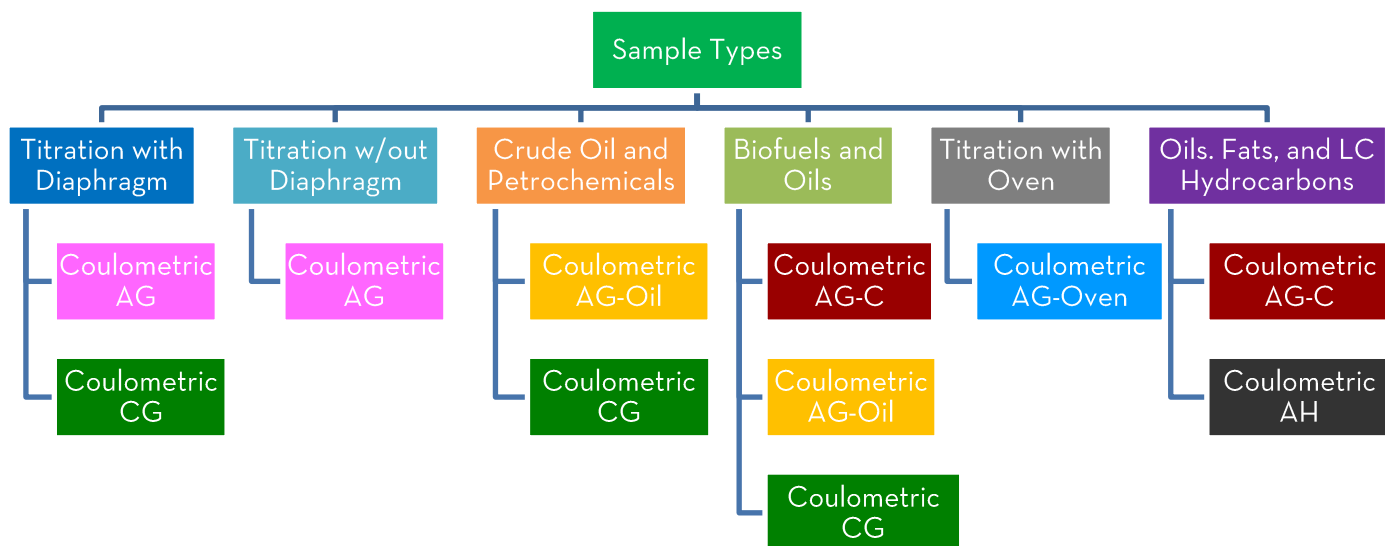


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**Volumetric** determination of water content is performed with either a One Component or Two Component Titration. The amount of water present in a sample is calculated based upon the volume of titrant needed to complete the reaction. RICCA's HydroSpec™ Line of Reagents for Volumetric Titrations includes products for One and Two Component Titrations as well as specialty solvents created for specific sample types.



**Coulometric Titrations** measure water content by generating free Iodine with an electrochemical current. This test is performed one of two ways: In a cell with a diaphragm or without a diaphragm. 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.



*RICCA HydroSpec™ Karl Fischer Reagents includes a full line of Coulometric and Volumetric solutions specially formulated for fast, reliable, and reproducible titrations. Comprehensive chemical compatibility allows for analysis on a wide range of sample types from crude oil to organic chemicals. Samples are available to try before you buy.*

## **Volumetric Reagents**

<b>Thomas Cat. No.</b>	<b>Description</b>	<b>Available Sizes</b>
C838W34, C838W35, C838W36, C838W37	HydroSpec™ Composit T5	500mL, 1L, 6x500mL, 6x1L
C838W38, C838W39, C838W40, C838W41	HydroSpec™ Composit T2	500mL, 1L, 6x500mL, 6x1L
C838W42, C838W43, C838W44, C838W45	HydroSpec™ Composit K5	500mL, 1L, 6x500mL, 6x1L
C838W46, C838W47, C838W48, C838W49	HydroSpec™ Titrant T5	500mL, 1L, 6x500mL, 6x1L
C838W50, C838W51, C838W52, C838W53	HydroSpec™ Composit T1	500mL, 1L, 6x500mL, 6x1L
C838W54, C838W55, C838W56, C838W57	HydroSpec™ Titrant T2	500mL, 1L, 6x500mL, 6x1L

## **Specialized Solvents**

<b>Thomas Cat. No.</b>	<b>Description</b>	<b>Available Sizes</b>
C838Q10, C838Q11	HydroSpec™ Methanol Accelerate	1L, 6x1L
C838Q14, C838Q15	HydroSpec™ Solvent D	1L, 6x1L
C838Q16, C838Q17	HydroSpec™ Solvent CX	1L, 6x1L
C838Q18, C838Q19	HydroSpec™ Solvent C	1L, 6x1L
C838Q20, C838Q21	HydroSpec™ Solvent K	1L, 6x1L
C838Q22, C838Q23	HydroSpec™ Solvent	1L, 6x1L

## **Coulometric Reagents**

<b>Thomas Cat. No.</b>	<b>Description</b>	<b>Available Sizes</b>
C838P88, C838P89, C838P90, C838P91	HydroSpec™ Coulometric AG	500mL, 1L, 6x500mL, 6x1L
C838P92, C838P93, C838P94, C838P95	HydroSpec™ Coulometric AH	500mL, 1L, 6x500mL, 6x1L
C838P96, C838P97	HydroSpec™ Coulometric CG	110mL, 6x110mL
C838P98, C838P99, C838Q00, C838Q01	HydroSpec™ Coulometric AG-Oven	500mL, 1L, 6x500mL, 6x1L
C838Q02, C838Q03, C838Q04, C838Q05	HydroSpec™ Coulometric AG-C	500mL, 1L, 6x500mL, 6x1L
C838Q06, C838Q07, C838Q08, C838Q09	HydroSpec™ Coulometric AG-Oil	500mL, 1L, 6x500mL, 6x1L

# HydroSpec™ Karl Fischer Reagent Sample Request Sheet

All RICCA HydroSpec™ Karl Fischer Reagents are available for testing prior to purchase. Sample size is 220 mL. List Desired Products Below.

Product Code	Description	Quantity

Detach, scan or email sample request form to [sales@riccachemical.com](mailto:sales@riccachemical.com) or Contact your Thomas Scientific Representative!

Not Sure What to Try? Here is a cross to other manufacturers' products so you can pick the right Karl Fischer Reagents for your process!

Manufacturer Cat. No.	Manufacturer Cat. No.	Thomas Cat. No.	Description
34836	109257/ 109255	C838P88, C838P89, C838P90, C838P91	HydroSpec™ Coulometric AG
34843		C838P92, C838P93, C838P94, C838P95	HydroSpec™ Coulometric AH
34840	AX1697C-1	C838P96, C838P97	HydroSpec™ Coulometric CG
34739		C838P98, C838P99, C838Q00, C838Q01	HydroSpec™ Coulometric AG Oven
34807	AX1697A-1	C838Q02, C838Q03, C838Q04, C838Q05	HydroSpec™ Coulometric AG-C
34868		C838Q06, C838Q07, C838Q08, C838Q09	HydroSpec™ Coulometric AG Oil
34805	188005	C838W34, C838W35, C838W36, C838W37	HydroSpec™ Composit T5
34806	188002	C838W38, C838W39, C838W40, C838W41	HydroSpec™ Composit T2
34816	188006	C838W42, C838W43, C838W44, C838W45	HydroSpec™ Composit K5
34801		C838W46, C838W47, C838W48, C838W49	HydroSpec™ Titrant T5
34827	188001	C838W50, C838W51, C838W52, C838W53	HydroSpec™ Composit T1
34811		C838W54, C838W55, C838W56, C838W57	HydroSpec™ Titrant T2
37817	188009	C838Q10, C838Q11	HydroSpec™ Methanol Accelerate
37856	188016	C838Q14, C838Q15	HydroSpec™ Solvent D
34697	485077	C838Q16, C838Q17	HydroSpec™ Solvent CX
34812		C838Q18, C838Q19	HydroSpec™ Solvent C
34698	188007	C838Q20, C838Q21	HydroSpec™ Solvent K
34800	188015	C838Q22, C838Q23	HydroSpec™ Solvent

## Spectroscopy and Ion Chromatography Standards by a Name You Can Trust



### Spectroscopy Standards

- RICCA Chemical Company standards for Atomic Absorption are ready to use and come equipped with a detailed Certificate of Analysis with each bottle. Standards are NIST traceable and are manufactured with high purity solutes and solvents.
- ICP/ICP-MS standards are available in both single-element and multi-element solutions. Products include elements required by the EPA Contract Laboratory Program plus many other elements.
- Both single and multi-element standards are applicable to standard methods such as EPA 200.7, 200.8, 200.9, SW-846, 6010, 6020, 200.11, etc. Certificates of Analysis contain details for 70 trace elements and impurities.

### Ion Chromatography Standards

- RICCA Standards for Ion Chromatography are manufactured and tested to ISO 17025/Guide 34 standards under a certified ISO 9001 Quality Management System.
- Products are available in both single and multi-ion solutions.

### Custom Capabilities

- Custom Capabilities are available for our Spectroscopy and Ion Chromatography standards. If you require a special blend, packaging, or formula tailored to your processes, RICCA can service your needs. See our “Custom Solutions” request forms on pages 7 & 8, follow the instructions and get your custom solution today!

## Atomic Absorption Standards

Thomas Cat No.	Description	Available Sizes
C839T72, C839T73	Silver (Ag) Standard for AAS 1000 ppm in 2% HNO <sub>3</sub>	100 mL, 500 mL
C839T74, C839T75, C839T76	Aluminum (Al) Standard for AAS 1000 ppm in 2% HCl	100 mL, 1000 mL, 500 mL
C839T77, C839T78	Arsenic (As) Standard for AAS 1000 ppm in 2% HCl	100 mL, 500 mL
C839T79, C839T80	Gold (Au) Standard for AAS 1000 ppm in 2% HCl	100 mL, 500 mL
C839T81, C839T82	Boron (B) Standard for AAS 1000 ppm in H <sub>2</sub> O	100 mL, 500 mL
C839T83, C839T84	Barium (Ba) Standard for AAS 1000 ppm in 2% HCl	100 mL, 500 mL
C839T87, C839T88	Bismuth (Bi) Standard for AAS 1000 ppm in 10% HNO <sub>3</sub>	100 mL, 500 mL
C839T89, C839T90, C839T91	Calcium (Ca) Standard for AAS 1000 ppm in 2% HCl	100 mL, 1000 mL, 500 mL
C839T92, C839T93	Potassium Ionization Buffer for AAS 2% K in 1% HNO <sub>3</sub>	100 mL, 500 mL

## ICP/ICP-MS Standards

Thomas Cat No.	Description	Available Sizes
C839X67, C839X68, C839X69, C839X70	Sodium Standard for ICP 1000 ppm in H <sub>2</sub> O	100 mL, 250 mL, 500 mL, 50 mL
C839X75, C839X76, C839X77, C839X78	Neodymium Standard for ICP 1000 ppm in 2% HNO <sub>3</sub>	100 mL, 250 mL, 500 mL, 50 mL
C838D37	Aluminum Standard for ICP/MS 100 ppm in 2% HNO <sub>3</sub>	100 mL
C838D39	Gold Standard for ICP/MS 100 ppm in 2% HCl	100 mL
C838E23	Copper Standard for ICP/MS 10 ppm in 2% HNO <sub>3</sub>	100 mL
C838Fo8	Varian Calibration Standard	100 mL
C838F12, C838F13	Interference Check Solution A	100 mL, 500 mL
C838F22	QC Standard 27 Elements	100 mL
C838Ho4	Primary Drinking Water Metals	100 mL

## Ion Chromatography Standards

Thomas Cat No.	Description	Available Sizes
C838H51, C838H52, C838H53	Acetate CH <sub>3</sub> COO <sup>-</sup> Standard 1g/L in H <sub>2</sub> O	100 mL, 250 mL, 500 mL
C838H54, C838H55, C838H56	Ammonium NH <sub>4</sub> <sup>+</sup> Standard 1000 ppm in H <sub>2</sub> O	100 mL, 250 mL, 500 mL
C838J20, C838J21, C838J22	Magnesium - Mg <sup>+</sup> Standard 1000 ppm in H <sub>2</sub> O	100 mL, 250 mL, 500 mL
C838J23, C838J24, C838J25	Maleate C <sub>2</sub> H <sub>2</sub> (COO) <sub>2</sub> <sup>-</sup> Standard 1000 ppm in H <sub>2</sub> O	100 mL, 250 mL, 500 mL
C838J59, C838J60, C838J61	Phosphate PO <sub>4</sub> <sup>-</sup> Standard 1000 ppm in H <sub>2</sub> O	100 mL, 250 mL, 500 mL
C838K09, C838K10, C838K11	3-Methoxypropylamine - CH <sub>3</sub> O(CH <sub>2</sub> ) <sub>3</sub> NH <sub>2</sub> Standard 1000 ppm in H <sub>2</sub> O	100 mL, 250 mL, 500 mL
C838F97	Mixed Anion Standard 7, 0.1 ppm: F <sup>-</sup> , PO <sub>4</sub> <sup>+</sup> , NO <sub>2</sub> <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , Br <sup>-</sup> , SO <sub>4</sub> <sup>+</sup> , Cl <sup>-</sup>	100 mL, 500 mL
C838G10	Ion Chromatography Calibration Standard 2, 650 ppm H <sub>3</sub> PO <sub>4</sub> , 10 ppm SO <sub>4</sub> <sup>-</sup>	100 mL
C838G12	Mixed Cation Standard 6, 10 ppm: K <sup>+</sup> , Ca <sup>+</sup> , Mg <sup>+</sup> ; 5 ppm: NH <sub>4</sub> <sup>+</sup> , Na <sup>+</sup> ; 1 ppm Li <sup>+</sup>	100 mL

\*the above is a sample of products available

## Custom Solutions Request Form - CRM - AA/ICP/ICPMS

**Choose from the Elements Below and Fill in the Following:**

- Select the elements of your choice
- The concentration of each element (in mg/L) - each element can have a different concentration (1 mg = 1 ug/L = 1ppm)
- The matrix and its concentration (%HNO<sub>3</sub>, % HCl, %H<sub>2</sub>SO<sub>4</sub>, %NH<sub>4</sub>OH, Etc...)

Element	Conc. mg/L	Element	Conc. mg/L	Element	Conc. mg/L	Element	Conc. mg/L	Element	Conc. mg/L
Ag		Cu		La		Pr		Ta	
Al		Dy		Li		Pt		Tb	
As		Er		Lu		Rb		Te	
Au		Eu		Mg		Re		Th	
B		Fe		Mn		Rh		Ti	
Ba		Ga		Mo		Ru		Tl	
Be		Gd		Na		S		Tm	
Bi		Ge		Nb		Sb		U	
Ca		Hf		Nd		Se		V	
Cd		Hg		Ni		Sc		W	
Ce		Ho		Os		Si		Y	
Co		In		P		Sm		Yb	
Cr		Ir		Pb		Sn		Zn	
Cs		K		Pd		Sr		Zr	

**\*All Custom Made Products are Non-Returnable**

<b>Matrix</b>	<b>Volume (50 mL, 100 mL, 250 mL, 500 mL)</b>	<b>Number of Bottles</b>
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
<b>Company</b>	<b>Name:</b>	
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	
<b>Phone:</b>	<b>Email:</b>	
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	

**MONO-ELEMENTS**

(Selected products are delivered in separate bottles)

**MULTI-ELEMENTS**

(Selected products are delivered in one bottle)

**AA**    **ICP**    **ICP-MS**

Complete and Send this Form to Your Thomas Scientific Representative for your Custom Standard



## Custom Solutions Request Form - CRM - Ion Chromatography Standards

Choose from the Ions Below and Fill in the Following:

- Concentration of each ion (in mg/l) - each ion can have a different concentration (1 mg/l = 1 ug/ml = 1 ppm)
- Source product : for Cl-, the source product can be Na+ or K+
- Matrix and its concentration (H<sub>2</sub>O, HNO<sub>3</sub>, CH<sub>3</sub>CH, etc.)

Ion	Conc. mg/L	Source	Ion	Conc. mg/L	Source
Acetate (CH <sub>3</sub> COO <sup>-</sup> )			Monoethanolamine		
Ammonium (NH <sub>4</sub> <sup>+</sup> )			Monoethylamine		
Ammonium conc. f(N)			Nitrilotriacetate		
Barium (Ba <sup>2+</sup> )			Nitrite (NO <sub>2</sub> <sup>-</sup> )		
Benzoate			Nitrite conc. f(N)		
Bromate (BrO <sub>3</sub> <sup>-</sup> )			Nitrate (NO <sub>3</sub> <sup>-</sup> )		
Bromide (Br <sup>-</sup> )			Nitrate conc. f(N)		
Calcium (Ca <sup>2+</sup> )			Oxalate		
Cesium (Cs <sup>+</sup> )			Perchlorate (ClO <sub>4</sub> <sup>-</sup> )		
Chlorate (ClO <sub>3</sub> <sup>-</sup> )			Hydrogen Phthalate		
Chloride (Cl <sup>-</sup> )			Phosphate (PO <sub>4</sub> <sup>3-</sup> )		
Chlorite (ClO <sub>2</sub> <sup>-</sup> )			Phosphate conc. f(P)		
Chromate (Cr <sub>6</sub> <sup>+</sup> )			Potassium (K <sup>+</sup> )		
Citrate			Propionate		
Cyanide (Cn <sup>-</sup> )			Silicate		
Diethanolamine			Sodium		
Fluoride (F <sup>-</sup> )			Strontium		
Formate (HCOO <sup>-</sup> )			Succinate		
Glycolate			Sulfite		
Iodite (I <sup>-</sup> )			Sulfate		
Iodate (IO <sub>3</sub> <sup>-</sup> )			Tartrate		
Iodite (IO <sub>2</sub> <sup>-</sup> )			Thiocyanate		
Lactate			Thiosulfate		
Lithium (Li <sup>+</sup> )			Triethanolamine		
Magnesium (Mg <sup>2+</sup> )			Trimethylamine		
Maleate			3- Methoxypropylamine		
Methane sulfonate			<b>*All Custom Made Products are Non-Returnable</b>		

**Matrix:** 
**Size:** 
**Qty:** 
 **Single Component** (Multiple Bottles)
  **Multi-Component** (One Bottle)

**Company:** 
**Name:**

**Email:** 
**Phone:**

Complete and Send this Form to Your Thomas Scientific Representative for your Custom Standard



**We Believe You Are Important**  
— How Can We Help?

[www.agapilabsolutions.com](http://www.agapilabsolutions.com)

**Contact Us:**

Phone 1 (267) 397-3345

E-mail [customerservice@agapilabsolutions.com](mailto:customerservice@agapilabsolutions.com)

