



## VAPODEST all systems in comparison - standard configuration

	VAP 200	VAP 300	VAP 400	VAP 450 without titrator	VAP 450 with titrator
Multi Touch Sensitive Screen 7"	●	●	●	●	●
Programmable addition H <sub>3</sub> BO <sub>3</sub>			●	●	●
Programmable addition H <sub>2</sub> O		●	●	●	●
Programmable addition NaOH / reagent	●	●	●	●	●
Programmable reaction time	●	●	●	●	●
Programmable distillation time	●	●	●	●	●
Programmable steam power 10 - 100 %	●	●	●	●	●
Programmable suction of sample waste		●	●	●	●
Programmable suction of the receiver				●	●
Selection of language	●	●	●	●	●
Different user levels	●	●	●	●	●
Optical and acoustical error messages	●	●	●	●	●
Method data base	●	●	●	●	●
Programmable methods	●	●	●	●	●
Connection for external keyboard	●	●	●	●	●
Connection for external PC-mouse	●	●	●	●	●
Automatic check of chemical reservoir	●	●	●	●	●
Kjeldatherm digestion tubes can be used <sup>1)</sup>	●	●	●	●	●
Kjeldahl flasks can be used <sup>1)</sup>	●	●	●	●	●
Titration with external CG titrator possible				●	●
Titrator included the delivery					1 x
USB-interface on the front side	1 x	1 x	1 x	1 x	1 x
USB-interface on the back	2 x	4 x	4 x	4 x	4 x
Ethernet-interface on the back	1 x	1 x	1 x	1 x	1 x
RS-232 interface on the back		1 x	1 x	1 x	1 x
Tubing set complete	1 x	1 x	1 x	1 x	1 x
KJELDATHERM-digestion tube, 250/300 ml	1 x	1 x	1 x	1 x	1 x
Buffer solution pH 7, 250 ml					1 x
Buffer solution pH 4, 250 ml					1 x
KCl electrolite solution, 250 ml					1 x

● = Standard configuration

1) = see digestion tubes and Kjeldahl-flasks on page 3

**TECHNICAL DATA**

Type	VAP 200	VAP 300	VAP 400	VAP 450 without titrator	VAP 450 with titrator
Cooling water consumption [l/min]	2 / 5 / 7	2 / 5 / 7	2 / 5 / 7	2 / 5 / 7	2 / 5 / 7
Cooling water pressure [bar]	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6
Distillation time [min]	2 - 4	2 - 4	2 - 4	2 - 4	2 - 4
Recovery rate [%]	> 99,5	> 99,5	> 99,5	> 99,5	> 99,5
Reproducibility [%]	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1
Detection limit N [mg]	0,1	0,1	0,1	0,1	0,1
Nominal voltage [VAC]	230 / 115	230 / 115	230 / 115	230 / 115	230 / 115
Frequency [Hz]	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60
Nominal wattage [W]	2200	2200	2200	2200	2200
Weight [kg]	~ 35	~ 37	~ 38	~ 38	~ 40 <sup>1)</sup>
Dimensions W / D / H [mm]	527 / 390 / 697	527 / 390 / 697	527 / 390 / 697	527 / 390 / 697	527 / 390 / 697

1) incl. Titrator

**ORDER INFORMATION**

Type	VAP 200	VAP 300	VAP 400	VAP 450 without titrator	VAP 450 with titrator
Version Standard, 230 V complete with tubing set	12-0520	12-0530	12-0540	12-0550	12-0545
Version Acid resistant, 230 V Equipped with acid resistant pumps <sup>1)</sup>	12-0522	12-0532	12-0542	12-0557	12-0547
Version Standard, 115 V complete with tubing set	12-0620	12-0624	12-0628	12-0632	12-0636
Version Acid resistant, 115 V Equipped with acid resistant pumps <sup>1)</sup>	12-0622	12-0626	12-0630	12-0634	12-0638

1) special for dosing of phosphoric acid max. 85 % and hydrochloric acid max. 5 % - more acids on request

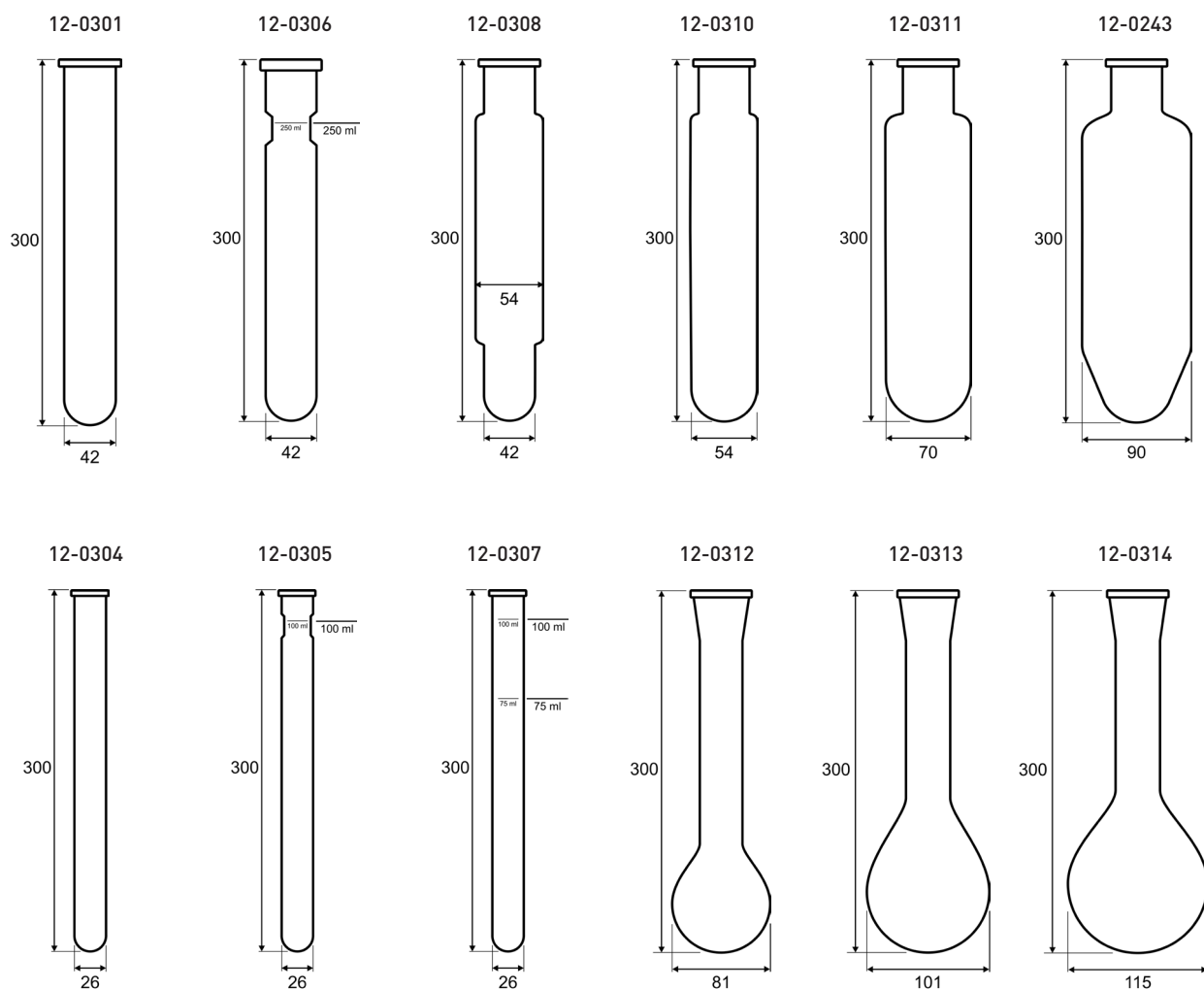
## CONSUMABLES AND ACCESSORIES

Make sure to use only original C. Gerhardt spare parts in order to obtain the best possible results. These parts have been tested thoroughly for the operation with VAPODEST in the C. Gerhardt application lab.

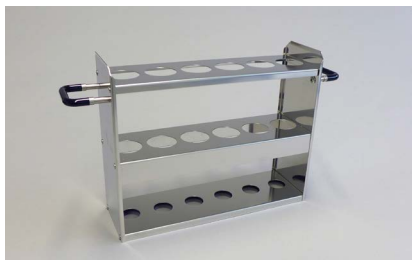
### KJELDAHL-DIGESTION TUBES AND KJELDAHL-FLASKS

Depending on sample type and sample quantity VAPODEST can use a lot of Kjeldahl-digestion tubes as well as Kjeldahl-flasks. All tubes are made of high standard Duran material.

Order No.	Type	Description
12-0301	KTG	KJELDATHERM-digestion tube, macro 250/300 ml - 10 pcs
12-0306	KTG/E	KJELDATHERM-digestion tube, macro 250/300 ml, with constriction + calibrated at 250 ml
12-0308	BS-400	KJELDATHERM-digestion tube, 400 ml, diminished
12-0310	KDD400	Jumbo-digestion tube 400 ml - 4 pcs
12-0311	KDD800	Jumbo-digestion tube 800 ml - 4 pcs
12-0243	KDD1200	Jumbo-digestion tube 1.200 ml
12-0304	KMT	KJELDATHERM-digestion glas, micro 100 ml - 10 pcs
12-0305	KMT/E	KJELDATHERM-digestion glas, micro 100 ml with constriction + calibrated at 100 ml
12-0307	KMT	KJELDATHERM-Glas, mikro 100 ml, calibrated at 100 ml + 75 ml
12-0312	KD250	Kjeldahl-flask 250 ml, with enlarged neck
12-0313	KD500	Kjeldahl-flask 500 ml, with enlarged neck, 4 pcs
12-0314	KD750	Kjeldahl-flask 750 ml, with enlarged neck, 4 pcs



Insert racks for digestion tubes



Insert racks made of stainless steel, best for collecting the single digestion tubes, e.g. for direct distillation.

Order No.	Type	Description
12-0269	EG625	Insert rack 6-place for tubes 250 ml
12-0273	EG125	Insert rack 12-place for tubes 250 ml
12-0271	EG440	Insert rack 4-place for tubes 400 ml
12-0272	EG480	Insert rack 4-place for tubes 800 ml
12-0277	EG12-100	Insert rack 12-place for tubes 100 ml

Tank level control



Tank level control 1005098

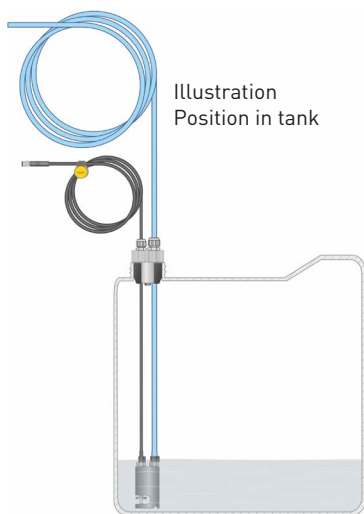


Illustration  
Position in tank

Order No.	Type	Description
1005098	ID8	Tank level control for <b>Reagent-storage tank</b> , incl. cable labels for clear identification, suitable for tanks with the following dimensions: - Height = min. 130 mm... max. 2000 mm - Filler neck = min. Ø 40 mm... max. Ø 50 mm
1005721	PA8	Tank level control for <b>sample waste storage tank</b> , incl. cable labels for clear identification, suitable for tanks with the following dimensions: - Height = all tanks - Filler neck = min. Ø 47 mm... max. Ø 50 mm
12-0560	NIV200	Tank level control set for 2 Reagent-tanks, consisting of: - 2 x Tank level control no. 1005098
12-0561	NIV300	Tank level control set for 2 Reagent-tanks and 1 sample waste tank, consisting of: - 2 x Tank level control for reagent-tank no. 1005098 - 1 x Tank level control for sample waste tank, no. 1005721
12-0562	NIV400	Tank level control set for 3 reagent-tanks and 1 sample waste tank, consisting of: - 3 x Tank level control for reagent-tank no. 1005098 - 1 x Tank level control for sample waste tank, no. 1005721

Storage tanks



Order No.	Type	Description
1005849	KAN10	Tank made of HDPE, 10 L
1005850	KAN20	Tank made of HDPE, 20 L

**Connection stopper, Viton**



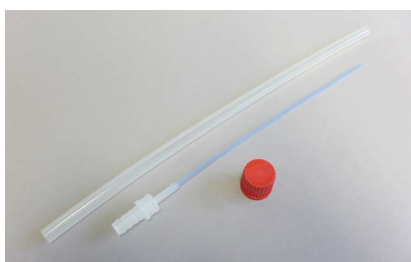
Order No.	Type	Description
12-0351		Viton-connection stopper, normal size

**Connection stopper, Micro**



Order No.	Type	Description
12-0352		Connection stopper VK, Isoversinic micro, special edition for the use of micro digestion tubes 100 ml

**Upgrade kit for alcohol determination**



Order No.	Type	Description
12-0241		Kit for alcohol determination: Special for alcohol determination, easy to mount

**Upgrade kit Büchi**



Order No.	Type	Description
12-0568		Adapter Set for Büchi tubes, suitable for all distribution heads VAP200-500, complete with: 1 x Viton-connection stopper, no. 12-0567 suitable for distribution heads with connection pipe $\varnothing$ 31 mm 1 x Viton-connection stopper, no. 12-0566 suitable for distribution heads with connection pipe $\varnothing$ 33 mm 1 x Viton-connection stopper, no. 12-0351 1 x Adapter PP-nature

**pH-combined electrode**



Order No.	Type	Description
12-0555	ET-KCL	pH-combined electrode KCl, require regularly filling with KCl
12-0355	ET-GEL	pH-combined electrode gel electrolyte, maintenance free

## Catalyst tablets



Order No.	Type	Description
12-0326	Se	KJELCAT-tablets, tin of 1,000 pcs 3.5 g $K_2SO_4$ + 0.0035 g Se
12-0328	Cu	KJELCAT-tablets, tin of 1,000 pcs 5.0 g $K_2SO_4$ + 0.5 g $CuSO_4 \times 5H_2O$
12-0329	CuTi	KJELCAT-tablets, tin of 1,000 pcs 5.0 g $K_2SO_4$ + 0.15 g $CuSO_4 \times 5H_2O$ + 0.15 g $TiO_2$
12-0336	Cu light	KJELCAT-tablets, tin of 1,000 pcs 5.0 g $K_2SO_4$ + 0.1 g $CuSO_4 \times 5H_2O$

## Antifoam tablets



Order No.	Type	Description
12-0332	AS	Antifoam extra tablets, tin with 1,000 pcs 0.97 $Na_2SO_4$ + 0.03 g silicone antifoam

## KCL and Buffer solution



Order No.	Type	Description
1000178		Electrolyte solution KCl
1000176		Buffer solution pH 4
1000177		Buffer solution pH 7

## Distribution head glass



Order No.	Type	Description
12-0587		Distribution head glass, standard version Length approx 230 mm

## Distillation condenser



Order No.	Type	Description
12-0551		Distillation condenser glass, standard version with connecting piece for ventilation valve
1000036		Ventilation valve for distillation condenser

PP-Distribution head kit



Order No.	Type	Description
12-0564		PP-distribution head kit, complete with: 1 x PP-Distribution head, No. 12-0553 1 x Distillation condenser, No. 12-0552 incl. Viton connection stopper and GL-screw caps

Tubings



Order No.	Type	Description
1000394		Water inlet tube 10/17, 2 m long, 90bar, 3/8 x 1/2" + 3/8 x 3/4"
1000047*		PVC-tubing, 8 x 12 mm
1000499		Verpren-tubing, 8 x 12 mm
1000567		PVC-pipe 400 mm long, 10,2 x 1,4 mm

\*length needed when order

GL-Screw caps + seals



Order No.	Type	Description
1004320		Screw cap GL14, nat. white
1004321		Screw cap GL18, nat. white
1004322		Screw cap GL 32, nat. white
1000358		Silicone seal GL 14 with connection, straight
1000356		Silicone-seal GL 18
1000357		Silicone-seal GL 32

Titration + Upgrade kit



Order No.	Type	Description
12-0565		Titration T5000 for connection to VAPODEST 450
12-0569		Upgrade kit for connection titration T5000 <b>Suitable for VAPODEST 450 up to serial number 5450170051</b> The upgrade kit contains all necessary accessories for the subsequent conversion of the VAPODEST 450, no. 12-0550, complete incl.: Holder for receiver, pH-electrode, cable for electrode, tubings and connection cables, fitting screws
12-0563		Upgrade kit for connection titration T5000 <b>Suitable for VAPODEST 450 as from serial number 5450170052</b> The upgrade kit contains all necessary accessories for the subsequent conversion of the VAPODEST 450, no. 12-0550, Scope of delivery identical with 12-0569

**ISOdoc-CREATOR**



Order No.	Type	Description
12-0584		ISOdoc-CREATOR, Software to create documents. VAPODEST-data transfer via USB-stick to a PC to create and print out ISO 17025-compliant documents. Delivery incl. USB-stick

**RECIRCULATING COOLER FL**



Order No.	Type	Description
10-0045	FL1201	Recirculating cooler 230 V / 50 Hz, 1200 W, for economical and environmentally friendly cooling water supply of VAPODEST
10-0047	FL1201	Identical to 10-0045, but in version 115 V / 60 Hz



## SUPPORT AND SERVICE

In addition to its high quality instruments, C. Gerhardt offers comprehensive services to maintain the functionality and efficiency of your equipment.

### INSTALLATION / EQUIPMENT QUALIFICATION

Selection	Type	Description
99-0201	ABI-VAP	Installation and Instruction VAPODEST - Installation and connection of the unit - functional check - operating instructions
99-0210	GQF-VAP	Equipment Qualification (IQ/OQ) VAPODEST - Installation of the unit and instruction - Installation <b>Q</b> ualification <b>I</b> Q and <b>O</b> perational <b>Q</b> ualification <b>O</b> Q, Guidance for <b>P</b> erformance <b>Q</b> ualification <b>P</b> Q - Training of laboratory personnel with certificate - Individual training certificates, if requested

### SERVICING AND MAINTENANCE CONCEPTS

For detailed information on servicing and maintenance concepts, please contact your local authorised C. Gerhardt representative.

### WORKSHOPS / SEMINARS / APPLICATIONS TRAINING

For detailed information on trainings and workshops, please contact your local authorised C. Gerhardt representative.

## APPLICATION SERVICE

The following listed applications are examples from our comprehensive application data base. Please contact your local C. Gerhardt representative or write to [application@gerhardt.de](mailto:application@gerhardt.de) to ask for one of the listed application data sheets or to ask for an application which is not yet listed.

### ANALYSIS OF FEED- AND FOODSTUFFS



Selection	Description
<input type="checkbox"/>	Non Protein content in Meat
<input type="checkbox"/>	Nitrogen in bread and rolls
<input type="checkbox"/>	Total Nitrogen in Raw Material for Breweries
<input type="checkbox"/>	Soluble Nitrogen Content Wort
<input type="checkbox"/>	Raw Protein Determination in Eggs
<input type="checkbox"/>	Total Protein in Margarine
<input type="checkbox"/>	Tomato puree and Ketchup
<input type="checkbox"/>	Nitrogen in Milk and Dairy Products
<input type="checkbox"/>	Nitrogen in Cream
<input type="checkbox"/>	Protein in Milk Powder
<input type="checkbox"/>	Non-Protein in Milk and Dairy Products
<input type="checkbox"/>	Raw Protein in Meat and Meat Products
<input type="checkbox"/>	Raw Protein in Grain and Grain Products
<input type="checkbox"/>	Raw Protein in Beer and Wort acc. to Lochner
<input type="checkbox"/>	Total Nitrogen in Sugar at very low N-content
<input type="checkbox"/>	Nitrogen in Starch
<input type="checkbox"/>	Nitrogen in Fish and Fish Products
<input type="checkbox"/>	Nitrogen in Chocolate
<input type="checkbox"/>	Total Protein in Fresh Yeast
<input type="checkbox"/>	Raw Protein in Feed
<input type="checkbox"/>	Volatile Acids in Wine
<input type="checkbox"/>	Sulphur Dioxide in Food
<input type="checkbox"/>	Sorbic acid in wine
<input type="checkbox"/>	TVBN in Fish and Fish Products
<input type="checkbox"/>	Vicinal Diketones in Beer
<input type="checkbox"/>	Alcohol in Beverages and Intermediates

### ENVIRONMENTAL ANALYTICS / OTHER



Selection	Description
<input type="checkbox"/>	Coagulated Nitrogen
<input type="checkbox"/>	Nitrogen Determination in Fertilizers with Nitrate
<input type="checkbox"/>	Fertilizers without Nitrate Content
<input type="checkbox"/>	Ammonium Determination in Fertilizers
<input type="checkbox"/>	Water soluble Ammonium nitrogen in Fertilizers
<input type="checkbox"/>	Determination of Nitrat and Ammonium Nitrogen fert
<input type="checkbox"/>	Total Nitrogen in Xanthan
<input type="checkbox"/>	Total Nitrogen in Water
<input type="checkbox"/>	Total Nitrogen in Soil
<input type="checkbox"/>	Total Nitrogen in Grass and Plant Material
<input type="checkbox"/>	Total Nitrogen in Coal
<input type="checkbox"/>	Phenol Index in Soils and Water
<input type="checkbox"/>	Ammonium in Solid Samples
<input type="checkbox"/>	Ammonium in Aqueous Samples
<input type="checkbox"/>	Nitrate in Aqueous Samples and Eluates
<input type="checkbox"/>	Total Cyanide in Water, Soil and Sludge
<input type="checkbox"/>	Volatile Organic Acids in Sludge
<input type="checkbox"/>	Total Formaldehyde in Aminoplast Adhesive

## TABLE OF CONFIGURATION

Please arrange the required system

### DISTILLATION SYSTEM / TYPE

Quantity	Order No.	Type	Description

### CONSUMABLES / ACCESSORIES

Quantity	Order No.	Type	Description

### SUPPORT AND SERVICE

Quantity	Order No.	Type	Description

Send offer to:

Customer No.	
Company	
Name	
Address	
Tel.	
E-Mail	
Web	

Presented by:

