



Solvents Karl-Fischer Titration

In recent years many publications described the application of ionic liquids in analytical chemistry. The combination of unique properties, in particular the good ability to dissolve a number of organic and inorganic materials and their negligible vapor pressure, offers a large field of new applications.

Karl-Fischer titration

The determination of water in a broad variety of different samples is of great importance in many areas of industrial analytics such as food industry, pharmaceuticals and fine chemicals. The most common method for the quantitative determination of the water content of a sample is either volumetric or coulometric titration according to the Karl-Fischer procedure. The equipment for the titration process includes a automatic titrator, special reagents for the titration and a water-free solvent that is able to dissolve many different substances completely (Right: KFT Titrimo from IOLITEC's partner Metrohm).



The limiting factor in many cases in pharmaceutical and food industry is the poor solubility of the analyte. For this reason huge efforts are undertaken in sample preparation to determine the water content by indirect methods. IOLITEC has developed a method that takes advantage of the manifold solvent properties of ionic liquids in matters of Karl-Fischer titration, especially to enable the determination of water content of materials that are almost insoluble in conventional solvents^[1]. Even though the classic solvents are applicable for a wide range of materials there are still problems in the analysis of food, pharmaceutical and polymer samples which can only be solved by introducing new Karl-Fischer solvents.

For a number of examples (e.g. cheese, nuts or some polymers) IOLITEC has demonstrated that these materials can be dissolved completely in our innovative Karl-Fischer solvents. As a consequence, it is possible to determine the water content directly without expensive preparation procedures of the samples.

IoLiTec offers three different solvent systems for Karl-Fischer titrations in quantities of 500 g and 1 kg.

Product Code	Compound	Quantities
KF-HydroPro-010	Hydrophilic solvent for Karl-Fischer titration, purity >99%	500g / 1 kg
KF-HydroPro-020	Hydrophilic solvent for Karl-Fischer titration, purity >99%	500g / 1 kg
KF-Hydropro-030	Hydrophobic solvent for Karl-Fischer titration, purity >99%	500g / 1 kg

References:

[1] A. Bösmann, T. Schubert, IOLITEC GmbH & Co. KG, **2004**, DE102004025756.