



Revolutionary automation of Karl Fischer water determinations right down to the trace level.

Az Ön viszonteladója:



A new concept opens up attractive applications

With the 774 Oven Sample Processor Metrohm presents a revolutionary new sample changer. It allows the application of the KF oven method to a series of liquid or solid samples. Combined with a coulometric or volumetric KF titrator, the Oven Sample Processor forms the ideal analysis system for the automatic determination of water in samples that contain interfering components or release their moisture only reluctantly. Typical examples are

- crude oil and oil products such as hydraulic oil, multigrade oil or used motor oil as well as
- organic amines, toners, plastics, pharmaceuticals, foodstuffs and freeze-dried products (lyophilisates).

Convincing advantages

Compared with a conventional KF drying oven the 774 Oven Sample Processor offers many advantages:

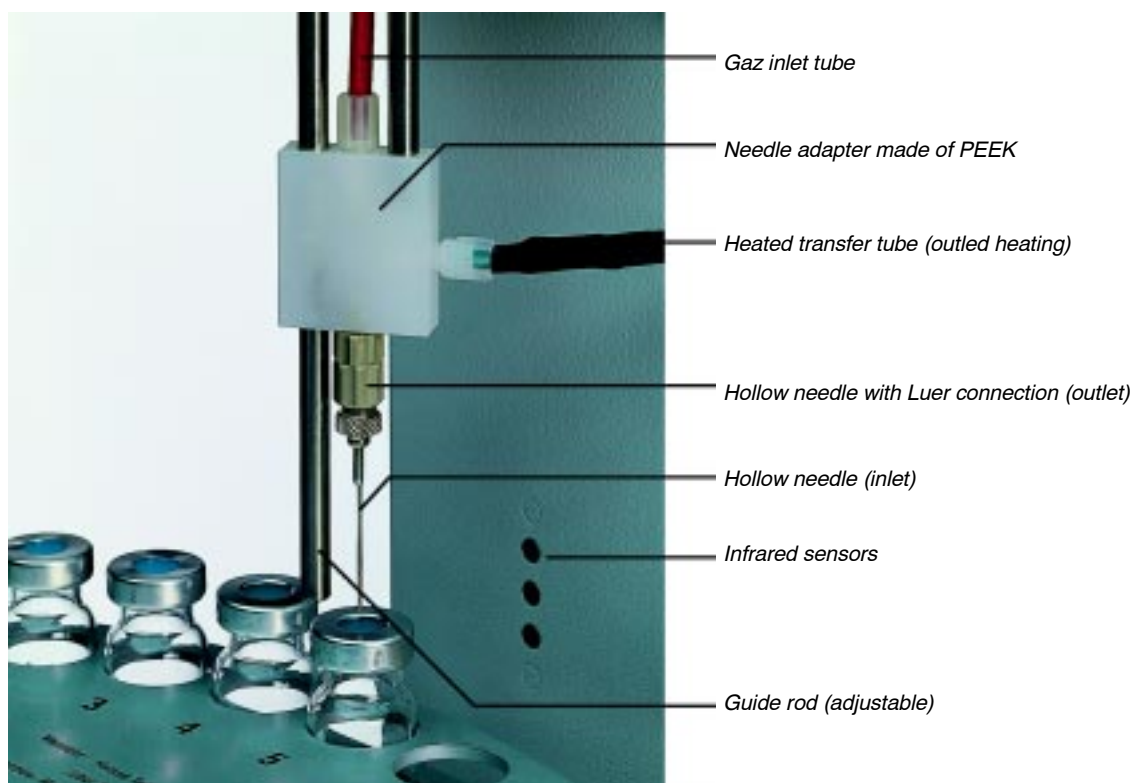
- The automation of the water determination means a considerably increased sample throughput and increased efficiency.
- Considerable savings in time.
- Manual sample preparation is reduced to a minimum.
- No contamination of the oven and titration cell; this means that there are no carryover or memory effects.
- Identical and reproducible analysis conditions for all samples; this is shown by the considerably improved precision of the results.
- Much lower reagent consumption as the titration solution only requires changing at infrequent intervals.
- Improved water release from the sample as the carrier gas does not pass over the sample but is led directly through it.
- The use of hermetically sealed sample vessels means that the samples can be transferred into the vials directly from where they are taken. The PTFE-coated septa guarantee a constant and unadulterated water content even after longer storage periods.



The new 774 Oven Sample Processor with the 756 KF Coulometer.



Instead of a KF Coulometer a volumetric KF titrator can also be used for the water determination; the new 784 KFP Titrino is shown here. The crimping tool in the foreground, a standard accessory, is used for sealing the sample vials.



Detail of the double needle system. The carrier gas takes up the water released by the sample and is then led to the titration cell via the heated transfer tube.

The 774 Oven Sample Processor's tower is equipped with beaker sensors based on infrared light for detecting whether a sample vial is present.

Sophisticated construction

The Oven Sample Processor is characterised by its extremely compact design. The oven heating block, gas pump, solenoid valve, flow meter and flow controller as well as a drying bottle are already built in. The turntable accommodates 35 sample vessels plus one conditioning vessel. If the «20 mm Headspace Vials» are used the maximum sample volume is 7 mL. Airtight sealing of the vials with PTFE-coated septa ensures that the samples do not take up water from the ambient air.

Simple sample preparation

Sample preparation could not be easier and consists of weighing the sample into the sample vial, sealing it with the crimping tool and then placing it in the rack of the sample changer. Contaminating samples present no problem as contamination is restricted to the particular sample vial. Neither the titration cell nor the oven become contaminated; carryover effects therefore do not occur. All samples are analysed under identical and reproducible conditions, which ensures results of the highest precision. Rapid and precise determination of trace amounts of water in critical matrices – no problem with the new 774 Oven Sample Processor.

Refined methodology

The vial containing the sample to be analysed is moved by the turntable to the appropriate position above the oven and then lowered into the heating block. A double hollow needle pierces the septum of the sample vessel. A stream of dry carrier gas (air or inert gas) is led through the heated sample via the inlet needle, which reaches down to the bottom of the vessel. The carrier gas containing the released moisture flows through the outlet needle and then through a heated transfer tube directly into the titration cell, which is mounted on the chassis of the 774 Oven Sample Processor together with a 728 Magnetic Stirrer. Depending on the water content of the sample, the subsequent KF water determination can be carried out either volumetrically or, at the trace level, coulometrically.