Supelco®
Analytical Products

Data Sheet

Item Number 188055 Water standard Oil

Standard for oil samples for coulometric Karl Fischer Titration (15-30 ppm) Aquastar®

The Aquastar® Water standard oil is a liquid water standard based on oil with a water content of 15 ppm–30 ppm. This standard is specially designed to measure the water content in oil samples. The batch-specific certificate of analysis states the water content measured by coulometric Karl Fischer Titration according to ISO 760 specifications.

This oil standard is used for ensuring the accuracy of Karl Fischer equipment according to ISO 9001 chapter 7.1.5 “Monitoring and measuring resources” of coulometric Karl Fischer Titrators. The Aquastar® Water standard oil is suitable for the direct as well as the indirect coulometric water determination.

This standard is not suitable for the volumetric titration due to the low water content.

Handling recommendations:

Coulometric Titration:

Titration parameters:

Titrator: Default titration settings
(refer to your instruction manual)

Stirring time: 180 seconds

Weigh in quantity: approx. 1-2 g

Procedure:

The Karl-Fischer reagent (100 mL) is placed into the titration cell. The coulometer is started, and the solvent is titrated dry. After preliminary titration and stabilization of drift the Aquastar® Water standard oil is injected into the titration cell with a syringe (exact sample weight determination by weighing of syringe before and after injection) and the water determination is started.

KF oven technique:

The KF oven technique can be applied in combination with coulometric KF titration. The sample is heated to the chosen extraction temperature and the released water is transferred by a dry air or nitrogen gas stream into the titration vessel.

Titration parameters:

Titrator: Default titration settings (according to instrument manufacturer)

Extraction time: min 300 seconds

Extraction temperature: 120–160° C

Weigh in quantity: approx. 3 g

Procedure:

The Karl-Fischer reagent (150–200 mL) is placed into the titration cell. The coulometer is started, and the solvent is titrated dry. After preliminary titration and stabilization of drift the series of measurements is started by determining the blank value for the sample vials.

The Aquastar® Water standard oil is weighed into a sample vial, which is capped tightly immediately afterwards. The vial is either manually or automatically placed into the KF oven and heated according to the chosen temperature program. The water hereby released is transferred to the titration cell by means of a gas stream (dry air or nitrogen) and coulometrically analyzed.

Note:

In this case the filling volume of the vial must be considered. Because of the high weigh-in quantity the blank value should be corrected. During the measurement of liquids, the oven needle can stay over the solution or can immerge into the solution. If the needle immerges into the solution, it is necessary to clean it after 5 to 10 measurements to prevent plugging. In comparison with the direct coulometric titration, the measuring results of the oven technique are slightly more unsteady. Therefore, we recommend accepting an absolute deviation of ± 5ppm from the batch specific certified water content.

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Merck KGaA
Frankfurter Strasse 250
64293 Darmstadt, Germany

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