behr
Labor-Technik

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Product Program

Kjeldahl Nitrogen Determination

Block Digestion Systems

The behr K 8, K 12 and K 20 for 250 ml Sample Vessels

Block digestion systems for standard Kjeldahl digestion vessels with a volume of 250 ml. High performance heating and fume exhaust by means of a fume manifold. 10 freely configurable programs for block temperature and digestion time.

- behr K 8, 8 sample positions, 250 ml
- behr K 12, 12 sample positions, 250 ml
- behr K 20, 20 sample positions, 250 ml

Stable and robust construction. Vessel holding frame and fume exhaust manifold made of acid-resistant stainless steel. Complete system with digestion vessels, vessel holding frame and fume exhaust manifold.

Type	Description	catalogue number
K 8	Standard Kjeldahl block digestion system with 8 sample positions for 250 ml sample vessels	80 48 49100
K 12	Standard Kjeldahl block digestion system with 12 sample positions for 250 ml sample vessels	80 48 49101
K 20	Standard Kjeldahl block digestion system with 20 sample positions for 250 ml sample vessels	80 48 49102

K 20

The behr K 16, K 24 and K 40 for 100 ml Sample Vessels

Block digestion systems for micro- Kjeldahl digestion vessels with a volume of 100 ml. High performance heating and fume exhaust by means of a fume manifold. 10 freely configurable programs for block temperature and digestion time.

- behr K 16, 16 sample positions, 100 ml
- behr K 24, 24 sample positions, 100 ml
- behr K 40, 40 sample positions, 100 ml

Stable and robust construction. Vessel holding frame and fume exhaust manifold made of acid-resistant stainless steel.

Type	Description	catalogue number
K 16	Micro-Kjeldahl block digestion system with 16 sample positions for 100 ml sample vessels	80 48 49150
K 24	Micro-Kjeldahl block digestion system with 24 sample positions for 100 ml sample vessels	80 48 49151
K 40	Micro-Kjeldahl block digestion system with 40 sample positions for 100 ml sample vessels	80 48 49152

Infrared Digestion Systems

Rapid Sample Digestors with Manual Power Control

InKjel infrared rapid sample digestor with manual power control and direct heating by infrared source (1500 W).

Configurations available:

- 6 sample vessels each 250 ml
- 12 sample vessels each 250 ml
- 4 sample vessels each 500 ml
- 4 sample vessels each 750 ml

Using 500 ml or 750 ml sample vessels behrotest® InKjel M also meets the requirements of water and sewage analysis. Base unit InKjel M can incorporate different holders and suction systems. This allows the user to convert the apparatus for use with various vessel sizes by simply exchanging the vessel holder and the suction system.

Type	Description	catalogue number
InKjel 450 M	infrared rapid sample digestor for 4 x 500 ml sample vessels	80 48 49450
InKjel 475 M	infrared rapid sample digestor for 4 x 750 ml sample vessels	80 48 49475
InKjel 625 M	infrared rapid sample digestor for 6 x 250 ml sample vessels	80 48 49998
InKjel 1225 M	infrared rapid sample digestor for 12 x 250 ml sample vessels	80 48 49999

InKjel 625 M

Programmable Rapid Sample Digestors

The InKjel P's modern microprocessor control allows up to 99 digestion programs to be entered and stored. Each program can cover up to 10 energy/time combinations facilitating rapid and easy digestion even with difficult samples.

The InKjel P also offers:

- 99 storage spaces each with a maximum of 10 freely programmable energy/time combinations for difficult sample matrices.
- Simple and economical capacity doubling by connecting a PE expansion module.

Type	Description	catalogue number
InKjel 450 P	Programmable infrared rapid digestion system for 4 glass vessels for 500 ml	80 48 50003
InKjel 475 P	Programmable infrared rapid digestion system for 4 glass vessels for 750 ml	80 48 50004
InKjel 625 P	Programmable infrared rapid digestion system for 6 glass vessels for 250 ml	80 48 50001
InKjel 1225 P	Programmable infrared rapid digestion system for 12 glass vessels for 250 ml	80 48 50002

InKjel 625 P

Steam Distillation Units

S 1

S 1

Simple steam distillation unit for a small number of samples.

Supply requirements:	230 V 50 Hz a.c.
Power rating:	1700 W
Cooling water consumption:	approx. 5 l/min
Distillation time:	approx. 2 to 3 min per sample
Reagent containers:	size is optional
Interface:	RS232
Dimensions (W x H x D):	410 x 675 x 410 mm
Weight:	32 kg

Type	Description	catalogue number
S 1	Steam distillation unit, manual operation	80 48 49001

S 3

S 3

Semi-automatic steam distillation unit for a routine number of samples. Choice of manual or automatic addition of H_2O and NaOH. Single distillation programme. Variable steam generating capacity (40% to 100%) Error diagnosis with both visible and audible indication.

Supply requirements:	230 V 50 Hz a.c.
Power rating:	1700 W
Cooling water consumption:	approx. 5 l/min
Distillation time:	approx. 2 to 3 min per sample
Reagent containers:	size is optional
Interface:	RS232
Display:	LCD
Programme storage:	1
Dimensions (W x H x D):	410 x 675 x 410 mm
Weight:	35 kg

Type	Description	catalogue number
S 3	Steam distillation unit, partly automated	80 48 49003
KAS 30	Set of 3 canisters (20 l each) for S 3, incl. float switch	80 48 49030

S 4

Complete water still. Programmed addition of H_2O, NaOH and H_3BO_3 and automatic removal of sample residues by suction. The steam production can be varied between 40% and 100%. Up to 99 programmes can be stored and recalled.

Supply requirements:	230 V 50 Hz a.c.
Power rating:	1700 W
Cooling water consumption:	approx. 5 l/min
Distillation time:	approx. 2 to 3 min per sample
Reagent containers:	behrotest® containers recommended
Interface:	RS232
Display:	LCD
Programme storage:	99
Dimensions (W x H x D):	410 x 675 x 410 mm
Weight:	35 kg

Type	Description	catalogue number
S 4	Steam distillation unit, fully automatic	8048 49004
KAS 40	Set of 4 x 20 l containers for S 4, incl. float switch	8048 49040

S 4

Accessories for Kjeldahl Nitrogen Determination

Type	Description	catalogue number
STI	Manual titration station for nitrogen analysis	8048 42020
BEHROSOG 3	Prozess fume evacuator with vacuum pump 40 l/min	8048 40008
KT 2	Catalyst tablets (5,0 g K_2SO_4; 0,15 g $CuSO_4$; 0,15 g TiO_2), pack quantity 1000	8048 40101
KJ 500	Sample vessel, 500 ml, for InKjel	8048 51051
KJ 750	Sample vessel, 750 ml, for InKjel	8048 51076
SR 3i	Sample vessel, 250 ml, for InKjel	8048 41015
EG 6	behrotest holding frame EG 6 for 6 vessels at 250 ml for InKjel 625	8048 49983
EG 12	behrotest holding frame EG 12 for 12 vessels at 250 ml for InKjel 1225	8048 49984
EG 4/500	behrotest holding frame EG 4/ 500 for 4 vessels at 500 ml for InKjel 450	8048 49982
EG 4/750	behrotest holding frame EG 4/ 750 for 4 vessels at 750 ml for InKjel 475	8048 49978
AE 6	behrotest fume exhaust manifold AE 6 for InKjel 625	8048 49986
AE 12	behrotest fume exhaust manifold AE 12 for InKjel 1225	8048 49987
AE 4	behrotest fume exhaust manifold AE 4 for InKjel 450 and InKjel 475	8048 49985

BEHROSOG 3

Soxhlet Extraction

Serial Extraction Apparatus

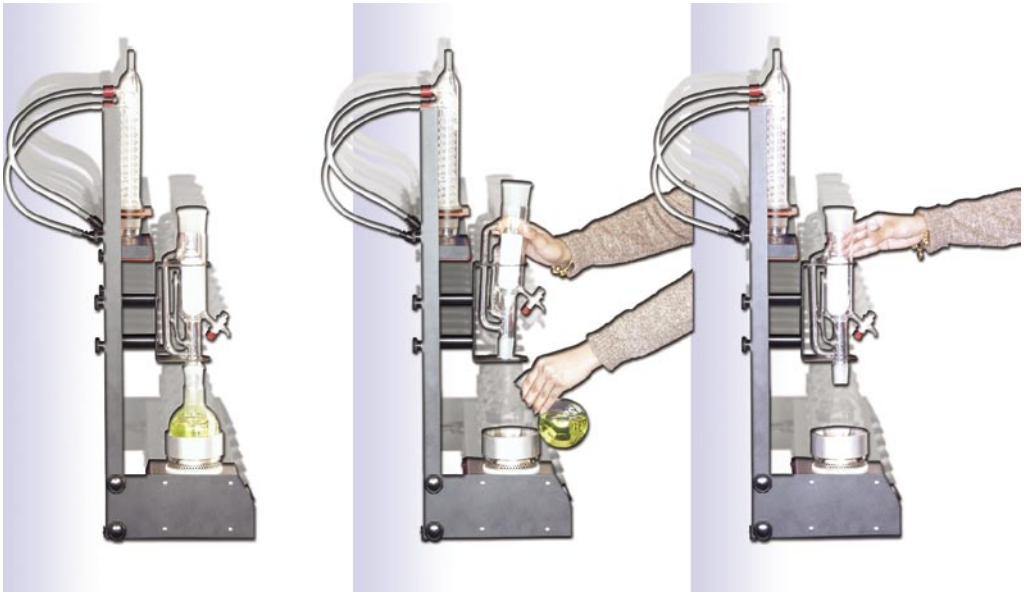
behrotest® Serial Extraction Apparatus

Excellent value and user friendly apparatus for classical Soxhlet- and Fat- Extraction:

- Each position individually controlled
- Cooling water supply is automatically split for homogeneous cooling at each position
- Practical shelf provided for holding the condensers when not in use
- Holder for safe positioning of the extraction assembly components while the sample tube is used

R 106 S

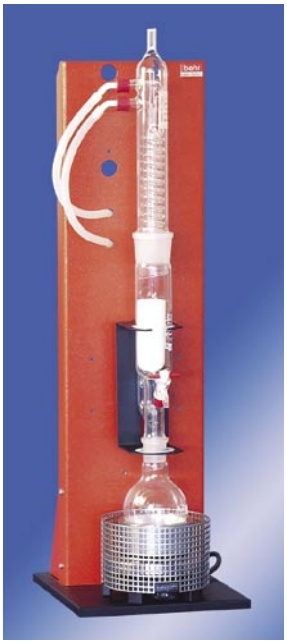
Type	Description	Capacity ml	catalogue number
R 256 S	Serial hotplate system, soxhlet/fat, 6-position	250	80480034
R 254 S	Serial hotplate system, soxhlet/fat, 4-position	250	80480033
R 106 S	Serial hotplate system, soxhlet/fat, 6-position	100	80480022
R 104 S	Serial hotplate system, soxhlet/fat, 4-position	100	80480023
R 306	Serial hotplate system, soxhlet/fat, 6-position	30	80480032
R 304	Serial hotplate system, soxhlet/fat, 4-position	30	80480031
HYDRO 1	Hydrolysis unit, single sample	30	80480028
HYDRO 6	Hydrolysis unit, 6-sample, complete	30	80480030



Compact Extraction Apparatus

Complete, compact extraction systems with base stand, heating mantle, glassware frame, tubing and glassware (reaction flask, extractor and Dimroth condenser).

Type	Description	catalogue number
KEX 30	Compact system for 30 ml Soxhlet extraction	80480520
KEX 100	Compact system for 100 ml Soxhlet extraction	80480521
KEX 100 F	Compact system for 100 ml fat extraction	80480522



KEX 100 F

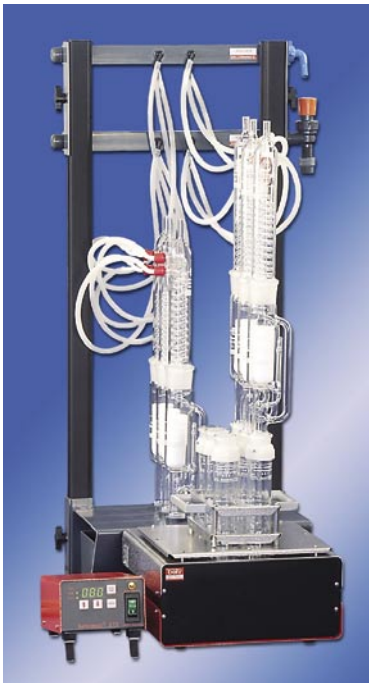
Soxhlet Extraction, 30 ml and 100 ml, 6 and 12 Sample Places

Supplementary sets are available for further tests in environmental and food analysis: heavy metal digestion with aqua-regia, COD hydroxyproline, hydroxyl number, arsenic, selenium, etc. - Please enquire.

Complete unit to undertake Soxhlet extraction, using 6 x 30 ml, 12 x 30 ml and 6 x 100 ml flasks. Comprises:

- Temperature and time controller
- Heating block with 6 sample positions
- Condenser frame with coolant water distribution manifold
- Glassware (flasks, extractors, Dimroth condensers)

Type	catalogue number
SMX 30	80480020
SMX 30/12	80480019
SMX 100	80480021



SMX 100

Equipment for

Foodstuff Analysis

WE 1/H
with GSAB

WE 1/H Distillation Unit

Equipment for the Determination of Alcohol Content

By introducing steam into the sample, the behrotest® WE 1/H steam generator guarantees a particularly gentle and uniform distillation for the determination of alcohol in beverages. The maximum duration for steam generation - and therefore the duration of distillation - is not limited by an internal reservoir but only by the size of the external feed container that the user chooses to employ. Supplementary heater enables particularly high distillation performance.

Type	catalogue number
WE 1/H	80 48 52200

Glassware Set for Distillation of Alcohol

Type	catalogue number
GSAB	80 48 52102

Compact System for Determantion of Volatile Oils

Complete and compact system for volatile oil determination according to DAB, with base unit, heating mantle, mounting frame and glassware.

Type	catalogue number
KOL	804800539

KSO 2

Compact Systems for Sulphur Dioxide Determination

For determination of sulphur dioxide (total SO_2), 2 absorption units per sample.

With base unit, heating mantle, mounting frame and glassware, including 500 ml reaction flasks.

Systems with adsorption units or other flask sizes on request.

Type	Description	catalogue number
KSO 2	Complete compact system	804800501
SO 2-6	System for 6 working units	804880027

KWA 500

Compact System for Determination of Water Content

Compact system for determination of water content by azeotropic distillation.

Suitable for non-homogeneous and irregularly shaped food such as dried fruit and vegetables, Sauerkraut etc.

With base stand, heating mantle, mounting frame and glassware.

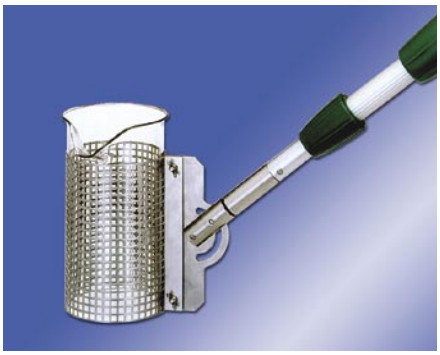
Type	catalogue number
KWA 500	804800500

Water Sampling

behrotest® Water Sampler

For sampling from the water surface. Adjustable clamping device and end rod made of stainless steel, with choice of sample container as indicated. For sampling in accordance with DIN 38409 to H14/AOX a 1 litre borosilicate beaker is required. With 3-part handle, which is continuously adjustable between 1 and 3,75 m. Ideal for use at sites which are difficult to access.

Type	Description	catalogue number
PB 1000	With borosilicate glass beaker	39 48 65012
PF 1000	With dispensing bottle	39 48 65014
PP 1000	With PP beaker	39 48 65015
PT 1000	With PTFE beaker	39 48 65016
PV 1000	With stainless steel beaker	39 48 65017



PB 1000

behrotest® Waste Water Mixer

With portable sample vessel. Homogenizer for pretreatment, dividing and homogenizing heterogeneous water samples according to the Federal Working Group for Water AQS standards for wastewater quality assurance and monitoring. The vessels are protected in the rack and two handles allow easy transport. Can be filled at sampling site via a flattened inlet connection. With graduations. In the laboratory or sample processing vehicle the transport is simply placed on the base plate with magnetic stirrer and the homogenizer is immediately ready for use. The magnetic stirrer speed is adjustable. Controlled removal of homogenized sample by PTFE needle valve.

Type	Description	catalogue number
QMR 2	Volume 2 l, 12V, w/Adapter for DC supply	80 48 65030
QMR 5	Volume 5 l, 12V, w/Adapter for DC supply	80 48 65000
QMR 10	Volume 10 l	80 48 65024
QMR 15	Volume 15 l	80 48 65001
QMR 20	Volume 20 l	80 48 65002
QMR 25	Volume 25 l	80 48 65010

QMR 15

QMR 2

Transport Containers

FTB 1/8

behrotest® FTB 1/8 and FTB 2/6 Sample Transport Containers

Transport containers with label holders for the secure transport and practical storage of 8 DIN sample bottles 1 l capacity each or 6 sample bottles 2 l capacity each. These containers are light and stable, and thanks to standardised dimensions, simple to stack in a space-saving manner.

Inserts for bottles with 1 or 2 l capacity ensure temperature isolation and a secure stand for the sample bottles. These containers are also suitable for light-protected storage of samples while also keeping temperature fluctuations to a minimum.

Type	Description	catalogue number
FTB 1/8	for 8 sample bottles 1 l each	2348 65021
FTB 2/6	for 6 sample bottles 2 l each	2348 65022

ITB 2/6

behrotest® ITB 1/8 and ITB 2/6 Insulated Transport Container for Samples

The containers ITB 1/8 and ITB 2/6 are used for transport or storage of 8 x DIN 1 litre sample bottles or 6 x 2 litre sample bottles. Standard dimensions mean that they can be easily stored. The insulated container resists the effect of external temperature fluctuations. The lid can be filled with an additional cooling device. Cooled air flows from the lid falling directly into the bottom of the container, where the samples have to be cooled. The containers are also used to protect samples from UV maintaining a constant climate.

Type	Description	catalogue number
ITB 1/8	for 8 x 1 litre DIN sample bottles	2348 65030
ITB 2/6	for 6 x 2 litre DIN sample bottles	2348 65032
KSP 1	Cooling device for ITB 1/8 and ITB 2/6	2348 65031

Accessories for Water Sampling

PFL 1000
with MST 29

Water Sampling Bottles and Solid Glass Stoppers

Comply with DIN 12036. Conical ground joint neck and solid glass stopper with convex base. Made of borosilicate glass 3.3.

The stoppers have two advantages:

- No bubbles are trapped at the stopper base when inserted into a filled bottle
- Less risk of breakage or cracking than conventional stoppers.

Type	Description	catalogue number
PFL 500	Sample bottles 500 ml	1148 65027
PFL 1000	Sample bottles 1000 ml	1148 65028
PFL 2000	Sample bottles 2000 ml	1148 65029
MST 24	Replacement stopper NS 24	1348 65023
MST 29	Replacement stopper NS 29	1348 65024

GSM 2

Sedimentation Cones, Accessory Holders

Imhoff pattern, solid grey PVC. Stable design.

Description	catalogue number
for 2 Imhoff funnels without stopcock	23 48 17002
for 4 Imhoff funnels without stopcock	23 48 17004
for 2 Imhoff funnels with stopcock	23 48 17012
for 4 Imhoff funnels with stopcock	23 48 17014

RB GT

Amber Glass Wide-mouth Bottles

For storage and transport. The PTFE-laminated screw caps make them ideal for taking samples.

Type	Capacity ml	Thread Ø mm	catalogue number
RB 250 GT	250	55	80 48 86006
RB 500 GT	500	55	80 48 86007
RB 1000 GT	1000	68	80 48 86008

PET bottles

PET bottles

PET bottles behroplast® made of thermoplastic polyester (PET) are light and suitable for containing food. They typically offer a high level of chemical resistance and very low gas or liquid permeability levels. They can withstand temperatures of -40 to +60°C. PET narrow mouth bottles, transparent, with blue tamper-evident caps made of polypropylene.

Capacity ml	Ext. Ø mm Height mm	To accept tube Ø mm	catalogue number	Pack qty.
100	48 x 94	28	22 48 17001	10
200	55 x 125	28	22 48 17002	10
250	63 x 131	28	22 48 17003	10
500	80 x 180	32	22 48 17005	10
1000	90 x 250	32	22 48 17010	10

behrotest® Flow-through Unit

AQUABOX

The Aquabox flow-through unit enables the correct, expert determination of on-site parameters during the collection of ground water and sewage water samples. The unit permits the simultaneous determination of electrolytic and physico-chemical parameters under optimal and reproducible flow conditions.

Aquabox is constructed of transparent, shock-resistant PETG, a thermoplastic copolyester. The transparent construction allows constant visual identification of problems during operation, e.g. sand or sediment contamination. All components which come into contact with water are made of non-wetting PETG (flow chamber and lid) or PP (inlet and outlet tubing). Therefore the water being sampled is not affected by any release of contaminants from the materials used for construction of the Aquabox. The lid is splashproof and easy to open and close by means of a quick-release fastener. The lid has 6 variable diameter, splashproof sensor holders for inserting sensors up to 25 mm Ø (larger diameters available on request).

- The water spirals upward in the chamber around the positioned electrodes and flows out over the splashproof outer housing.
- Six holders in the lid with variable diameters provide secure sensor mounting in the peak flow area.
- On-site measurements are made easy due to the rugged construction materials.
- Water flow can be adjusted using a valve.
- An inlet bypass valve allows sampling.
- Aquabox is quick and easy to disassemble without the need for tools through a central threaded joint.

AQUABOX

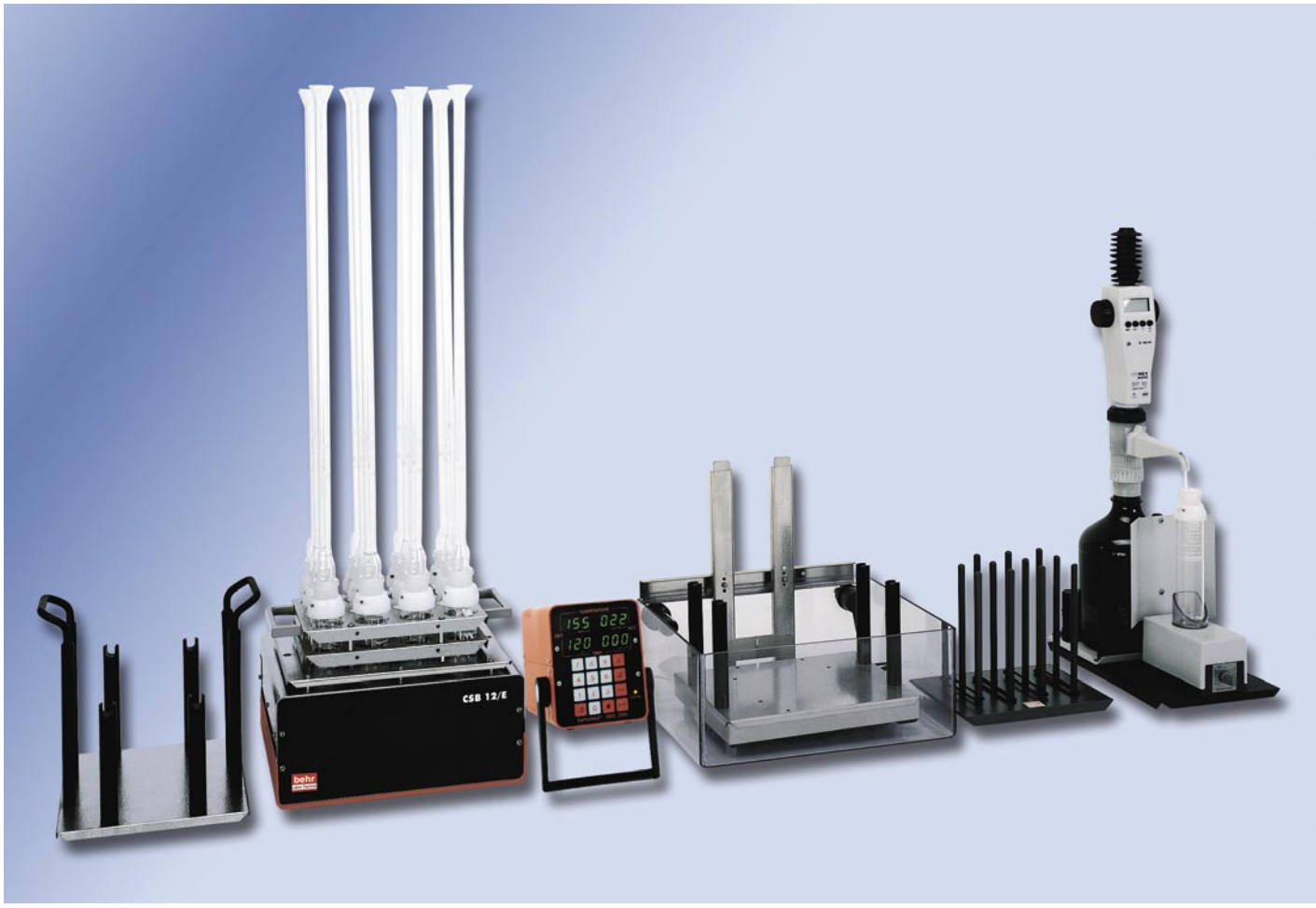
Aquabox application areas:

- In the laboratory and on-site.
- In-line and point sample operation also possible.

Type	catalogue number
AQUABOX	78 48 65056

Water and Soil Analysis

Instruments for the Determination of COD



PA-CSB COD Sample Digestion Units

Units configured to simultaneously treat a maximum of 6 or 12 x COD samples in accordance with ISO.

The digestion unit contains the following components:

- TRS 200/COD-Automatic microprocessor-controlled, time and temperature regulator
- CSB/E precision block heater for RG 2 reaction vessels
- E/B insert/capping rack for RG 2 reaction vessels
- KW/N cooling trough with holder and stand for E/B
- RG 2 reaction vessels
- LK 1 air condenser
- LS stand for LK air condenser

Type	catalogue number
PA-CSB 6	804880000
PA-CSB 12	804880001

PA-CSB 12

PB-CSB/M COD Workstations

For COD determination. Complete workstations for the simultaneous determination of a maximum of 6 or 12 samples in accordance with DIN/DEV and ISO. Manual dosing and titration.

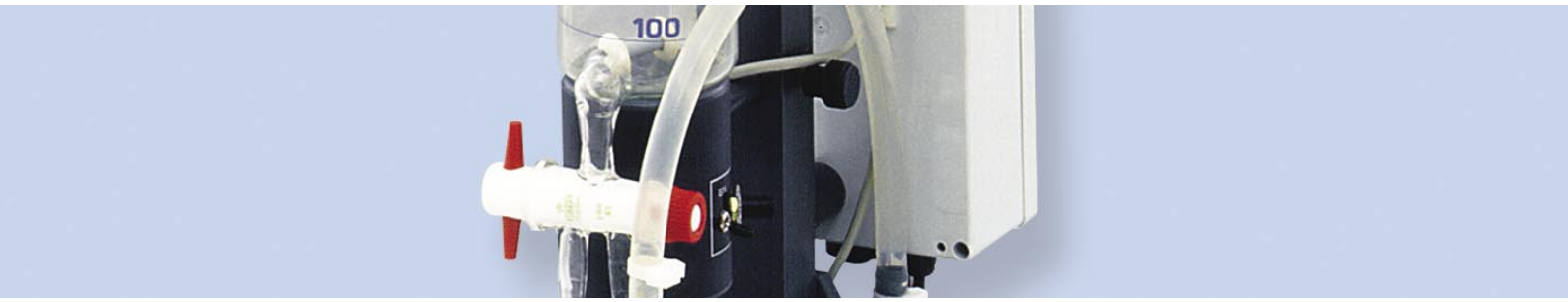
The workstations comprise:

- TRS 200/COD-Automatic microprocessor-controlled, time and temperature regulator
- CSB/E precision block thermostat heater for RG 2 reaction vessels
- E/B insert/capping rack for RG 2 reaction vessels
- KW/N cooling trough with holder and stand E/B
- SM 12/N serial magnetic stirrer for E 12/B insert/capping rack (PB-CSB 12/M only)
- RG 2 reaction vessels
- MRST 2 magnetic stirrer bar set, pack of 12
- SIST 100 boiling stones, capacity 100g
- LK 1 COD air condenser
- LS air condenser stand
- PTFE 29 sleeves for LK 1, set of 12
- TS COD transport stand for E/B insert/capping rack E/B
- HTI 1 manual titrating station

PB-CSB 12/M

Type	catalogue number
PB-CSB 6/M	804880002
PB-CSB 12/M	804880003

Determination of the Biological Oxygen Demand (BOD)



BSB 4A

BOD (Karlsruhe) bottle

BSB - type Mixing Equipment for BOD Determination

behrotest BSB mixing equipment is reliable and simple to operate. In conjunction with appropriate accessories - from dilution water containers with cooling coils to circulation thermostat and right on up to Micro-dosing units for allylthiourea - complete work stations can be configured. You can significantly reduce the operation overhead for determining BOD 5 per ISO 5815-1, thereby also reducing costs.

BSB 2

Comprises 1 litre graduated mixing cylinder, magnetic stirrer and 3-way PTFE stopcock for bubble-free supply of dilution water from below

Type	catalogue number
BSB 2	80 48 01002

BSB 4A

Similar to BSB 2 but semi-automatic with fill-level shut-off and rinse mechanism

Type	catalogue number
BSB 4A	80 48 01003

DSA

Dosing mechanism complete with dispenser and holder for use with BSB mixing equipment

Type	catalogue number
DSA	80 48 01010

BOD (Karlsruhe) bottles with Stoppers

The funnel shaped bottle neck contains water, which is displaced once the meter electrode is inserted. This guarantees bubble-free sealing of the bottle when the electrode is withdrawn.

Capacity ml	Length mm	catalogue number
100	30	80 48 02130
100	60	80 48 02160
250	30	80 48 02030
250	60	80 48 02060

Type	catalogue number
BOD bottles with stoppers	80 48 02200

Dilution Water Container for BOD Depletion Water

With ventilation, level display and stopcock. Colored (light protection). Additional lid for easier cleaning. With cooling coil (stainless steel) and connections for refrigerated thermostats or thermostatting devices.

Type	Volume l	Description	catalogue number
VD 30	30	blue, with aeration heads and air pressure connection	804803030
VD 60	60	blue, with aeration heads and air pressure connection	804803060
VD 120	120	blue, with aeration heads and air pressure connection	804803120
VDT 30	30	as VD 30 but with internal cooling/warming coil and connection for thermostat-circulation pump	804804030
VDT 60	60	as VD 60 but with internal cooling/warming coil and connection for thermostat-circulation pump	804804060
VDT 120	120	as VD 120, but with internal cooling/warming coil and connection for thermostat-circulation pump	804804120

VD and VDT

Diaphragm Pumps

Sturdy, economical diaphragm pumps with high pressure output. Variable adjustment.

Diaphragm pumps

Model	MP 300	MP 500
Max. flow rate (L/hr.) approx.:	300	500
Max. output (mWs) approx.:	3,1	3,3
Voltage (V):	220-240	220-240
Frequency (Hz):	50	50
Power consumption (W):	4	8

Type	catalogue number
MP 300	804806001
MP 500	804806002

behrotest® Thermostatic Circulator

For temperature control of BOD dilution water.

Holds the BOD dilution water at +20°C by active cooling or warming. Connection for external temperature probe.

Type	Description	catalogue number
UT 12	thermostatic circulator	804840202

UT 12

Determination of Biodegradability

KA 1

KA 1/SR

Laboratory Sewage Plants

According to OECD 303 A (Coupled Units Test).

Trolley mounted. All glassware is made of borosilicate glass 3.3, with pumps for water transport and aeration, flow meters and storage containers.

Laboratory sewage unit KLD 4 has an additional preliminary denitrification stage, in which activated sludge is held under virtually anaerobic conditions. In this way the sludge is denitrified and certain wastewater pollutants are more easily degraded. In combination with aeration, two stirrers prevent unwanted sludge deposits in the denitrification stage and in the aeration vessel. The operator can set the pumping and pause times for the return of the sludge to the denitrification vessel.

Type	Description	catalogue number
KA 1	Lab-scale waste water system, complete	80 48 62001
KA 1/SR	Lab-scale waste water system, complete with oxygen level control	80 48 62005
KLD 4	Lab-scale waste water system, complete with denitrification stage	80 48 62003
KLD 4/SR	Lab-scale waste water system, complete with denitrification stage and oxygen level control	80 48 62006
KLD 4/N	As KLD 4, with sludge reinnoculation	80 48 62007
KLD 4N/SR	As KLD 4/SR, with sludge reinnoculation	80 48 62008

Determination of Cyanide by Digestion and Separation

KTC

Compact Distillation Apparatus

Complete compact system for cyanide analysis. With base stand, heating device, flowmeter(s), mounts, tubing and glassware.

Type	Description	catalogue number
KTC	Compact system for distillation of total cyanide	804800524
KLFC	Compact system for air condensing of easy-liberatable cyanide, 1-place	804800525
KLFC 2	Compact system for air condensing of easy-liberatable cyanide, 2-place	804800526

KTC-MR

Compact Digestion and Separation Systems

With magnetic stirrer for cyanide determination.

Complete, compact systems for cyanide determination. With integral magnetic stirrer, suspended absorption vessel and dropping funnel for reagent additions, the installation corresponds with the draft document for the new DIN/DEV 38405 to D 13.

With base stand, heating mantle, magnetic stirrer, flow meter, clamps, tubing and glassware.

Type	Description	catalogue number
KTC-MR	With magnetic stirrer for the determination of total cyanide	804800532
KLFC-MR	With magnetic stirrer for the determination of free cyanide	804800533

DET Universal Analysis System

The behrotest® DET universal analysis system is a cost effective alternative for distillation, digestion and extraction in laboratories with changing applications. It can be used, for example, in cyanide determination, extraction and many other investigations in water and food analysis.

The base unit of the DET system consists of a heating block thermostat with 5 aperture holes for reaction vessels with a diameter of 65 mm. The heating blocks have a heating range of 20 to 300°C. The base unit also has a cold water distributor and a temperature/ time controller.

Application-specific, supplementary sets with the necessary glassware, gas distributors, etc. enable you to put together complete workstations for various applications based on this unit.

Type	Description	catalogue number
DBAS	DET base unit as base for supplementary sets	804850020
DGC	DET supplementary set, total cyanide	804850021
DLFC	DET extension set, easy-liberatable cyanide	804850022

DBAS with DGC

Distillation of Phenols and Ammonium-nitrogen

behrotest® WE 1/H Continuous Steam Generator

The injection of steam into the sample guarantees a particularly gentle and uniform distillation. Steam is produced almost immediately (within maximum of 30 seconds). The maximum period of steam injection depends only on the size of the external container. In WE 1 the distillation occurs only as a result of water vapour injection into the sample.

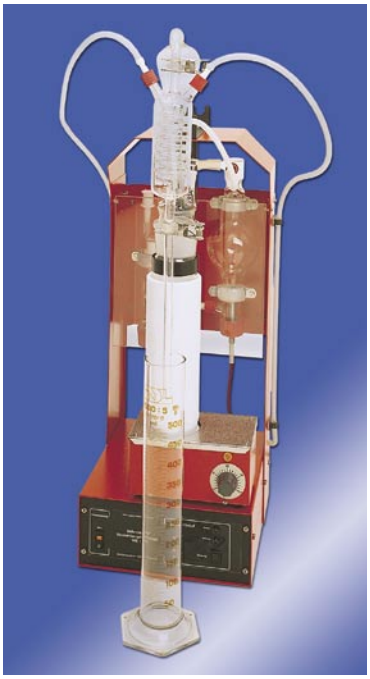
Type	catalogue number
WE 1/H	804852200

Glassware for Phenol Index Determination

Type	catalogue number
GSPH	804852201

Glass Set for Ammonium-nitrogen Distillation in WE 1/H

Type	catalogue number
GSAS	804852202



WE 1/H with GSPH

Determination of Hydrocarbons

EX 1000

EX 1000 Extraction Unit

This sample bottle with stable glass stopper has been specifically designed to aid sample separation.

A graduated cylindrical funnel makes the separation of an organic phase much easier. Modular construction (bottle, stopper, funnel) which enables the user to transfer the organic phase directly to the clean-up column.

Type	catalogue number
EX 1000	80 48 00202

CUS 2 Clean-up Station

The behrotest® Clean-up column has a frit made of glass and fulfils the requirements of ISO 9377-2.

A twin stand offers safe positioning of two complete Clean-up units (dropping funnel, Clean-up column and Kuderna-Danish flask). The two steps for clean-up can be achieved in one unit now, also can be used for two samples.

CUS 2

Type	Description	catalogue number
CUS 2	Clean-up-Station, supplied as: stand, 2 graduated round bottom flasks, 100 ml, 2 columns with grade 2 frits	80 48 00203

KOSTA 2 Nitrogen Station

For 2-stage concentration of an organic sample reducing the volume to max. 1 ml, whilst under a low pressure nitrogen atmosphere.

In the behrotest® Nitrogen station a splitter ensures the nitrogen enters via two adjustable injectors into the Kuderna-Danish-ground glass joint vessels. Therefore two samples can be treated according to ISO 9377-2 simultaneously.

Type	catalogue number
KOSTA 2	80 48 00204

KOSTA 2

FBA

Determination of Inorganic Total Fluoride

Distillation Equipment

behrotest® distillation unit for determination of inorganic total fluoride

In highly contaminated, inorganic wastewater, having a fluoride concentration greater than 0.2 mg/l, determination of inorganic total fluorine is possible after digestion and distillation of the components. These two steps are now combined in a stable unit.

The single components of this unit are:

Distillation unit from borosilicate glass for acidic steam distillation, contact thermometer, heating mantles for round bottomed flasks, volumetric flasks.

Type	catalogue number
FBA	80 48 00320

KAS

Arsenic Determination

KAS Compact System for Arsenic Determination

Complete and compact system for arsenic determination according to ISO 11969, with base unit, heating mantle, mounting frame and glassware.

Type	catalogue number
KAS	80 48 00535

ELUM 2

ELUM 6 with
ELUM 6/E

Soil Elution

ELUM 2 Overhead Mixers

For 24-hour soil elution with distilled water at constant speed.

Type	Description	catalogue number
ELUM 2/1	For 2 x 2 l bottles, speed 1 rpm	52 48 53110
ELUM 2/5	For 2 x 2 l bottles, speed 5 rpm	52 48 53111

ELUM 6 and ELUM 46 Elution Overhead Mixers

With fixed speed of 1 rpm, according to the current national and international soil elution regulations. With the extension modules mixing units with up to 18 containers can be assembled.

Type	Description	catalogue number
ELUM 6/E	Extension module for 6 x 2 l bottles	52 48 53001
ELUM 46/E	Extension module for 4 x 6,4 l bottles	52 48 54001
ELUM 6	Overhead mixer for 6 x 2 l bottles	52 48 53000
ELUM 46	Overhead mixer for 4 x 6,4 l bottles	52 48 54000
EFL 2	Glass bottle 2 l, with PTFE insert in cap	80 48 53102
EFL 6	Plastic bottle 6,4 l	80 48 54100
SAD 61	Adapter for use of six 1 l jars in ELUM 6	80 48 53005

Column Elution Unit for the Elution of Soil Samples

SEB 32 Column elution unit

Column elution acc. to LUA recommendations with fixed-speed 4-channel peristaltic pump. The unit consists of:

- system stand
- fixed-speed, 4-channel peristaltic pump
- supply container, 20 litres
- 4 elution columns, inside diameter 6 cm, 32 cm long, with 2 threaded openings (GL 45, with Teflon inserts) to simplify filling the columns
- 4 x 2 litre drip collectors for column eluate with threaded opening (GL 45) and vent
- Tygon and PVC supply tubing with check-valve in column supply line
- Teflon tubing lines between columns and drip collector

SEB 32 R Column elution unit

column elution acc. to LUA recommendation as above but with adjustable-speed, 4-channel peristaltic pump.

- flow rate 0.003 to 35 ml/min
- speed range 2 to 100 rpm
- simultaneous regulation of all 4 channel

SEB 16 Column elution unit

behrotest® column elution unit acc. to DIN V 19736 with fixed-speed, 4-channel peristaltic pump. The unit consists of:

- system stand
- fixed-speed, 4-channel peristaltic pump
- 20 litre supply container
- 4 elution columns, inside diameter 6 cm, 16 cm long, 450 ml capacity with 2 threaded openings (GL 45, with Teflon inserts) to simplify filling the columns
- 4 x 2 litre drip collectors for column eluate with threaded opening (GL 45) and vent
- Tygon and PVC supply tubing with check-valve in column supply line
- Teflon tubing lines between columns and drip collectors

SEB 16 R Column elution unit

behrotest® column elution unit acc. to DIN V 19736, as above but with adjustable-speed, 4-channel peristaltic pump.

- flow rate 0.003 to 35 ml/min
- speed range 2 to 100 rpm
- simultaneous regulation of all 4 channels

behrotest® Quartz sand

for column elution unit, grain diameter 1 to 2 mm acc. to DIN V 19736, bottle of 1000 g

behrotest® glass wool

for column elution unit, bag of 100 g

Type	Description	catalogue number
SEB 32	Column elution unit	804886101
SEB 32 R	Column elution unit	804886100
SEB 16	Column elution unit	804886000
SEB 16 R	Column elution unit	804886003
	Quartz sand	804886004
	Glass wool	804886005

SEB 16

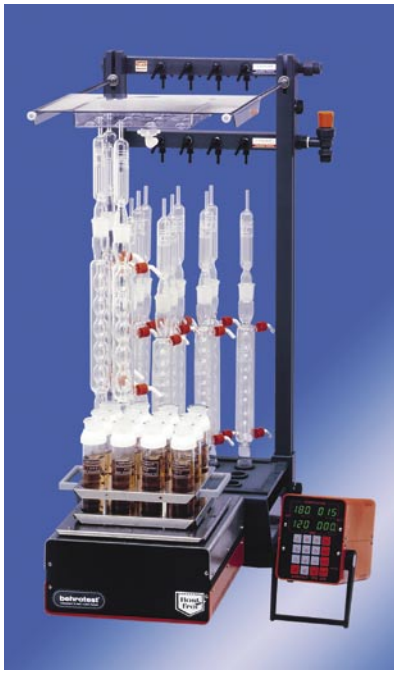
Digestion of Heavy Metals

SMA-ARB Heavy Metal Decomposition Workstations, Basic

The behrotest® model SMA-ARB workstations are basic systems for simultaneous aqua regia digestion of either 6 or 12 samples for heavy metals analysis.

- Precision 6 or 12 sample SMA heating block for round-bottom sample vessels of 41.8 mm dia. Temperature range: 20 to 300°C.
- External time / temperature controller ET 2 (operating range 20 to 399°C). Time settings: 10 to 120 mins. and continuous operation.
- 6 or 12 each SR 2 250 ml round-bottom sample vessels with conical joint neck and PVDF collar
- 6 or 12 each SFK 50 reflux condensers
- 6 or 12 each AS 1 absorption vessels
- SG/B stainless steel support frame for 6 or 12 sample vessels
- Stand with cooling water distributor and storage holder for 6 or 12 condensers

Type	Description	catalogue number
SMA-ARB 6	for simultaneous digestion of up to 6 samples for heavy metal analysis	804880009
SMA-ARB 12	for simultaneous digestion of up to 12 samples for heavy metal analysis	804880010



SMA ARM 12

SMA-ARM Heavy Metal Decomposition Workstations, Medium

The behrotest® SMA-ARM workstations are intermediate level systems for simultaneous aqua regia digestion of either 6 or 12 samples for heavy metals analysis, incorporating a programmable, microprocessor-controlled time / temperature controller as well as a fume manifold for drawing off acid vapours. This results in greater convenience and functionality in routine laboratory operations.

- Precision 6 or 12 sample SMA heating block for round-bottom sample vessels of 41.8 mm dia. Temperature range: 20 to 300°C
- External time/temperature controller TRS 200 (operating range 20 to 399°C). Time settings: 1 to 999 mins. With continuous display of actual and desired temperatures, interval duration and remaining time. Up to 10 intervals are programmable.
- 6 or 12 each SR 2 250 ml round-bottom sample vessels with conical joint neck and PVDF collar
- 6 or 12 each SFK 50 reflux condensers
- PTFE sleeves for conical joints
- SG/B stainless steel support frame for 6 or 12 sample vessels
- TS bench-top stand and transport carrier for support frame
- Stand with cooling water distributor and storage holder for 6 or 12 condensers
- AH fume manifold for drawing off the acid vapours in both 6 and 12 sample versions. Connects to scrubber suction unit (i.e. behrosog)

Type	Description	catalogue number
SMA-ARM 6	Intermediate level workstation for simultaneous digestion of up to 6 samples for heavy metal analysis, incl. microprocessor time/temperature controller	804880011
SMA-ARM 12	Intermediate level workstation for simultaneous digestion of up to 12 samples for heavy metal analysis, incl. microprocessor time/temperature controller	804880012

Compact Heavy Metal Digestion System

Complete compact system for heavy metal digestion with aqua regia. With basic stand, heating mantle, stand, tubing and glass apparatus.

Type	catalogue number
KSMA	804800523

KSMA

behrotest® PFA 130 Pressure Fusion System

Pressure fusion device with PFA reaction insert for trace analysis without absorption or desorption occurring in the sample material. Provides improved detection limits for AAS, ICP etc. Can be operated in a drying cabinet without additional heating.

- No conditioning processes
- No substance entrainment
- No memory effects
- Single fusion process for all heavy metal definitions increases confidence
- Multiple and series analyses can be carried out for greater cost-effectiveness

Pressure vessel made of anodized aluminium with integral, factory set pressure protection system. Tubing connection for controlled pressure relief.

Capacity:	100 ml
Max. permissible operating pressure:	50 bar
Max. permissible operating temperature:	170°C
Ø x height, mm:	90 x 165 mm

Type	catalogue number
PFA 130	274800530

PFA 130

Pumps

Laboratory Peristaltic Pumps

Compact laboratory peristaltic pumps with stepless, adjustable flow rate, pump rotor, two compression and four guide rollers. Changing pump tubing is easy, no tools or other aids are required. For 220V 50 Hz a.c. supplies.

Type	Flow rate L/hr.	catalogue number
PLP 33	0,2 to 2	584870102
PLP 66	0,5 to 4	584870104
PLP 330	2 to 24	584870120
PLP 1000	12 to 64	584870160

PLP

Water Purification

Demineralisation Systems

behropur® Water Deionisers with Unpressurized Gravity Flow Output

Heavy-walled, robust and practical mixed bed deioniser in blue polyethylene with free flow output to the reservoir. Also ideal for the post desalination of reverse osmosis systems or for aquariums.

- Can be directly connected to the water supply and is immediately ready for operation.
- Automatic venting as water is supplied from below.
- Minimal risk of contamination due to slotted filter in the raw water inlet.
- Nozzles are durable and easy to clean. Highly resistant to abrasion or shocks.
- Extremely sturdy, heavy-duty nozzle welding by the manufacturer's own welding process.
- Resistivity meter fitted.
- B5 and B10 can also be used as wall mounted devices (wall mounting included).
- Also available with water quality cut-out and solenoid valve which engages if specified limits are exceeded and reservoir level control.
- Resistivity control available directly on the unit or remotely at any location.
- Fitted in-line with reduction adapters for ½" laboratory water fittings and ¾" standard water taps.

B5

Output data:

Model:	B5	B10
Cation exchange capacity* at 10°dH:	500 L	1.000 L
Flow max. L/hr.:	50	100
Ø in cm:	16	21
Height in cm:	53	63

Type	Description	catalogue number
B5	unpressurised, complete with resistivity meter	93 48 20005
B10	unpressurised, complete with resistivity meter	93 48 20010
B5Z	unpressurised, dual cartridge	93 48 20050
B10Z	unpressurised, dual cartridge	93 48 20110
B5A	unpressurised, resistivity meter with water quality cut-out and solenoid valve	93 48 50005
B10A	unpressurised, resistivity meter with water quality cut-out and solenoid valve	93 48 50010

* Limiting value 20 µS

behropur® Water Deionisers, Cartridge Made of Nylon

Compact and secure mixed bed deionisers for small to medium-sized volumes of ultra pure water. Ideal for feeding laboratory washing machines, general requirements in the laboratory, low level consumption in industry and for post-treatment desalination of the output from reverse osmosis systems.

- Optimal utilisation of the deioniser due to totally uniform water distribution in the resin chamber.
- Can be connected directly to the raw water mains without a pressure reducer.
- Back pressure resistant.
- Also available with water quality cut-out and solenoid valve, which engages if specified limits are exceeded, and reservoir level control.
- Resistivity control available directly on the unit or remotely at any location.

Performance data:

Model:	B10dN	B22dN	B45dN
Cation exchange capacity* at 10°dH:	1.200 L	2.400 L	5.500 L
Flow max. L/hr.:	300	500	800
Ø in cm:	21	21	26
Height incl. meter in cm:	68	112	125
Height, cartridge only in cm:	55	98	110

Type	Description	catalogue number
B10dN	Pressure-resistant mixed bed unit made of nylon,for steady loads up to 8 bar,with resistivity meter	93 48 30011
B10dNZ	Pressure-resistant mixed bed unit made of nylon,for steady loads up to 8 bar,dual cartridge	93 48 30111
B10dNA	Pressure-resistant mixed bed unit made of nylon,for steady loads up to 8 bar, resistivity meter with water quality cut-out and solenoid	93 48 50112
B22dN	Pressure-resistant mixed bed unit made of nylon,for steady loads up to 8 bar,with resistivity meter	93 48 30023
B22dNZ	Pressure-resistant mixed bed unit made of nylon,for steady loads up to 8 bar, dual cartridge	93 48 30123
B22dNA	Pressure-resistant mixed bed unit made of nylon,for steady loads up to 8 bar, resistivity meter with water quality cut-out and solenoid	93 48 50123
B45dN	Pressure-resistant mixed bed unit made of nylon,for steady loads up to 8 bar,with resistivity meter	93 48 30046
B45dNZ	Pressure-resistant mixed bed unit made of nylon,for steady loads up to 8 bar, dual cartridge	93 48 30146
B45dNA	Pressure-resistant mixed bed unit made of nylon, or steady loads up to 8 bar, resistivity meter with water quality cut-out and solenoid	93 48 50146

B22dN

behr Labor-Technik GmbH

Laboratory Technology

Today's behr Labor-Technik is characterized by our more than 50 year experience in development, production and sales of laboratory equipment. Over this period, the small family operated company has grown dynamically in order to also serve international customers. Our products enjoy world-wide renown for quality, practicality and reliability.

Our principal activity is in the production of laboratory equipment for environmental and foodstuff analysis. Today, behr is one of Germany's leading names for water as well as food and foodstuffs analysis equipment.

Our product lines range from the cost-effective Compakt line to fully automated workstations for performance of analyses according to internationally recognized procedures (ISO/EN, EPA, ASTM, etc.).

Instruments for the determination of carbon, sulphur and halogens. Ask for a separate catalogue or get information from our web-site www.behr-labor.com

behr
Labor-Technik

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