



# Hydranal® Reagents

## 800-877-3225

### ONE COMPONENT VOLUMETRIC REAGENTS

Hydranal® Composites contain all the reactants (iodine, sulphur dioxide and imidazole) dissolved in diethyleneglycolmonomethyl ether (DEGEE). The loss of titre is less than 10% per year.

Volumetric reagents have a two-year minimum shelf life for an unopened bottle.

#### COMPOSITE REAGENTS

##### HYDRANAL® COMPOSITE 1

#34827	500 ml	68.24
One Component reagent	6x500ml	355.77
1ml = approx 0.7-1.0 mg H <sub>2</sub> O	1 L	107.54
	6x1L	562.12

##### HYDRANAL® COMPOSITE

#34806	500 ml	68.24
One Component reagent	6x500 ml	355.77
1ml = approx. 2 mg H <sub>2</sub> O	1 L	107.54
	6x1L	544.97
	2.5 L	233.31
	4x2.5L	809.49

##### #34806-SC-Composite 2

Honeywell's Smart Chemical	1 L	112.76
Hydranal™ bottles are embedded with an RFID chip	6x1 L	571.43

##### HYDRANAL® Composite 5

#34805	500 ml	68.24
General one component reagent	6x500 ml	355.77
1 ml = approx 5 mg H <sub>2</sub> O	1 L	107.54
	6x1 L	562.12
	2.5 L	233.31
	4x2.5 L	809.49

##### #34805-SC-Composite 5

Honeywell's Smart Chemical	1 L	112.76
Hydranal™ bottles are embedded with an RFID chip	6x1L	589.41

#### Working Medium solvents to be used with Hydranal® Composite reagents

##### HYDRANAL® Liposolver CM

#37855	1 L	81.09
For water determination in non-polar substances like fats & oils. Contains chloroform and methanol.	6x1 L	414.54

##### HYDRANAL® Liposolver MH

#37856	1 L	90.89
For water determinations in non-polar substances like fats & oils. Contains methanol and hexane.	6x1 L	414.54

##### HYDRANAL® Methanol Dry

#34741	1 L	37.74
A custom made solvent for KF titration with a maximum water content of 100 ppm - 0.01%	6x1L	176.98
	2.5L	70.56
	4x2.5L	218.61

##### HYDRANAL® Methanol Rapid

#37817	1 L	43.97
Working medium containing accelerators for the determination of H <sub>2</sub> O with shorter titration times.	6x1L	230.85
	2.5 L	97.00
	4x2.5L	338.61

#### HYDRANAL® Solver (Crude Oil)

#34697	1 L	103.98
Working medium containing xylene and chloroform for water determination of oils	6x1 L	541.91
	2.5 L	229.63
	4x2.5 L	794.79

#### SPECIALTY REAGENTS FOR ALDEHYDES & KETONES

##### HYDRANAL® Composite 5K

#34816	500 ml	91.75
Titration for water determination in ketones and aldehydes (1ml = approx 5 mg H <sub>2</sub> O)	6x500ml	478.83
	1 L	148.20
	6x1 L	778.87
	2.5L	328.83
	4x2.5 L	1140.15

##### #34816-SC

Honeywell's Smart Chemical	1 L	155.40
Hydranal™ bottles are embedded with an RFID chip	6x1 L	816.68

##### HYDRANAL® Keto Solver

#34738	500 ml	71.90
Solvent component for water determination in aldehydes & ketones. Suppresses side reactions that generate water or consume titrant. Contains no halogenated compounds.	6x500ml	342.30
	1 l	105.32
	6x1 L	548.64

##### HYDRANAL® Working Medium

#34817	1 L	112.93
Solvent system which contains chloroethanol and chloroform. For the determination of water in aldehydes and ketones.	4x1 L	393.74

##### HYDRANAL® Medium K

#34698	1 L	112.05
Working Media used for volumetric KF titration in ketones & aldehydes to be used with Hydranal® Composite 5K.	6x1 L	555.38

##### HYDRANAL® Composolver E

#34734	1 L	64.66
An ethanol-based working medium formulated for use with the standard one-component Hydranal® Composites. It permits a methanol-free analysis using a single component reagent.	6x1 L	338.61
	2.5 L	133.50
	4x2.5 L	465.37

## TWO COMPONENT VOLUMETRIC REAGENTS

With two component reagents, the reactants are in separate bottles. The titrant is a solution of iodine and alcohol. The solvent solution contains the sulphur dioxide and imidazole in a specific alcohol. The reagents remain stable and unchanged for a minimum of two years as long as the bottles remain unopened.

<b>TITRANTS</b>	500 ml	
<b>HYDRANAL® Titrant 2</b>	6x500ml	
<b>#34811 DEA</b>	1 L	
One ml is equivalent to	6x1L	
2ml + 0.01 mg H <sub>2</sub> O		
<b>HYDRANAL® Titrant 5</b>	500 ml	
<b>#34801 DEA</b>	6x500 ml	
One ml is equivalent to	1 L	
5.00 ± 0.02 mg H <sub>2</sub> O	6x1 L	
	2.5 L	
	4x2.5 L	

### SOLVENTS

#### New

<u>Medium for Volumetric 2 comp. titration</u>		
<b>#34432 Hydranal® Solvent Fi</b>	1 L	101.91
Methanol based, free of imidazole	6x1L	530.09
<b>#34431 Hydranal® Solvent E-Fi</b>	1 L	100.87
Ethanol based, free of imidazole	6x1L	526.30
<b>HYDRANAL® Solvent S</b>	1 L	81.53
<b>#34800</b>	6x1 L	424.08
A methanol based standard solvent for volumetric KF applications	2.5 L	168.92
<b>HYDRANAL® Solvent CM</b>	4x2.5 L	586.29
<b>#34812</b>	1 L	103.07
Solvent component containing methanol and chloroform for the determination of non-polar samples like oils & fats.	6x1 L	537.69
	2.5 L	205.37
	4x2.5 L	709.63
<b>HYDRANAL® Solvent Oil</b>		
<b>#34749</b>		
For water determination in non-polar substances like fats and oils. Contains methanol and hexane.	1 L	103.18
	6x1 L	537.69

### Specialty Reagents for Aldehydes and Ketones

<b>HYDRANAL® Solvent E</b>	1 L	80.69
<b>#34730</b>	6x1L	421.04
An ethanol based working medium containing imidazole, sulphur dioxide and diethanolamine. Can be used in the analysis of aldehydes and ketones when used with other methanol free reagents.	2.5 L	167.09
	4x2.5 L	580.22

<b>HYDRANAL® Titrant 2E</b>		
<b>#34723 DEA</b>	1 L	
A two component reagent based on ethanol. Can be used with any combination of traditional solvents. When used with Hydranal® Solvent E, it provides a methanol-free system for the analysis with a titre of 2.		
<b>HYDRANAL® Titrant 5E</b>		
<b>#34732 DEA</b>	500 ml	
A two-component reagent based on ethanol. Can be used with any combination of traditional reagents. When used with the Hydranal Solvent E, it provides a methanol-free system for the analysis with a titre of 5.	6x500mL	

## HYDRANAL® REAGENTS COULOMETRIC REAGENTS

Coulometry usually requires the use of an anolyte and a catholyte. Hydranal® anolytes contain iodide and a sulphur dioxide/imidazole buffer in a suitable solvent. Coulometric reagents have a shelf life of 5 years, as long as bottle remains unopened.

### ANOLYTES

<b>HYDRANAL® Coulomat A</b>	500 ml	109.04
<b>#34807</b>	6x500 ml	558.17
Anolyte standard two component coulometry. Contains methanol and chloroform as the solvents. Water capacity is >10 mg/ml.		
<b>HYDRANAL® Coulomat AG</b>	500 ml	108.45
<b>#34836</b>	6x500 ml	564.90
For coulometry in cells with or without a diaphragm. Free of carbon tetrachloride and chloroform.	1 L	189.68
	6x1 L	989.67
<b>HYDRANAL® Coulomat AG-H</b>		
<b>#34843</b>	500 ml	122.10
Coulometric analysis for cells with or without a diaphragm. Effective for very polar samples (long-chained hydrocarbons). Free of carbon tetrachloride and chloroform.	6x500 ml	660.20

### New

<b>#34433 -HYDRANAL® Coulomat AG-F</b>	500 ml	117.12
Anolyte for Coulometric KF w or w/o diaphragm. Methanol based, free of imidazole	6x500 ml	610.09
<b>HYDRANAL® Coulomat AD</b>	500 ml	141.40
<b>#34810</b>	6x500 ml	736.41
For coulometry in cells without a diaphragm. Free of carbon tetrachloride and chloroform.		

### CATHOLYTES

<b>#34840 HYDRANAL® Coulomat CG</b>	50 ml	87.30
Standard catholyte for coulometric cells with diaphragm. It contains protected ammonium salts as the reactive component and methanol.	6x50 ml	456.72
<b>HYDRANAL® Coulomat Oil</b>		
<b>#34868</b>	100 ml	34.56
Anolyte for determination of oils. Based on methanol, with addition of aromatic and halogenated hydrocarbons to aid solubility.	6x100 ml	180.73
	500 ml	117.05
	6x500 ml	612.24

<b>HYDRANAL® Coulomat AK</b>		
<b>#34820</b>	500 ml	252.65
Anolyte for coulometric water determination in samples containing ketones.	6x500 ml	1309.33

<b>HYDRANAL® Coulomat CG-K</b>		
<b>#34821</b>	50 ml	223.14
Catholyte for coulometric water determination in samples of aldehydes & ketones. Packaged as 10x5ml ampoules.	6x50 ml	1159.32

### SPECIALTY REAGENTS

<b>HYDRANAL® Coulomat E</b>	500 ml	127.35
<b>#34726</b>	6x500 ml	662.65
Replaces much of the methanol with ethanol reducing the toxicity without affecting performance. Can be used in systems with or without a diaphragm.		
<b>HYDRANAL® Coulomat AF7</b>		
<b>#34829</b>	1 L	230.50
Anolyte for two-component coulometry, specifically for the AF7 coulometer. It is used with Composite 5 as the catholyte.	6x1 L	1204.81

## SPECIALTY REAGENTS

**HYDRANAL® STANDARDS**

Standards are necessary to standardize and control reagents, to check reliability of the titrator and to test instruments according to the requirements of ISO9000, GMP, GLP and FDA guidelines. (A Manufacturer's Test certificate with exact specifications is included with each standard.)

**CERTIFIED STANDARDS****HYDRANAL® Water standard 0.10**

#34847			
A certified standard containing 0.01 mg of H <sub>2</sub> O per g (0.10 mg/g=0.01%).	40 ml	107.17	
40 ml is packaged as 10x4 ml ampoules.	6x40 ml	559.59	

**HYDRANAL® Water Standard 1.0**

#34828			
A certified standard containing 1.00 mg of H <sub>2</sub> O per g (1 mg/g = 0.1%).	40 ml	107.17	
40 ml is packaged as 10x4ml ampoules.	6x40 ml	559.59	

**HYDRANAL® Water Standard 10.0 #34849**

A certified standard containing 10.0 mg of H <sub>2</sub> O per g (10 mg/g= 1%).	80 ml	107.17	
80 ml is packaged as 10 x 8 ml ampoules.	6x80 ml	559.59	

**NEW****ISO GUIDE 34 WATER STANDARDS****HYDRANAL® CRM WATER STANDARD 10.0**

#34425 Water content 10.0 mg/g=1.0%	80ml(10x8ml)	125.66	
#34426 Water content 1.0 mg/g = 0.1%	40ml(10x4ml)	125.66	
#34446 Water content 0.1 mg/g = .01%	40ml(10x4ml)	125.66	
#34424 Solid CRM Standard, water content	10 gm	105.53	
Approx. 15.66%			

**BUFFERS**

#34804	500 ml	58.93	
	6x500 ml	309.23	

For KF titrations of samples containing

HYDRANAL® Molecular Sieve 0.3nm	250gm	59.57	
---------------------------------	-------	-------	--

#34241

**HYDRANAL® Buffer Base**

#37859	1 L	100.79	
For KF titrations of samples containing Salicylic acid. Buffer capacity 1 mmoles base/ml.	6x1 L	525.98	

**HYDRANAL® Humidity Absorber**

#34788	500 gm	52.06	
	1 kg	86.33	

**HYDRANAL® Formamide Dry**

#34724	1 L	80.46	
	6x 1 L	345.97	

**ADDITIONAL STANDARDS****HYDRANAL® Water Standard KF oven 220-230° C**

#34748	10 gm	73.55	
Solid standard specially designed to check control/validate KF ovens @ 229-230 ° C. Consists of finely milled potassium citrate-1-hydrate with a theoretical water content of 5.55% by weight.	6x10 gm	390.37	

**HYDRANAL® Coulomat AG Oven**

#34739	500 ml	127.25	
Anolyte for coulometric water determinations using a KF oven. Ensures low error even for long duration determinations. Free of halogenated hydrocarbons.	6x500ml	665.11	

**HYDRANAL® Standard 5.0 Non-Hygroscopic**

#34813	100 ml	25.86	
A non-hygroscopic butanol/xylene mixture for volumetric standardization.	6x100 ml	134.11	
Water content is 5.00 ± 0.02 mg/ml	500 ml	66.75	
	6x500 ml	306.78	

**HYDRANAL® Water in Methanol Standard 5.00**

#34802	1 L	56.10	
A standard designed specifically for use in doing back titrations. Water content is 5.00 ± 0.02 mg/ml	500 ml	41.05	

**HYDRANAL® Standard Sodium Tartrate-2-hydrate**

#34803	100 gm	56.58	
A primary standard for volumetric titration.	6x100 gm	296.37	
Water content = 15.66 +/- 0.05%			

**HYDRANAL® Water Standard Oil**

#34694	80 ml	164.70	
A standard specifically designed for water determination in oils by coulometric titration. Water content in low ppm range.			

**HYDRANAL® Water Standard KF Oven 140-160° C**

#34693	10 gm	80.33	
Solid standard specifically designed to check/control/validate KF ovens @ 140-160 deg. C. Water content approx. 5% (exact value stated on C of A).			

**HYDRANAL® Sodium Tartrate Dihydrate**

#34696	25 gm	34.69	
	6x25 gm	208.13	

**HYDRANAL® Chloroform**

#37863	1 L	63.32	
	6x 1 L	329.45	

**HYDRANAL® Xylene**

#37866	1 L	77.04	
	6x1 L	402.30	

**HYDRANAL® Salicylic acid**

#37865	500 gm	44.47	
--------	--------	-------	--

**HYDRANAL® Imidazole**

#37864	500 gm	108.64	
--------	--------	--------	--

**HYDRANAL® Benzoic acid**

#32035	500 gm	52.91	
	6x500 gm	279.32	