

874 USB Oven Sample Processor



Automatic thermal sample preparation for
Karl Fischer titration

Principle of the oven method

02

The oven method is suitable for samples that release their water only at high temperatures, are difficult to dissolve or react with the KF reagent.

Sample preparation is very simple. The substance to be analyzed is weighed out into a sample vial, which is hermetically sealed with a septum and placed on the rack. The sample vial is heated in an oven to release the water from the sample. A double hollow needle pierces the septum and a stream of carrier gas transports the moisture to the titration cell for subsequent determination.

The advantage of the oven method is that the sample itself does not get in contact with the KF reagent. This prevents contamination of the oven and the titration cell, which means that there is no risk of carryover or memory effects. Possible contamination is confined to the sample container alone.

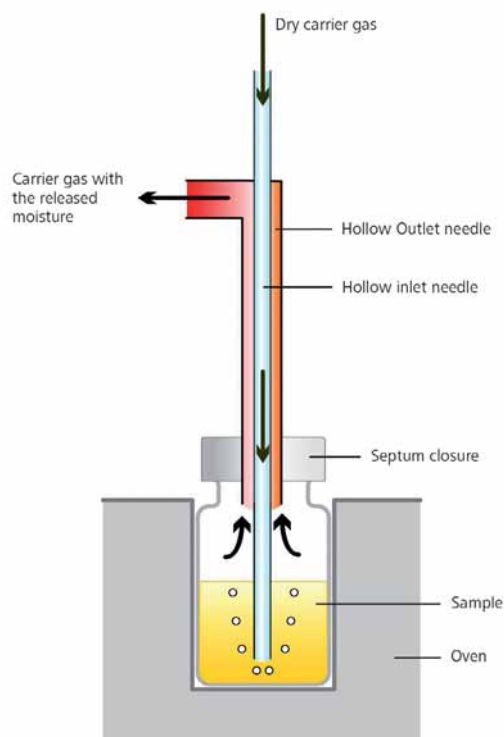
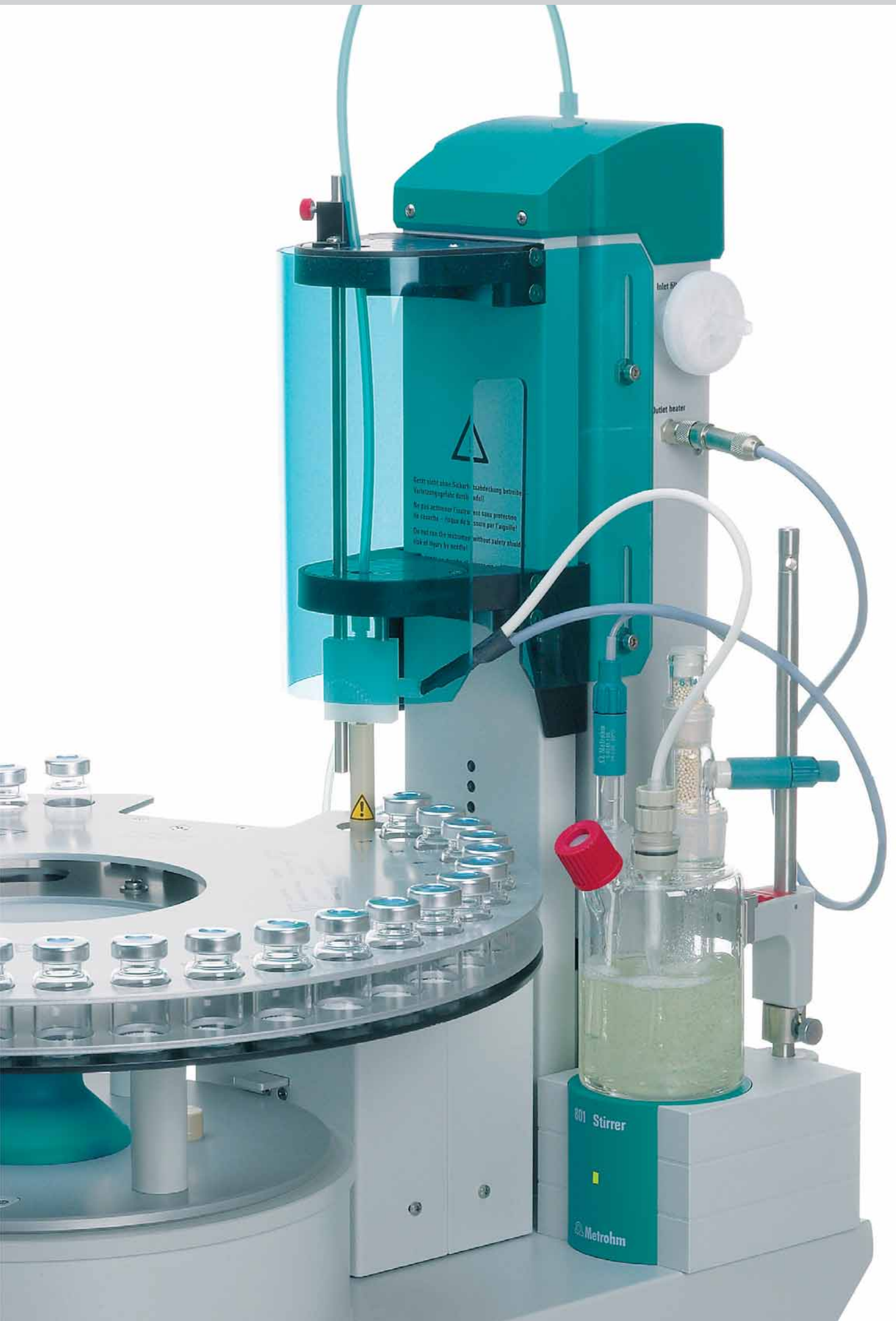


Diagram of oven method

Advantages of the 874 USB Oven Sample Processor

- The 874 USB Oven Sample Processor is simply connected to the USB port of a computer and is automatically recognized.
- Use your own sample vessels. The oven and the rack can be adjusted to different sample vials.
- An 800 Dosino can be connected directly to the MSB port of the 874 USB Oven Sample Processor and used with a Dosing Unit for automatic replacement of the reagent.
- The optimum oven temperature for every sample can be determined with the temperature gradient.
- A heated transfer tube ensures that the moisture is completely transferred to the titration cell.



High flexibility

You want to work with your own sample vessels?
No problem at all.
The oven and rack can be adjusted to fit your sample vessels.



Automatic reagent change – safe handling of toxic reagents

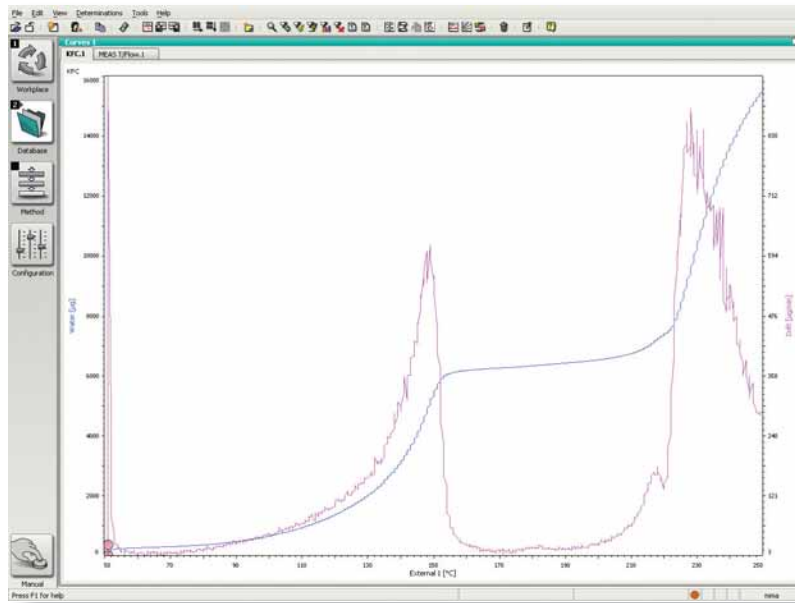
The 874 USB Oven Sample Processor has three MSB ports. In addition to the stirrer, Dosinos and Dosing Units can be connected to the Sample Processor. This allows spent reagent to be removed automatically from the titration cell and the cell to be filled with fresh titration medium. Because the titration cell is not opened, moisture absorption from the atmosphere is reliably pre-

vented. This means that the conditioning time of the fresh reagent is very short and you save valuable time and also avoid direct contact with toxic reagents. Reagent change can be triggered by limits related to the number of analyses, the age of the reagent, its water capacity or the drift value.

Optimum heating temperature with temperature gradient

The optimum heating temperature is always a question with unknown samples. The temperature should always be high enough to ensure that the water enters the titration cell as quickly as possible. However, the sample must not decompose, because decomposition products may

falsify the results. With the 874 USB Oven Sample Processor you can record the heating curve of an unknown sample. This curve can be used to determine the optimum temperature for the analysis.



Example of a heating curve



Coulometry or Volumetry?

06

Once the moisture from the sample has been transferred to the titration cell, the water content is determined. This can be done by coulometric or volumetric Karl Fischer titration.



Coulometric titration – 874 USB Oven Sample Processor with 831 KF Coulometer



Volumetric titration – 874 USB Oven Sample Processor with 841 Titrand

Order Information

- 2.874.0010 874 USB Oven Sample Processor for 6-mL sample vessels incl. **tiamo™** full
2.874.0020 874 USB Oven Sample Processor for special sample vessels incl. **tiamo™** full

07

Optional Accessories

- 2.756.0110 756 KF Coulometer
2.831.0110 831 KF Coulometer
2.841.0010 841 Titrande
2.851.0110 851 Titrande
2.852.0150 852 Titrande
2.890.0210 890 Titrande with **tiamo™** light
6.1448.050 Aluminum septum seal, 1000 units
6.2419.000 Sample vessel 6 mL, 1000 units



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