



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_3BO_3			●	●	●
Programmable addition H_2O		●	●	●	●
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 ¹⁾	●	●	●	●	●
Kjeldahl flasks can be used ¹⁾	●	●	●	●	●
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
Average distillation time per sample [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 ¹⁾
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 ¹⁾	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 ¹⁾	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

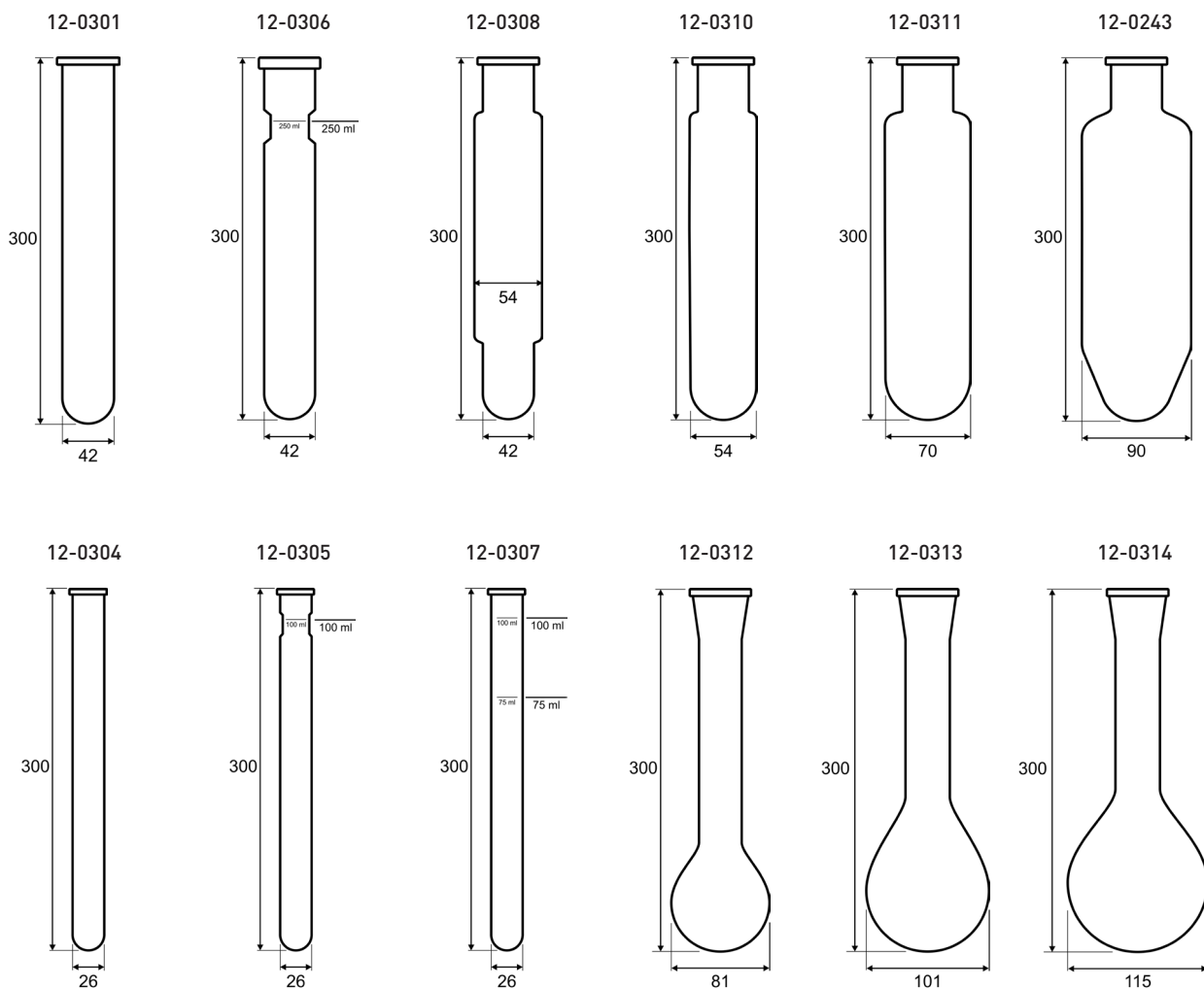
CONSUMABLES AND ACCESSORIES

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.

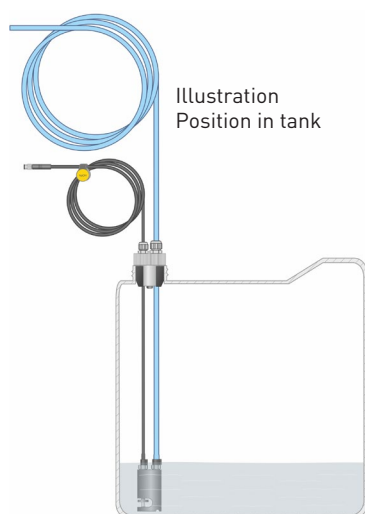
Order No.	Type	Description
12-0301	KTG	KJELDATHERM-digestion tube, macro 250/300 ml - 10 pcs
12-0306	KTG/E	KJELDATHERM-digestion tube, macro 250/300 ml, with constriction + calibrated at 250 ml
12-0308	BS-400	KJELDATHERM-digestion tube, 400 ml, diminished
12-0310	KDD400	Jumbo-digestion tube 400 ml - 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



Tank level control



Tank level control 1005098



Order No.	Type	Description
1005098	ID8	Tank level control for Reagent-storage tank , 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 sample waste storage tank , 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, Capacity 10 L Dimensions: 202 x 230 x 314 mm (Width x Depth x Height)
1005850	KAN20	Tank made of HDPE, Capacity 20 L Dimensions: 258 x 294 x 385 mm (Width x Depth x Height)

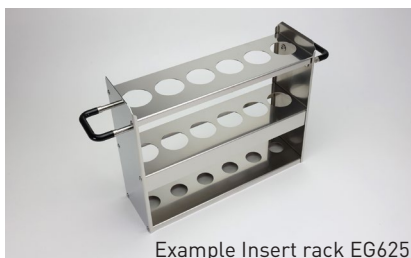
Labelling - Stickers



Order No.	Type	Description
1005823		Stickers for tank level sensors (cable banner), can be attached to the tubes. 12 Stickers: Reagent 1, Reagent 2, H ₂ O, NaOH, HCl, H ₃ BO ₃ , NDF, ADF, H ₂ SO ₄ , KOH, Sample Waste, Neutral
1005824		Stickers for tanks, can be affixed to any place on the tank. 12 Stickers: Reagent 1, Reagent 2, H ₂ O, NaOH, HCl, H ₃ BO ₃ , NDF, ADF, H ₂ SO ₄ , KOH, Sample Waste, Neutral

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
12-0593	EG6-1200	Insert rack 6-place for tubes KDD 1200 ml

Sealing plug for digestion tubes



Order No.	Type	Description
12-0412		Plug for cyanide determination. For effective sealing of Gerhardt digestion tubes type KTG, BS and KDD, e.g. for incubation in the determination of hydrogen cyanide in foodstuffs.

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 Büchi



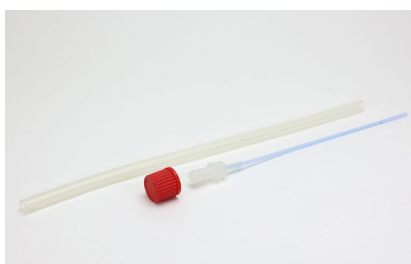
Order No.	Type	Description
12-0568		Adapter Set for Büchi tubes, suitable for all distribution heads VAP200-500, complete with: 1 x Viton-connection stopper, no. 12-0567 suitable for distribution heads with connection pipe Ø 31 mm 1 x Viton-connection stopper, no. 12-0566 suitable for distribution heads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

Upgrade kit for alcohol determination



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

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 $CuSO_4 \times 5H_2O$
12-0334	CK	Kjelcat tablets, 3.5g K_2SO_4 + 0.4g $CuSO_4 \times 5H_2O$, 1,000 pcs

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

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

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

Titration + Upgrade kit



Order No.	Type	Description
12-0565		Titration T5000 for connection to VAPODEST 450
12-0569		Upgrade kit for connection titration T5000 Suitable for VAPODEST 450 up to serial number 5450170051 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 Suitable for VAPODEST 450 as from serial number 5450170052 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

Product data sheet VAPODEST

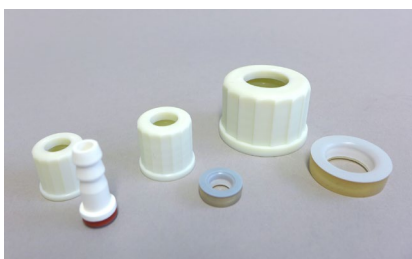
Order information accessories and consumables

Accessories for receiver



Order No.	Type	Description
1001269	REC	Receiver vessel for collecting distillate

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, Standard version
1006792		Screw cap GL 32, nature white, with borehole ø 22 mm (when using PP-distribution head 12-0553)
1000358		Silicone seal GL 14 with connection, straight
1000356		Silicone-seal GL 18
1000357		Silicone-seal GL 32

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

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

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 Q ualification IQ and O perational Q ualification OQ , Guidance for P erformance Q ualification PQ - 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 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
☐	Non Protein content in Meat
☐	Nitrogen in bread and rolls
☐	Total Nitrogen in Raw Material for Breweries
☐	Soluble Nitrogen Content Wort
☐	Raw Protein Determination in Eggs
☐	Total Protein in Margarine
☐	Tomato puree and Ketchup
☐	Nitrogen in Milk and Dairy Products
☐	Nitrogen in Cream
☐	Protein in Milk Powder
☐	Non-Protein in Milk and Dairy Products
☐	Raw Protein in Meat and Meat Products
☐	Raw Protein in Grain and Grain Products
☐	Raw Protein in Beer and Wort acc. to Lochner
☐	Total Nitrogen in Sugar at very low N-content
☐	Nitrogen in Starch
☐	Nitrogen in Fish and Fish Products
☐	Nitrogen in Chocolate
☐	Total Protein in Fresh Yeast
☐	Raw Protein in Feed
☐	Volatile Acids in Wine
☐	Sulphur Dioxide in Food
☐	Sorbic acid in wine
☐	TVBN in Fish and Fish Products
☐	Vicinal Diketones in Beer
☐	Alcohol in Beverages and Intermediates

ENVIRONMENTAL ANALYTICS / OTHER



Selection	Description
☐	Coagulated Nitrogen
☐	Nitrogen Determination in Fertilizers with Nitrate
☐	Fertilizers without Nitrate Content
☐	Ammonium Determination in Fertilizers
☐	Water soluble Ammonium nitrogen in Fertilizers
☐	Determination of Nitrat and Ammonium Nitrogen fert
☐	Total Nitrogen in Xanthan
☐	Total Nitrogen in Water
☐	Total Nitrogen in Soil
☐	Total Nitrogen in Grass and Plant Material
☐	Total Nitrogen in Coal
☐	Phenol Index in Soils and Water
☐	Ammonium in Solid Samples
☐	Ammonium in Aqueous Samples
☐	Nitrate in Aqueous Samples and Eluates
☐	Total Cyanide in Water, Soil and Sludge
☐	Volatile Organic Acids in Sludge
☐	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	

