1 Sampling bags, PVDF

Saint Gobain

Reusable bags made of 2 ml (50 µm) PVDF fluoropolymer film, Chemware® Gas Bags offer an economical alternative for analysis of noncorrosive gases. Durable, heat-sealed seams ensure leak-proof operation. Available with either a nickel-plated, brass on/off valve that accepts 6.4 mm I.D. flexible tubing or with a PTFE/silicone septum in a polypropylene housing for use with a hypodermic needle. Applications include sampling carbon monoxide, sulfur dioxide, hydrogen sulfide, radon and mercaptan. The bags are individually packaged. When used for liquid samples, bags should be supported with a tray. Custom sizes and configurations available on request.

- Flexible
- Will not contaminate sample
- Choice of fitting style: on/off or septum
- For use in gas sampling trains
- Use for gas or liquid sample containment

Capacity L	Size mm	Connection	PK	Cat. No.
0.3	150 x 150	on/off	1	**6.267 492**
1.6	230 x 230	on/off	1	**6.267 493**
3.8	300 x 300	on/off	1	**6.267 494**
8.1	380 x 380	on/off	1	**6.267 495**
20.3	460 x 460	on/off	1	**6.267 496**
37.7	600 x 600	on/off	1	**6.267 497**
0.3	150 x 150	septum	1	**6.267 498**
3.8	230 x 230	septum	1	**6.267 499**
1.6	300 x 300	septum	1	**6.267 600**
8.1	380 x 380	septum	1	**6.267 601**
20.3	460 x 460	septum	1	**6.267 602**
37.7	600 x 600	septum	1	**6.267 603**

2 Sampling bags, FEP

Saint Gobain

Made from 5 mil (125 µm) FEP fluoropolymer film, these flexible, sturdy bags are heat sealed on all four sides for complete chemical resistance and leak-proof operation. They are inert to most chemicals and have low permeability which limits sample loss. Available with either a nickel-plated, brass on/off valve that accepts 6.4mm I.D. flexible tubing or with PTFE/silicone septum in polypropylene housing for use with a hypodermic needle. These FEP bags are easy to use. They can be stored for an unlimited period prior to use. Applications include gas sample analysis, extracting air samples from smokestack exhaust systems, monitoring air quality or calibrating instruments in the field. The bags are individually packaged.

- Chemically resistant
- Flexible
- Will not contaminate sample

Capacity L	Size mm	Connection	PK	Cat. No.
1.2	150 x 250	on/off	1	**6.267 484**
0.5	150 x 150	on/off	1	**6.267 485**
4.7	300 x 300	on/off	1	**6.267 486**
50.0	600 x 900	on/off	1	**6.267 487**
0.5	150 x 150	Septum	1	**6.267 488**
1.2	150 x 250	Septum	1	**6.267 489**
4.7	300 x 300	Septum	1	**6.267 490**
50.0	600 x 900	Septum	1	**6.267 491**

3 Air Flow Tester

Dräger

In many fields, such as mining or industry, it is very important to detect even the smallest air flows, in order to quickly and reliably evaluate the possible diffusion of dangerous substances. With the air flow test tubes, the source, direction and speed of the air flow are visible immediately.

Type	PK	Cat. No.
Air Flow Tester (Set with blower ball and 10 flow test tubes)	1	**6.054 581**
Blower Ball	1	**6.200 206**
Flow test tubes	10	**6.076 362**

Gas sampling tubes, DURAN® tubing

Made of DURAN® tubing. Available with or without nozzle (with thread GL and septa), with two one-way stopcocks NS14 (with retaining device), connections: capillary tube (outer dia. 8mm, inner dia. 2.7mm), glass olive (outer dia. 8mm), with inscription label

Lenz

Type	Capacity ml	External body diam. mm	Length*	PK	Cat. No.
Without sampling connections	150	42	155	1	**9.110 215**
Without sampling connections	350	54	200	1	**9.110 220**
Without sampling connections	500	65	220	1	**9.110 225**
Without sampling connections	1000	85	260	1	**9.110 230**
With sampling connections, GL 14	150	42	155	1	**6.243 069**
With sampling connections, GL 14	350	54	200	1	**9.110 236** 1
With sampling connections, GL 14	500	65	220	1	**9.110 237**
With sampling connections, GL 14	1000	85	260	1	**7.623 930**

* Body length (mm)

1

9.110 236

2 Digital Anemometer

Digital Anemometer to measure wind speed and temperature. Useful for the functional check of fume hoods and safety cabinets.

- Wind speed range: 0 to 30 m/s
- Wind temperature range: -10 to +45 °C (14 to 113 °F)
- Current/MAX/Average wind speed reading
- Wind speed units: m/s, km/h, ft/min, knots, mph
- Temperature display in °C/°F
- LCD backlight display
- Auto/Manual power off
- Battery: 3V CR2032 (included)

2

Type	PK	Cat. No.
Digital Anemometer	1	**6.264 198**

3 Dräger Sampling Tubes

Using the Dräger activated charcoal tubes or silica gel tubes, hazardous substances in the air are collected using a suitable medium via adsorption or chemisorption. The sample is then analysed in the laboratory by means of various analytical methods such as gas chromatography (GC), high performance liquid chromatography (HPLC), UV-VIS photometry, or IR spectroscopy.

Dräger

Type	Description	PK	Cat. No.
BiA	Charcoal tubes	10	**9.620 414**
G	Charcoal tubes	50	**7.616 384**
G	Charcoal tubes	10	**9.620 415**
B/G	Charcoal tubes	10	**9.620 416**
BiA	Silica gel tubes	10	**9.620 417**
G	Silica gel tubes	10	**9.620 418**
B/G	Silica gel tubes	10	**9.620 419**
	Isocyanate sampling set incl. analysis	1	**6.070 187**
	Diffusion sampler ORSA 5	5	**6.050 155**
	Diffusion sampler ORSA 25	25	**6.080 611**

3

12. Environmental-, soil-, water-, food analysis

Sample preparation/Air sampling and analysis

1 Dräger-Tubes®

Dräger

The Dräger-Tubes® measuring system is the safe method for measuring pollutants in the soil, water and air. More than 500 substances can be measured in varying concentrations. The long-established principle of Dräger-Tubes® is still the same. A defined volume of gas/air must be pumped through the sampling tube. This can be achieved by using the Accuro® gas pump. On contact with the substance under test the reagent system contained in the tube reacts and displays a colour. The strength of the concentration of the substance is shown by the length of the colour band displayed and can be read directly from the scale. The Dräger-Tubes® sampling system provides accuracy, efficiency, quick and easy handling. Over 250 tubes are available on request for all substances and measuring fields. Further sampling devices, diffusion tubes for long-term measurements as well as sampling systems with activated carbon tubes, ORSA collector and TDS thermodesorption tubes are also available.

Type	Measuring range	PK	Cat. No.
Gas pump set accuro (incl. bag a. E-Set)		1	**9.620 411**
Accuro gas pump		1	**9.620 410**
Acetone 100/b tubes	100 to 12000ppm	10	**9.620 421**
Ammonia 0.25/a tubes	0.25 to 3ppm	10	**6.056 774**
Ammonia 2/a tubes	2 to 30ppm	10	**9.620 404**
Ammonia 5/a tubes	5 to 700ppm	10	**9.620 405**
Ammonia 5/b tubes	5 to 100ppm	10	**9.620 424**
Petroleum hydrocarbons 10/a tubes	10 to 300ppm	10	**9.620 426**
Cyanide 0.5/a	0.5 to 100ppm	10	**9.620 449**
Chlorine 0.2/a tubes	0.2 to 3ppm	10	**9.620 407**
Acetic Acid 5/a	5 to 80ppm	10	**6.900 409**
Formaldehyde 0.2/a tubes	0.2 to 5ppm	10	**9.620 429**
Carbon dioxide 5/a	5 to 60Vol.%	10	**6.050 554**
Carbon dioxide 100/a tubes	100 to 3000ppm	10	**9.620 408**
Carbon monoxide 2/a tubes	2 to 60ppm	10	**9.620 432**
Carbon monoxide 5/c tubes	8 to 700ppm	10	**9.620 409**
Mercaptan 0.1/a	0.1 to 2.5ppm	10	**6.230 608**
Mercaptan 0.5/a	0.5 to 5ppm	10	**6.079 278**
Mercaptan 20/a	20 to 100ppm	10	**6.800 619**
Nitrous fumes 0.2/a	0.2 to 30ppm	10	**6.266 890**
Ozone 0.05/b tubes	0.05 to 0.7ppm	10	**9.620 434**
Perchloroethylene 2/a tubes	2 to 300ppm	10	**9.620 436**
Phenol 1/b tubes	1 to 20ppm	10	**9.620 437**
Hydrogen phosphide 0.01/a tubes	0.01 to 1ppm	10	**9.620 438**
Mercury vapour 0.1/b tubes	0.05 to 2mg/m³	10	**9.620 439**
Hydrochloric acid 1/a tubes	1 to 10ppm	10	**9.620 413**
Hydrochloric acid/nitric acid 1/a tubes	1 to 10/15ppm	10	**9.620 441**
Oxygen 5%/c	5 to 23Vol.%	10	**9.620 448**
Sulphur dioxide 0.5/a tubes	0.5 to 25ppm	10	**9.620 420**
Carbon disulfide3/a tubes	3 to 95ppm	10	**9.620 442**
Carbon disulfide tubes 5/a	5 to 60ppm	10	**6.259 530**
Hydrogen sulfide 0.2%/a	0.2 to 7Vol.%	10	**6.088 166**
Hydrogen sulfide 2%/a	2 to 40Vol.%	10	**6.203 543**
Hydrogen sulfide 0.2/a	0.2 to 5ppm	10	**6.085 794**
Hydrogen sulfide 0.5/a	0.5 to 15ppm	10	**6.304 822**
Hydrogen sulfide 2/a	2 to 20ppm	10	**6.210 081**
Hydrogen sulfide 100/a	100 to 2000ppm	10	**6.050 553**
Hydrogen sulfide 5/b tubes	5 to 60ppm	10	**9.620 425**
Hydrogen sulfide 1/c	1 to 20ppm	10	**6.052 630**
Hydrogen sulfide 1/d tubes	1 to 200ppm	10	**9.620 443**
Toluene 5/b tubes	5 to 300ppm	10	**9.620 446**
Trichloroethylene 2/a tubes	20 to 250ppm	10	**9.620 447**
Water vapor 0.1	1 to 40mg/l	10	**6.050 757**
Ethanol 100/a	100 to 3000 ppm	10	**6.284 047**
Methanol 20/a	20 to 5000 ppm	10	**6.284 102**
N-Butanol 10/a	10 to 2000 ppm	10	**6.287 566**
I-Propanol	50 to 4000 ppm	10	**6.287 567**

Test gas in disposable bottles

NEW

Dräger

According to ISO 9002.DOT39 and EN12205.
Control valve not included, please order separately.

Type	Concentration	Capacity	PK	Cat. No.
Hydrogen sulfide	20 ppm	60 l , 35 bar	1	**6.253 813**
Methane / Hydrogen sulfide / Carbon dioxide	2,5 Vol.% / 15 ppm / 2 Vol.%	60 l , 35 bar	1	**7.618 098**
Hydrogen sulfide / Carbon monoxide / Carbon dioxide	2,5 Vol.% / 15 ppm / 50 ppm / 2 Vol.%	60 l , 35 bar	1	**7.655 788**
Carbon dioxide	10 ppm	60 l , 35 bar	1	**7.661 308**
Methane	2 Vol.%	112 l, 70 bar	1	**7.661 767**
Standard control valve, 0.5 l per min			1	**7.654 036**
Pressure reducer On Demand 2001 for Gas detectors with internal pump			1	**7.660 299**

E & OE.
info@haeberle-lab.de www.haeberle-lab.de Phone: +49 7336 9603-0

Dräger Aerotest Alpha

1

Dräger

The Dräger Aerotest Alpha allows the quality of breathing air supplied by a compressor or compressed gas cylinder to be determined. Use of the test system performs a reliable check in accordance with the breathing air standard EN 12 021.

Dräger Aerotest Alpha
comprising of 1 pressure reducer, measuring device for 4 tubes, impactor adapter, coupling, barbed nipple, stopwatch, tube opener Dräger TO 7000, bubble test hose, pack of 5 sintered filters, instruction for use, transport case (black)

Dräger Aerotest Alpha, with Dräger Tubes:
Dräger Aerotest Alpha
+ box of 10 Dräger Oil Impactors,
+ box of 10 Dräger-Tubes carbon dioxide (CO_2) 100/a-P,
+ box of 10 Dräger-Tubes carbon monoxide (CO) 5/a-P,
+ box of 10 Dräger-Tubes water vapor (H_2O) 20/a-P

7.629 381

Specifications

Dimensions of carrying case (L x W x H)	350 x 300 x 85 mm
Weight, including contents	approx. 3.0 kg
Max. supply pressure	15 bar
Supply pressure (set on delivery)	3.0 bar
Pressure gauge	0.3 to 15 bar
Connection for compressed air supply	barbed nipple 9 mm
Flow rate	0.2 and 4.0 l/min

Description	PK	Cat. No.
Dräger Aerotest Alpha	1	**6.241 227**
Dräger Aerotest Alpha, with Dräger Tubes	1	**7.629 381** 1
Oil-impactor	10	**6.241 225**
Carbon monoxide 5/a-P	10	**6.801 977**
Carbon dioxide 100/a-P	10	**6.801 978**
Water Vapor 5/a-P	10	**6.087 703**
Water vapour 20/a-p	10	**6.801 979**
Oil 10/a-P	10	**6.078 279**

Automatic tube pump Dräger X-act® 5000

2

Dräger

The automatic tube pump Dräger X-act® 5000 is the first all-in-one solution designed for measurements with Dräger short-term tubes and for sampling tubes and systems. Ease of operation and a high degree of reliability compliment the measurement and sampling of gases, vapors and aerosols.
- New Pump Concept
- Simplicity of Operation, even with protection gloves
- Automatic Transfer of Measurement Parameters with barcode reader
- Measurement in Technical Gases
- Direct Settings for Sampling
- Simple and intuitive menu structure

9.620 470

Specifications

Number of strokes	adjustable, 1 to 199 strokes
Stroke volume	100ml
Sample taking	
Flow rate range:	0.1 to 2.0 L/min Resolution 0.1 to 1.0 L/min: 0.1 L/min ±5 % Resolution 1.0 to 2.0 L/min: 0.2 L/min ±5 %
Sampling time:	adjustable, up to 12 hours, depending on flow rate Resolution in steps of 15 minutes (default) or 1 minute
Display:	two parts: segment and matrix
Menu languages	Danish, Dutch, English, Finnish, French, German, Italian, Norwegian, Polish, Spanish, Swedish
Dimensions (H x W x D)	approx.. 175 mm x 230 mm x 108mm
Weight (without battery pack)	approx. 1.6kg
Temperature during storage:	-20 °C to 55 °C
Temperature during operation:	5 °C to 40 °C
Humidity:	0 to 95% r. h., non-condensing
Pressure	700 to 1300 hPa

Description	PK	Cat. No.
Dräger X-act 5000, shoulder strap without power supply	1	**9.620 470** 2
Rechargeable Battery NiMH, T4	1	**9.620 471**
Alkaline Battery Pack, T4 without Batteries (6 batteries required)	1	**9.620 472**
Alkaline Battery Dräger X-act 5000	1	**9.620 473**
Wall-Wart Charger 100 – 240 VAC (worldwide)	1	**9.620 474**
Car Charger 12 / 24 V	1	**9.620 475**

1

Oxygen Depletion & Enrichment Safety Monitors

The widespread use of N_2, LN_2, He or Ar in laboratories poses a potential asphyxiation hazard to personnel. If an inert gas leaks or builds up in a confined area it can deplete the O_2 to dangerously low levels.

The use of enriched O_2 in laboratories poses both a fire risk and hyperoxia risk to personnel if it were to leak or build up in a confined area.

The O_2NE+ and Safe-Ox+ from Analox Sensor Tecnhology are an affordable, low maintenance, long life solution to assist in mitigating the risk of using these gases in your laboratory.
- Long life, low drift sensor lasts up to 7 years
- Minimum calibration check required - only every 12 months (user maintainable)
- Simple to read "OK", "Alarm" and "Fault" indication
- Easy installation and maintenance can be conducted by the user
- Additional (quick connect) alarm repeaters available if more than one entrance to the laboratory
- Assists in compliance with Exposure Limit regulations such as EH40
- Supplied with relays which can be used to trigger ventilation or building management systems etc

Specifications

Range:	0.1 to 25 % O_2
Sensor Accuracy:	±0.75 % O_2 (5.0 to 25.0 %)
Alarm intensity:	85 dbA
Monitor display:	4 digit LCD
Operating Temperature:	0 to 40 °C
Monitor Dimensions:	175 x 110 x 75 mm
Alarm Repeater Dimensions:	72 x 170 x 45 mm
IP Rating:	IP65 (IP43 alarm repeater)
Warranty:	2 years electronics (1 year sensor)

2

1 Oxygen Depletion Safety Monitor, O_2Ne+™

NEW

Analox Sensor Technology

The O_2NE+™ is a simple to use, wall mounted oxygen depletion monitor which has 2 audible/visual alarms which will trigger at 19.5% and 18% O_2 which means that lab personnel can take evasive action in the event of a gas leak.

Delivery Includes: Main O_2 sensor unit with relay on 2nd alarm (18%) and 1 alarm repeater to be placed at the entrance, with mains power supply

Type	Connector	PK	Cat. No.
O_2Ne+™	EU	1	**6.284 255**
O_2Ne+™	UK	1	**6.284 256**

2 Oxygen Enrichment and Depletion Safety Monitor, Safe-Ox+™

NEW

Analox Sensor Technology

Safe-Ox+™ is a simple to use, wall mounted oxygen enrichment and depletion monitor
which has 2 audible/visual alarms which will trigger at 23% and 19.5% O_2 which means that lab personnel can take evasive action in the event of a gas leak.

Delivery Includes: Main O_2 sensor unit with 2 relays and 1 alarm repeater to be placed at the entrance, with mains power supply.

Type	Connector	PK	Cat. No.
Safe-Ox+™	EU	1	**6.284 260**
Safe-Ox+™	UK	1	**6.284 261**

Accessories for O_2NE+ and Safe-Ox+ depletion Safety Monitors

Analox Sensor Technology

Description	PK	Cat. No.
Additional alarm repeater for additional entrances (max 3 per sensor)	1	**6.284 257**
Calibration kit: Regulator for 110 litre gas cylinders, tubing and flow adapter	1	**6.284 258**
Spare O_2 Sensor (User Changeable)	1	**6.284 259**

1 Carbon Dioxide Safety Monitor Ax60

NEW

Analox Sensor Technology

The use and storage of CO_2 in laboratories is varied and increasing in popularity including use in CO_2 incubators, glove boxes, in dry ice form for storage, carbonation and many more applications.
CO_2 is dangerous, even at relatively low levels and a leak or build up of CO_2 in a confined area could prove potentially lethal for lab personnel.
The Ax60 comprises of a wall mounted central display unit, a CO_2 sensor and a CO_2 alarm which can provide an early warning of a CO_2 leak.

- No calibration required (unless local regulations state otherwise)
- Very long life sensor can last up to 15 years
- Up to 4 x CO_2 sensors and 8 x CO_2 alarms can be used per Central Display Unit
- Supplied with a relay on each alarm which can be used to trigger ventilation, extraction or a building management system
- Easy installation and maintenance can be conducted by the user
- Additional (quick connect) CO_2 sensors and alarms available if more than one entrance to the laboratory or more than one risk area
- Assists in compliance with Exposure Limit regulations such as EH40

Delivery Includes: 1 x Central Display Unit with 2 relays, 1 x CO_2 Sensor and 1 x CO_2 alarm, complete with universal mains power supply

1

Specifications

Range:	0.1 to 5 % CO_2
Accuracy:	±5% of alarm setpoint
Alarm intensity:	88 dbA
Monitor Display:	16 digit 2 line LCD in ppm
TWA Alarm:	5.000 ppm (0.5%) over 8 hours
CO_2 Alarms:	15.000 ppm (1.5%) & 30.000 ppm (3%)
Operating Temperature:	-5 to 50 °C
Central Unit Dimensions:	175 x 110 x 75 mm
Sensor & Alarm Dimensions:	72 x 170 x 45 mm
IP Rating:	IP55 (IP54 Central Display Unit)
Warranty:	5 years for electronics and sensor

Description	PK	Cat. No.
Ax60 CO_2 Safety Monitor	1	**6.284 262**
Additional CO_2 Sensor (Max 4 per Central Display Unit)	1	**6.284 263**
Additional CO_2 Alarm (Max 8 per Central Display Unit)	1	**6.284 264**
Optional Sensor Protector Kit: Protector bar, splashguard and fixing kit	1	**6.284 265**

2 Air sampler, Airport MD8 airborne bacteria sampler

Sartorius

AirPort MD8 is a new portable air bacteria sampler for the pharmaceutical and food and beverage industries, hospitals, environmental protection and for industrial safety. AirPort MD8 has the following benefits:

- Battery-powered and portable for lab or field use
- Battery status display guarantees constant performance during sampling
- Ergonomic, smooth design, surfaces can be disinfected
- Choice of sampling selection, either by total volume or measurement duration

The device can be calibrated on-site. AirPort MD8 uses the gelatin membrane filter method which guarantees reliable and accurate measurement results.

2

Specifications

Volume flow control:	Volume flow can be set to three levels using integral hydrometric manometer: 30 L/min., 40 L/min. and 50 L/min.
Fixed sample volumes:	25, 50, 100, 250, 500, 750 and 1000 litres Sample volume can also be adjusted in 5 litre increments
Battery:	NiMH 16.8 Volt/3800 mAh
Running time with a full battery charge:	approx. 4 hours
Charging time:	approx. 4.5 hours if battery flat
Noise level:	Using gelatin membrane filters, 48 dB(A)
Weight:	2.5 kg
Dimensions (L x W x H):	300 x 135 x 165 mm
Filter size:	80 mm dia., area 38.5 cm²

Type	PK	Cat. No.
AirPort MD8	1	**9.841 605**

12. Environmental-, soil-, water-, food analysis
Sample preparation/Air sampling and analysis

Gas analyzers MAT1000 series

Gas analyzers MAT1000 series are used for measuring oxygen concentrations (O_2) or optional carbon dioxide concentrations (CO_2).
Applies to all models of MAT1000 series:
- Easy and intuitive operation via touchscreen, even by untrained personnel
- Create your own method
- Available method parameters: scales, measurement procedures, limit values, comment and much more
- Selectable measurement methods: single or continuous
- Several single measurement procedures: manual, automatic, min/max detection
- Shortcut keys for most important functions
- Short measurement period, high accuracy even with small sample volume
- Validation possible
- Compliance with global standards such as GMP/GLP and 21 CFR Part 11
- Documentation of all measured values of the last 999 measurements
- Integrated interfaces, flexible data export (USB, Ethernet, RS-232)
- Compact design in robust cast aluminum housing
- Built-in air pressure sensor
- Integrated flow rate monitoring

1 Gas analyzers MAT1100/MAT1200

NEW

A.KRÜSS Optronic

Gas analysers for controlling protective gas packaging. The MAT1100 equipped with an electrochemical oxygen cell measures the oxygen concentration within the range of 0.5 and 35 vol% and with an accuracy of ±0.2 vol%. The MAT1200 additionally features a non-dispersive infrared sensor for measuring carbon dioxide within the range of 0 and 50 vol% and with a high accuracy of ±0.5 vol%. Both devices are suitable for the random sampling as well as the permanent monitoring of the gas mixture used on packaging machines. Their solid metal housing with an interchangeable protective cover offers protection against impact and dirt from the outside.

Measurement of O_2 and CO_2 e.g. in modified atmosphere packaging, for work with modified atmosphere conditions.
- Sporadic O_2 sample checks
- Quick Operation
- Low-drift electrochemical oxygen cell (EC)
- Low-drift carbon non-dispersive infrared sensor (NDIR), model MAT1200
- Combined O_2 and CO_2 measurement, model MAT1200
- Environmental compensated CO_2 measurement, model MAT1200

Specifications

O2 measuring range:	0.5 to 35 Vol.-%
Accuracy:	±0.2 Vol.-%
Resolution:	0.1 Vol.-%
CO_2 measuring range (only MAT1200):	0 to 50 Vol.-%
Accuracy:	±0.5 Vol.-%
Resolution:	0.11 Vol.-%
Average measurment period:	7 to 10 sec
Heating time MAT 1100/MAT1200:	<10 sec/5 min
Interface:	RS-232, USB, Ethernet
Dimensions (W x D x H):	200 x 350 x 150 mm
Weight:	4.6 kg
Power consumption:	60 W
Power supply:	100-250 V, 50/60 Hz

Type	Description	PK	Cat. No.
MAT1100	with oxygen cell	1	**6.269 834**
MAT1200	with oxygen cell and NDIR carbon dioxide sensor	1	**6.269 835**

1

1 Laboratory purification plants to determine the biodegradability

e.g. for the Coupled Units Test in acc. with OECD 303 A, complete. optional: *behr*
- Dentrification step with pump and stirrers
- Oxygen control, consisting of:

Oxygen measuring unit for preliminary sedimentation with a voltage output for switching the air supply on and off behrotest® GWS 200 limit switch. Operating capacity 0 to 200%, corresponds to 0 to 19.9 mg/l
Vessels made of borosilicate glass 3.3

1

Type	Description	PK	Cat. No.
KA 1	Laboratory purification plant, complete	1	**9.920 600**
KA 1/SR	Laboratory purification plant, complete, with oxygen entry control	1	**9.920 605**
KLD 4	Laboratory purification plant, complete, with dentrification step	1	**9.920 602**
KLD 4/SR	Laboratory purification plant, complete, with dentrification step and oxygen entry control	1	**9.920 606**
KLD 4/N	Like KLD 4, with continual sludge recirculation	1	**9.920 598**
KLD 4N/SR	Like KLD 4/SR, with continual sludge recirculation	1	**9.920 599**

behrotest ® column elution unit for the elution of soil samples

Column elution unit: *behr*
Column elution unit in acc. with the LUA recommendation with 4-channel hose pump with controllable speed. The unit consists of:
- Assembly stand for the system
- Controllable 4-channel hose pump with fixed speed
- Storage vessel, 20 l
- 4 elution columns, internal diameter 6 cm, 32 cm long, with 2 screwed joints (GL 45, with PTFE inserts) for simple filling of the columns
- 4 collection bottles for the column eluate, 2 l, with screwed joint (GL 45) and deaeration
- Supply tube made of TYGON and PVC, with non-return valve in the supply to the column
- PTFE tubes between columns and collection vessels
- Flow rate 0.003 to 35 ml/min
- Range of speed 2 to 100 min^{-1}
- Simultaneous control of all 4 channels

behrotest® silica sand:
for column elution unit, grain size 1 to 2 mm in acc. with DIN V 19736, 1000 g bottle

behrotest® silica wool:
for column elution unit, 100 g bag

2

9.843 741

Type	Description	PK	Cat. No.
SEB 32 R	Column elution unit B	1	**9.843 741** 2
QS-SEB	Silica sand for column elution unit	1	**9.843 744**
QW-SEB	Fibreglass for column elution unit	1	**9.843 745**
GS 950	Glass column 60 mm x 320 mm	1	**9.843 925**

3 Equipment to determine anaerobic digestion

The complete equipment consists of: *behr*
- Tempering bath with thermostat for 6 eudiometer units incl. clamping device for eudiometer tubes
- 6 eudiometer units with laboratory bottles, 500ml, eudiometer tubes with graduation, stopcock and connecting tube and levelling bulb
- Series magnetic stirrer, for use in water bath to stir 6 bottles, each with 500 ml, including separate control unit

Specification

Dims (WxDxH):	850 x 330 x 360 mm
Weight:	16 kg

3

Type	Description	PK	Cat. No.
FH 6	Tempering bath made of PVC incl. thermostat for 6 eudiometer units	1	**9.843 850**
FH 10	Eudiometer unit.Eudiometer tube, laboratory and levelling bottle	1	**9.843 851**
RM 6	Series magnetic stirrer	1	**9.843 852**

12. Environmental-, soil-, water-, food analysis
Sample preparation/for standard analysis

1

1 behrotest® waste water mixers

behr

behrotest ® homogenisers. With transportable sample vessels. Homogenisers for pre-treatment, splitting and homogenization of heterogeneous water samples in accordance with the quality assurance and quality control standards for wastewater examinations. The vessels of the homogenizers are protected against damage in the yolk type frame and can be carried easily by the two handles. They can be filled at the sampling location by a flattened inlet connection. Capacities from 2 to 25 l permit extraction and collection of multiple samples. Exact measurement of the sample quantities due to graduation. Subsequently, the transport rack is just placed on the magnetic stirrer in the laboratory or in the sampling vehicle and the homogeniser is immediately ready for use. The speed of the magnetic stirrer can be adjusted by a controller. The user can thus comply with the specified cone height in all cases. Oxygen is thus prevented from entering the samples. Dosed extraction of the homogenised sample via PTFE spindle stopcock. 12V, with adapter for mains connection.

Type	Capacity ml	PK	Cat. No.
QMR 2	2000	1	**9.920 639**
QMR 5	5000	1	**9.920 640**
QMR 10	10000	1	**9.920 641**
QMR 15	15000	1	**9.920 642**
QMR 20	20000	1	**9.920 643**
QMR 25	25000	1	**9.920 644**

2

2 Distillation unit FBA

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Determination of the inorganic total fluoride FBA distillation unit behrotest® distillation unit to determine inorganically bound total fluoride

In highly contaminated inorganic wastewater with a fluoride ionic concentration greater than 0.2 mg/l determination of the inorganic bound total fluoride takes place after digestion and distillation. The behrotest® distillation unit combines all components required for distillation on a stable laboratory stand. The unit is also suitable for larger analysis series due to the heating control system.

The single components are: Distillation equipment made of borosilicate glass for acid steam distillation, contact thermometer, heating mantles for distillation flasks and volumetric flasks.

Type	Description	PK	Cat. No.
FBA	Distillation unit for total fluoride	1	**6.285 445**

3

3 Extraction unit EX 1000

Determination of hydrocarbon EX 1000 extraction unit
The PFL sampling bottle is ideal for direct extraction in terms of ISO 9377-2. With its solid glass stopper, in addition it offers a decisive advantage in handling and safety.

The funnel separator facilitates the separation of the organic phase. The individual functional parts of the separator can be easily separated. The user can thus transfer the organic phase quickly and simply in one step to the clean-up column. In addition the individual functional parts are particularly easy to clean.

Type	Description	PK	Cat. No.
EX 1000	Extraction unit	1	**9.843 800**

E & OE.
info@haeberle-lab.de
www.haeberle-lab.de
Phone: +49 7336 9603-0

1 behrotest® compact equipment for elution of solid matters

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Percolation equipment to jointly examine the elution behaviour of inorganic and organic substances in solid matters. Including hose pump with 2 channels and 2 different pump tubes for a flow rate of 0.25-12 ml/min. and 0.66-33 ml/min. (Other pump tubes upon request).
Complete equipment, consisting of
- Percolation columns with pre-filters on sturdy stands
- Storage bottle with cap and tube
- Tube
- Eluate lead made of PTFE
- Storage vessel made of glass, cap with ventilation tube

1

Type	Description	PK	Cat. No.
KEB 101	Complete equipment, elution of solid matters for one sample w/ GS 101 glass column. Incl. two-channel hose pump and 2 tubes for different flow rates	1	**9.843 931**
KEBE 101	Supplementary equipment, elution of solid matters for one sample w/ GS 101 glass column. Incl. two-channel hose pump and 2 tubes for different flow rates	1	**9.843 932**
GS 101	Glass column, 90 x 500 x 5 mm, thread GL 100	1	**9.843 928**
SRR	Tube set, 4 pump tubes made of Tygon, flow rate of 0.25 - 12 ml/min	1	**9.843 929**
SVV	Tube set, 4 pump tubes made of Tygon, flow rate 0.66 - 33 ml/min	1	**9.843 930**

2 CUS 2 clean-up-station

behr

The behrotest® clean-up column with glass frit corresponds exactly to the provisions of ISO 9377-2.
The practical twin stand provides safe support for two complete clean-up units with dropping funnel, clean-up columns and Kuderna-Danish flasks.
Thus, the complete clean-up procedure can be carried out for two samples simultaneously - without delays due to time-consuming equipment or sample manipulation.
Clean-up-Station, supplied as:
stand, 2 graduated round, bottom flasks, 100ml, 2 columns with grade 2 frits

2

Type	Description	PK	Cat. No.
CUS 2	Clean-up-Station	1	**9.843 801**

3 KOSTA 2 nitrogen station

behr

The two-stage concentration of the organic phase is concluded by reducing the extract down to less than 1 ml under a mild nitrogen flow.
In the behrotest® nitrogen station, a distributor leads the nitrogen flow via two individually adjustable tubes into the Kuderna-Danish flasks. Thus, two samples can be reduced simultaneously in accordance with ISO 9377-2.

3

Type	Description	PK	Cat. No.
Kosta 2	Nitrogen station	1	**9.843 802**