

# AQUA 40.00

## with Headspace Module

### Use

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.

### Working Principle

It doesn't need time-consuming sample preparation. Weigh the sample into a headspace vial, close and seal the vial, and administer it into the AQUA 40.00 headspace oven. The analysis procedure starts by heating up the sample to a temperature set prior to analysis. A carrier gas current transports the liberated moisture into the measuring cell where the moisture is titrated.

One unique advantage of the system is the closed-loop carrier gas circulation. This makes any additional gas drying unnecessary: the carrier gas is continually titrated to dryness within the closed loop. The total dryness of the gas enhances the moisture liberation, and sensitive samples can be heated out very gently.

Moisture liberation becomes possible even at ambient temperature. All these advantages add to a drastically reduced reagent consumption.

What's more, temperature-programmed heating-out procedure 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, adsorbed surface water, or water formed by other chemical reactions.

This unique heating-out method provides for a new quality to characterize pharmaceutical products, biological substances, lyophilized cultures, hygroscopic compounds, oils and viscous material.

### Design

The modular AQUA 40.00 is characterized by its compact and robust design:

#### Manual System



The AQUA 40.00 basic module is coupled with a headspace oven. This system is especially suitable for single measurements. The sample vial is administered into the electric headspace oven manually by the user.

#### Automated System



The manual system is coupled with a 30 position-autosampler to automate the procedure. The samples can be analyzed in any order. The user can also set prioritized express samples.

## Convince yourself of this system

- Filling and sealing of vials right after sampling in the field
- Reduced reagent consumption and no gas drying due to closed-loop carrier gas circulation
- Easy automation with autosampler
- Isothermal or temperature-programmed heating procedure
- Gentle heating-out of unstable samples at room temperature
- Frequent system check with standards before, during and after measurement series
- Stand-by titration for automated conditioning
- Easy blank tests
- Software automatically recognizes current configuration and offers the relevant commands and options
- Software with user-specific access, routine methods for individually definable user levels, profound documentation and archiving of all measured data
- Software complies with FDA 21 part 11 requirements
- Priorized express samples can set individually by user
- Wide range of applications, e. g. pharmaceutical products, freeze-dried products, food, mineral oil, oil derivatives, used motor oils, and many more

## Technical Specification

Temperature range:	ambient temp. - 300° C
Oven performance:	100 W
Sample vials:	40 mm (H) x 22 mm (diameter)
Seal:	PTFE covered silica sept and aluminum cap
Sample volume:	5 ml or less (through adapter)
Capacity:	30 sample vials + 1 position for blank test
Electric power:	110 or 230 V, 50...60Hz
Dimensions:	55 cm (L) x 55 cm (W) x 50 cm (H)