

# aqua 40.00 Vario Head Space Module

## Product description

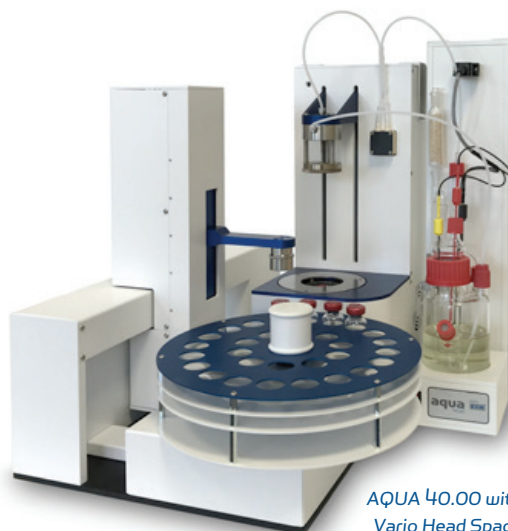
The combination of the Karl Fischer Titrator AQUA 40.00 and the headspace technique offers a wide range of interesting applications to determine moisture in solid and pasty samples, oils and viscous compounds.

It does not require time-consuming sample preparation: Weigh the sample in a headspace vial, close and seal the vial, and then start the analysis. The analysis procedure starts with heating up the sample up to a temperature set prior. The carrier gas transports the released water vapor from the sample into the measuring cell where the moisture is titrated.

With the unique advantage of the system using the closed-loop-carrier gas circulation, any additional gas drying is no longer necessary. Hence, the carrier gas is continually titrated to dryness within the closed loop. The total dryness of the gas enhances the moisture release and sensitive samples can be heated out very gently. All these advantages result in reducing reagent consumption considerably.

Furthermore, temperature-programmed heating procedure and temperature scans can be defined individually by the user. Such a temperature program reveals in which way the moisture in question is bonded to the sample substance. You can distinguish between chemically bonded water of crystallization and adsorbed surface water.

The manual version of Vario Head Space Module can be easily extended to the fully automated version with autosampler. The modification for other sample vials is quickly and comfortably – just by changing the oven unit and the sample rack - with automatic ID and storage of all adjustments in defaults.



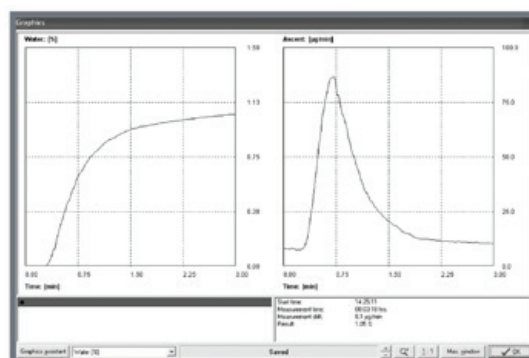
*AQUA 40.00 with  
Vario Head Space  
Module and autosampler*



*AQUA 40.00 with Vario Head Space  
Module (manual version)*

## Applications

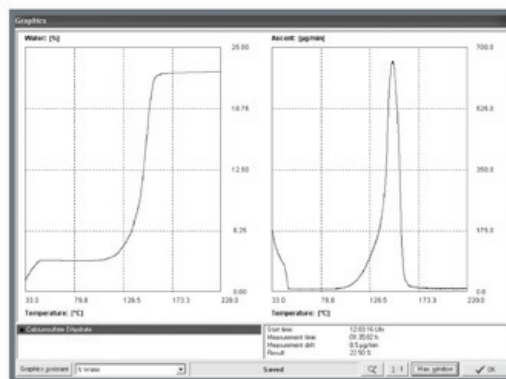
- Pharmaceutical products
- Biological substances
- Plastics
- Hygroscopic compounds
- Freeze-dried products, e. g. lyophilized cultures
- Oils and lubricants
- Viscous materials (bitumen, tar, sludges)
- Powder and pellets
- Food
- Petrochemicals



*Typical measurement with isothermal heating*

## Advantages

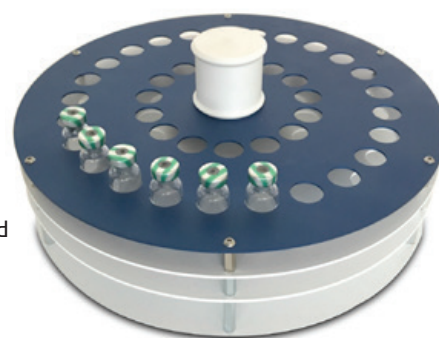
- Reduced reagent consumption
- Gas drying is not required due to closed-loop carrier gas circulation
- No evaporation of methanol from reagents
- Temperature programmed procedures
- Short measuring times of complex samples
- Stand-by titration for automated conditioning and easy blank tests
- Suitable for 2 R - 50 R vials
- Easy automation with autosampler
- Software with user-specific access, routine methods for individual and definable user levels, profound documentation and archiving of all measured data
- Software complies with requirements of FDA to 21 CFR Part 11
- Prioritized express samples can set individually by user
- Automatic identification of sample rack



Heating with temperature program

## Principle

- Filling and sealing of vials right after sampling in the laboratory or in the field
- Analysis without sample preparation
- Sample is heated up without contact with environment
- Short measuring time due to closed loop gas extraction



Interchangeable sample rack for different vial sizes

## Specifications

Sample vial:	head space vials (size 2 R – 50 R)
Measuring range:	1 g - 100 mg, absolute
Resolution:	0.1 µg
Reproducibility:	± 3 µg for 10 ... 1000 µg, 3 % for > 1 mg
Temperature range:	35 °C ... 300 °C (isothermal or temperature programmed)
Power supply:	230 V, 50/60 Hz; 115 V, 50/60 Hz
Power input:	250 W
Dimensions/Weight:	Manual version: 300 x 450 x 240 mm (W x H x D)/7 kg Autosampler version: 420 x 450 x 460 mm (W x H x D)/17 kg



Interchangeable oven unit for different vial sizes

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