

LABORATORY HEATERS and CLASSIC APPARATUS

# HEATERS · KJELDAHL SOXHLET · WEIBULL



## CLASSIC

Laboratory heaters and classic apparatus of traditional design

## LONG-LIVED

Proven and reliable C. Gerhardt technology

## VERSATILE

Kjeldahl-N  
Acid Hydrolysis  
Soxhlet Extraction

## FLEXIBLE

Comprehensive range of accessories for a multitude of applications

# LABORATORY HEATERS AND CLASSIC APPARATUS



*"Individual heaters, serial heaters and flask heaters by C. Gerhardt are standard equipment in many laboratories."*

Robust, classic laboratory heaters of proven C. Gerhardt quality for reliable and lasting intensive heating of laboratory glassware with a flat or rounded base.

As a compact individual heater or space-saving serial heating unit for working in batches.

The comprehensive range of accessories further extends the application options. Upgradable to a classic distillation apparatus, digestion apparatus, hydrolysis apparatus or classic Soxhlet apparatus.



### CLASSIC TASKS

- + Heating of liquids
- + Boiling chemicals
- + Sequential tasks
- + Intense heating of laboratory glassware
- + Drying of laboratory glassware

### MANUAL ANALYSES

- + Kjeldahl digestion
- + Distillation
- + Extraction
- + Hydrolysis
- + Fibre analysis



## ONE LABORATORY HEATER INFINITE POSSIBILITIES

### LABORATORY HEATERS

- + Individual heaters for flat-base vessels or flasks
- + Serial heaters for flat-base vessels or flasks

### CLASSIC LABORATORY APPARATUS

- + Kjeldahl digestion apparatus
- + Hydrolysis apparatus
- + Extraction apparatus
- + Distillation apparatus etc.

### ACCESSORIES

- + Beakers, flasks, cooling attachments
- + Holders, stands, interchangeable top moulds, airbath inserts



# LABORATORY HEATERS



## EV INDIVIDUAL HEATER

Individual heater for flat-base laboratory glassware. Hotplate diameter 85 mm. Flexible application thanks to interchangeable top moulds for flat-base glassware (e.g. Kjeldahl flasks) and airbath inserts to optimise heat distribution. With infinitely adjustable power output.

Order no.	Type	Description
10-0001	EV 1	Laboratory heater, single-plate



## EV SERIAL HEATING UNIT

Serial heating unit with 85-mm hotplates for rational working in series. Each hotplate is individually infinitely adjustable. Features a mains switch and indicator lamp as well as a surge protection circuit breaker for each hotplate.

Order no.	Type	Description
10-0006	EV 16	Serial heating unit, 6-place

### Accessories for EV laboratory heater

Application options can be extended through accessories (see page 11).

Type	EV 1	EV 16
Order no.	10-0001	10-0006
Hotplates	1	6
Max. temperature [°C]	425	425
Flask sizes [ml]	see accessories (page 11)	see accessories (page 11)
Overall dimensions W/D/H [mm]	150 / 225 / 110	900 / 225 / 110
Weight [kg]	2	10
Rated voltage [V]	230 <sup>1)</sup>	230 <sup>1)</sup>
Frequency [Hz]	50 - 60	50 - 60
Rated power input [W]	450	2700

1) 115 V upon request



## KI FLASK HEATER

Individual heater for intense heating of laboratory glassware with rounded bases. Trough shaped tubular heating element in a stainless steel reflector ensures high application of energy. With infinitely adjustable power output.

Order no.	Type	Description
10-0003	KI 1	Flask heater, 1-place for flask sizes 50 to 250 ml
10-0004	KI 2	Flask heater, 1-place for flask sizes 250 to 1000 ml



## KI SERIAL FLASK HEATERS

Serial heating units with 6 trough-shaped tubular heating elements, installed in stainless-steel reflectors for rational working in series. Each hotplate is individually infinitely adjustable. Features a mains switch and indicator lamp as well as a surge protection circuit breaker for each hotplate.

Order no.	Type	Description
10-0007	KI 16	Serial flask heater, 6-place for flask sizes 50 to 250 ml
10-0009	KI 26	Serial flask heater, 6-place for flask sizes 250 to 750 ml

### Accessories for KI laboratory heaters

Application options can be extended through accessories (see page 11).

Type	KI 1	KI 2	KI 16	KI 26
Order no.	10-0003	10-0004	10-0007	10-0009
Hotplates	1	1	6	6
Max. temperature [°C]	600	650	600	650
Flask sizes [ml]	50 - 250	250 - 1000	50 - 250	250 - 750
Overall dimensions W/D/H [mm]	150 / 225 / 130	150 / 225 / 130	600 / 225 / 130	900 / 225 / 130
Weight [kg]	2	2	7	10
Rated voltage [V]	230	230 <sup>1)</sup>	230 <sup>1)</sup>	400 V 3PN <sup>1,2)</sup>
Frequency [Hz]	50 - 60	50 - 60	50 - 60	50 - 60
Rated power input [W]	450	580	1800	3480

1) 115 V upon request

2) requires permanent connection by an electrician

# CLASSIC APPARATUS



## DIGESTION APPARATUS

Apparatus for classic, manual Kjeldahl digestion processes with tried and tested C. Gerhardt quality. For Kjeldahl flasks of sizes 50, 100, 250, 500 and 750 ml. Each hotplate is individually infinitely adjustable. With efficient glass exhaust manifold (with adapters tailored to the flask size), Kjeldahl flasks, stands and mains cable.

A water jet pump or the TURBOSOG suction system can be connected to extract gases [see accessories on page 11].

### KI 8/16 digestion apparatus

Order no.	Type	Description
10-0024	KI 8/16	Digestion apparatus, 6-place, with 50ml flasks
10-0025	KI 8/16	Digestion apparatus, 6-place, with 100ml flasks
10-0026	KI 8/16	Digestion apparatus, 6-place, with 250ml flasks
10-0250	KI 8/16	Digestion apparatus, 6-place, with 250ml KD* flasks

### KI 11/26 digestion apparatus

Order no.	Type	Description
10-0033	KI 11/26	Digestion apparatus, 6-place, with 500ml flasks
10-0251	KI 11/26	Digestion apparatus, 6-place, with 500ml KD* flasks
10-0034	KI 11/26	Digestion apparatus, 6-place, with 750ml flasks

\* special KD flasks with neck extension for subsequent distillation in VAPODEST®.

Type	KI 8/16	KI 11/26
Order no.	see above	see above
Hotplates	6	6
Max. temperature [°C]	600	650
Flask sizes [ml]	50 - 250	500 - 750
Overall dimensions W/D/H [mm]	600 / 250 / 300	900 / 250 / 300
Weight [kg]	8	15
Rated voltage [V]	230 <sup>1)</sup>	400 V 3PN <sup>1,2)</sup>
Frequency [Hz]	50 - 60	50 - 60
Rated power input [W]	1800	3480

1) 115 V upon request

2) requires permanent connection by an electrician

## DISTILLATION APPARATUS

Apparatus for classic, manual Kjeldahl distillation processes with tried and tested C. Gerhardt quality. For Kjeldahl flasks of sizes 50, 100, 250, 500 and 750 ml. Each hotplate is individually infinitely adjustable. With Kjeldahl flasks, Reitmair tops, condenser tubes, discharge tubes, Erlenmeyer flasks, all rubber connectors, stands and mains cable.

### KI 9/16 distillation apparatus

Order no.	Type	Description
10-0037	KI 9/16	Distillation apparatus, 6-place, with 50ml flasks
10-0038	KI 9/16	Distillation apparatus, 6-place, with 100ml flasks
10-0039	KI 9/16	Distillation apparatus, 6-place, with 250ml flasks

### KI 12/26 distillation apparatus

Order no.	Type	Description
10-0042	KI 12/26	Distillation apparatus, 6-place, with 500ml flasks
10-0043	KI 12/26	Distillation apparatus, 6-place, with 750ml flasks

Type	KI 9/16	KI 12/26
Order no.	see above	see above
Hotplates	6	6
Max. temperature [°C]	600	650
Flask sizes [ml]	50 - 250	500 - 750
Overall dimensions W/D/H [mm]	650 / 380 / 950	950 / 380 / 950
Weight [kg]	25	35
Rated voltage [V]	230 <sup>1)</sup>	400 V 3PN <sup>1,2)</sup>
Frequency [Hz]	50 - 60	50 - 60
Rated power input [W]	1800	3480

1) 115 V upon request

2) requires permanent connection by an electrician

# CLASSIC APPARATUS



## HYDROLYSIS APPARATUS

Apparatus for classic, manual acid hydrolysis. Tried and tested C. Gerhardt quality for HCl hydrolysis for fat determination using the Weibull-Stoldt or Weibull-Berntrop method.

Serial heating unit with 6 individually adjustable heaters, with glass condenser attachments, ring-shaped supports, tube connections and 1,000ml (or 1 litre) glass beakers. Filter frame with funnels, folded filters, boiling stones and 1 litre wash bottle made of polyethylene.

Complete and ready for operation.

Order no.	Type	Description
10-0020	HY 16/6	Hydrolysis apparatus, 6-place



Type	HY 16/6
Order no.	10-0020
Hotplates	6
Max. temperature [°C]	425
Flask sizes [ml]	-
Overall dimensions W/D/H [mm]	900 / 225 / 340
Weight [kg]	21
Rated voltage [V]	230 <sup>1)</sup>
Frequency [Hz]	50 - 60
Rated power input [W]	2700

1) 115 V upon request



## SOXHLET APPARATUS

Apparatus for classic, manual extraction using the Soxhlet method. Tried and tested C. Gerhardt quality apparatus for determining the fat content in food and feeds by means of solid/liquid extraction using an appropriate solvent.

Serial heating unit with 6 individually adjustable heaters. With interchangeable top moulds, airbath inserts, 600 x 12 mm support rods and mains cable. The cooling water feed pipe, Soxhlet glass parts and holders for fastening the glass parts to the support rods have to be ordered separately (see accessories).

Order no.	Type	Description
10-0012	EV6 All/16	Extraction heating apparatus, 6-place, for flask sizes 250 - 500 ml

### Accessories

Order no.	Description
10-0054	Holder with fixed sleeve, for fastening Soxhlet glass parts to the support rods
10-0060	Cooling water feed pipe, 6-line, nickel-plated brass, feed pipe with tap for every line
10-0061	Soxhlet glass parts set, includes: 1x 500ml flat-base flask, 1x coiled-tube condenser and 1x 150ml extractor
13-0054	Extraction thimbles, 33 x 80 mm, pack of 25

Type	EV 6 All/16
Order no.	10-0012
Hotplates	6
Max. temperature [°C]	425
Flask sizes [ml]	250 - 500
Overall dimensions W/D/H [mm]	900 / 225 / 650
Weight [kg]	14
Rated voltage [V]	230 <sup>1)</sup>
Frequency [Hz]	50 - 60
Rated power input [W]	2700

1) 115 V upon request

# CLASSIC APPARATUS



## KJELDAHL COMBINED APPARATUS

The space-saving alternative to two individual pieces of equipment. Combined apparatus for classic, manual nitrogen determination using the Kjeldahl method. Sturdy design in tried and tested C. Gerhardt quality. For 6 digestion and 6 distillation processes simultaneously. Each heater can be adjusted individually. Comes complete with KI 11/26 digestion apparatus (page 6) and KI 12/26 distillation apparatus (page 7). With glass exhaust system, 2 litre washing bottle, water jet pump and all connecting hoses. The apparatus requires permanent connection by an electrician.

The TURBOSOG suction system can be connected to extract gases instead of the water jet pump (see page 11).

Order no.	Type	Description
10-0035	KI 13/26	Combined apparatus with 500ml flasks
10-0036	KI 13/26	Combined apparatus with 750ml flasks

Technical data	
Max. temperature	650 °C
Hotplates	6
Flask size	500 or 750 ml
Overall dimensions W / D / H	970 / 470 / 1820 mm
Weight	75 kg
Rated power input	6960 W
Rated voltage	2 x 400 V 3PN
Frequency	50 Hz



## STL RAPID GLASS DRYER

Laboratory glass dryer in tried and tested C. Gerhardt quality. Dry laboratory glassware in just 6 – 15 minutes thanks to filtered hot air. Simultaneous drying of up to 56 tubes. Rotatable dryer attachment with 24 air nozzles with 16 mm diameter and 32 nozzles with 11 mm diameter. Maximum temperature in tube approx. 50 °C. Cold or hot operation. With electric timer.

Order no.	Type	Description
10-0010	STL56	Rapid glass dryer

Technical data	
Timer	0 - 120 min or unlimited
Overall dimensions W / D / H	380 / 380 / 1150 mm
Weight	12 kg
Rated power input	1000 W
Rated voltage	230 V <sup>1)</sup>
Frequency	50 Hz

1) 115 V upon request

# ACCESSORIES

## FUME EXTRACTION SYSTEMS

### TURBOSOG

Process extractor for effective extraction of aggressive acid vapours. Uses an integrated TURBOSOG centrifugal suction washer removing and washing acid vapours in the two stage preseparator.

Order no.	Type	Description
12-0057	TUR/K	TURBOSOG with preseparator
12-0361	ZKE	Additional cooling unit (accessories) complete with wwater regulator

Technical data	
Overall dimensions W / D / H	330 / 450 / 420 mm
Weight	19 kg
Rated power input	205 W
Water consumption	approx. 30 l/h
Delivery rate	approx. 3200 l/h
Rated voltage	230 V / 50 Hz



TURBOSOG + ZKE (optional)

### WSP WATER JET PUMP

Order no.	Type	Description
10-0088	WSP	Water jet pump for connection to KI digestion apparatus (see also page 6)
10-0091	ISO	Iso-Versinic hose 1.5 m, required accessory for WSP



WSP

## ACCESSORIES FOR EV/KI LABORATORY HEATERS

Order no.	Description	EV 1	EV 16	KI 1	KI 2	KI 16	KI 26
10-0053	All interchangeable top mould Ø 95 mm, aluminium, for flask sizes 250 to 500 ml	•	•				
10-0056	SPII airbath insert (spider) for extraction, fits top mould 10-0053	•	•				
10-0097	Support rod 600 x 12 mm, VA, screw-in	•	•	•	•	•	•
10-0100	Support rod 1000 x 12 mm, VA, screw-in	•	•	•	•	•	•
10-0098	AG forked rod for Kjeldahl flasks, chrome-plated, screw-in	•	•	•	•	•	•
10-0099	AD holder, for distillation flasks	•	•	•	•	•	•
10-0121	B1000S glass beaker, 1000 ml, tall version, without spout	•	•				
10-0074	K50 Kjeldahl flask, 50 ml			•		•	
10-0075	K100 Kjeldahl flask, 100 ml			•		•	
10-0076	K250 Kjeldahl flask, 250 ml	• <sup>1)</sup>	• <sup>1)</sup>	•	•	•	•
10-0077	K500 Kjeldahl flask, 500 ml	• <sup>1)</sup>	• <sup>1)</sup>		•		•
10-0078	K750 Kjeldahl flask, 750 ml				•		•
12-0312	KD250 Kjeldahl flask (with neck extension)	• <sup>1)</sup>	• <sup>1)</sup>	•	•	•	•
12-0313	KD500 Kjeldahl flask (with neck extension)	• <sup>1)</sup>	• <sup>1)</sup>		•		•
12-0314	KD750 Kjeldahl flask (with neck extension)				•		•
10-0079	E100 Erlenmeyer flask, 100 ml, narrow neck	•	•				
10-0080	E300 Erlenmeyer flask, 300 ml, narrow neck	•	•				
10-0081	E500 Erlenmeyer flask, 500 ml, narrow neck	•	•				

Other accessories available on request

• = only suitable for this type  
 •<sup>1)</sup> = in conjunction with interchangeable top mould 10-0053 only

C. Gerhardt – Quality made in Germany

# AUTOMATING STANDARD ANALYSES

Completely automated laboratory analysis systems from C. Gerhardt are highly developed special equipment. They automate recurring analysis processes in accordance with national and international standards and norms. They continuously provide precise and reproducible analysis results quickly, at low cost, economically and highly efficiently.



## An excerpt from our product portfolio

- + COMPLETELY AUTOMATIC HYDROLYSIS**  
HYDROTHERM – automatic acid hydrolysis system for fat determination according to Weibull-Stoldt. When combined with SOXTHERM®, HYDROTHERM is an ideal system solution for total fat determination.
- + COMPLETELY AUTOMATIC FAT EXTRACTION**  
SOXTHERM® – automatic fast extraction system for fat determination.
- + COMPLETELY AUTOMATIC WATER STEAM DISTILLATION**  
VAPODEST® – fast distillation system for Kjeldahl nitrogen/protein determination and water steam distillation as sample preparation for further analysis.
- + COMPLETELY AUTOMATIC NITROGEN ANALYSIS**  
DUMATHERM® – nitrogen/protein determination of solid and liquid samples according to the Dumas combustion method. A fast and convenient alternative to the classic Kjeldahl method for almost all sample matrices.
- + COMPLETELY AUTOMATIC CRUDE FIBRE EXTRACTION**  
FIBRETHERM® – completely automated processing of the boiling and filtration processes for determining crude fibre, ADF and NDF.



Issue 01/2016 | Subject to technical amendments