



WATER STANDARDS FOR KARL FISCHER TITRATIONS

Community titrator? Questionable sample? You can use water standards to identify a problem with your sample or titrator. Start with fresh vessel solution and inject a water standard as a sample. Next, analyze your products. Finally, inject a water standard as a sample again. There should be a correlation between the two water standard values. If there isn't, one of your samples may be causing an interference, or there may be a problem with the titrator.

GFS Chemicals is a primary manufacturer of a broad range of reference materials, all made in our Columbus OH facility. The liquid standards are delivered in ten 5mL single use ampoules with a 5-year shelf life. Watermark® water standards are methanol free and can be used for all applications.

Liquid Standards – By Weight			PART NO.
10 mg/g	1.00%	10,000 ppm	99881
5 mg/g	0.50%	5000 ppm	98992
1 mg/g	0.10%	1000 ppm	99862
0.5 mg/g	0.05%	500 ppm	98962
0.1 mg/g	0.01%	100 ppm	99842
0.05 mg/g	0.005%	50 ppm	98981

Liquid Standards – By Volume		PART NO.
10 mg/mL		99888
5 mg/mL		99753
1 mg/mL		99733
0.1 mg/mL		99893

Solid Standards		PART NO.
Sodium Tartrate, 15.61% to 15.71% 100 g		69356
Potassium Citrate, 5.5% to 5.6%, 10 g		99571
Potassium Citrate, 5.5% to 5.6%, 10 x 10 g		99572

ADVANTAGES OF WATERMARK® KF WATER STANDARDS

- Manufactured in USA according to ISO 9001:2008 & 17025:2017
- NIST Traceable to SRM 2890
- Single use ampoules sealed under argon
- Certificate of Analysis included

Liquid standards are the easiest and most accurate way to introduce a water standard into the titration vessel. Many titrators have built-in methods to make titrant standardization simple for you.



Volumetric Karl Fischer Reagents

Scientific, Inc.

1-Component Volumetric Titrants

GFS WaterMark®	Honeywell Hydranal®	Millipore-Sigma Aquastar®	J.T. Baker Hydra-Point®
1600 - Single Solution Titrant, 5 mg/mL	Hydranal-Composite 5 34805	CombiTitrant 5 1.88005.2545	Hydra-Point KF Reagent 5 mg/mL 6271-68
1893 - 5 mg/mL Titrant Non-Hazardous Formulation	Hydranal-Composite 5K 34816	CombiTitrant 5K 1.88006.1045	
1601 - Single Solution Titrant, 2 mg/mL	Hydranal-Composite 2 34806	CombiTitrant 2 1.88002.2545	Hydra-Point KF Reagent 2 mg/mL 6272-68
1894 - 2 mg/mL Titrant Non-Hazardous Formulation			
1884 - Single Solution Titrant, 1 mg/mL	Hydranal-Composite 1 34827	CombiTitrant 1 1.88001	

1-Component Volumetric Solvents

1885 - Methanol Prime	Hydranal Methanol Rapid 37817		
1610 - General Purpose Solvent	Hydranal Methanol Rapid 37817	Aquastar CombiMethanol 1.88009.1045	
1609 - Methanol Free Solvent	Hydranal Keto Solver 34738	CombiSolvent Keto 1.88007.1000	Hydra-Point KF Solvent Methanol Free 6275-68
5322 - Solvent for Aldehydes & Ketones	Hydranal Working Medium K 34817	CombiSolvent Keto 1.88007.1000	Hydra-Point KF Solvent Methanol Free 6275-68
2978 - Solvent, Oils	Hydranal LipoSolver MH 37856	Solvent for Oils and Fats 1.88016.1000	
		CombiSolvent Oils 1.88020.1000	
3569 - Methanol, Anhydrous < 0.01% (100 ppm)	Hydranal Methanol, Dry 34741	CombiMethanol 1.88009.2545	Hydra-Point Methanol Anhydrous 6290-68

2-Component Volumetric Titrants

1604 - Non-Hygroscopic Titrant, 5 mg/mL	Hydranal Titrant 5 34801	Titrant 5 1.88010.2545	Hydra-Point KF Titrant 5 mg/mL 6274-02
1616 - Methanol based Titrant, 5 mg/mL	Hydranal Titrant 5 34801	Titrant 5 1.88010.2545	
1603 - Non-Hygroscopic Titrant, 2 mg/mL	Hydranal Titrant 2 34811	Titrant 2 1.88011.1045	Hydra-Point KF Titrant 2 mg/mL 6273-02
1602 - Non-Hygroscopic Titrant, 1 mg/mL			
1970 - Non-Hygroscopic Titrant, 0.5 mg/mL			

2-Component Volumetric Solvents

1885 - Methanol Prime	Hydranal Methanol Rapid 37817		
1610 - General Purpose Solvent	Hydranal Solvent 34800	Aquastar Solvent 1.88015.2500	Hydra-Point General Purpose Solvent 6276-68
1609 - Chloroform & Methanol free Solvent for Aldehydes and Ketones	Hydranal Working Medium K 34817	CombiSolvent Keto 1.88007.1000	Hydra-Point KF Solvent Methanol Free 6275-68
2991 - Solvent for Oils	Hydranal Solvent CM 37855	Solvent Oil 1.88016.1000	



Volumetric Karl Fischer Reagents

Scientific, Inc.

Volumetric Pyridine Reagents

GFS WaterMark®	Honeywell Hydranal®	Millipore-Sigma Aquastar®	J.T. Baker Hydra-Point®
1620 - Titrant, 5 mg / mL, Pyridine			
1621 - Diluent, Pyridine			

Volumetric Buffering Products

1615 - Buffer, Acid	Hydranal Buffer 34804	Aquastar Buffer AX1699D-3	Hydra-Point Buffer Solution 6282-02
1973 - Imidazole, ACS Grade	Hydranal Imidazole - 37864		
673 - Benzoic Acid, ACS Grade	Hydranal Benzoic Acid 32035		

Water Standards - Volumetric

1892 - Water Standard 10 mg/ml			
1617 - Water Standard 5 mg/mL		Water Std. 5 mg / mL 1.09259.0250	
1618 - Water Standard 1.00 mg/mL			
2196 - Water Standard 0.1 mg/mL			

Volumetric Water Standards - Gravimetric

2303 - Water Standard 10.0 mg/g	Hydranal Water Standard 10 34849	Water Standard 1.0% 1.88052.0010	
2304 - Water Standard 5.0 mg/g	Hydranal Water Standard 5 34813		
2302 - Water Standard 1.00 mg/g	Hydranal Water Standard 1.0 34828	Water Standard 0.1 % 1.88051.0010	
2301 - Water Standard 0.1 mg/g	Hydranal Water Standard 0.1 34847	Water Standard 0.01 % 1.88050.0010	
805 - Sodium Tartrate 15.61-15.71%	Hydranal Standard Sodium Tartrate Dihydrate 34803	Sodium Tartrate Dihydrate 15.66% 1.06664.0100	
9425 - Water Standard 1.0 mg/g in Methanol			
2385 - Potassium Citrate Standard 5.50 - 5.60%			

Additional Products

963 - Molecular Sieve, 3A, 8-12 Mesh Beads	Hydranal Humidity Absorber 34788		
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Coulometric Karl Fischer Reagents

Scientific, Inc.

CHEMICALS®

Analyte Vessel Solutions

GFS WaterMark®	Honeywell Hydranal®	Millipore-Sigma Aquastar®	J.T. Baker Hydra-Point®
1612 - General Use Analyte	Hydranal Coulomat A 34807	Coulomat A AX1697A-30	Hydra-Point Coulometric Vessel Solution 6280-02
		CombiCoulomat Frit 1.09255.0500	
1619 - Analyte for Ketones & Aldehydes	Hydranal Coulomat AK 34820		Hydra-Point Coulometric Vessel Solution (ketones/ aldehydes) 6283-01
1607 - Biodiesel, Non-polar Materials, & Oil Analysis	Hydranal AG-H 34843	Coulomat A Xylene Blend AX1697AX-1	Hydra-Point Coulometric Vessel Solution, CFC-Free 6284-01
5202 - Universal Crude Oil Analysis	Hydranal Coulomat Oil 34868	Coulomat A Xylene Blend AX1697AX-1	

Catholyte - Generator Solutions

1613 - Coulometric Vessel Solution	Hydranal Coulomat CG 34840	Coulomat C AX1697C-1	Hydra-Point KF Generator Solution, pyridine free 6281-00
2321 - Universal Solution for use with Aldehydes & Ketones	Hydranal Coulomat CG 34840	Coulomat C AX1697C-1	Hydra-Point KF Generator Soln., Universal 6286-00

Diaphragm-less (Fritless) Coulometric Solutions

1671 - Fritless Vessel Solution Chloroform Free	Hydranal Coulomat AG 34836	CombiCoulomat Fritless 1.09257.0500	Hydra-Point KF Coulometric Vessel Solution 6280-02
	Hydranal Coulomat AD 34810		
1612 - Coulometric Vessel Solution w/o Diaphragm	Hydranal Coulomat A 34807	Coulomat A AX1697A-30	Hydra-Point Coulometric Vessel Solution 6280-02
		CombiCoulomat Frit 1.09255.0500	

Coulometric Oven Reagents

1889 - KF Oven Reagent	Hydranal AG-Oven 34739		Hydra-Point KF Coulometric Oven Reagent 6287-02
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Pyridine Based Coulometric Vessel Reagents

1622 - Vessel Solution, Pyridine			
1623 - Generator Solution, Pyridine			

Coulometric Karl Fischer Reagents

Coulometric Water Standards - Gravimetric

GFS WaterMark®	Honeywell Hydranal®	Millipore-Sigma Aquastar®	J.T. Baker Hydra-Point®
2302 - 1.00 mg / g	Hydranal Water Standard 1.0 34828	Water Standard 0.1 % 1.88051.0010	
2301 - 0.1 mg / g	Hydranal Water Standard 0.1 34847	Water Standard 0.01 % 1.88050.0010	
3493 - 0.5 mg / g			
2311 - 0.05 mg / g			
9425 - 1.0 mg / g in Methanol			
805 - Sodium Tartrate 15.61-15.71%	Hydranal Standard Sodium Tartrate Dihydrate 34803	Sodium Tartrate Dihydrate 15.66% 1.06664.0100	
2385 - Potassium Citrate Standard 5.50-5.60%			

Coulometric Buffering Products

673 - Benzoic Acid, ACS Grade	Hydranal Benzoic Acid 32035		
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Additional Products

963 - Molecular Seive, 3A, 8-12 Mesh Beads	Hydranal Humidity Absorber 34788		
5605 - Coulometric Reagent Kit for Oil Anolyte: 8 x 100 ml + Catholyte 8 x 5 ml			