



J.T.Baker® Brand
HYDRA-POINT™
KARL FISCHER REAGENTS



LAB-OPTIMIZED PERFORMANCE:

Function-tested Karl Fischer reagents from the brand that delivers quality and purity.

The J.T.Baker® HYDRA-POINT™ Karl Fischer Reagents

The J.T.Baker® brand HYDRA-POINT™ product line is developed with a pyridine-free formulation specifically for use in Karl Fischer volumetric and coulometric titrations. Our line of reagents is suited for a variety of markets:

- Pharmaceutical
- Petrochemical
- Industrial
- Chemical
- Food & Beverage
- Analytical Testing
- Agriculture
- Biotechnology
- Academic/Institute

J.T.Baker® HYDRA-POINT Karl Fischer reagents make water determination easy and trouble-free. Products are formulated to give you consistent and reliable results for all types of samples. HYDRA-POINT products reach endpoint quickly, accurately and with excellent reproducibility, allowing you to perform more titrations in less time.

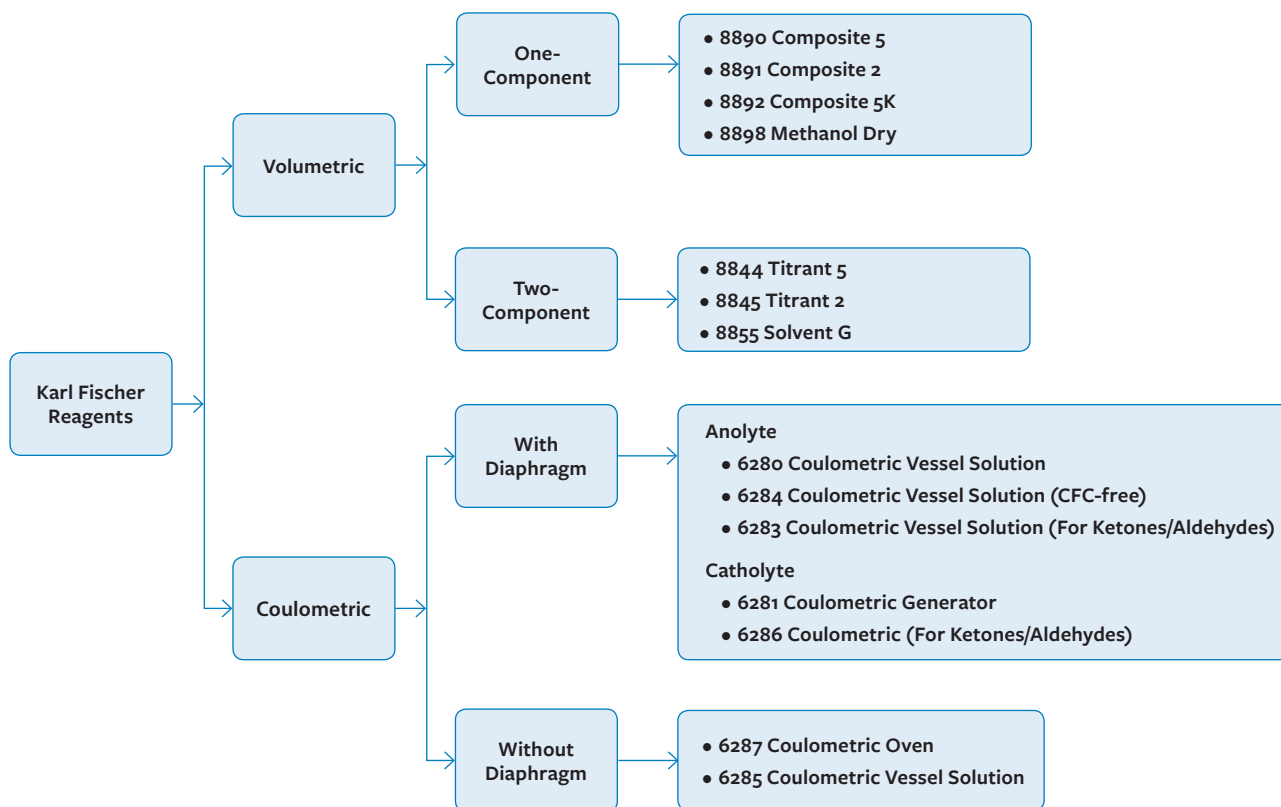
- General use
- Oils/transformer oils
- Aldehydes and ketones
- Diaphragmless
- Chloroform free
- Specifically for use with a Karl Fischer Oven

We also offer a complete line of ready-to-use volumetric solutions and volumetric solution concentrates, including high-quality sodium hydroxide grades and hydrochloric acid solutions, to save you the time and expense of preparation. Visit <http://www.avantormaterials.com/Laboratory-Chemicals.aspx> for a full product listing and additional information including specifications, package types and pricing.





HYDRA-POINT™ Reagent Selection Guide



HYDRA-POINT™ Volumetric Reagents

Pyridine-free for safe, easy water determination—the product line with all the right components. HYDRA-POINT titrants and solvents achieve fast equilibration within the Karl Fischer reaction vessel, giving greater laboratory efficiency and speed of analysis.

No matter what your requirements are for volumetric systems, HYDRA-POINT Karl Fischer reagents make water determination easy and trouble-free. They are pyridine-free and specially formulated for existing application procedures to give you consistent, reliable results for all types of samples. Key features of HYDRA-POINT reagents are:

- **Pyridine-free**—The use of pyridine in the laboratory has well-recognized hazards, in addition to its unpleasant odor. That is why our HYDRA-POINT products do not contain pyridine.
- **Productivity**—HYDRA-POINT reagents are formulated to reach each endpoint quickly, accurately and with reproducibility, allowing you to perform more titrations in less time.
- **Accuracy**—HYDRA-POINT reagents have titers that are more stable with less drift, helping you save time and reduce reagent usage.

Product Name	Product Number	Units per Case	Size	Product Description
One-component Volumetric Reagents				
HYDRA-POINT Composite 5	8890.1000	6	1 L	Pyridine-free, one-component reagent (5 mg H2O per mL) for volumetric Karl Fischer titration
	8890.2500	4	2.5 L	
HYDRA-POINT Composite 2	8891.1000	6	1 L	Pyridine-free, one-component reagent (2 mg H2O per mL) for volumetric Karl Fischer titration
	8891.2500	4	2.5 L	
HYDRA-POINT Composite 5K	8892.1000	6	1 L	Pyridine-free, one-component reagent for volumetric Karl Fischer titration of ketones
	8892.2500	4	2.5 L	
Two-component Volumetric Reagents				
HYDRA-POINT Titrant 5	8844.1000	6	1 L	Titrant component (5 mg H2O per mL) for volumetric Karl Fischer titration
	8844.2500	4	2.5 L	
HYDRA-POINT Titrant 2	8845.1000	6	1 L	Titrant component (2 mg H2O per mL) for volumetric Karl Fischer titration
	8845.2500	4	2.5 L	
HYDRA-POINT Solvent G	8855.1000	6	1 L	Pyridine-free solvent component for volumetric Karl Fischer titration
	8855.2500	4	2.5 L	
Additional Reagents				
HYDRA-POINT Dry Methanol	8898.1000	6	1 L	Dry methanol (water content max. 0.01%) for Karl Fischer titration
	8898.2500	4	2.5 L	
HYDRA-POINT Buffer Solution	6282-01	6	500 mL	Solvent for volumetric analysis when extra buffering capacity is needed
	6282-02	6	1 L	

HYDRA-POINT™ Coulometric Reagents

HYDRA-POINT coulometric reagents are designed to deliver faster analyses, lower detection limits and increased accuracy. These products feature lower background noise that gives a better signal/noise ratio, resulting in a significant increase in the lower detection limit—to as low as 1 ppm.

- Pyridine- and chlorocarbon-free vessel solution
- The fritless/diaphragmless reagent works both in cells without and with diaphragm.
- High water capacity, where the anolyte can take over 1000 mg of water per charge

Product Name	Product Number	Units per Case	Size	Product Description
For Cell Coulometers with Diaphragm				
HYDRA-POINT Karl Fischer Coulometric Vessel Solution, Pyridine-Free	6280-1	6	500 mL	For coulometric analysis. Anolyte for all coulometric titrators. Universal solution for certain coulometric titrators.
	6280-2	6	1 L	
HYDRA-POINT Karl Fischer Coulometric Vessel Solution, for Ketones and Aldehydes	6283-1	6	500 mL	Methanol-free vessel solution for coulometric analysis of aldehydes and ketones
HYDRA-POINT Karl Fischer Coulometric Vessel Solution, CFC-Free	6284-1	6	500 mL	Pyridine- and chlorocarbon-free vessel solution for coulometric analysis. Suitable for non-polar samples.
	6284-2	6	1 L	
HYDRA-POINT Karl Fischer Coulometric Generator Solution, Pyridine-Free	6281	1	125 mL	For coulometric analysis. Catholyte for coulometric titrators.
	6281-3	1	10 × 5 mL	
HYDRA-POINT Karl Fischer Coulometric Generator Solution, Universal	6286	1	125 mL	Catholyte solution for coulometric analysis. For both general use and aldehydes and ketones.
	6286-5	1	10 × 5 mL	
For Cell Coulometers without Diaphragm				
HYDRA-POINT Karl Fischer Coulometric Vessel Solution, For Diaphragmless Cell, Chloroform-Free	6285-1	6	500 mL	Pyridine- and chlorocarbon-free vessel solution for coulometric analysis. For diaphragmless cell coulometers.
	6285-2	6	1 L	
HYDRA-POINT Karl Fischer Coulometric Oven Reagent	6287-1	6	500 mL	Halogen-free anolyte for Coulometric analysis. For diaphragmless cell coulometers.
	6287-2	6	1 L	

Key Factors to Consider in Karl Fischer Titration

- pH: pH 5–7 is ideal. Use acid, base or buffer if necessary.
- Aldehydes and ketones: use special reagents to prevent side reactions, which generate or consume water and prevent good endpoints.
- Sample size: choose a sample size that is large enough for precise determination, but not so large as to prolong the titration (or exceed the capacity of the buret), or exceed the capacity of the reagent or be insoluble. For volumetric, aim for 25 mg of water (for 10 mL burets). For coulometric, aim for 0.1 to 5 mg water.
- Frequency of solvent/working medium change: when the vessel is full, when the methanol content is < 25%, when the capacity of the solvent is exceeded (generally not more than 1 mg water per 1 mL methanol).
- Exclusion of background water: maintain desiccant tubes; and keep reagents dry, with good seals on instrument and reagent bottles.
- Pretitration/conditioning of working solution: solvent/working solution must be dry, but not over-titrated before the sample titration to avoid positive or negative bias to results. Some agitation of the titration vessel to capture moisture in the headspace during initial set-up will ensure best results.
- Dissolution of the sample: sample must be completely dissolved prior to the start of the titration to obtain accurate and reproducible



results. Choose the right solvent, allow sufficient time for dissolution (extract time), increase temperature and grind sample. Some samples may never dissolve and this is not a problem if occluded moisture is the analytical goal. Grinding samples may introduce moisture—know your sample.

- Conductivity: conductivity of the solvent and added sample has to be sufficient to support proper function of the electrodes in order to detect the endpoint and/or generate the iodine titrant (coulometric).



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