

VAPODEST® 500 – Fully automated Kjeldahl analysis work steps in a single apparatus

# KJELDAHL DISTILLATIONS FULLY AUTOMATED



## COST-EFFECTIVE

Less time spent at the apparatus changing tubes

## EFFICIENT

Automatic autosampler for large range of samples

## FLEXIBLE

Create your own program libraries for different samples

## TRANSPARENT

Powerful control and data processing software

Automatic steam distillation with

# VAPODEST® 500

C. Gerhardt presents the new top-of-the-range model of the world's most successful VAPODEST® distillation systems. VAPODEST® distillation units are the first choice for laboratories looking for safe, reliable and flexible equipment that provides interactive guidance for analyses and guidelines and fulfils the most stringent data management requirements. Provides standard-compliant results in accordance with DIN EN ISO, AOAC, EPA, ASTM, EU Directives, APHA, etc.

## CONVENIENT

- + Automatic calculation of results
- + Up-to-date and intuitive operation
- + Quick start thanks to predefined methods and favourites list
- + Integrates into the existing network with the "C. Gerhardt Dashboard"
- + Automatic transfer of sample data to LIMS from all conventional peripheral equipment
- + Data recording in accordance with ISO 9001, 17025, GLP
- + Illuminated glass components for continuous visual inspection of the analyses process
- + Programmable addition of NaOH, H<sub>2</sub>O and H<sub>3</sub>BO<sub>3</sub> and extraction of chemical residues

## RELIABLE

- + Designed for high sample throughput rates and continuous operation
- + Maintenance-free steam generator
- + High quality, chemical-resistant components
- + First-class maintenance and service concept in a complete package

## COST-EFFECTIVE

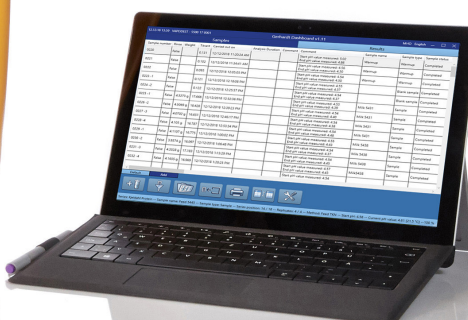
- + Titration during distillation reduces the analysis time: less time spent at the apparatus changing tubes
- + Stand-by mode saves energy – the next analysis can start at any time
- + Resource-saving cooling water management
- + Choice of method libraries

## SAFE

- + Intelligent monitoring of the cooling water supply, position of the sample tube, function of the steam generator and fill level of the chemicals tanks
- + Components meet highest safety standards
- + Soft-start function for containing strong reactions and for managing crystallised samples
- + Level control sensors (optional) match standard 5 l, 10 l and 20 l tanks: no need for dangerous decanting of chemicals

## FLEXIBLE

- + Maximum freedom with the range of samples: sample tubes from 100 to 1,200 ml and Kjeldahl flasks from 250 to 750 ml can be used
- + For all conventional Kjeldahl methods and analyses of ammonium, nitrate, TVBN, non-protein
- + Different operator levels



C. Gerhardt Dashboard –

### EASY OPERATION AND DATA INTEGRITY

The Dashboard makes entering and then analysing sample data easy. The data are transferred to the VAPODEST® 500 via the network.

- ✦ VAPODEST® 500 can be integrated into any network via LAN
- ✦ Any number of devices can be connected to the Dashboard
- ✦ Easy data entry and sample evaluation
- ✦ Clear user management with unique permissions
- ✦ Use of all network devices (printers, scales, LIMS, bar code scanners etc.)
- ✦ Data can be imported and exported to and from LIMS
- ✦ Data processing meets requirements of GLP, ISO 17025



## VAPODEST® 500 C

### FULLY AUTOMATED DISTILLATION SYSTEM WITH AUTOSAMPLER

Distillation system with automatic sample feed for fully automated analysis process with up to 20 samples. The sample tubes are taken directly out of the autosampler and fed directly into the VAPODEST® 500 distillation system. The robust and pneumatic technology is extremely reliable during processing. All the functions are monitored continuously by a diagnostic system.

#### CONFIGURATIONS

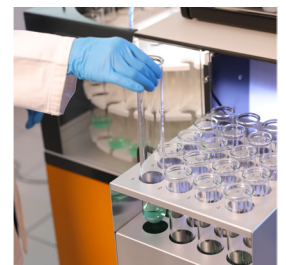
Different sample tube sizes are possible if different carousel inserts are used (optional), e.g.:

- ✦ 20 x 250/300 ml tubes
- ✦ 20 x 400 ml tubes (KDD or BS tubes)

The inserts are easy to remove for changing or cleaning.

#### OPERATION

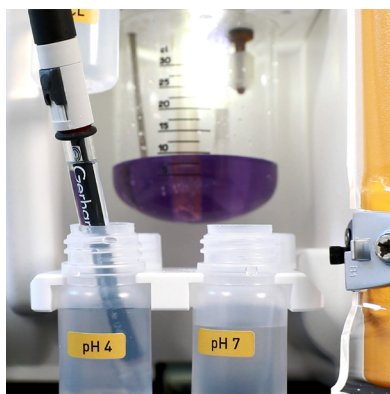
The samples follow a short and safe route: to transfer the samples to the carousel, the insert rack can be set down on a stable loading flap.



#### STORAGE TANKS

The fill level of the chemical tanks and sample waste tanks is monitored continuously. The tanks are kept in a tidy, space-saving, lockable drawer.





## TITRATION = PRECISION WORK

The integrated titration unit evaluates the analysis by means of a pH combined electrode and potentiometric automatic endpoint determination. The titration solution is dosed using an almost wear-free, high-precision calibratable micro dosing pump.

- ✦ Minimal flow rate deviation
- ✦ Virtually unlimited running time
- ✦ Flow rate can be calibrated
- ✦ Online titration for quicker analyses
- ✦ Maximum precision and transparency of process parameters with pH measurement
- ✦ Automatic endpoint detection for each sample, so there is no need for daily calibration

## ACCESSORIES

Tanks, level control sensors for tanks, catalyst tablets, sample tubes in various sizes and further accessories are available on request.

## APPLICATIONS

Benefit from our analytical experience and our comprehensive C. Gerhardt application database.

## SERVICE

We offer a full service, all-inclusive package with a preventive maintenance concept. Our authorised, optimally trained C. Gerhardt representatives carry out servicing and maintenance on your C. Gerhardt analysis system in line with our guidelines.

## TECHNICAL INFORMATION

Details	VAP 500 / VAP 500 C
Integrated titration	Yes
Gerhardt Dashboard, program for data management	Yes
Variable steam power	0–100%
Display size of touch display	7", resolution 480x800 pixel
Resource-saving stand-by mode	Yes
Distillation time / sample	2–4 min.
Recovery	> 99.5%
Reproducibility	± 1%
Detection limit	0.1 mg N absolute
Automatic addition of H <sub>3</sub> BO <sub>3</sub> , H <sub>2</sub> O, NaOH	Yes
Automatic extraction of samples/receivers	Yes
100, 250, 400, 800 and 1,200 ml digestion tubes possible	Yes
250 ml, 500 ml and 750 ml Kjeldahl flasks possible	Yes
Connection for fill level monitoring of set of tanks	Yes
Fill level monitoring of tanks	Optional/standard VAP 500C
Cooling water pressure	0.5–6 bar
Nominal voltage*	230 V, 50/60 Hz
Power consumption	2,200 W/2,300 W
Weight	approx. 44 kg/205 kg
Dimensions VAP 500 (W x D x H)	527 x 390 x 697 mm
Dimensions VAP 500 C (W x D x H)	960 x 600 x 1,670 mm
Predefined methods	Yes
Customer defined methods	Yes
Pump calibration	Yes
Article number VAPODEST® 500	12-0500
Order no. VAPODEST® 500 C for 20 x 250/300 ml tubes	12-0510
Order no. VAPODEST® 500 C for 20 x 400 ml tubes	12-0513

\*Further rated voltages upon request

For more information and details, see our in-depth product data sheet

Est. 1846  
C. Gerhardt



EN ISO  
9001:2015



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