VWR
We Enable Science

VWR INTERNATIONAL

ALL YOU NEED

FOR COSMETICS

- Sample collection
- Sample preparation
- Hygiene & disinfection
- General methods
- Life Science applications
- Microbiology
- Laboratory essentials

VWR
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Product choice simplified

For over 160 years, our customers have been challenged with finding the answers that help improve lives. Our mission is to identify product and service solutions, while eliminating process complexities to help labs and production facilities to work better and faster.

Through our global reach and knowledgable teams, we proudly excel in delivering solutions that improve productivity, accelerate discovery and encourage innovation.

Product choice delivered by a team of people focussed on your success.
Together, We Enable Science

VWR We Enable Science

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THESE SYMBOLS INDICATE IMPORTANT PRODUCT FEATURES:

SYMBOLS

Accessory articles required

Chemicals/ reagents required

Autoclavable

Explosion proof

HACCP Certified

Ethernet interface

RS 232interface

USB interface

Sterile

Selected for you

IP 21 IP 55 IP65 IP67 IP68

IP Classifications

Sustainable

2 year warranty 3 year warranty 4 year warranty 5 year warranty

Warranty

IVD

CE Marking conforms with IVD MDD 98/79 EC for in-vitro diagnostics

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- With health and safety data and useful physicochemical data
- With details of our quality and sustainability programmes

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Chemistry is a universal language and at VWR we're fluent because ... **We Enable Science**

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VWR® CUSTOM MANUFACTURING SERVICES FROM BENCH TO PRODUCTION

VWR enables the advancement of science by providing high quality chemicals and services, customised to unique product or manufacturing needs. We use operational excellence to deliver solutions that enable research, testing and production across the globe.

Our Core Capabilities Include:

- Custom liquid manufacturing
- Custom liquid dosing and packaging
- Custom powder manufacturing
- Powder dosing and packaging
- Assembly and finishing

VWR is committed to providing the highest manufacturing value for our customers. Primary attributes that define our approach include:

- Flexibility
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- Quality
- Operational excellence
- Resource optimisation
- Breadth of capabilities

Focus on your core business and let VWR take care of sourcing, production, testing and documentation of your chemicals.

Global manufacturing sites State-of-the-art facilities

Seven VWR manufacturing sites provide a global footprint to accommodate life science applications in biotechnology, biopharmaceutical, diagnostics and research, encompassing research and development to full scale production.

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- Helping you reclaim valuable time for research
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- Facility Support and Logistics support
- Sourcing and Procurement Solutions
- Scientific Research Support
- Laboratory Equipment Management
- Lean Six Sigma Laboratory Process Consulting

For more details on the services we offer, please contact us via VWRcatalyst@eu.vwr.com

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Speaking your language...
We Enable Science

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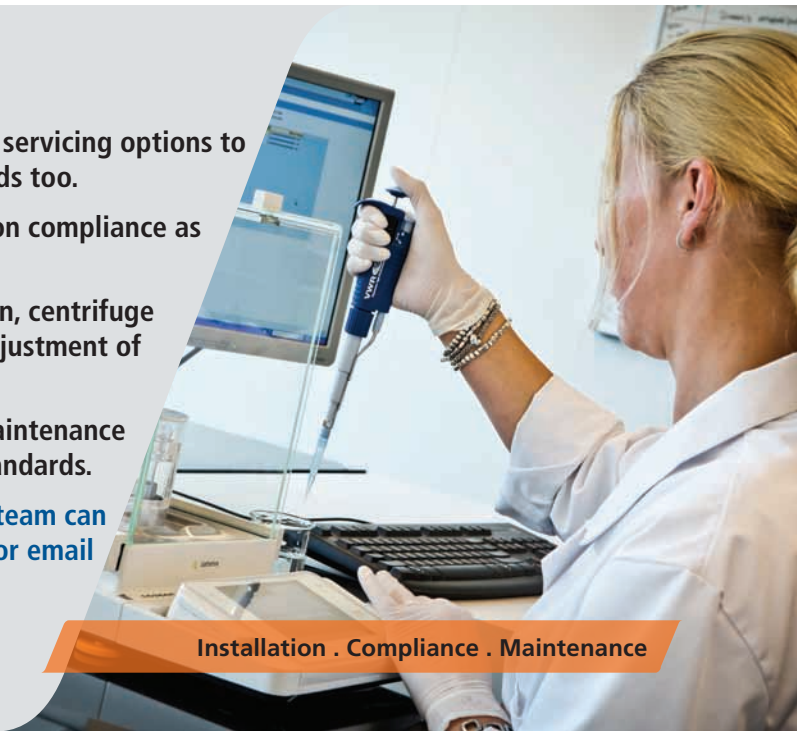
The VWR service team offers a wide range of servicing options to support your equipment VWR and other brands too.

We can help with GMP/GLP and FDA regulation compliance as well as IQ/OQ/PQ validations.

Our specialities include air sampler calibration, centrifuge servicing and independent calibration and adjustment of thermometers and data loggers.

VWR's multi-brand pipette calibration and maintenance is accurate and reliable to the highest ISO standards.

For full details of how our technical services team can help you contact your local VWR sales office or email technical.services@eu.vwr.com



VWR CATALYST
We Enable Science Through Services

VWR COLLECTION

Our own range of branded products delivers quality you can trust and value you've come to expect from VWR. Whether you need equipment, instruments, consumables or chemicals, there's a VWR product for your laboratory and your budget.

You will also find speciality chemicals, microbiology media, histology reagents and consumables and a wide range of safety and cleanroom products – its a collection that keeps on growing ...

At VWR, we are focused on your success because together we enable science.

VWR We Enable Science

basan® the cleanroom division of VWR

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pbi

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SAMPLE COLLECTION

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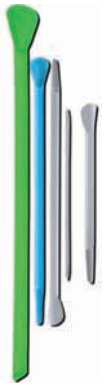
Sample containers 20

Sample storage 30

Spatulas, disposable



PP

Multipurpose, robust and inexpensive tools for collecting, transferring and processing samples of chemical and biological materials. The innovative shape of the spatulas allows them to be used as a spatula, spoon, scoop, scraper, mixing rod or for wiping. Ideal for recovering samples that have been frozen in liquid nitrogen. The macro type disposable spatulas are 50% larger than standard disposable spatulas. The long shaft makes it easier to transfer material from larger containers.

- Resistant to dilute acids and alkalis
- Reduce cross-contamination
- Autoclavable
- Compliant with FDA standards for applications involving contact with food

Description	Type	Length (mm)	Colour	Pk	Cat. No.
Standard disposable spatulas	Standard	210	Blue	300	**231-0103**
Standard disposable spatulas	Standard	210	Natural	300	**231-0104**
Macro disposable spatulas	Macro	310	Green	150	**231-0105**
Micro disposable spatulas, anti-static	Micro	140	Natural	300	**231-0106**
Sterile disposable spatulas	Sterile	210	Natural	100	**231-0369**
Disposable Eco spatulas, biodegradable (EcoPure® additive)	Eco	140	Natural	300	**231-0416**

Spatulas, micro, disposable, SteriWare®

PS or HDPE, sterile or non sterile

These disposable micro spatulas are ideal for sampling small volumes. The narrow sampling blade enables samples to be taken from very small containers such as vials.

- Moulded and packed in a cleanroom
- Suitable for food contact
- Available sterile (gamma irradiated)
- Individually packed

Description	Length (mm)	Blade (mm)	Sterile	Material	Pk	Cat. No.
Powder spatula, 2 ml	170	40×13	-	PS	100	**231-0488**
Powder spatula, 2 ml	170	40×13	+	PS	100	**231-0489**

Spatulas, Sterileware®
Bel-Art Products

PS, white

V-shaped, disposable spatula for powders, granules and pastes. Enables convenient, rapid sample collection and serves to prevent sample contamination. Ideal for collecting samples from bags, containers or a production process.

- Overall length 229 mm, insertion depth 152 mm, width 19 mm, depth 13 mm, volume 15 ml
- Stable handle and fixed tip, makes insertion in agglomerated materials easier
- Sterile, individually wrapped

Description	Length (mm)	Pk	Cat. No.
Sampling spatulas, sterile, 15 ml capacity	229	100	**231-0014**

Spoon spatulas
Bochem

Stainless steel 18/10, anti-magnetic

Multipurpose spoon for a wide range of uses. With round handle.

- Very good thermal resistance, autoclavable
- Good chemical resistance
- Quick and easy to clean

Length (mm)	Blade (mm)	Spoon size (mm)	Pk	Cat. No.
120	35×10	30×22	1	**231-0184**
150	40×10	30×22	1	**231-0476**
180	50×12	40×29	1	**231-0477**
210	50×12	40×29	1	**231-0478**
250	70×14	48×35	1	**231-0479**
300	70×14	48×35	1	**231-0185**

Spatula set
RSG Solingen

Stainless steel 18/10

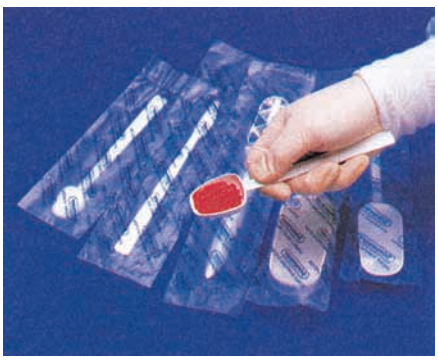
Useful combination of double spatulas, spoon spatulas and forceps. Universal usage in laboratories and industry.

- Very good thermal resistance, autoclavable
- Good chemical resistance
- Comes in practical imitation leather case

Each set includes a 150×5 and 150×7 mm spoon spatula, a 150×9 mm double spatula, a 150×4 mm micro double spatula, a 150×9 mm powder spatula, a 150×4 mm micro powder spatula, as well as tweezers (straight, blunt, 145 mm long).

Description	Pk	Cat. No.
Set of 6 spatulas and 1 pair of tweezers	1 SET	**231-2176**

Sampling spoons, sterile
Bel-Art Products



PS, white

Designed to gather small amounts of sample material.

- For powder, granulates and liquids
- The long handle reaches easily into confined areas and minimises the potential of personal contact with sampled material
- Available in three sizes; all sterilised and individually packed

Length (mm)	Capacity (ml)	Pk	Cat. No.
178	2,46	200	**231-2423**
178	4,93	200	**231-0418**
178	14,79	200	**231-2425**

Scoops, disposable, PharmaScoop®, SteriWare®

PS or PP

Single-use plastic scoops for hygienic applications. These scoops are a useful alternative to traditional stainless steel scoops. They are moulded and packed in a cleanroom environment. Each scoop is individually wrapped so that they remain clean from the time that they are moulded until they are used.

- FDA conforming materials
- Crevice- and BSE/TSE-free
- Full batch traceablility
- ATEX rated for zones 0,1 and 2

Description	Capacity (ml)	Length (mm)	Width (mm)	Pk	Cat. No.
White, non sterile	30	153	40	100	**231-0381**
White, non sterile	60	178	49	100	**231-0420**
White, non sterile	125	196	61	100	**231-0375**
White, non sterile	250	209	81	100	**231-0377**
White, non sterile	500	249	118	100	**231-0383**
White, non sterile	1000	324	150	100	**231-0374**
White, non sterile	2500	357	166	60	**231-0450**
White, sterile	30	153	40	100	**231-0382**
White, sterile	60	178	49	100	**231-0421**
White, sterile	125	196	61	100	**231-0376**
White, sterile	250	209	81	100	**231-0380**
White, sterile	500	249	118	100	**231-0384**
White, sterile	1000	324	150	100	**231-0419**
White, sterile	2500	357	166	60	**231-0451**

Scoops
RSG Solingen

Stainless steel

Manual scoops for collecting or measuring powders, pastes or granulates.

- Very good thermal resistance, autoclavable
- Good chemical resistance
- Robust design

Capacity (ml)	Length (mm)	Pk	Cat. No.
120	190	1	**231-0201**
450	250	1	**231-0202**
1000	320	1	**231-0203**
1500	350	1	**231-0204**
2500	365	1	**231-0236**

Scoops, FoodScoop
Bürkle

Stainless steel V2A (1.4301), highly polished

Very stable hand scoop for various applications, particularly suitable for the food industry. Seamless join between scoop and hollow handle so has no crevices and edges.

- Conforms to European food law regulations
- Robust design
- With suspension eyelet

Capacity (ml)	Length (mm)	Width (mm)	Pk	Cat. No.
100	120	60	1	**231-0403**
200	140	75	1	**231-0404**
250	155	85	1	**231-0405**
350	180	100	1	**231-0406**
500	220	130	1	**231-0407**

Sets of cutlery

PS

- Disposable
- Individually packed

Description	Pk	Cat. No.
Spoon	100	**481-0674**
Knife	100	**481-0675**
Fork	100	**481-0676**

IVD

Cervical scrapers, Ayre spatula, wood

Wooden spatula with rounded edges. Non sterile.

Description	Pk	Cat. No.
Cervical scrapers, Ayre spatula, wood	500	**231-2475**

IVD

Cervical scrapers, Ayre spatula, plastic

PP spatula with rounded edges. Sterile model is sterilised by ethylene oxide. Pack includes instructions for use.

Description	Pk	Cat. No.
Cervical scrapers, Ayre spatula, plastic, non sterile	500	**231-2601**
Cervical scrapers, Ayre spatula, plastic, sterile, individual peel-packs	500	**231-2611**

Tongue depressor

PS, cream

Tongue depressor with smooth rounded edges. Can also be used for spreading balms and ointments, for stirring liquids or mixing medicine.

- Odour and taste-free
- Maintains a high tensile strength, more flexible than wood depressors
- Features a ribbed finger rest for easy handling

Description	Length (mm)	Sterile	Width (mm)	Pk	Cat. No.
Tongue depressor, non sterile	160	-	20	250	**231-2645**
Tongue depressor, ethylene oxyde sterilised, flow-pack, supplied with "instuctions for use"	160	+	20	500	**231-2646**

Tongue depressor

Wood

Tongue depressor with smooth rounded edges. Made from high quality wood to provide a smooth, splinter-free finish. Can also be used for spreading balms and ointments and for stirring liquids or mixing medicine.

- Odour and taste-free
- Maintains a high tensile strength

Description	Length (mm)	Sterile	Width (mm)	Material	Pk	Cat. No.
Tongue depressor, non sterile, 50×100 pieces	150	-	20	Wood	5.000	**231-0370**
Tongue depressor, ethylene oxyde sterilised, flow-pack, 500 pieces	150	+	20	Wood	500	**231-0486**

Tongue depressor

Wood

As well as conventional use, these can also be used in a wide range of laboratory and production applications.

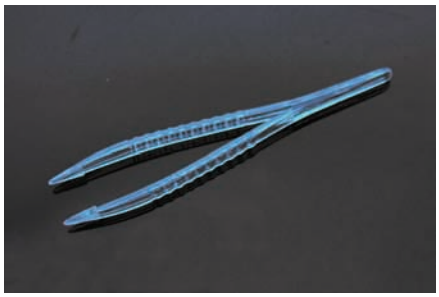
- Smooth, round edges
- Clean finish, splinter-free
- Odourless and taste-free

Length (mm)	Width (mm)	Pk	Cat. No.
150	20	100	**231-2634**

VWR COLLECTION

SELECTED FOR YOU

Forceps



PS, translucent blue

- Combine high mechanical strength, flexibility and chemical resistance
- Available in sterile (individually wrapped) and non sterile versions

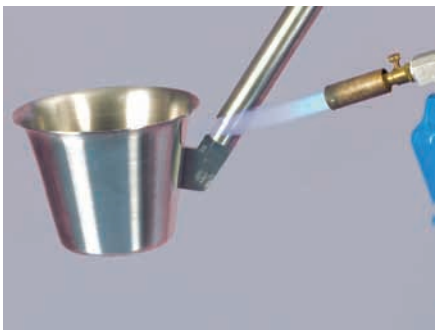
Type	Length (mm)	Pk	Cat. No.
Sterile, individually wrapped	120	100	**232-0191**
Non sterile, 3 bags of 500	120	1.500	**232-0192**

Forceps
RSG Solingen

Stainless steel 18/10, anti-magnetic

Type	Length (mm)	Pk	Cat. No.
Straight, blunt	105	1	232-2111
Straight, blunt	115	1	232-2112
Straight, blunt	130	1	232-2113
Straight, blunt	145	1	232-2114
Straight, blunt	160	1	232-2115
Straight, blunt	200	1	232-2116
Straight, blunt	250	1	232-2117
Straight, blunt	300	1	232-2118
Straight, pointed	105	1	232-2121
Straight, pointed	115	1	232-2122
Straight, pointed	130	1	232-2123
Straight, pointed	145	1	232-2124
Straight, pointed	160	1	232-2125
Straight, pointed	200	1	232-2126
Curved, pointed	105	5	232-2160
Curved, pointed	115	1	232-2131
Curved, pointed	130	1	232-2132
Curved, pointed	145	1	232-2133
Curved, pointed	160	1	232-2134
Curved, pointed	200	5	232-0190

Scoop
Bürkle



Stainless steel V2A (1.4301)

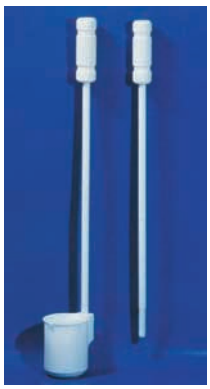
- Complete with rod
- No openings, undercuts or crevices in which residues could collect
- Pore-free finish produced by high-quality laser welding seams
- Sterilisable by flame sterilisation or steam sterilisation

Capacity (ml)	Length (cm)	Pk	Cat. No.
1000	115	1	331-0056

VWR COLLECTION

SELECTED FOR YOU

Sample dippers



PTFE, inert

Extendible screw-in shafts have a steel core for rigidity and are fully encapsulated in PTFE. The basic unit consists of a container with a single 600 mm shaft. A second shaft (331-0005) can be screwed onto the handle to increase length.

- Very good chemical resistance
- Temperature resistant; suitable for use at high and low temperatures (–200 to +280 °C)

Description	Capacity (ml)	Pk	Cat. No.
Dipper	100	1	331-0006
Dipper	250	1	331-0007
Dipper	500	1	331-0008
Dipper	1000	1	331-0009
Replacement/extension shaft, 600 mm	-	1	331-0005

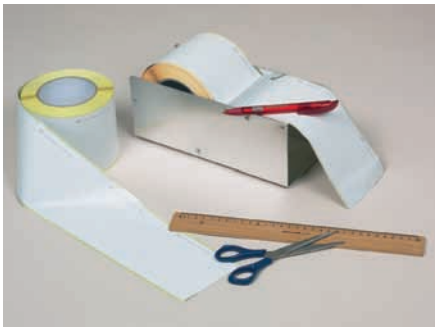
Control seal, close-it® food
Bürkle

A control seal with an adhesive approved for use with foodstuffs. The strength of the adhesive is almost as powerful as that of the original. Just like the original, close-it® food has a barrier layer of aluminium foil. This means that close-it® food is suitable for sampling foodstuffs, pharmaceuticals, cosmetics, food additives, even frozen goods where cleanliness is particularly important. Rolls contain 500 (95×95 mm) or 250 (150×150 mm) stickers.

- Adheres very firmly
- Can be written on
- Adhesive complies with the European guidelines for foodstuffs

Description	Pk	Cat. No.
95×95 mm		
close-it® food 95×95 mm, blank, white	1 Roll	**312-0074**
close-it® food 95×95 mm, printed red	1 Roll	**312-0073**
close-it® food 95×95 mm, printed yellow	1 Roll	**312-0094**
close-it® food 95×95 mm, printed blue	1 Roll	**312-0095**
close-it® food 95×95 mm, printed green	1 Roll	**312-0096**
close-it® food 95×95 mm, printed black	1 Roll	**312-0097**
150×150 mm		
close-it® food 150×150 mm, blank, white	1 Roll	**312-0076**
close-it® food 150×150 mm, printed red	1 Roll	**312-0075**
close-it® food 150×150 mm, printed yellow	1 Roll	**312-0098**
close-it® food 150×150 mm, printed blue	1 Roll	**312-0099**
close-it® food 150×150 mm, printed green	1 Roll	**312-0100**
close-it® food 150×150 mm, printed black	1 Roll	**312-0101**

Control seal, close-it® tape
Bürkle



Standard close-it® and close-it® food control seals are also available on a continuous roll. This offers the flexibility to provide a small length of tape to seal a small hole or to mark a specific point. Alternatively longer pieces can be used to repair a long tear quickly, reliably and easily. With its extremely strong adhesive strength, close-it® tapes adhere to a range of different surfaces, where the glue effect of normal adhesive tape quickly reaches its maximum capacity.

- Customisable
- White with tear-off lines
- Available in the classic close-it® design, as well as close-it® tape food, with a food-compatible adhesive
- Can be labelled with permanent ink and provides gas-proof seal

Description	Length (m)	Pk	Cat. No.
Standard			
close-it® tape 95 mm, standard	50	1 Roll	**312-0089**
close-it® tape 150 mm, standard	50	1 Roll	**312-0090**
Food			
close-it® tape 95 mm, food	50	1 Roll	**312-0091**
close-it® tape 150 mm, food	50	1 Roll	**312-0092**

Sampler for viscous substances, Mini ViscoSampler
Bürkle

V4A stainless steel, electropolished. For viscous media such as paste, sludge, cream or oil. Supplied with a 2 mm suction nozzle which can be replaced with drills that have a wider aperture for sampling substances with higher viscosity. The sampler has a diameter of 15 mm and is available in three lengths.

- Easy to clean
- Ideal for pharmaceutical industry
- Sterilisable
- Stainless steel V4A (1.4404)/ AISI 316L

Description	Pk	Cat. No.
Mini ViscoSampler 600 mm	1	**300-1032**
Mini ViscoSampler 1000 mm	1	**300-1027**
Mini ViscoSampler 1500 mm	1	**300-1028**

Description	Pk	Cat. No.
Accessories		
Suction nozzle Ø 2 mm	1	**300-1029**
Suction nozzle Ø 4 mm	1	**300-1030**
Suction nozzle Ø 6 mm	1	**300-1031**

Hand-Drill, QualiRod
Bürkle

Conically shaped hand-drill, with sharp cutting edges and a solid handle. Ideal to cut out samples from soft, paste-like substances (cheese, butter, clay, loam, soap, wax, etc.).

- Stainless steel V2A (1.4301)/AISI 304
- Sterilisable
- Conforms to standards EN/ISO 707

Weight 96 g.

Description	Length (cm)	Immersion depth (mm)	Pk	Cat. No.
Hand-drill, conical	17,5	120	1	**300-0018**
Hand-drill, conical	17,5	170	1	**300-0140**

Hand-Drill, QualiRod
Bürkle

Cylindrical hollow drill with a sharp cutting edge, can easily be driven into paste-like and semi-solid substances. The samples cut out are subsequently removed with the appropriate push-rod ejector.

- Stainless steel V2A (1,4301)
- Sterilisable
- Inner Ø 8 mm, outer Ø 10 mm

Description	Length (cm)	Immersion depth (mm)	Ø (mm)	Pk	Cat. No.
Hand-drill, cylindrical	26	200	8	1	**300-0141**

Sampler for medium viscosity substances, ViscoSampler
Bürkle

Made of transparent PP or ultra-pure and chemically inert PTFE/FEP for contamination-free sampling. The medium to be sampled is drawn up and discharged using the suction flask. Developed for viscous substances such as slurry, silt, sediment, oil or emulsions. The sampler can be disassembled and the non porous surfaces completely cleaned.

- Powerful suction for viscous media
- No dirt accumulation
- Disassembling and cleaning is very easy
- Colour coded handles available

Description	Capacity (ml)	Pk	Cat. No.
ViscoSampler, PP	160	1	**331-0038**
ViscoSampler, PP	300	1	**331-2162**
ViscoSampler, PP	650	1	**331-2163**
ViscoSampler, PTFE/FEP	160	1	**331-0039**
ViscoSampler, PTFE/FEP	300	1	**331-2160**
ViscoSampler, PTFE/FEP	650	1	**331-2161**

Viscous samplers

The viscous sampler is ideal for sampling creams, shampoos, soaps, honey and other semi-viscous materials. After sampling, the sampler can be completely dismantled for quick and thorough cleaning.

Continued on next page

Continued from previous page

Description	Capacity (ml)	Pk	Cat. No.
Viscous sampler, stainless steel 316, 1000 mm, for medium viscosity materials	300	1	**231-0487**

Samplers, pigment lance
Bürkle

Pigment lance to sample pigments, pastes and agglomerating bulk goods.

- With half-open flute, 50%, for highly sticky products
- With quarter-open flute, 25%, for less sticky products
- Stainless steel V4A (1.4404)

Description	Length (cm)	Ø (mm)	Volume (ml)	Pk	Cat. No.
Pigment lance, for pigments and pastes, stainless steel V4A, 25 %	30	30	145	1	**231-0480**
Pigment lance, for pigments and pastes, stainless steel V4A, 50 %	30	30	85	1	**231-0481**
Pigment lance, for pigments and pastes, stainless steel V4A, 25 %	60	30	312	1	**231-0482**
Pigment lance, for pigments and pastes, stainless steel V4A, 50 %	60	30	179	1	**231-0483**
Pigment lance, for pigments and pastes, stainless steel V4A, 25 %	90	30	480	1	**231-0484**
Pigment lance, for pigments and pastes, stainless steel V4A, 50 %	90	30	273	1	**231-0485**

Jumbo pipettes, SteriWare®

Made from HDPE (FDA acceptable grade conforms to CFR 177.1520). This Jumbo Pipette is a low cost disposable liquid sampler. It is ideal for taking samples from low viscosity liquids.

- Quick and easy to use
- Individually wrapped
- Different convenient lengths available
- Available pre-sterilised, assembled in a cleanroom

Description	Capacity (ml)	Pk	Cat. No.
Jumbo pipette, HDPE, non sterile, for low viscosity liquids, 450 mm, overall Ø 21 mm, I.Ø 17 mm	80	50	**300-2006**
Jumbo pipette, HDPE, sterile, for low viscosity liquids, 450 mm, overall Ø 21 mm, I.Ø 17 mm	80	50	**300-2007**
Jumbo pipette, HDPE, non sterile, for low viscosity liquids, 900 mm, overall Ø 21 mm, I.Ø 17 mm	180	50	**300-2008**
Jumbo pipette, HDPE, sterile, for low viscosity liquids, 900 mm, overall Ø 21 mm, I.Ø 17 mm	180	50	**300-2009**
Jumbo pipette, HDPE, non sterile, for low viscosity liquids, 1100 mm, overall Ø 21 mm, I.Ø 17 mm	225	50	**300-2033**

Samplers, Liquid-Sampler
Bürkle

Material: V4A stainless steel (1.4404). Sampler for thin to viscous liquids.

- Easy to operate with one hand
- With discharge funnel for safe filling of sample bottles

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Description	Capacity (ml)	Pk	Cat. No.
Opened/closed with thumb			
Liquid-Sampler, open with thumb, 32×460 mm	50	1	**331-0032**
Liquid-Sampler, open with thumb, 32×540 mm	100	1	**331-0033**
Opened/closed semi-automatically			
Liquid-Sampler, place onto bottle, 32×455 mm	50	1	**331-0034**
Liquid-Sampler, place onto bottle, 32×535 mm	100	1	**331-0035**

Samplers, single-use, sampling system

Suitable for all industries (pharmaceutical, food, chemical, cosmetic, biotechnology, etc.). Pre-sterilised versions available. Length 500 or 1000 mm, diameter 21 mm.

- FDA conformity, BSE-,TSE-free, full batch traceability, ATEX rated
- Risk of cross-contamination is eliminated
- Assembled in a cleanroom environment
- Economical - save time and money

Each sampler is individually wrapped, 20/box.

Description	For volume (ml)	Sterile	Pk	Cat. No.
Disposable LiquiThief for sampling low viscosity liquids (e.g. water), sampling hole is 1.5 mm				
HDPE, 500 mm	100	-	20	**300-2002**
HDPE, 500 mm	100	+	20	**300-2003**
HDPE, 1000 mm	190	-	20	**300-2000**
HDPE, 1000 mm	190	+	20	**300-2001**
Disposable ViscoThief for sampling creams and gels, sampling hole is 10 mm				
HDPE, 500 mm	100	-	20	**300-2012**
HDPE, 500 mm	100	+	20	**300-2013**
HDPE, 1000 mm	190	-	20	**300-2010**
HDPE, 1000 mm	190	+	20	**300-2011**

Bowls, disposable

HDPE, white

Ideal for handling and mixing powders and liquids. With spout and grip.

- Moulded and packed in a cleanroom
- Individually bagged
- FDA acceptable CFR 177.1520, EU Regulations 10/2011 compliant
- BSE- and TSE-free
- Full batch traceability

Capacity (ml)	Ø ext. (mm)	Pk	Cat. No.
500	129	100	**216-1554**

Disposal bags

With 'Biohazard' printing

Without 'Biohazard' printing

PP, 40 µm thick, clear, with or without 'Biohazard' printing

For safe disposal of laboratory waste such as pipette tips, disposable Petri dishes, sample tubes, etc.

- Heat resistant up to 145 °C
- Autoclavable

Description	Capacity (l)	L×W (mm)	Pk	Cat. No.
Without 'Biohazard' printing				
Autoclavable bags, clear	2	200×300	500	**129-0578**
Autoclavable bags, clear	3	400×250	500	**129-0579**
Autoclavable bags, clear	12	660×305	500	**129-0580**
Autoclavable bags, clear	14	610×420	500	**129-0582**
Autoclavable bags, clear	16	780×400	500	**129-0581**
Autoclavable bags, clear	25	770×550	500	**129-0583**
Autoclavable bags, clear	32	780×600	500	**129-0584**
Autoclavable bags, clear	40	1100×700	350	**129-0585**
Autoclavable bags, clear	60	1100×900	100	**129-0586**
With 'Biohazard' printing				
Autoclavable bags, clear, with 'Biohazard' printing	12	660×305	200	**129-0587**
Autoclavable bags, clear, with 'Biohazard' printing	14	610×420	200	**129-0588**
Autoclavable bags, clear, with 'Biohazard' printing	32	780×600	200	**129-0589**

Bags, biohazard

PP, 50 µm thick, with 'Biohazard' label

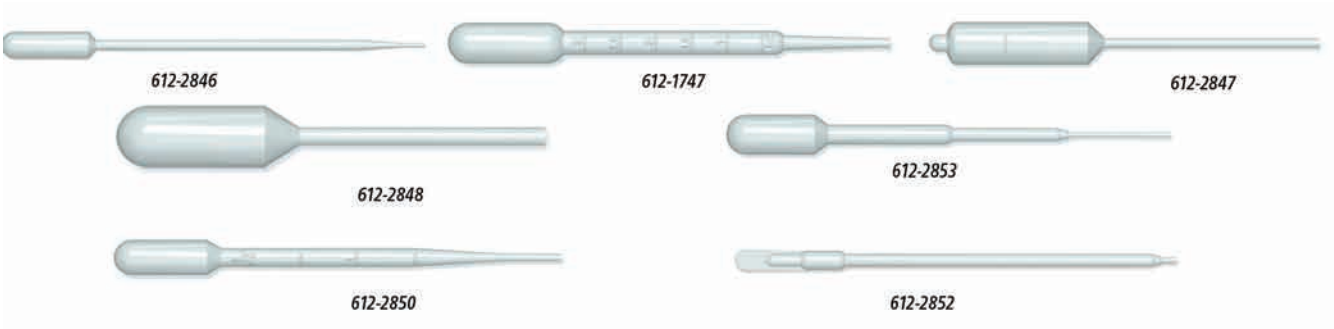
Sturdy bags, ideal for disposing of biologically hazardous waste that must first be autoclaved. With wire closures that allow expansion of the bag and ventilation when cooling. Highly resistant to tears and puncture. Available as transparent bags without temperature indicator or orange with temperature indicator.

- Autoclavable up to 135 °C
- The useful temperature indicator text is white before autoclaving, then black. The text 'Contents Have Been Autoclaved' indicates successful autoclaving
- Highly visible 'Biohazard' label with the corresponding warning sign

The bags meet the requirements of the 165 g puncture inspection standard as described in ASTM D 709-98.

Description	Capacity (l)	Material	L×W (mm)	Pk	Cat. No.
Orange with temperature indicator	11	PP	483×356	200	**129-0024**
Orange with temperature indicator	27	PP	610×483	200	**129-0025**
Orange with temperature indicator	80	PP	889×635	200	**129-0026**
Orange with temperature indicator	210	PP	1143×914	100	**129-0027**
Clear	12	PP	610×305	200	**129-0028**
Clear	75	PP	914x610	200	**129-0029**

Transfer pipettes, High Performance



LDPE, disposable

These unbreakable all in one pipettes eliminate the hazard of broken glass and exposure to infectious materials. The low-affinity surface reduces the loss of cells and valuable proteins due to binding. They work well whenever there is a need for quick, safe transfer of fluids.

- Non toxic and inert to biological fluids and most acids
- Can be heat-sealed and frozen at very low temperatures such as in liquid nitrogen
- Available sterile or non sterile
- Sterility assurance level is SAL10^{-6}

Packaging: Sterile pipettes are packaged in medical grade paper and non toxic film.

Capacity (ml)	Drop vol. (µl)	Suction volume (ml)	Stem Ø (mm)	Length (mm)	Graduation (ml)	Sterile	Packed	Pk	Cat. No.
General purpose									
1,5	40	1,0	5	87	-	-	Bulk	1.000	**612-2846**
	35,7	1,0	5	123	-	-	Bulk	1.000	**612-2849**
Graduated									
3,0	45,4	1,0	5	138	1,0	-	Bulk	500	**612-2851**
5,0	43,4	1,0	5	150	1,0	-	Bulk	500	**612-1684**
	43,4	1,0	5	150	1,0	+	Individual	500	**612-1685**
	43,4	1,0	5	150	1,0	+	5 per bag	500	**612-1686**
	43,4	1,0	5	150	1,0	+	10 per bag	500	**612-1687**
6,0	45,4	1,5	5	230	1,5	-	Bulk	400	**612-2842**
	45,4	1,5	5	230	1,5	+	5 per bag	500	**612-2844**
7,0	47,6	3,0	7,8	150	3,0	-	Bulk	500	**612-1681**
	47,6	3,0	7,8	150	3,0	+	Individual	500	**612-1747**
	47,6	3,0	7,8	150	3,0	+	5 per bag	500	**612-1682**
	47,6	3,0	7,8	150	3,0	+	10 per bag	500	**612-1683**
Narrow stem									
1,2	40	0,9	2,5	63	-	-	Bulk	500	**612-2848**
4,0	35,7	3,5	2,5	150	-	-	Bulk	500	**612-1688**
	35,7	3,5	2,5	150	-	+	Individual	500	**612-1756**
Fine tip									
1,5	20	1,0	3	104	-	-	Bulk	400	**612-2853**
5,0	15,4	3,5	5	144	-	-	Bulk	500	**612-2856**
	15,4	3,5	5	144	-	+	Individual	500	**612-2857**
7,0	15,1	6,0	6,3	150	-	-	Bulk	400	**612-4464**
Blood bank									
5,0	45,4	2,0	6,7	155	2,0	-	Bulk	500	**612-2850**
Paddle									
3,0	30,3	0,2	3,8	130	-	-	Bulk	500	**612-2852**

Transfer pipettes, Standard Line

LDPE, disposable

These unbreakable all-in-one pipettes eliminate the potential hazard of broken glass and exposure to infectious materials. The low-affinity surface reduces the loss of cells and valuable proteins due to binding. They work well whenever there is a need for quick, safe transfer of fluids.

- Will not shatter or break
- Non toxic and inert to biological fluids and most acids
- Can be sealed and refrigerated; can be gas sterilised
- No bulb to insert or remove
- Uniform drop size

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	Capacity (ml)	Drop vol. (µl)	Suction volume (ml)	Length (mm)	Graduation (ml)	Sterile	Packed	Pk	Cat. No.
Graduated, large bulb									
	5,8	40	3,4	155	0,25	-	Bulk	500	**612-4494**
		40	3,4	155	0,25	+	Individually wrapped	500	**612-4497**
	7,0	50	3,0	153	1,0	-	Bulk	500	**612-4472**
		50	3,0	153	1,0	+	Individually wrapped	500	**612-4473**
	7,5	50	3,2	155	0,5	-	Bulk	500	**612-4545**
		50	3,2	155	0,5	+	20 per bag	500	**612-4502**
		50	3,2	155	0,5	+	Individually wrapped	500	**612-4543**
Graduated, small bulb									
	3,0	40	2,1	140	0,25	-	Bulk	500	**612-4520**
Non graduated, standard									
	7,5	50	3,2	155	-	-	Bulk	500	**612-4504**
Non graduated, general purpose									
	1,7	40	0,9	87	-	-	Bulk	500	**612-3608**
Non graduated, general purpose, large bulb									
	8,0	50	4,6	152	-	+	20 per bag	400	**612-4508**
		50	4,6	152	-	+	Individually wrapped	400	**612-4509**
	9,3	56	4,8	137	-	-	Bulk	250	**612-4511**
Non graduated, narrow stem, standard									
	4,6	45	3,3	155	-	-	Bulk	500	**612-3609**
		45	3,3	155	-	+	Peel-off pouch (100×5)	500	**612-4526**
Non graduated, narrow stem, large bulb									
	4,0	40	3,0	86	-	-	Bulk	500	**612-4476**
Non graduated, thin stem									
	1,5	48	0,8	116	-	-	Bulk	500	**612-3399**
		48	0,8	116	-	+	20 per bag	500	**612-4468**
	15,0	53	8,0	155	-	-	Bulk	250	**612-4512**
Non graduated, long									
	5,5	40	2,3	230	-	-	Bulk	500	**612-3610**
Non graduated, extra long									
	23,0	50	7,3	300	-	-	Bulk	100	**612-3627**
		50	7,3	300	-	+	Individually wrapped	100	**612-4515**
Non graduated, fine tip, standard									
	5,8	20	3,3	147	-	-	Bulk	500	**612-4492**
		20	3,3	147	-	-	Peel-off pouch (50×10)	500	**612-4530**
Non graduated, extended fine tip, large bulb									
	5,0	20	3,3	153	-	-	Bulk	250	**612-4486**

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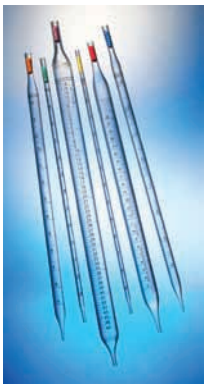
	Capacity (ml)	Drop vol. (µl)	Suction volume (ml)	Length (mm)	Graduation (ml)	Sterile	Packed	Pk	Cat. No.
Non graduated, extended fine tip, small bulb									
	1,5	20	1,0	104	-	+	20 per bag	500	**612-4466**
		20	1,0	104	-	+	Individually wrapped	400	**612-4518**

Serological pipettes



PS, transparent, graduated

Smooth, shiny, transparent pipettes with smooth ends and raised, bright, permanent graduations.

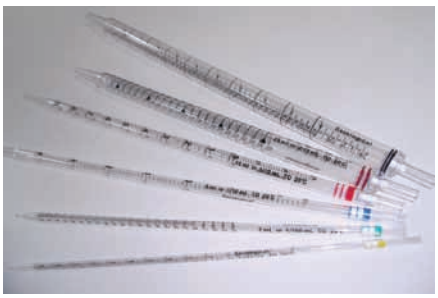
- Coloured top for easy identification
- With cotton plug
- Negative and double graduations: Ascending and descending (for 5, 10, 25 ml) and very precise
- Integral construction, preventing any risk of leakage or retention at the weld seam, and shorter for improved ergonomics and greater comfort during use, particularly when working within a fume hood
- Non pyrogenic, non cytotoxic, non haemolytic

Packaging: Bulk or individually wrapped in paper/plastic peel-pack with „fibre-free" paper - no fibre in suspension while opening the wrap.

Ordering information: Supplied in stackable dispensing boxes.

Capacity (ml)	Division (ml)	Packed	Pk	Cat. No.
Sterile				
1	0,01	Single	500	**612-1240**
	0,01	25 per bag	1.000	**612-1271**
2	0,02	Single	500	**612-1243**
	0,02	25 per bag	1.000	**612-1274**
5	0,10	Single	250	**612-1245**
	0,10	25 per bag	375	**612-1276**
10	0,10	Single	200	**612-1248**
	0,10	25 per bag	250	**612-1279**
25	0,20	Single	100	**612-1270**
	0,20	10 per bag	100	**612-1600**
50	0,50	Single	100	**612-3982**
Non sterile				
1	0,01	Bulk	2.000	**612-1288**
2	0,02	Bulk	1.000	**612-1289**
5	0,10	Bulk	400	**612-1290**
10	0,10	Bulk	250	**612-1291**

Serological pipettes, Standard Line



PS, transparent, graduated, sterile

- Graduations are calibrated for accurate dispensing to within ±3%
- Colour coded stripes for quick volume identification
- Non pyrogenic
- With cotton plug

Packaging: Individually wrapped in paper-plastic bags or bulk packed in bags.

Capacity (ml)	Division (ml)	Colour code	Packed	Pk	Cat. No.
Individually wrapped					
1	0,01	Yellow	Individual	1.000	**612-3707**
2	0,01	Green	Individual	800	**612-3704**
5	0,10	Blue	Individual	300	**612-3702**
10	0,10	Red	Individual	200	**612-3700**
25	0,20	Lilac	Individual	200	**612-3698**
50	1,00	Black	Individual	100	**612-3696**

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Capacity (ml)	Division (ml)	Colour code	Packed	Pk	Cat. No.
Bulk packed					
1	0,01	Yellow	25/bag	1.000	**612-3705**
2	0,01	Green	25/bag	700	**612-3703**
5	0,10	Blue	25/bag	500	**612-3701**
10	0,10	Red	25/bag	350	**612-3699**
25	0,20	Lilac	25/bag	350	**612-3697**
50	1,00	Black	25/bag	250	**612-3695**

Serological pipettes, Sterilin®
Thermo Scientific

PS, transparent, disposable, sterile

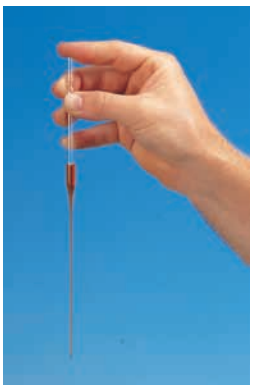
- Clear black printed graduations for maximum clarity, colour coded for easy identification, printed with product code/lot number and expiry date
- Negative graduations for extra capacity
- Gamma irradiated to ensure sterility and certified both non pyrogenic (<0,1 EU/ml) and non haemolytic

Ordering information: Batch specific certificate supplied in each case.

Capacity (ml)	Division (ml)	Colour code	Pk	Cat. No.
Pipettes, individually wrapped, paper peel packaging, plugged				
1	0,01	Yellow	1.000	**612-2958**
2	0,01	Green	1.000	**612-2959**
5	0,1	Blue	200	**710-0092**
10	0,1	Orange	500	**710-0093**
25	0,2	Red	200	**710-0094**
50	1	Lilac	50	**710-0095**
Pipettes, individually wrapped, plastic film packaging, plugged				
1	0,01	Yellow	1.000	**612-2944**
2	0,01	Green	1.000	**612-3266**
5*	0,1	Blue	200	**734-0463**
5	0,1	Blue	200	**734-0476**
10	0,1	Orange	500	**734-0477**
25	0,2	Red	25	**612-3267**
50	1	Lilac	50	**734-0479**
Pipettes, bulk packed, plugged				
1	0,01	Yellow	1.000	**612-2957**
2	0,01	Green	1.000	**612-3268**
5	0,1	Blue	200	**710-0091**
10	0,1	Orange	500	**734-0480**

*Without suction adapter

Pasteur pipettes

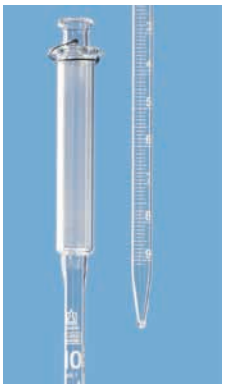


Glass, disposable, non sterile

- Automated manufacturing process ensuring total uniformity of production
- Tapered upper opening for cotton ball plugging
- Top body outer diameter: 7,1 mm, wall thickness: 0,53 mm, jet outer Ø: 1,50 mm

Description	Capacity (ml)	Length (mm)	Pk	Cat. No.
Non plugged	2,0	150	250	**612-1701**
Non plugged	2,0	230	250	**612-1702**
Pre-plugged	2,0	150	250	**612-1798**
Pre-plugged	2,0	230	250	**612-1799**

Graduated pipettes, SILBERBRAND, with piston, total delivery
Brand



AR-Glas®

- Calibrated to deliver 'Ex'
- Marks and inscriptions in high contrast white enamel
- Integrated piston pipetting aid with retaining spring

Length: 360 mm ±10 mm except for 25 ml pipettes: 450 mm ±10 mm

Capacity (ml)	Division (ml)	Pk	Cat. No.
1	0,01	1	**612-1001**
2	0,02	1	**612-1002**
5	0,05	1	**612-1003**
10	0,1	1	**612-1004**
25	0,2	1	**612-1006**

Graduated pipettes, type 3, total delivery
Hirschmann Laborgeräte

AR-Glas®, class AS

- Calibrated to deliver 'Ex', certificate of conformity with dated batch identification available on internet (www.hirschmannlab.de)
- Marks and inscriptions in amber stain, graduated to the tip
- From 5 ml with a cotton plug as standard
- Waiting time 5 seconds

DIN EN ISO 835

Length: 360 mm ±5 mm except for 25 and 50 ml pipettes: 450 mm ±5 mm

Capacity (ml)	Division (ml)	Tolerance (± ml)	Pk	Cat. No.
0,5	0,01	0,006	1	**612-1045**
1	0,01	0,007	1	**612-1046**
1	0,1	0,007	1	**613-2111**
2	0,01	0,01	1	**613-2112**
2	0,02	0,01	1	**612-1047**
2	0,1	0,01	1	**613-2113**
5	0,05	0,03	1	**612-1048**
5	0,1	0,03	1	**612-1049**
10	0,1	0,05	1	**612-1050**
20	0,1	0,1	1	**612-1051**
25	0,1	0,1	1	**612-1052**
50	0,2	0,2	1	**612-1053**

Capacity (ml)	Division (ml)	Tolerance (± ml)	With	Pk	Cat. No.
With certificate					
1	0,01	0,006	USP certificate	12	**612-4723**
1	0,1	0,007	DKD certificate	1	**612-4725**
2	0,02	0,01	USP certificate	1	**612-4727**
2	0,1	0,01	DKD certificate	1	**612-4729**
5	0,05	0,02	USP certificate	1	**612-4731**
5	0,1	0,03	DKD certificate	1	**612-4733**
10	0,1	0,03	USP certificate	1	**612-4735**
10	0,1	0,05	DKD certificate	1	**612-4742**
20	0,1	0,1	DKD certificate	1	**612-4743**
25	0,2	0,05	USP certificate	1	**612-4744**
25	0,1	0,1	DKD certificate	1	**612-4745**
50	0,2	0,2	DKD certificate	1	**612-4746**

Bulb pipettes with syringe
Hirschmann Laborgeräte

Glass, 1 mark

- With silver diffusion ink durable brown graduation
- With attached syringe for simple and risk-free pipetting

Capacity (ml)	Tolerance (± ml)	Pk	Cat. No.
1	0,008	1	**612-1341**
2	0,01	1	**612-1342**
5	0,015	1	**612-1343**
10	0,02	1	**612-1344**
20	0,03	1	**612-1345**
25	0,03	1	**612-1346**
50	0,05	1	**612-1347**

Bulb pipettes
Hirschmann Laborgeräte

AR-Glas®, 1 mark, class AS

- Calibrated to deliver (TD, Ex)
- Ring mark and inscriptions in blue
- Certificate of conformity with dated batch identification available via website: (www.hirschmannlab.de)

DIN EN ISO 648

Capacity (ml)	Tolerance (± ml)	Length (mm)	Pk	Cat. No.
1	0,007	300	1	**612-1310**
2	0,01	330	1	**612-1311**
2,5	0,01	350	1	**612-1312**
3	0,01	350	1	**612-1313**
5	0,015	400	1	**612-1314**
10	0,02	440	1	**612-1315**
15	0,03	510	1	**612-1316**
20	0,03	510	1	**612-1317**
25	0,03	520	1	**612-1318**
50	0,05	540	1	**612-1384**
100	0,08	585	1	**612-1320**

VWR COLLECTION

SELECTED FOR YOU

Measuring cylinders

PP, translucent, tall form, autoclavable, class B

Non wetting properties mean no loss of liquid. The measured liquid quantity is the same as the quantity dispensed.

- Ring moulded graduations, overprinted in blue
- Large hexagonal base for better stability
- Anti-drip lip
- Autoclavable at +121 °C for 20 minutes

DIN 12681, ISO 6706

Capacity (ml)	Division (ml)	Tolerance (± ml)	Height (mm)	Ø (mm)	Pk	Cat. No.
25	0,5	0,5	169	21	12	**612-4401**
50	1,0	1,0	199	28	12	**612-4402**
100	1,0	1,0	260	34	12	**612-4403**
250	2,0	2,0	315	47	6	**612-4404**
500	5,0	5,0	350	61	1	**612-4405**
1000	10,0	10,0	440	76	1	**612-4406**
2000	20,0	20,0	482	97	1	**612-4407**

VWR COLLECTION

SELECTED FOR YOU

Beaker cups, disposable

PS

Economical, multipurpose beaker for a very wide range of uses.

- Suitable for use in various sample dispensers
- Beakers with capacity of 5 and 20 ml are recommended for use in flame photometric analyses

Capacity (ml)	Pk	Cat. No.
5	1.000	**611-1363**
10	1.000	**611-1364**
20	500	**611-1365**
50	500	**611-1366**
150	100	**611-1367**
250	100	**611-1368**
800	100	**611-1369**
1000	100	**611-1370**

Bags, zip seal

LDPE

For storage and transport of solid samples, tubes, spare parts and documents, available with and without write-on panel.

- Quick sealing with guide tracks on the pressure seal
- Transparent PE for easy identification of the contents
- Can be resealed repeatedly, flexible and tear-proof

LxW (mm)	Pk	Cat. No.
Single pocket without write-on panel		
60×40	1.000	**129-0293**
80×60	1.000	**129-0294**
100×70	1.000	**129-0309**
120×80	1.000	**129-0295**
150×100	1.000	**129-0296**
170×120	1.000	**129-0297**
220×160	1.000	**129-0298**
250×180	1.000	**129-0299**
300×200	1.000	**129-0306**
350×250	1.000	**129-0307**
400×300	1.000	**129-0308**
Single pocket with writing area		
40×60	1.000	**129-0310**
60×80	1.000	**129-0311**
70×100	1.000	**129-0320**
80×120	1.000	**129-0312**
100×150	1.000	**129-0313**
120×170	1.000	**129-0314**
160×220	1.000	**129-0315**
180×250	1.000	**129-0316**
200×300	1.000	**129-0317**
350×250	1.000	**129-0318**
300×400	1.000	**129-0319**

Bags, twist-seal

LDPE bags, manufactured and packaged in sterile conditions

Universal use, for samples such as foods, liquids, grains, petroleum products, animal material, waste and soil samples. Suitable for environmental sampling (surface samples), carcass sampling, biomedical and pharmaceutical research, quality assurance procedures (QA/QC), food industry applications and clinical and veterinary medicine.

- Provide a secure, contaminant-free, flexible container that ensures dependable analytical results
- RNase-, DNase-, pyrogen- and BPA-free
- Offer an economical and efficient way to collect, contain and carry samples
- Wire tab keeps bag open for filling
- Unique double fold over system provides a temporary leakproof seal

The opaque VWR® bag is used in the food, pharmaceutical and environmental industries. The black resin is a total light barrier that protects photosensitive substances, such as vitamins, chemicals and pharmaceuticals, or food supplements, plant extracts and biological tissues.

Capacity (ml)	Thickness (µm)	Dimensions (mm)	Pk	Cat. No.
Closure with 2 round wires, without write-on panel				
60	63	76×127	500	**129-9831**
130	63	76×178	500	**129-9832**
355	76	114×190	500	**129-9833**
450	63	114×229	500	**129-9834**
650	76	140×229	500	**129-9837**
900	63	114×305	500	**129-9835**

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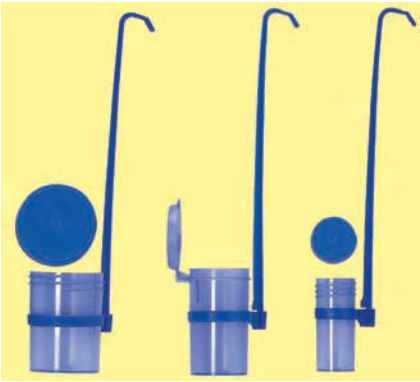
Capacity (ml)	Thickness (µm)	Dimensions (mm)	Pk	Cat. No.
Closure with 2 round wires, without write-on panel				
1200	63	114×382	500	**129-9836**
1500	76	140×382	500	**129-9838**
1650	76	178×305	250	**129-9839**

Sample dippers



All sample dippers are made of blue polypropylene and consist of a bottle with snap handle. Available with either hinged or screw cap.

- Containers designed for sample collection and dispatch for testing in the same container, eliminating risk of cross-contamination
- Gamma sterilised and individually packed in sealed zip bag to guarantee integrity of sample

Description	Capacity (ml)	Pk	Cat. No.
Sample dippers, hinged cap	90	150	**331-3413**
Sample dippers, screw cap	40	250	**331-3414**
Sample dippers, screw cap	180	100	**331-3415**
Sample dippers, screw cap	125	100	**331-3416**

Conical sample containers, with snap-on lids

PP, translucent

Conical containers for sample collection, storage and transport.

- Available in sterile or non sterile versions
- Raised graduations
- Leakproof snap-on lid

Capacity (ml)	Height (mm)	Type	Ø top/Ø bottom (mm)	Packed	Pk	Cat. No.
200	88	Separate snap-on lid	62/54	Carton of 660	660	**216-2648**
200	88	Assembled snap-on lid, sterile	62/54	Carton of 220	220	**216-2649**
400	100	Separate snap-on lid	85/72	Carton of 460	460	**216-2651**
400	100	Assembled snap-on lid, sterile	85/72	Carton of 185	185	**216-2652**

Specimen container, conical, with screw caps

PP, translucent

Ideal as general specimen containers. 120 ml capacity.

- Complete range available with different cap colours
- Sterile as well as non sterile, individually packed or bulk
- With frosted labelling area

Type	Cap colour	Packed	Version	Pk	Cat. No.
Non sterile	—	bulk	without cap	1.000	**216-1185**
Non sterile	Red	50/bag	Separate cap	500	**216-0855**
Non sterile	Red	Bulk	Separate cap	500	**216-0859**
Non sterile	Red	Bulk	Assembled cap	300	**216-0864**
Non sterile	Red	Individually	Assembled cap	250	**216-0868**
Non sterile	Blue	Bulk	Assembled cap	300	**216-0858**
Non sterile	White	Bulk	Assembled cap	300	**216-0863**
Non sterile	Green	Bulk	Assembled cap	300	**216-0865**
Sterile	Red	Bulk	Assembled cap	300	**216-0861**
Sterile	Red	Individually	Assembled cap	250	**216-0856**
Sterile	Blue	Bulk	Assembled cap	300	**216-0857**
Sterile	White	Bulk	Assembled cap	300	**216-0860**
Sterile	White	Individually	Assembled cap	250	**216-0869**
Sterile	Green	Bulk	Assembled cap	300	**216-0862**

Buckets with snap-on lids

PP, opaque white

Recyclable, single-use buckets for transport and deliveries; improve working conditions by eliminating washing and decanting tasks. Tamper-evident, skirted lid.

- Resistant to chemical products
- Stackable and sturdy with plastic carrying handle
- Uncapped, aseptic

Capacity (l)	Height (mm)	Ø top/Ø bottom (mm)	Pk	Cat. No.
3	139	184/170	80	**216-0793**
3,8	177	184/166	75	**216-0794**
5,7	195	210/191	45	**216-0791**
10,7	264	251/226	20	**216-0792**

Bottles, wide mouth, square or rectangular, with screw cap

HDPE, translucent or HDPE, brown (2700 ml) with screw cap

Space saving bottles. Wide mouth, easy to fill. Translucent HDPE ensures good visibility of the content level. Screw cap with separate seal. Ideal for storage of liquids, solids and powders. Bottles with 500, 1000, 2000 and 2700 ml capacities have graduations. The 2500/2700 ml version has a carrying handle.

- Good chemical resistance, good temperature resistance
- Capped aseptic or capped ionised (10 kGray)
- Excellent shock resistance

Capacity (ml)	W×D×H (mm)	Colour	Neck I-Ø (mm)	Cap	Cap colour	Form	Pk	Cat. No.
Aseptic								
150	50×50×95	Translucent	37	Screw cap with insert sealing plug	Red	Square	300	**215-3008**
250	57×57×109	Translucent	37	Screw cap with insert sealing plug	Red	Square	210	**215-3014**
250	57×57×109	Translucent	37	Screw cap with insert sealing plug	Blue	Square	210	**215-3016**
500	76×76×122	Translucent	58	Screw cap with insert sealing plug	Red	Square	175	**215-3020**
500	76×76×122	Translucent	58	Screw cap with insert sealing plug	Blue	Square	175	**215-3022**
500	76×76×122	Translucent	58	Screw cap with insert sealing plug	White	Square	175	**215-3023**
1000	95×78×185	Translucent	58	Screw cap with insert sealing plug	Red	Rectangular	90	**215-3004**
1000	95×78×185	Translucent	58	Screw cap with insert sealing plug	Blue	Rectangular	90	**215-3006**
1000	95×78×185	Translucent	58	Screw cap with insert sealing plug	White	Rectangular	90	**215-3007**
2000	109×96×230	Translucent	58	Screw cap with insert sealing plug	Red	Rectangular	50	**215-3010**
2000	109×98×230	Translucent	58	Screw cap with insert sealing plug	White	Rectangular	50	**215-3013**
2500	110×110×285	Translucent	88	Screw cap with wad	White	Square	35	**215-3018**
2700	128×117×250	Brown	70	Screw cap with wad	Yellow	Rectangular	30	**215-3003**
Sterile SAL 10-3								
250	57×57×109	Translucent	37	Screw cap with insert sealing plug	Red	Square	210	**215-3015**
500	76×76×122	Translucent	58	Screw cap with insert sealing plug	Red	Square	175	**215-3021**
1000	95×78×185	Translucent	58	Screw cap with insert sealing plug	Red	Rectangular	90	**215-3005**
1000	95×78×185	Translucent	58	Screw cap with insert sealing plug	Blue	Rectangular	90	**215-3025**
1000	95×78×185	Translucent	58	Screw cap with insert sealing plug	White	Rectangular	90	**215-3026**
2000	109×98×230	Translucent	58	Screw cap with insert sealing plug	Red	Rectangular	50	**215-3012**
2500	110×110×285	Translucent	88	Screw cap with wad	White	Square	35	**215-3019**

VWR COLLECTION

SELECTED FOR YOU

Bottles, wide mouth with screw cap

215-3431 - 215-3436

215-3443 - 215-3448

LDPE, HDPE or PP with PP screw cap

Can be used anywhere in the laboratory, as well as for collecting samples. Wide opening allows rapid filling and dispensing of powders, pastes and liquids. Four litre bottles have integrated handle design.

- Good chemical resistance
- LDPE and HDPE heat resistant up to +80 °C
- PP heat resistant up to +135 °C, autoclavable
- Leakproof

Capacity (ml)	Thread	Ø ext. (mm)	Height (mm)	Pk	Cat. No.
LDPE, translucent					
30	28-415	35,0	62,5	12	**215-3431**
60	28-415	38,5	85,0	12	**215-3432**
125	38-415	50,5	98,0	12	**215-3433**
250	43-415	61,5	131,0	12	**215-3434**
500	53-415	72,5	169,0	12	**215-3435**
1000	63-415	91,5	199,0	6	**215-3436**
HDPE, translucent					
30	28-415	35,0	62,5	12	**215-3437**
60	28-415	38,5	85,0	12	**215-3438**
125	38-415	50,5	98,0	12	**215-3439**
250	43-415	61,5	131,0	12	**215-3440**
500	53-415	72,5	169,0	12	**215-3441**
1000	63-415	91,5	199,0	6	**215-3442**
HDPE, amber (to protect light-sensitive materials)					
30	28-415	35,0	62,5	12	**215-3443**
60	28-415	38,5	85,0	12	**215-3444**
125	38-415	50,5	98,0	12	**215-3445**
250	43-415	61,5	131,0	12	**215-3446**
500	53-415	72,5	169,0	12	**215-3447**
1000	63-415	91,5	199,0	6	**215-3448**
PP, translucent, autoclavable					
30	28-415	35,0	62,5	12	**215-3449**
60	28-415	38,5	85,0	12	**215-3450**
125	38-415	50,5	98,0	12	**215-3451**
250	43-415	61,5	131,0	12	**215-3452**
500	53-415	72,5	169,0	12	**215-3453**
1000	63-415	91,5	199,0	6	**215-3454**

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VWR.com in your pocket

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Bottles, wide mouth, with screw cap

LDPE, translucent

Perfect for sample collection, storage and transport. Ideal for liquids, pastes and granular material. The wide mouth allows easy filling and cleaning. Without graduations.

- Good chemical resistance
- Leakproof, tough and versatile
- Suitable for packing and storing food

Capacity (ml)	Ø ext. (mm)	Height (mm)	Neck I-Ø (mm)	Neck Ø ext. (mm)	Pk	Cat. No.
Bottles with screw cap						
50	39	77	24	32	10	**215-5630**
100	47	94	24	32	10	**215-5631**
250	63	119	31	40	10	**215-5632**
500	78	152	39	50	12	**215-5633**
1000	96	206	50	65	12	**215-5634**
1500	109	226	50	65	6	**215-5635**
2000	120	247	50	65	6	**215-5636**

Thread (mm)	For bottles (ml)	Pk	Cat. No.
Screw caps			
32	50/100	10	**215-5646**
40	250	10	**215-5647**
50	500	10	**215-5648**
65	1000/1500/2000	10	**215-5649**

Containers, wide mouth, square with thread
KAUTEX TEXTRON

PVC, clear or amber, without screw cap

Ideal for packaging, sampling, storing and shipping pastes or powdered substances.

- Good chemical resistance, temperature resistant from –20 to +80 °C
- Wide mouth for easy filling and cleaning
- Leakproof PP screw caps, black with PE foam insert, ordered separately

Capacity (ml)	W×D×H (mm)	Neck I-Ø (mm)	Thread (mm)	Pk	Cat. No.
Container, clear, without screw cap					
50	38,5×38,5×59	23	32	162	**215-2185**
100	46×46×71	31	40	80	**215-3116**
200	59,5×59,5×87	41	50	1	**215-3906**
300	67,5×67,5×94	41	50	1	**215-3907**
500	80,5×80,5×108	54	65	1	**215-3908**
750	91,5×91,5×120	69	80	1	**215-3910**
1000	97×97×143	69	80	1	**215-3930**
2000	122×122×187	69	80	1	**215-3931**
Container, amber, without screw cap					
50	38,5×38,5×59	23	32	162	**215-2186**
100	46×46×71	31	40	80	**215-3118**
200	59,5×59,5×87	41	50	1	**215-3916**
300	67,5×67,5×94	41	50	1	**215-3917**

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Capacity (ml)	W×D×H (mm)	Neck I-Ø (mm)	Thread (mm)	Pk	Cat. No.
Container, amber, without screw cap					
500	80,5×80,5×108	54	65	1	**215-3918**
750	91,5×91,5×120	69	80	1	**215-3920**
1000	97×97×143	69	80	1	**215-3932**
2000	122×122×187	69	80	1	**215-3933**

Thread (mm)	For bottles (ml)	Pk	Cat. No.
Screw caps, PP, black with PE foam insert			
32	50	1	**215-3921**
40	100	1	**215-3922**
50	200/300	1	**215-3923**
65	500/750	1	**215-3924**
80	750/1000/1500/2000	1	**215-3925**
80	2000	1	**215-3926**

Containers, wide mouth, square with thread
KAUTEX TEXTRON

PETG, clear, without screw cap

Ideal for packaging, sampling, storing and shipping pastes or powdered substances.

- Good chemical resistance, temperature resistant from –40 to +65 °C
- Wide neck for easy filling and cleaning
- Leakproof PP screw caps, black with PE foam insert, ordered separately

Capacity (ml)	W×D×H (mm)	Neck I-Ø (mm)	Thread (mm)	Pk	Cat. No.
50	38,5×38,5×60,5	23	32	162	**215-2287**
100	46,0×46,0×71,0	31	40	80	**215-3120**
200	59,5×59,5×88,0	41	50	406	**216-3900**
500	80,5×80,5×108,0	54	65	1	**216-3907**
1000	97,0×97,0×143,0	69	80	96	**216-3904**
2000	122,0×122,0×187,0	69,0	80	44	**216-3906**

Thread (mm)	For bottles (ml)	Pk	Cat. No.
Screw caps, PP, black with PE foam insert			
32	50	1	**215-3921**
40	100	1	**215-3922**
50	200/300	1	**215-3923**
65	500/750	1	**215-3924**
80	750/1000/1500/2000	1	**215-3925**
80	2000	1	**215-3926**

Bottles, wide mouth, with screw cap, Nalgene®
Thermo Scientific

PPCO, translucent with PP screw cap

Can be used anywhere in the laboratory and for sample collection. Wide opening for rapid filling and dispensing of powders, pastes and liquids.

- Very good chemical resistance
- Heat resistant up to +121 °C, autoclavable
- Leakproof

Capacity (ml)	Thread (mm)	Ø ext. (mm)	Height (mm)	Neck I-Ø (mm)	Pk	Cat. No.
30	28	34	63	21	12	**215-7221**
60	28	39	86	21	12	**215-7222**
125	38	50	99	28	12	**215-7223**

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Capacity (ml)	Thread (mm)	Ø ext. (mm)	Height (mm)	Neck I-Ø (mm)	Pk	Cat. No.
250	43	61	131	33	12	**215-7224**
500	53	73	168	44	12	**215-7225**
1000	63	91	199	53	6	**215-7226**

Bottles, wide mouth, square with thread
KAUTEX TEXTRON

HDPE, translucent or HDPE, white, without cap

Ideal for collecting, storing and shipping liquids, pastes and granulates. Square shape saves space. Recessed labelling space. Wide neck makes filling and cleaning easy.

- Good chemical resistance
- Resistant to temperatures from –40 to +110 °C
- Various types of cap e.g. leakproof, are available as an option
- UN approved for solids; the approvals are only valid with the closures offered here

Capacity (ml)	Thread (mm)	W×D×H (mm)	Neck I-Ø (mm)	Pk	Cat. No.
HDPE, translucent					
50	28	36×36×88,5	21,4	1	**215-3601**
100	32	45×45×101	24,0	1	**215-3604**
250	45	59×59×128	35,0	1	**215-3603**
350	45	60x60x164	35	1	**215-3375**
500	54	75×75×161	42,5	1	**215-3380**
750	54	83×83×188	42,5	1	**215-2361**
1000	54	85×85×212	42,5	1	**215-2362**
1500	80	108×108×209	68,5	1	**215-2363**
2500	80	122×122×260	68,5	1	**215-2364**
4000	80	142×142×294	68,5	1	**215-2365**
HDPE, white					
50	28	36×36×88,5	21,4	1	**215-2370**
100	32	45×45×101	24,0	1	**215-3362**
250	45	59×59×128	35,0	1	**215-3363**
500	54	75×75×161	42,5	1	**215-3364**
750	54	85×85×185	42,5	1	**215-2371**
1000	54	85×85×212	42,5	1	**215-3365**
1500	80	111×111×209	68,5	1	**215-2372**
2500	80	122×122×258	68,5	1	**215-2373**
4000	80	142×142×294	68,5	1	**215-2374**

Description	Thread (mm)	For bottles (ml)	Pk	Cat. No.
Screw closure, PP, blue, with tamper-evident ring and conical seal				
Screw cap PP, blue, with tamper-evident ring and conical seal	28	50	1	**215-2386**
Screw cap PP, blue, with tamper-evident ring and conical seal	32	100	1	**215-2387**
Screw cap PP, blue, with tamper-evident ring and conical seal	45	250/350	1	**215-2388**
Screw cap PP, blue, with tamper-evident ring and conical seal	54	500/750/1000	1	**215-3369**
Screw cap PP, blue, with tamper-evident ring and conical seal	80	1500/2500/4000	1	**215-2389**
Screw closure, PP, black, with PE foam insert				
Screw cap, PP, black, with PE foam insert	28	50	1	**215-2381**
Screw cap, PP, black, with PE foam insert	32	100	1	**215-2382**
Screw cap, PP, black, with PE foam insert	45	250/350	1	**215-2383**
Screw cap, PP, black, with PE foam insert	54	500/750/1000	1	**215-3373**
Screw cap, PP, black, with PE foam insert	80	1500/2500/4000	1	**215-2385**
Screw closure, PP, red, with PE foam insert				
Screw cap, PP,red, with tamper-evident ring and PE foam insert	28	50	1	**215-2390**
Screw cap, PP,red, with tamper-evident ring and PE foam insert	32	100	1	**215-2391**
Screw cap, PP,red, with tamper-evident ring and PE foam insert	45	250/350	1	**215-2392**
Screw cap, PP,red, with tamper-evident ring and PE foam insert	54	500/750/1000	1	**215-2393**
Screw cap, PP,red, with tamper-evident ring and PE foam insert	80	1500/2500/4000	1	**215-2394**

Bottles, wide mouth with screw cap

Clear or amber glass with black PP cap

Ideal for sampling, storing and transporting powders and pastes. Amber coloured to protect light-sensitive materials.

- Good chemical and physical properties
- For applications that do not involve high thermal stresses
- Round thread in accordance with DIN 168

Capacity (ml)	Thread	Height (mm)	Ø ext. (mm)	Pk	Cat. No.
Clear glass					
30	GL 32	68	36	126	**215-1801**
50	GL 32	75	44	85	**215-1802**
100	GL 40	92	50	63	**215-1803**
250	GL 55	113	70	48	**215-1805**
500	GL 55	154	84	20	**215-1806**
Amber glass					
30	GL 32	68	36	126	**215-1811**
50	GL 32	75	44	85	**215-1812**
100	GL 40	92	50	63	**215-1813**
250	GL 55	113	70	42	**215-1815**
500	GL 55	154	84	20	**215-1816**

Laboratory bottles, wide mouth, with GLS 80® screw cap
DURAN Group

DURAN®, borosilicate glass, clear, with screw caps and pouring rings

Round, with graduations and specially developed GLS 80® thread. Opening and closing the bottle is easy with quick closure mechanism. The 80 mm wide outer diameter of the bottle neck enables bottles to be filled conveniently and safely with powders, pastes, granulates and liquids. The large opening can accommodate even large volume funnels and gives easy access to scoops or spatulas.

- Very good chemical resistance, high temperature resistance
- Extra wide opening allows easy cleaning
- Minimal thermal expansion giving relatively high resistance to temperature changes
- USP Standard

With printed retrace code (batch identification); batch certificate available at www.duran-group.com

Capacity (ml)	Thread	Height (mm)	Ø ext. (mm)	Pk	Cat. No.
250	GLS 80	105	95	1	**215-2955**
500	GLS 80	152	101	1	**215-1785**
1000	GLS 80	222	101	1	**215-1786**
2000	GLS 80	252	136	1	**215-1787**

Laboratory bottles, amber, wide mouth, with GLS 80® screw thread
DURAN Group

DURAN®, borosilicate glass, amber, with blue PP screw cap

Amber to protect light-sensitive materials. UV protection up to approx. 500 nm light wavelength. Only the outer surface of the bottles is tinted, ensuring that the DURAN® properties on the inside remain unchanged. Round, with graduations and specially developed GLS 80® thread. Opening and closing the bottle is easy with quick closure mechanism. The 80 mm wide outer diameter of the bottle neck enables bottles to be filled conveniently and safely with powders, pastes, granulates and liquids. The large opening can accommodate even large volume funnels and gives easy access to scoops or spatulas.

- Very good chemical resistance, high temperature resistance
- Extra wide opening allows easy cleaning
- Minimal thermal expansion giving relatively high resistance to temperature changes
- USP Standard

With printed retrace code (batch identification); batch certificate available at www.duran-group.com

Capacity (ml)	Thread	Height (mm)	Ø ext. (mm)	Pk	Cat. No.
250	GLS 80	105	95	1	**215-2960**
500	GLS 80	152	101	1	**215-2065**
1000	GLS 80	222	101	1	**215-2066**
2000	GLS 80	252	136	1	**215-2067**

VWR COLLECTION

SELECTED FOR YOU

Laboratory bottles, round, with screw cap GL 45

Grade 3.3 borosilicate glass with PP screw cap

The economical alternative for a wide range of laboratory applications. Round, with graduations, DIN GL 45 thread, pouring ring and blue PP screw cap.

- Very good chemical resistance
- High temperature resistance
- Minimal thermal expansion, giving relatively high resistance to temperature changes

ISO 4796

Capacity (ml)	Thread	Ø ext. (mm)	Height (mm)	Pk	Cat. No.
100	GL 45	56	100	10	**215-1592**
250	GL 45	70	138	10	**215-1593**
500	GL 45	86	176	10	**215-1594**
1000	GL 45	101	225	10	**215-1595**

VWR COLLECTION

SELECTED FOR YOU

Laboratory bottles, round, amber, with screw cap GL 45

Amber borosilicate glass with PP screw cap

The economical alternative. Suitable for a wide range of laboratory applications. Round, with graduations, DIN GL 45 thread, pouring ring and blue PP screw cap. Amber coloured to protect light-sensitive materials.

- Very good chemical resistance
- High temperature resistance
- Minimal thermal expansion, giving relatively high resistance to temperature changes

ISO 4796

Capacity (ml)	Thread	Ø ext. (mm)	Height (mm)	Pk	Cat. No.
100	GL 45	56	100	1	**215-2325**
250	GL 45	70	138	1	**215-2326**
500	GL 45	86	176	1	**215-2327**
1000	GL 45	101	225	1	**215-2328**

YOUTILITY bottles with screw cap
DURAN Group

DURAN®

The DURAN® YOUTILITY bottle represents a new generation of glass laboratory bottles for use in a wide and diverse range of applications. The innovations include improved ergonomic bottle shape and extend to dedicated accessories that incorporate many innovative features to improve handling, sample identification, and ease of use.

- Specially shaped grip zones on the bottles for safer and easier handling
- Ergonomic GL 45 screw cap made from food grade polypropylene
- Shortened threads on bottle and cap for faster opening
- Dedicated accessories for easy and simple identification and personalisation

Capacity (ml)	Ø ext. (mm)	Height (mm)	Cap size	Pk	Cat. No.
125	55	124	GL 45	4	**215-4500**
250	66	158	GL 45	4	**215-4501**
500	78	193	GL 45	4	**215-4502**
1000	93	253	GL 45	4	**215-4503**

Description	Pk	Cat. No.
Accessories		
YOUTILITY screw cap GL 45, food grade PP, cyan	10	**215-3297**
Bottle tags GL 45, silicone, eight colours, two bottle tags of each colour supplied	16	**215-3299**

Shipping bottles with screw cap, UN approved packaging
DURAN Group

Manufactured from corrosion resistant AISI Type 316 L (1.4404) stainless steel, and hygienically constructed with all welded seams

The unbreakable steel bottle is ideal for the storage and safe shipping of dangerous liquid goods such as solvents, and reagents, without the need for additional protective outer packaging. The bottle has a smooth inner surface finish that corresponds to IIIc (DIN 17441) with rounded inner edges for ease of cleaning. Polished and brushed durable exterior finish. It has a special thread (45 mm) with a built in pouring lip. Supplied complete with GL 45 stainless steel screw cap and PTFE sealing disc, and UN certification mark and code.

- Container for shipping hazardous or non hazardous liquids
- Storage or shipping of precious liquids, such as high purity fine chemicals, pharmaceutical or cosmetic products
- Storage of light-sensitive liquids

Certified to UN standards for the carriage of HAZMAT Class 3: Flammable Liquids; classified as dangerous goods in UN packing Group I: (great danger) Groups II (medium danger) and III (low danger). It is suitable for liquids with a relative density of 2.0 or less.
International regulations are subject to change, it is the user's responsibility for complying with all applicable laws and regulations.

Important note: The supplied DURAN Group stainless steel 45 mm thread closure must be used to maintain UN certification.

Capacity (ml)	Thread	Pk	Cat. No.
1500	GL 45	1	**215-3263**

Drums with lid and clamping ring
KAUTEX TEXTRON

HDPE, blue, round

Heavy duty open top drums with PE lid and galvanised clamping ring. Suitable for storage, disposal and transport of laboratory materials.

- 30 and 60 litre versions include handles
- Good chemical and temperature resistance
- 30, 60 and 150 litre with UN approval

Capacity (l)	Height (mm)	Ø ext. (mm)	Ø opening (mm)	Pk	Cat. No.
30**	518	313	251	1	**216-5652**
30*	460	340	251	1	**216-5378**
60	620	398	325	1	**216-5541**
60	610	400	325	1	**216-5654**
120	790	469	365	1	**216-5542**
120	800	500	396	1	**216-5656**
150**	960	493	395	1	**216-5658**
220	970	590	460	1	**216-5660**

* 216-5378 is a rectangular barrel (340×300×460 mm)
** Meet the GGVS/GGVE (rail/road/sea) regulations for the transport of solid substances with a density of at least 1,5 g/cm^3.

Jerricans, narrow neck with screw cap

HDPE, translucent

Universal canister for industry, trade and laboratories. Ideal for packaging, storage and transportation. With UN or Y approval.

- Good chemical resistance
- Temperature resistant from –40 to +110 °C
- UN canister with Y approval

Capacity (l)	W×D×H (mm)	Colour	Thread (mm)	Pk	Cat. No.
2,5	115×153×202	Transparent	45	1	**216-5371**
3	115×153×237	Transparent	45	1	**216-5372**
5	145×192×251	Transparent	45	1	**216-5332**
10	193×234×298	Transparent	45	1	**216-5333**
20	248×290×379	Transparent	61	1	**216-5334**
25	246×290×450	Transparent	61	1	**216-5376**
30	280×360×415	Transparent	61	1	**216-5336**

Safety storage cabinets, type 90, Q-CLASSIC-90

asecos

Body anthracite grey/doors light grey (RAL7016/RAL7035)

Body anthracite grey/doors warning yellow (RAL7016/ RAL1004)

Fireproof safety cabinets, classified type 90 (fire resistant up to 90 minutes), safe, durable, robust and convenient with transport base and bicoloured cabinet design.

- Robust construction and longevity – triple hinged door, safety elements assembled outside the storage compartment for increased protection against corrosion, scratch and impact resistant surface, easy to clean
- Easy handling with comfort – doors stop in any position, self-closing in the event of fire
- No unauthorised use – doors lockable with cylinder locking (integration in a locking system possible) and locking state indicator (red/green)
- Easy transport – integrated transport base with removable, optional base cover
- Easy alignment – adjusting aids to compensate for uneven floor
- Quickly put into operation – integrated exhaust outlet ready for connection (NW 75 mm) to a technical exhaust system

The 2-colour look with a choice of 7 door colours, at no extra cost, offers maximum individuality and a modern appearance.

Furnace tested (type test) in accordance with EN 14470-1
Fire resistance 90 minutes
GS approval, CE conformity
EN 14727 conformity (laboratory furniture)

Seven door colours are available. Supplied without interior equipment packages. Interior equipment packages need to be ordered separately. Please check www.vwr.com or contact your local VWR office for further information.

Delivery information: Delivery prices available upon request.

Description	W×D×H (mm)	W×D×H int. (mm)	Doors	Weight (kg)	Pk	Cat. No.
Safety storage cabinet, type 90, without interior equipment, model Q90.195.090 Body anthracite grey/doors light grey	1200×615×1955	1050×520×1645	2 wing	424	1	**135-1742**
Safety storage cabinet, type 90, without interior equipment, model Q90.195.090 Body anthracite grey/doors light grey	600×615×1955	450×520×1645	1 wing	265	1	**135-1753**

Description	Pk	Cat. No.
Accessories		
3 Shelves, 1 perforated insert, 1 bottom collecting sump (V=33 ltr.) sheet steel plastic laminated RAL7035, for safety cabinet Q - width 1200 mm	1 Pack	**135-1770**
1 Shelf, sheet steel plastic laminated RAL 7035, 1043×435×30 mm (W×D×H), for safety cabinet - width: 1200 mm	1	**135-1808**
3 Shelves, 1 perforated insert, 1 bottom collecting sump (V=22 ltr.) sheet steel plastic laminated RAL7035, for safety cabinet Q-PEGASUS-90 - width 600 mm	1 Pack	**135-1994**

VWR®
We Enable Science

basan®
the cleanroom division of VWR

basan – your partner for controlled environment solutions

- Highly skilled specialists and high level of flexibility to turn your needs into a custom-made supply concept
- Supply chain excellence to provide 100 % security of supply and JIT-deliveries
- Comprehensive portfolio of premium-products and services
- Global network of suppliers and partners

For detailed information, please go to:

www.basan.com

SAMPLE PREPARATION

Solid phase Extraction 34

Centrifugation 40

Homogenisation 50

Filtration 53

Solvents for analysis

- Reagents appropriate for classical analysis
- Actual values typically >99,8% for most materials
- Specification displayed on the labels and certificate of analysis CoA

Description	Pk	Cat. No.
2-Propanol AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**20842.298**
2-Propanol AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**20842.312**
2-Propanol AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20842.323**
2-Propanol AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20842.330**
Acetone AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**20066.296**
Acetone AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20066.321**
Acetone AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20066.330**
Chloroform AnalaR NORMAPUR® analytical reagent	1 l	**22711.290**
Chloroform AnalaR NORMAPUR® analytical reagent	2,5 l	**22711.324**
Cyclohexane AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**23224.293**
Cyclohexane AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**23224.327**
Dichloromethane AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**23366.293**
Dichloromethane AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**23366.327**
Dichloromethane AnalaR NORMAPUR® analytical reagent	1 l	**23354.292**
Dichloromethane AnalaR NORMAPUR® analytical reagent	2,5 l	**23354.326**
Diethyl ether AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**23811.292**
Diethyl ether AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**23811.326**
Ethanol absolute AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**20821.296**
Ethanol absolute AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**20821.310**
Ethanol absolute AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20821.321**
Ethanol absolute AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20821.330**
Ethyl acetate AnalaR NORMAPUR® ACS, Reag. Ph. Eur. 1035301 analytical reagent	1 l	**23882.296**
Ethyl acetate AnalaR NORMAPUR® ACS, Reag. Ph. Eur. 1035301 analytical reagent	2,5 l	**23882.321**
Ethyl acetate AnalaR NORMAPUR® ACS, Reag. Ph. Eur. 1035301 analytical reagent	2,5 l	**23882.330**
Methanol AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**20847.295**
Methanol AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20847.307**
Methanol AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20847.320**
N,N-Dimethylformamide AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**23466.298**
N,N-Dimethylformamide AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**23466.323**
n-Heptane AnalaR NORMAPUR® analytical reagent	1 l	**24551.290**
n-Heptane AnalaR NORMAPUR® analytical reagent	2,5 l	**24551.324**
n-Hexane 99% AnalaR NORMAPUR® analytical reagent	1 l	**24608.296**
n-Hexane 99% AnalaR NORMAPUR® analytical reagent	2,5 l	**24608.321**
n-Hexane AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**24577.298**
n-Hexane AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**24577.323**
n-Pentane AnalaR NORMAPUR® analytical reagent	1 l	**26185.297**
n-Pentane AnalaR NORMAPUR® analytical reagent	2,5 l	**26185.322**
Tetrahydrofuran AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**28551.296**
Tetrahydrofuran AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**28551.321**
Toluene AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**28676.297**
Toluene AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**28676.322**
Xylene (mixture of isomers) AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**28975.291**
Xylene (mixture of isomers) AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**28975.325**

Solvents for analysis, EMSURE® ACS, ISO, Reag. Ph. Eur.

- Purities in the range 99,0 - 99,9%
- Extensive impurity profile on the certificate of analysis
- Suitable for regulated industries
- Applications in quality control and all critical laboratory applications

Description	Pk	Cat. No.
2-Propanol for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	1 l	**1.09634.1000**
2-Propanol for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	2,5 l	**1.09634.2500**
Acetone for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	1 l	**1.00014.1000**
Acetone for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	2,5 l	**1.00014.2500**
Acetone for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (HDPE plastic bottle)	1 l	**1.00014.1011**
Acetone for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (HDPE plastic bottle)	2,5 l	**1.00014.2511**
Chloroform for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	1 l	**1.02445.1000**
Chloroform for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	2,5 l	**1.02445.2500**
Dichloromethane for analysis EMSURE® ACS, ISO, Reag. Ph. Eur.	2,5 l	**1.06050.2500**

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Description	Pk	Cat. No.
Diethyl ether for analysis EMSURE® ACS, ISO, Reag. Ph. Eur.	1 l	1.00921.1000
Diethyl ether for analysis EMSURE® ACS, ISO, Reag. Ph. Eur.	2,5 l	1.00921.2500
Diethyl ether for analysis EMSURE® ACS, ISO, Reag. Ph. Eur.	4 l	1.00921.4000
Ethanol absolute for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	1 l	1.00983.1000
Ethanol absolute for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	2,5 l	1.00983.2500
Ethanol absolute for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (HDPE plastic bottle)	1 l	1.00983.1011
Ethanol absolute for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (HDPE plastic bottle)	2,5 l	1.00983.2511
Isooctane for analysis EMSURE® ACS, Reag. Ph. Eur.	1 l	1.04727.1000
Isooctane for analysis EMSURE® ACS, Reag. Ph. Eur.	2,5 l	1.04727.2500
Methanol for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	1 l	1.06009.1000
Methanol for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	2,5 l	1.06009.2500
Methanol for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (HDPE plastic bottle)	2,5 l	1.06009.2511
n-Heptane for analysis EMSURE® Reag. Ph. Eur. (glass bottle)	1 l	1.04379.1000
n-Heptane for analysis EMSURE® Reag. Ph. Eur. (glass bottle)	2,5 l	1.04379.2500
n-Hexane for analysis EMSURE® ACS	1 l	1.04367.1000
n-Hexane for analysis EMSURE® ACS	2,5 l	1.04367.2500
n-Hexane for analysis EMSURE® ACS, Reag. Ph. Eur. (glass bottle)	1 l	1.04374.1000
n-Hexane for analysis EMSURE® ACS, Reag. Ph. Eur. (glass bottle)	2,5 l	1.04374.2500
n-Hexane for analysis EMSURE® ACS, Reag. Ph. Eur. (HDPE plastic bottle)	2,5 l	1.04374.2511
Tetrahydrofuran for analysis EMSURE® ACS, Reag. Ph. Eur. analytical reagent (glass bottle)	1 l	1.09731.1000
Tetrahydrofuran for analysis EMSURE® ACS, Reag. Ph. Eur. analytical reagent (glass bottle)	2,5 l	1.09731.2500
Toluene for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	1 l	1.08325.1000
Toluene for analysis EMSURE® ACS, ISO, Reag. Ph. Eur. (glass bottle)	2,5 l	1.08325.2500

n-Hexane 1.04374, 96,0%

VWR COLLECTION

SELECTED FOR YOU

Conical separating funnels

Borosilicate glass 3.3, with NS-PE stopper

Capacity (ml)	Socket size (NS)	Pk	Cat. No.
Without graduation, with PTFE key			
50	19/26	1	532-0006
100	19/26	1	532-0007
250	29/32	1	532-0008
500	29/32	1	532-0009
1000	29/32	1	532-0010
2000	29/32	1	532-0011

Liquid-liquid extraction, EXtrelut® NT

EXtrelut® NT is a specially processed, inert, wide-pore kieselguhr with a high pore volume. It has been used for quite some time within research, for the sample preparation of urine, whole blood, plasma and other biological matrices. Other applications include environmental and residue testing such as analysis of industrial, domestic and waste water. EXtrelut® NT is supplied either pre-packed in cartridges or as a loose sorbent. EXtrelut® NT simplifies liquid-liquid extraction by replacing separation funnels. Using a single step is more efficient, saves solvent, as well as material and time, in contrast to classical funnel separation. The aqueous sample is simply applied to the EXtrelut® NT sorbent. It distributes itself over the chemically inert matrix and thus acts as a stationary phase. Subsequently, elution takes place using organic solvents that are non miscible with water. All the lipophilic substances are extracted from the aqueous into the organic phase.

- Saves solvent
- Easy to use
- Highly efficient

A comprehensive application guide is available. Contact VWR to receive a copy of the Merck ChromBook.

Description	Pk	Cat. No.
Extrelut® NT 1 glass columns for 0,1 - 1 ml sample	100	**1.15094.0001**
Extrelut® NT 3 glass columns for 1 - 3 ml sample	50	**1.15095.0001**
Extrelut® NT 20 PE columns for 5 - 20 ml sample	25	**1.15096.0001**

Description	Pk	Cat. No.
Accessories		
Cannulae 0.60/30 with Luer tip for EXtrelut® NT 1 and NT3	100	**1.15373.0001**
Collection tubes with tapered bottom and screw cap 15 ml for EXtrelut® NT1 and NT3	30	**1.15622.0001**

Solid phase extraction cartridges, LiChrolut®

LiChrolut® solid phase extraction (SPE) cartridges and accessories are manufactured to the highest standards. All SPE cartridges listed below are polypropylene unless otherwise stated. They are compatible with all automated SPE instruments and robots. Three important criteria are carefully controlled:

- Batch-to-batch reproducibility - each sorbent is tested for capacity towards polar and non-polar compounds
- Elimination of fines - sorbents have a narrow particle size distribution with virtually no fines
- Contamination - high purity sorbents and tubes are used and are pre-washed prior to packing ensuring contamination-free products

CN - For polar extractions

EN - For non-polar extraction on a polymeric phase

SCX- For cation exchange extraction

TSC- For mixed mode analysis of neutral and cationic analytes

Description	Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
LiChrolut® CN	200 mg	40 - 63	3	50	**1.19698.0001**
LiChrolut® EN glass*	200 mg	40 - 120	3	30	**1.19693.0001**
LiChrolut® EN	200 mg	40 - 120	6	30	**1.19941.0001**
LiChrolut® EN/RP-18 (top)	100/200 mg	40 - 120/40 - 63	6	30	**1.19912.0001**
LiChrolut® RP18	100 mg	40 - 63	1	100	**1.19855.0001**
LiChrolut® RP18	200 mg	40 - 63	3	50	**1.02014.0001**
LiChrolut® RP18	500 mg	40 - 63	3	50	**1.02023.0001**
LiChrolut® RP18	500 mg	40 - 63	6	30	**1.19687.0001**
LiChrolut® RP18	1000 mg	40 - 63	6	30	**1.02122.0001**
LiChrolut® RP18	2000 mg	40 - 63	6	30	**1.19686.0001**
LiChrolut® RP18E	200 mg	40 - 63	3	50	**1.19847.0001**
LiChrolut® RP18E	500 mg	40 - 63	3	50	**1.19849.0001**
LiChrolut® SCX	200 mg	40 - 63	3	50	**1.02016.0001**
LiChrolut® SCX	500 mg	40 - 63	3	50	**1.02022.0001**
LiChrolut® Si	200 mg	40 - 63	3	50	**1.02021.0001**
LiChrolut® Si	500 mg	40 - 63	3	50	**1.02024.0001**
LiChrolut® TSC	300 mg	40 - 63	3	50	**1.19767.0001**

* For ultra-trace analysis

Extraction unit and drying attachment, LiChrolut®

All the individual steps associated with solid phase extraction can be carried out using the LiChrolut® extraction unit. This transparent and vacuum-suitable unit, made of glass, can be used to prepare up to 12 samples simultaneously.

- Control of the vacuum via a manometer located at the front
- Individual and easy setting of the various flow rates using valves

Supplied with 1 lid with 12 standard valves and seal, 1 glass chamber with gauge and vacuum valve, 12 standard stainless steel cannules, 1 collecting rack (base plate with 3 support rods, centre plate, top plate with 10 mm boring and 12 clamps), 1 rack for volumetric flasks, 1 rack for test tubes 16 mm, 1 rack for autosampler vials.

Description	Pk	Cat. No.
Complete extraction unit, LiChrolut®	1	**1.19851.0001**
Complete drying attachment, LiChrolut®	1	**1.19852.0001**

HyperSep™ Retain™ PEP SPE columns
Thermo Scientific

HyperSep™ Retain™ PEP polymeric SPE material is a high purity, highly porous polystyrene DVB (divinyl benzene) material modified with urea functional groups to give balanced retention of polar and non-polar analytes.

HyperSep™ Retain™ PEP is ideal for a wide range of applications, such as drugs and metabolites in biological fluids, peptides in serum, plasma or biological fluids and environmental fluids.

HyperSep™ Retain™ PEP offers reproducible and reliable sample preparation through excellent batch-to-batch reproducibility. Many of the problems associated with traditional silica-based materials, such as inconsistent recoveries due to sorbent drying, are eliminated when using HyperSep™ Retain™ PEP. This can lead to fast sample preparation and method development.

- High and consistent recoveries
- Fast and easy sample preparation and method development
- pH stable 0 to 14

Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
30 mg	40 - 60	1	100	**549-0628**
30 mg	40 - 60	3	50	**549-0629**
60 mg	40 - 60	3	50	**549-0630**
60 mg	40 - 60	6	30	**549-0635**
100 mg	40 - 60	3	50	**549-0664**
100 mg	40 - 60	6	30	**549-0634**
150 mg	40 - 60	6	30	**549-0636**
200 mg	40 - 60	3	50	**549-0631**
200 mg	40 - 60	6	30	**549-0637**
500 mg	40 - 60	3	50	**549-0632**
500 mg	40 - 60	6	30	**549-0633**
1000 mg	40 - 60	6	30	**549-0665**
1000 mg	40 - 60	25	20	**549-0639**
2000 mg	40 - 60	25	20	**549-0638**

HyperSep™ Retain™-AX SPE columns
Thermo Scientific

HyperSep™ Retain™-AX polymeric SPE material is a high purity, highly porous polystyrene DVB (divinyl benzene) material partially functionalised with quaternary amine groups to give balanced retention of acidic and non-polar analytes.

HyperSep™ Retain™-AX is ideal for the retention of THC and its metabolites.

HyperSep™ Retain™-AX offers reproducible and reliable sample preparation through excellent batch-to-batch reproducibility. Many of the problems associated with traditional silica-based materials, such as inconsistent recoveries due to sorbent drying, are eliminated when using HyperSep Retain-AX. This can lead to fast, reproducible sample preparation and method development.

- High and consistent recoveries
- Fast and easy sample preparation and method development
- pH stable 0 to 14

Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
30 mg	40 - 60	1	100	**549-0652**
30 mg	40 - 60	3	50	**549-0653**
60 mg	40 - 60	3	50	**549-0654**
60 mg	40 - 60	6	30	**549-0659**

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Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
100 mg	40 - 60	3	50	**549-0886**
100 mg	40 - 60	6	30	**549-0658**
150 mg	40 - 60	6	30	**549-0660**
200 mg	40 - 60	3	50	**549-0655**
200 mg	40 - 60	6	30	**549-0661**
500 mg	40 - 60	3	50	**549-0656**
500 mg	40 - 60	6	30	**549-0657**
500 mg	40 - 60	15	20	**549-0667**
1000 mg	40 - 60	25	20	**549-0663**
2000 mg	40 - 60	25	20	**549-0662**

HyperSep™ Retain™-CX SPE columns
Thermo Scientific

HyperSep™ Retain™-CX polymeric SPE material is a high purity, highly porous, polystyrene DVB material partially functionalised with sulphonic acid groups to give balanced retention of basic and non-polar analytes.

HyperSep™ Retain™-CX is ideal for the retention of a wide range of drugs of abuse, including basic and neutral drugs.

HyperSep™ Retain™-CX offers reproducible and reliable sample preparation through excellent batch-to-batch reproducibility. Many of the problems associated with traditional silica-based materials, such as inconsistent recoveries due to sorbent drying, are eliminated when using HyperSep™ Retain™-CX. This can lead to fast sample preparation and method development.

- High and consistent recoveries
- Fast and easy sample preparation and method development
- pH stable 0 to 14

Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
30 mg	40 - 60	1	100	**549-0640**
30 mg	40 - 60	3	50	**549-0641**
60 mg	40 - 60	3	50	**549-0642**
60 mg	40 - 60	6	30	**549-0647**
100 mg	40 - 60	6	30	**549-0646**
150 mg	40 - 60	6	30	**549-0648**
200 mg	40 - 60	3	50	**549-0643**
200 mg	40 - 60	6	30	**549-0650**
500 mg	40 - 60	3	50	**549-0644**
500 mg	40 - 60	6	30	**549-0645**
1000 mg	40 - 60	25	20	**549-0651**
2000 mg	40 - 60	25	20	**549-0649**

Ion exchangers

In general, ion exchangers consist of a cross-linked polymer matrix with a uniform distribution of fixed ionic groups sited throughout the resin structure. These must be balanced by a similar number of ions of the opposite charge, the counter ions, to maintain electrical neutrality. Cation exchangers therefore exchange and enrich only cations, anion exchangers only anions. In contrast adsorber resins have a non ionic, but depending on the structure a somewhat polar character and don't adsorb stoichiometrically both: anions, cations, as well as uncharged compounds.

Possible applications are:

- Trace enrichment by using chelating ion exchangers
- Determination of total salt content of solutions and water by H+ exchange
- Removals of interfering cations or anions
- Chromatographic separation
- Digestion of insoluble compounds
- Application as a catalyst

Description	Pk	Cat. No.
Strong basic anion exchanger, Ion exchanger III, OH^-, exchange capacity >0,9 mval/ml	500 g	**1.04767.0500**
Strong basic anion exchanger, Amberlite® IRA-402, CL, exchange capacity >0,9 mval/ml (Cl^-)	500 ml	**1.12463.0500**
Strong basic anion exchanger, Dowex® 1-X8, Cl^-, exchange capacity >1,2 mval/ml	250 ml	**1.05242.0250**

Handheld automated analytical syringe, eVol® XR

SGE (Trajan)

eVol® is the coupling of two precision devices: A digitally controlled electronic drive and an XCHANGE® enabled analytical syringe. The result is a digitally controlled positive displacement dispensing system that can be programmed to reproducibly and accurately perform a wide variety of liquid handling procedures.

Typical applications: Preparation of calibration standards, addition of internal standards, precise dispensing of non-aqueous liquids, sample dilution. Only five XCHANGE® syringes are required to dispense liquid volumes covering the range from 0,2 to 1000 µl.

- Precise user-independent handling procedures
- XCHANGE® analytical syringes can be easily and quickly changed allowing them to be dedicated to individual liquids and methods preventing possible cross-contamination of reagents
- Perfect solution for accurately aspirating and dispensing both aqueous and non-aqueous liquids

eVol® features a familiar Touch Wheel user interface and a full-colour screen. The smart menu allows all the functions to be accessed logically and quickly. The programming functions are intuitive and include help screens and prompts.

To comply with stringent laboratory standards (e.g. GLP, GMP, FDA) eVol® can be easily calibrated to ensure accurate dispensing at all times. The gravimetric calibration procedure is simple, intuitive and can be performed at appropriate intervals. Calibration factors can be stored for up to ten XCHANGE® syringes and can be quickly loaded when the syringe is changed.

eVol® XR automated analytical syringe starter kit

Delivery information: Supplied with eVol® XR electronic syringe, three eVol® syringes; 5 µl, 100 µl and 1 ml, stand, universal charger, instruction manual and disc with manual in multiple languages.

Replacement needles for 5 µl eVol® syringes

Note: All SGE 25 - 250 µl replacement needles can be used with the 50 and 100 µl eVol® syringes. All SGE 1 - 2,5 ml replacement needles can be used with the 500 µl eVol® syringe.

Description	Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type of tip	Pk	Cat. No.
eVol® XR automated analytical syringe starter kit							
eVol® XR syringe starter kit	-	-	-	-	-	1	**548-1532**
eVol® syringes without needle							
eVol® syringe for MEPS	-	50	-	-	-	1	**548-1428**
eVol® syringe for MEPS	-	500	-	-	-	1	**548-1427**
eVol® syringe for MEPS (2011 Firmware required)	-	100	-	-	-	1	**548-1429**

Description	Pk	Cat. No.
Replacement plungers for eVol® syringes		
Replacement plunger for 5 µl eVol® syringes	1	**548-1356**
Replacement plunger for 50 µl eVol® syringes	1	**548-1357**
Replacement plunger for 500 µl eVol® syringes	1	**548-1358**

Microcentrifuges, ventilated/refrigerated, Micro Star 17 / 17R

The Micro Star 17 and 17R microcentrifuges combine power, versatility and convenience in a safe, compact, easy to use laboratory instrument. Both the ventilated Micro Star 17 and the refrigerated Micro Star 17R are designed to accelerate the routine sample preparation process. The special biocontainment rotor lid for one click rotor opening and closing shortens retrieval time compared to screw on lids.

- Quiet and powerful performance up to 17 000 ×g
- 'Click' biocontainment rotor lid keeps the user and the samples safe
- Easy operation; intuitive controls and bright, easy to read displays

Ordering information: Supplied with 24-place rotor for 1,5/2,0 ml tubes and aerosol-tight rotor lid.

Model	Micro Star 17	Micro Star 17R
Temperature (°C)	-	–9...+40
Max. speed (min^{-1})	13300	
Max. RCF (×g)	17000	
Timer	1–99 min (in increments of 1 min) + Hold mode	
Noise level (dB(A))	<56	<50
W×D×H (mm)	225×243×352	330×295×445

Description	Pk	Cat. No.
Microcentrifuge, ventilated, Micro Star 17	1	**521-1646**
Microcentrifuge, refrigerated, Micro Star 17R	1	**521-1647**

Centrifuges, bench top, ventilated/refrigerated, Mega Star 1.6 / 1.6R

1.6

1.6R

TX-400

These versatile centrifuges are ideal for a range of routine applications in pharmaceutical and biotechnology industries as well as for academic research. They offer good capacity and an ergonomic design which facilitates the work on the bench top. The Mega Star centrifuges are available as a ventilated or a refrigerated version. The refrigerated version, with pre-cooling function, is suitable for temperature-sensitive sample processing with control between –10 °C and +40 °C.

- Auto-Lock® III rotor system: Tool-free rotor exchange system enables quick rotor exchange; with just the push of a button users can quickly change rotors and easily access the rotor chamber for cleaning
- Aerosol-tight ClickSeal® bucket sealing system: Glove friendly one handed open/close capability, no need for screw caps and complicated clips
- SMARTSpin® technology optimising acceleration, braking and residual load imbalance for maximum safety, smooth runs and reproducible separations
- Time saving pulse function for short runs
- Intuitive controls and large, bright LED display facilitate operation and programming

TX-400 swing out rotor: This rotor is designed for a broad range of laboratory throughput needs. With a capacity of 4×400 ml, 76×5/7 ml blood tubes or up to 36×15 ml conical tubes in a single run, it provides a very high configuration flexibility.

Ordering information: Supplied as complete packages, incl. centrifuge, TX-400 rotor, set of four round buckets, four ClickSeal® lids and two power cords (EU and UK plug). Adapters need to be ordered separately.
Centrifuges can be used with all rotors suitable for Megafuge 16/16R centrifuges. Additional rotors are available on request.

Model	Mega Star 1.6	Mega Star 1.6R
Max. capacity - swing out rotor	4×400 ml	
Max. speed - swing out rotor (min^{-1})	4700	
Max. RCF - swing out rotor (×g)	4149	
Temperature (°C)	-	–10...+40
Acceleration/braking ramps	9/10	
Motor	Brushless induction motor	
Control	Microprocessor	
Functions	Auto-Lock® III rotor locking system, ClickSeal® sealing system	Auto-Lock® III rotor locking system, pre-cooling and CFC-free refrigeration, ClickSeal® sealing system
Programs	6 (direct access)	
Timer	9 h 99 min + continuous	

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Anti-unbalance system	SMARTSpin®	
Display	Large, bright LED	
Languages	English, German, French, Spanish, Italian, Dutch and Russian	
Noise level (dB(A))	<61	<55
Power supply	230 V / 50 - 60 Hz	
Power consumption (W)	1010	1400
W×D×H (mm)	440×605×360	623×605×360
Weight (kg)	57,5 (centrifuge only)	91,5 (centrifuge only)

Description	Pk	Cat. No.
Ventilated bench top centrifuge, Mega Star 1.6, package incl. TX-400 rotor, buckets and lids	1	**521-1749**
Refrigerated bench top centrifuge, Mega Star 1.6R, package incl. TX-400 rotor, buckets and lids	1	**521-1750**

Description	Pk	Cat. No.
Adapters		
Adapter for 4×25 ml universals, 25×110 mm for TX-400	4	**521-1427**
Adapter for 9×15 ml conical tubes, 16,5×121 mm for TX-400	4	**521-1418**
Adapter for 4×50 ml conical tubes, 29,5×116 mm for TX-400	4	**521-1419**
Adapter for 7×14 ml conical urine tubes, 17×112 mm for TX-400	4	**521-1457**
Adapter for 4×50 ml round tubes, 28,5×114 mm for TX-400	4	**521-1458**
Adapter for 3×50 ml DIN round tubes, 34,5×105 mm for TX-400	4	**521-1428**
Adapter for 1×100 ml round open tube, 45×117 mm for TX-400	4	**521-1429**
Adapter for 19×5/7 ml blood collection tubes, 12×110 mm for TX-400	4	**521-1416**
Adapter for 14×10/15 ml blood collection tubes, 15×113 mm for TX-400	4	**521-1417**
Adapter for 4×15 ml blood collection tubes, 15,5×131 mm for TX-400	4	**521-1456**
Adapter for 34×1,5/2 ml microtubes, 11×45 mm for TX-400	4	**521-1568**
Adapter for 5×25/30 ml DIN round/flat bottom tubes, 25,5×108 mm for TX-400	4	**521-1425**
Adapter for 10×15 ml Sarstedt® tubes, 17×105 mm for TX-400	4	**521-1426**
Adapter for 1×250 ml Nalgene bottle, Ø 62×125 mm for TX-400	4	**521-1454**
Adapter for 19×3 ml RIA open tubes, 11×110 mm for TX-400	4	**521-1571**

VWR COLLECTION

2 year warranty

SELECTED FOR YOU

Centrifuges, bench top, ventilated/refrigerated, Mega Star 3.0 / 3.0R

3.0

3.0 R

TX-750

These versatile centrifuges are ideal for a range of routine applications in pharmaceutical and biotechnology industries as well as for academic research. They offer exceptional capacity and an ergonomic design which facilitates the work on the bench top. The Mega Star centrifuges are available as a ventilated or a refrigerated version. The refrigerated version, with pre-cooling function, is suitable for temperature-sensitive sample processing with control between –10 °C and +40 °C.

- Auto-Lock® III rotor system: Tool-free rotor exchange system enables quick rotor exchange; with just the push of a button users can quickly change rotors and easily access the rotor chamber for cleaning
- Aerosol-tight ClickSeal® bucket sealing system: Glove friendly one handed open/close capability, no need for screw caps and complicated clips
- SMARTSpin® technology optimising acceleration, braking and residual load imbalance for maximum safety, smooth runs and reproducible separations
- Time saving pulse function for short runs
- Intuitive controls and large, bright LED display facilitate operation and programming

TX-750 swing out rotor: This high capacity (4×750 ml) rotor accelerates productivity with up to 196×5/7 ml blood tubes or 28×50 ml conical tubes in a single run.

Ordering information: Supplied as complete packages, incl. centrifuge, TX-750 rotor, set of four round buckets, four ClickSeal® lids and two power cords (EU and UK plug). Adapters need to be ordered separately.
Centrifuges can be used with all rotors suitable for Megafuge 40/40 R centrifuges. Additional rotors are available on request.

Model	Mega Star 3.0	Mega Star 3.0R
Max. capacity - swing out rotor	4×750 ml	
Max. speed - swing out rotor (min^{-1})	4000	
Max. RCF - swing out rotor (×g)	3494	
Temperature (°C)	-	–10...+40
Acceleration/braking ramps	9/10	

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Motor	Brushless induction motor	
Control	Microprocessor	
Functions	Auto-Lock® III rotor locking system, ClickSeal® sealing system	Auto-Lock® III rotor locking system, pre-cooling and CFC-free refrigeration, ClickSeal® sealing system
Programs	6 (direct access)	
Timer	9 h 99 min + continuous	
Anti-unbalance system	SMARTSpin®	
Display	Large, bright LED	
Languages	English, German, French, Spanish, Italian, Dutch and Russian	
Noise level (dB(A))	<61	<57
Power supply	230 V / 50 - 60 Hz	
Power consumption (W)	1700	1950
W×D×H (mm)	565×670×360	745×670×360
Weight (kg)	86 (centrifuge only)	116 (centrifuge only)

Description	Pk	Cat. No.
Ventilated bench top centrifuge, Mega Star 3.0, package incl. TX-750 rotor, buckets and lids	1	**521-1751**
Refrigerated bench top centrifuge, Mega Star 3.0R, package incl. TX-750 rotor, buckets and lids	1	**521-1752**

Description	Pk	Cat. No.
Adapters		
Adapter for 7×50 ml conical tubes, 29,5×120 mm	4	**521-1409**
Adapter for 14×15 ml conical tubes, 17×122 mm	4	**521-1410**
Adapter for 7×50 ml round bottom tubes, 29,5×120 mm	4	**521-1433**
Adapter for 2×100 ml round bottom open-top tubes, 45×123 mm	4	**521-1431**
Adapter for 37×5/7 ml round bottom tubes with decanting aid, 13×111 mm	4	**521-1439**
Adapter for 37×5 ml RIA/round bottom tubes, 13×111 mm	4	**521-1438**
Adapter for 7×25 ml conical/skirted tubes, 25,5×120 ml	4	**521-1434**
Adapter for 12×14 ml conical urine tubes, 18×124 mm	4	**521-1435**
Adapter for 3×50 ml conical tubes (incl.sealing vessels), 29,5×120 mm	4	**521-1432**
Adapter for 48×1,5/2 ml microtubes, 11×50 mm	4	**521-1440**
Adapter for 1×250 ml Nalgene bottle, 62,5×139 mm	4	**521-1430**
Adapter for 27×5/7 ml blood collection tubes, 13×116 mm	4	**521-1437**
Adapter for 21×10 ml blood collection tubes, 17×117 mm	4	**521-1436**

VWR COLLECTION

SELECTED FOR YOU

Microcentrifuge tubes with screw caps, SuperClear™

Resin, ultra-clear with silicone O-ring caps

SuperClear™ screw cap microtubes are made from an ultra-clear resin that gives you an excellent view of tube contents. These tubes include universal screw threads that will work with all major brands of caps. Caps include an silicone O-ring seal for secure storage. Also included are large external graduations and a smooth surface for applying labels. Caps and tubes are autoclavable and freezable. Sterile tubes are radiation sterilised. Tubes can be centrifuged to 20 000 ×g.

- Silicone O-ring caps that accept colour code inserts
- 0,5/1,5 and 2,0 ml sizes
- Reseable bags

Capacity (ml)	Type	Pk	Cat. No.
Tubes with natural colour silicone O-Ring caps			
0,5	Conical bottom	500	**525-0541**
0,5	Free-standing	500	**525-0543**
1,5	Conical bottom	500	**525-0537**
1,5	Free-standing	500	**525-0545**
2,0	Conical bottom	500	**525-0547**
2,0	Free-standing	500	**525-0539**
Sterile tubes with attached natural colour silicone O-Ring caps			
0,5	Conical bottom	500	**525-0542**
0,5	Free-standing	500	**525-0544**
1,5	Conical bottom	500	**525-0538**
1,5	Free-standing	500	**525-0546**
2,0	Conical bottom	500	**525-0548**
2,0	Free-standing	500	**525-0540**

Microcentrifuge tubes, 0,65 ml, SuperClear™ boil-proof

Ultra-clear PP, graduated, autoclavable and freezable with flat cap

- Can withstand centrifugation to 30 000×g
- Fits all standard and high capacity rotors
- Flat cap can be easily labelled and pierced, includes a special 90° hinge, making it easier to close while pipetting one handed
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: Microtubes packed in resealable bags. Assorted colours pack includes red, blue, green, yellow, orange tubes in separate 200 tube bags.

Capacity (ml)	Colour	Pk	Cat. No.
0,65	Transparent	1.000	**211-0024**
0,65	Yellow	1.000	**211-0025**
0,65	Orange	1.000	**211-0026**
0,65	Red	1.000	**211-0027**
0,65	Violet	1.000	**211-0028**
0,65	Blue	1.000	**211-0029**
0,65	Green	1.000	**211-0030**
0,65	Assorted	1.000	**211-0031**

Microcentrifuge tubes, 1,5 ml, SuperSpin™

Ultra-clear PP, graduated, autoclavable and freezable with flat caps, easy to open

- Can withstand ultra-high centrifugation to RCF 40 000×g
- Fits all standard and high capacity rotors
- Flat cap can be easily labelled and pierced, includes a special 90° hinge, making it easier to close while pipetting one handed
- Good for phenol/chloroform vortexing
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: Microtubes packed in resealable bags. Assorted colours pack includes red, blue, green, yellow, orange tubes in separate 100 tube bags.

Capacity (ml)	Colour	Pk	Cat. No.
1,5	Transparent	500	**211-0015**
1,5	Amber	500	**211-0016**
1,5	Yellow	500	**211-0017**
1,5	Orange	500	**211-0018**
1,5	Red	500	**211-0019**
1,5	Violet	500	**211-0020**
1,5	Blue	500	**211-0021**
1,5	Green	500	**211-0022**
1,5	Assorted	500	**211-0023**

Microcentrifuge tubes, 1,7 ml, SuperClear™ boil-proof

Ultra-clear PP, graduated, autoclavable and freezable with or without flat cap

- Can withstand centrifugation to 20 000×g
- Fits all standard and high capacity rotors
- Flat cap can be easily labelled and pierced, includes a special 90° hinge, making it easier to close while pipetting one handed
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: Microtubes packed in resealable bags. Assorted colours pack includes red, blue, green, yellow, orange tubes in separate 100 tube bags.

Capacity (ml)	Colour	Pk	Cat. No.
With cap			
1,7	Transparent	500	**211-0007**
1,7	Yellow	500	**211-0008**
1,7	Orange	500	**211-0009**
1,7	Red	500	**211-0010**
1,7	Violet	500	**211-0011**
1,7	Blue	500	**211-0012**
1,7	Green	500	**211-0013**
1,7	Assorted	500	**211-0014**
Without cap			
1,7	Transparent	500	**211-0032**

Microcentrifuge tubes, 2,0 ml, SuperClear™

Ultra-clear PP, graduated, autoclavable and freezable with flat cap

- Can withstand centrifugation to 14 000×g
- Fits all standard and high capacity rotors
- Tubes have frosted side labelling surface and flat cap can be easily labelled and pierced
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: In resealable bag. Assorted colours pack includes red, blue, green, yellow, orange tubes in separate 100 tube bags.

Capacity (ml)	Colour	Pk	Cat. No.
2,0	Transparent	500	**211-0034**
2,0	Amber	500	**211-0035**
2,0	Blue	500	**211-0036**
2,0	Green	500	**211-0037**
2,0	Assorted	500	**211-0038**
2,0	Yellow	500	**211-0116**
2,0	Orange	500	**211-0117**
2,0	Red	500	**211-0118**
2,0	Violet	500	**211-0119**

Microcentrifuge tubes, Safe-Lock
Eppendorf

0,5 ml / 1,5 ml / 2,0 ml

Microcentrifuge tubes

PP, graduated, with attached cap, autoclavable when open

- Can withstand centrifugation up to 30 000×g for 0,5 and 1,5 ml and up to 25 000×g for 2,0 ml
- Frosted writing surface, easily opened using one hand
- The hook on the patented hinged lid clips around the rim of the test tube, preventing the tube from opening accidentally

Micropestle for microcentrifuge tubes

White plastic. For resuspension of pellets in 1,5 and 2,0 ml microtubes.

- Simple and easy handling
- Good chemical resistance
- High thermal resistance, autoclavable

Capacity (ml)	Colour	Pk	Cat. No.
Microcentrifuge tubes			
0,5	Transparent	500	**211-2140**
0,5	Yellow	500	**211-2141**
0,5	Red	500	**211-2142**
0,5	Green	500	**211-2144**
0,5	Amber	500	**211-2145**
0,5	Assorted	500	**211-2149**
1,5	Transparent	1.000	**211-2130**
1,5	Yellow	1.000	**211-2131**
1,5	Blue	1.000	**211-2133**
1,5	Green	1.000	**211-2134**
1,5	Amber	1.000	**211-2135**
1,5	Assorted	1.000	**211-2139**
2,0	Transparent	1.000	**211-2120**
2,0	Yellow	1.000	**211-2121**
2,0	Red	1.000	**211-2122**
2,0	Blue	1.000	**211-2123**
2,0	Green	1.000	**211-2124**
2,0	Amber	1.000	**211-2125**
2,0	Assorted	1.000	**211-2129**

Description	Pk	Cat. No.
Micropestle for microcentrifuge tubes		
Micropestles for resuspending pellets from microcentrifuge tubes Safe-Lock (1,5-2,0 ml)	10	**211-2100**

IVD

Microcentrifuge tubes, 1,5 ml
Brand

PP, graduated (except 211-2611), autoclavable with attached cap (except 211-2611)

- Can withstand centrifugation up to 20 000×g (except 211-2611: Up to 6000×g)
- Flat cap can be easily labelled and pierced
- Frosted marking area (except 211-2611)
- Amber-coloured microcentrifuge tubes are particularly suitable for light-sensitive reagents

IVD (except 211-2611): CE-marked according to IVD-Directive 98/79 EC

Capacity (ml)	Colour	Pk	Cat. No.
With cap			
1,5	Transparent	500	**211-2610**
1,5	Transparent	3.000	**212-0198**
1,5	Yellow	500	**211-2601**
1,5	Blue	500	**211-2602**
1,5	Green	500	**211-2603**
1,5	Orange	500	**211-2604**
1,5	Amber	500	**211-2605**
Without cap			
1,5	Transparent	2.000	**211-2611**

Microcentrifuge tubes, Snaplock, Axygen®
Corning®

High quality PP, graduated, autoclavable

Microtubes made from PP homopolymer for excellent sample visibility. Available in an ultra-transparent (MaxyClear) version or in assorted colours, with frosted writing area.

- Flat snaplock cap makes labelling easier, an area of 0,28 mm diameter can be perforated to minimise the risk of opening at high temperatures
- Maxymum Recovery® microtubes with ultra-smooth surfaces prevent adhesion of proteins and nucleic acids after long periods of storage
- Certified DNase-, RNase- and endotoxin-free

Packaging: Supplied in bulk, in resealable plastic bags.

Capacity (ml)	Type	Colour	Sterile	Pk	Cat. No.
0,6	Maxyclear Boil-Proof	Clear	-	1.000	**525-0225**
0,6	Maxyclear Boil-Proof, Maxymum Recovery®	Clear	-	500	**525-0229**
1,5	Maxyclear Boil-Proof	Clear	-	500	**525-0226**
1,5	Maxyclear Boil-Proof	Green	-	500	**525-0268**
1,5	Maxyclear Boil-Proof, Maxymum Recovery®	Clear	-	250	**525-0230**
1,5	Maxyclear Boil-Proof	Red	-	500	**525-0270**
1,5	Maxyclear Boil-Proof	Violet	-	500	**525-0271**
1,5	Maxyclear Boil-Proof	Amber	-	500	**525-0278**
1,7	Maxyclear Boil-Proof	Clear	-	500	**525-0227**
1,7	Maxyclear Boil-Proof, Maxymum Recovery®	Clear	-	250	**525-0231**
2,0	Maxyclear Boil-Proof	Clear	-	500	**525-0228**
2,0	Maxyclear Boil-Proof Maxymum Recovery®	Clear	-	250	**525-0232**
2,0	Maxyclear Boil-Proof	Violet	-	500	**525-0286**
2,0	Maxyclear Boil-Proof	Amber	-	500	**525-0285**
2,0	Maxyclear Boil-Proof	Yellow	-	500	**525-0284**

Centrifuge tubes, high performance

Clear PP, with purple HDPE flat screw or plug seal caps

These disposable conical bottom and free-standing tubes are extremely versatile, and can be used for routine tasks as well as high speed centrifuging. Rack-packed tubes are packaged in freezable, recyclable, autoclavable racks. Tubes are sterilised by gamma irradiation (except free-standing tubes in bags or bulk). Tubes and caps are autoclavable and freezable.

- Certified non cytotoxic, nuclease-free and pyrogen-free
- Caps available in two styles: Flat screw caps with a smooth surface for additional labelling options, or plug seal caps for a secure seal when using shakers and horizontal incubators
- Easy to read black graduations and white writing area on the side for permanent coding
- Can be used for storing and freezing samples at temperatures down to –80 °C
- Can be centrifuged up to 12 500×g

Packaging: In bulk, in bags, or on plastic, autoclavable racks.

Capacity (ml)	Packed	Version	Type	Pk	Cat. No.
Conical bottom					
15	50/bag, 10 bags/case	Flat screw cap	Sterile	500	**525-0400**
15	25 tubes per rack, 2 racks/pack, 10 packs/case	Flat screw cap	Sterile	500	**525-0401**
15	50/bag, 10 bags/case	Plug seal cap	Sterile	500	**525-0449**
15	25 tubes per rack, 2 rack/pack, 10 packs/case	Plug seal cap	Sterile	500	**525-0450**
50	50/bag, 10 bags/case	Flat screw cap	Sterile	500	**525-0402**
50	25 tubes per rack, 1 rack/pack, 20 packs/case	Flat screw cap	Sterile	500	**525-0403**
50	50/bag, 10 bags/case	Plug seal cap	Sterile	500	**525-0447**
50	25 tubes per rack, 1 rack/pack, 20 packs/case	Plug seal cap	Sterile	500	**525-0448**
Free-standing					
50	50/bag, 10 bags/case	Plug seal cap	Non sterile	500	**525-0417**
50	bulk (tubes & caps in separate bags)	Plug seal cap	Non sterile	500	**525-0416**
50	50/bag, 10 bags/case	Plug seal cap	Sterile	500	**525-0418**

Centrifuge tubes, metal-free

PP

Ideal for environmental uses such as water analysis and other applications where tubes have the potential to contaminate samples. Tubes are certified free of major critical trace metals to less than 1 ppb.

- Available in two sizes with natural flat caps for easy labelling
- Tubes and caps are made of ultra-high purity CFR 21 compliant resins
- Printed graduation marks and large white writing area

Packaging: Tubes packaged in bulk bags are supplied 50 tubes per bag, 10 bags per case. SBS recyclable rack packaged tubes are supplied 25 per rack, 2 racks per pack, 10 packs per case.

Capacity (ml)	Packed	Pk	Cat. No.
15	Bulk bag	500	**525-0460**
15	SBS recyclable rack	500	**525-0461**
50	Bulk bag	500	**525-0462**
50	SBS recyclable rack	500	**525-0463**

VWR Mobile
Available on the App Store
Google play
VWR.com in your pocket

VWR2GO

VWR2Go provides the essential features from our web-based shop system on mobile phones and tablets

Real time, intuitive searching and ordering of over one million items

Download today!

Centrifuge tubes, conical, NUNC™
Thermo Scientific

PP, conical bottom, graduated, sterile, autoclavable with HDPE screw cap

- Leakproof to protect samples
- USP Class VI, non pyrogenic, non cytotoxic and RNase/DNase-free
- Recyclable plastic rack reduces waste and minimises risk of contamination and particles

Capacity (ml)	Packed	RCF max. (×g)	Pk	Cat. No.
15	Bulk (50/pack, 10 packs/case)	10500	500	**525-0492**
15	Racked (25/rack, 20 racks/case)	10500	500	**525-0493**
50	Bulk (25/pack, 20 packs/case)	17000	500	**525-0494**
50	Racked (25/rack, 12 racks/case)	17000	300	**525-0495**

Centrifuge tubes, EZ Flip™, Nunc™
Thermo Scientific

PP, conical, printed graduations with hinged cap

- Printed graduations, white writing area and flat caps for sample identification
- Hinged-cap system with ergonomic design for one handed opening and closing
- Integrated leakproof cap prevents cross-contamination and lost closures
- Withstands forces up to 8500×g for 15 ml and 9500×g for 50 ml

Capacity (ml)	Packed	Description	Pk	Cat. No.
15	Loose	Centrifuge tubes, conical bottom, with hinged cap	500	**734-0995**
15	Racked	Centrifuge tubes, conical bottom, with hinged cap	500	**734-0996**
50	Loose	Centrifuge tubes, conical bottom, with hinged cap	500	**734-0997**
50	Racked	Centrifuge tubes, conical bottom, with hinged cap	500	**734-0998**

VWR COLLECTION

Centrifuge tubes, ultra-high performance, light-sensitive

525-0437

525-0442/525-0439

PP, dark amber

Designed to provide protection for light-sensitive samples.

- Printed labelling area for quick and convenient sample identification
- HDPE caps are included
- Available in 15 or 50 ml sizes and offered in a variety of packaging formats
- Certified non cytotoxic, nuclease-free and pyrogen-free

Capacity (ml)	Packed	Sterile	Pk	Cat. No.
15	Bulk (tubes & caps in separate bags)	-	500	**525-0440**
15	50/bag, 10 bags/case	+	500	**525-0441**
15	25/rack, 2 racks/pack, 10 packs/case	+	500	**525-0442**

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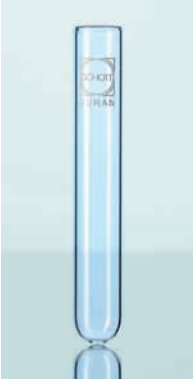
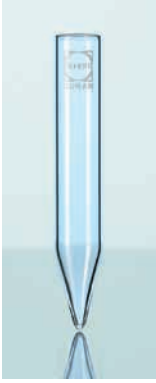
Capacity (ml)	Packed	Sterile	Pk	Cat. No.
50	Bulk (tubes & caps in separate bags)	-	500	**525-0437**
50	50/bag, 10 bags/case	+	500	**525-0438**
50	25/rack, 20 racks/case	+	500	**525-0439**

Centrifuge tubes
DURAN Group



525-1104



525-1122

525-1142

DURAN®, borosilicate glass

Robust universal centrifuge tubes for a wide variety of applications.

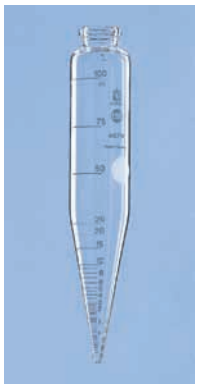
- Very good chemical and thermal resistance
- Max. RCF: 4000×g

DIN 58970 (Part 2)*

Capacity (ml)	Ø×L (mm)	Description	Pk	Cat. No.
6	12×100	Centrifuge tubes, round bottom	1	**525-1102**
12	16×100	Centrifuge tubes, round bottom	1	**525-1104**
25	24×100	Centrifuge tubes, round bottom	1	**525-1106**
50	34×100	Centrifuge tubes, round bottom	1	**525-1108**
80	40×115	Centrifuge tubes, round bottom	1	**525-1110**
80	44×100	Centrifuge tubes, round bottom	1	**525-1112**
250	56×147	Centrifuge tubes, round bottom	1	**525-1114**
25	24×100	Centrifuge tubes with conical bottom, angle 60°	1	**525-1132**
50	34×100	Centrifuge tubes with conical bottom, angle 60°	1	**525-1142**
12	16×100	Centrifuge tubes with conical bottom, angle 30°	1	**525-1122**

* 525-1110 and 525-1114 not in accordance with DIN

Centrifuge tubes, ASTM, BLAUBRAND®
Brand



Borosilicate glass 3.3, graduated

- Withstands forces up to 700×g
- Design, accuracy, etc. to meet ASTM specifications

Capacity (ml)	Length (mm)	Description	Pk	Cat. No.
100	203	Cylindrical, conical bottom, ASTM D 91	1	**525-1272**
100	160	Pear-shaped, cylindrical bottom, former standard ASTM D 96	1	**525-1273**
100	167	Cylindrical, conical bottom, former standard ASTM D 96	1	**525-1271**

Mortars with pestles, low form

Agate

High quality with flawless grinding surface.

Capacity (ml)	Ø (mm)	Ø int. (mm)	Pk	Cat. No.
10	50	40	1	**410-1008**
24	75	60	1	**410-1009**
50	100	80	1	**410-1010**
100	125	105	1	**410-1011**
200	150	125	1	**410-1012**

Mortars, without pestles

Porcelain, produced according to DIN 12906

- With spout
- Glazed outside, grinding surface unglazed
- Highly resistant to acids and alkalis

Capacity (ml)	Height (mm)	Ø int. (mm)	Pk	Cat. No.
20	32	50	1	**410-0108**
70	42	66	1	**410-0109**
75	46	76	1	**410-0110**
140	50	85	1	**410-0111**
170	56	92	1	**410-0112**
250	64	115	1	**410-0113**
400	71	122	1	**410-0114**
650	90	155	1	**410-0115**
1000	104	185	1	**410-0116**
2400	127	255	1	**410-0117**
4300	160	265	1	**410-0118**

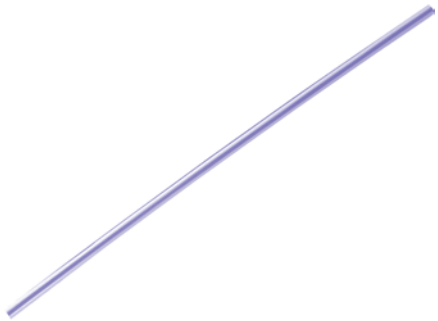
Pestles

Porcelain, produced according to DIN 12906

- Grinding surface unglazed
- Glazed handle

Head Ø (mm)	Length (mm)	Pk	Cat. No.
24	115	1	**410-0119**
30	135	1	**410-0120**
36	150	1	**410-0121**
42	175	1	**410-0122**
48	185	1	**410-0123**
58	210	1	**410-0124**
73	255	1	**410-0125**
86	305	1	**410-0126**

Straw pipettes



PP, irradiated, disposable, sterile, without graduation

- Traceability including the expiry date on the secondary packaging
- Zip bag can be pressed closed thus ensuring the protection of the products
- Tamper-evident seal guarantees the sterility of the product

Description	Capacity (ml)	Packed	Pk	Cat. No.
Straw pipettes	1	25 per bag	1.000	**612-1675**

Homogeniser, T 50 digital ULTRA-TURRAX®
IKA

Stand model, volume range 250 to 30 000 ml

Reproducible operation due to constant speed, even with changes in viscosities.

- Digital display for precise monitoring of set and actual speeds
- Wide selection of dispersing tools to suit your application
- Motor protected against overload
- Smooth start
- Error code display

Optional shaft 431-2961 enables the T 50 basic to be used as a high-speed stirrer.

IP protection class according to DIN EN 60529: IP 20

Ordering information: Dispersing elements and accessories must be ordered separately.

Model	T 50 digital
Volume H_2O (ml)	250 - 30000
Max. viscosity (mPas)	5000
Speed range (min^{-1})	500 - 10000
Speed stability (%)	1
Speed adjustment	Stepless
Motor rating input/output (W)	1100/700
Display	LED
Sound level (dB(A))	72
W×D×H (mm)	115×139×355
Weight (kg)	5,76

Description	Pk	Cat. No.
T 50 digital ULTRA-TURRAX® homogeniser, EU-plug	1	**431-0180**
T 50 digital ULTRA-TURRAX® homogeniser, UK-plug	1	**431-0181**
T 50 digital ULTRA-TURRAX® homogeniser, CH-plug	1	**431-0182**

Description	Pk	Cat. No.
Accessories		
Disperser R 1402, Ø 42 mm	1	**441-2993**
Propeller R 1405, Ø 45 mm	1	**441-2991**
High-speed stirring shaft R 50	1	**431-2961**

Dispersing elements for homogenisers
IKA

S 50 N - 45 G

S 50 N -45 F

S 50 N - G 45 M

Type N

Materials in contact with medium are PTFE and stainless steel AISI 316L, suitable for solvents and abrasive substances, can be sterilised by all methods, max. temperature 180 °C

Type	For	Speed (m/s)	Stator/rotor Ø (mm)	Length (mm)	Volume (ml)	Pk	Cat. No.
S 50 N - G 45 G	T 50 basic	18,8	45,0 / 36,0	300	0,5 - 20 000	1	**431-2560**
S 50 N - G 45 F	T 50 basic	20,9	45,0 / 40,0	290	0,25 - 10 000	1	**431-2569**
S 50 N - G 45 M	T 50 basic	21,2	45,0 / 40,5	290	0,5 - 15 000	1	**431-2563**

More dispersing elements are available on request. ST= Sawtooth

Sealing film for manual application, PARAFILM® M
Brand

Universal, semi-transparent, highly elastic film designed for airtight and moisture-proof sealing and many other applications. The film can be stretched up to 200% and forms a completely tight seal even with irregular shapes and areas.

- Resistant to polar substances such as saline solutions, inorganic acids and alkalis for up to 48 hours
- Effective temperature range –45 to +50 °C (melting point ca. +60 °C)
- Liquid-tight and gas permeable
- Non toxic, free of plasticisers

Length (m)	Width (mm)	Pk	Cat. No.
75	50	1	**291-1214**
75	100	1	**291-1212**
38	100	1	**291-1213**
15	500	1	**291-1211**

VWR COLLECTION

SELECTED FOR YOU

Qualitative filter papers

Grade (plain)	Application
410	Filtration of copper(I) oxide, lead sulphate, barium sulphate, manganese carbonate and more for analytical work. Suitable for extremely difficult filtration and for clarification of wine.
413	For routine laboratory work, suitable for student requirements in general chemistry. Suitable for filtration of aluminium phosphate, barium carbonate, lead chromate and more.

Grade	Weight	Thickness	Particle retention	Max. pore size	Min. pore size	Filtration speed	Wet burst strength	Dry burst strength
Plain filters								
410	80 g/m²	0,15 mm	2 - 3 µm	20 µm	9 µm	2500 s (Herzberg)	1 psi	22 psi
413	73 g/m²	0,16 mm	5 - 13 µm	45 µm	20 µm	160 s (Herzberg)	9 psi	28 psi

Grade	Size (mm)	Pk	Cat. No.
Plain filters			
410	75	100	**516-0800**
410	90	100	**516-0801**
410	110	100	**516-0802**
410	125	100	**516-0803**
410	150	100	**516-0804**
410	185	100	**516-0805**
413	15	100	**516-0810**
413	42,5	100	**516-0811**
413	55	100	**516-0812**
413	75	100	**516-0813**
413	90	100	**516-0814**
413	110	100	**516-0815**
413	125	100	**516-0816**
413	150	100	**516-0817**
413	185	100	**516-0818**
413	205	100	**516-0819**
413	240	100	**516-0820**

Qualitative filter papers, standard grades

Whatman (GE Healthcare)

Grade (folded)	Application
595 1/2	Very popular, thin filter paper, medium fast with medium-to-fine particle retention. Used for many routine analytical applications in different industries, (e.g. particle separation from food extracts or filtration of solids from digested environmental samples, e.g. for ICP/AAS analysis).
597 1/2	A medium fast filter paper with medium-to-fine particle retention. Used for a wide variety of analytical routine applications in different industries like food testing (e.g. determination of fat content acc. to Section 35 LMBG) or removal of carbon dioxide and turbidity from beverages (e.g. beer analysis).
598 1/2	A thick filter paper with high loading capacity. Combines medium retention with medium fast to fast filtration speed.
602 h 1/2	A dense filter paper for collecting very small particles and removing fine precipitates. Used in sample preparation, e.g. in the beverage industry for residual sugar determination, acidic spectra, refractometric analysis and HPLC.

Grade	Weight	Thickness	Particle retention	Filtration speed
Folded filters				
595 ½	68 g/m²	0,15 mm	4 - 7 µm	80 s (Herzberg)
597 ½	85 g/m²	0,18 mm		140 s (Herzberg)
598 ½	140 g/m²	0,32 mm	8 - 10 µm	50 s (Herzberg)
602 h ½	84 g/m²	0,16 mm	<2 µm	375 s (Herzberg)

Grade	Size (mm)	Pk	Cat. No.
Folded filters			
595 ½	70	100	**515-5501**
595 ½	90	100	**512-3620**
595 ½	110	100	**512-3621**
595 ½	125	100	**512-3622**
595 ½	150	100	**512-3623**
595 ½	185	100	**512-3624**
595 ½	240	100	**512-3625**
595 ½	270	100	**512-3626**
595 ½	320	100	**512-3627**
597 ½	70	100	**515-5301**
597 ½	90	100	**515-5302**
597 ½	110	100	**515-5303**
597 ½	125	100	**512-3628**
597 ½	150	100	**512-3629**
597 ½	185	100	**512-3630**
597 ½	240	100	**512-3631**
597 ½	270	100	**512-3632**
597 ½	320	100	**512-3633**
597 ½	385	100	**512-3634**
597 ½	500	100	**515-5311**
598 ½	125	50	**515-5204**
598 ½	185	50	**512-3635**
598 ½	240	50	**515-5207**
598 ½	500	50	**515-5211**
602 h ½	90	100	**515-5802**
602 h ½	125	100	**515-5804**
602 h ½	150	100	**515-5805**
602 h ½	185	100	**515-5806**
602 h ½	240	100	**515-5807**

Other grades and sizes are available, please check www.vwr.com.

Qualitative filter papers
Whatman (GE Healthcare)

Grade 0860 ½, folded

Comparable to Grade 0858 ½ but with a smooth surface, slightly thinner and faster.

Grade	0860 ½
Weight	75 g/m²
Thickness	170 µm
Particle retention	7 - 12 µm
Filtration speed	60 s (Herzberg)

Grade	Size (mm)	Pk	Cat. No.
Grade 0860 ½, folded			
0860 ½	185	100	**512-0524**
0860 ½	240	100	**512-0525**
0860 ½	320	100	**512-0526**

Qualitative filter papers, wet strengthened grades
Whatman (GE Healthcare)

These extremely strong filter papers have a high wet strength due to the addition of a small quantity of chemically stable resin. Normal qualitative applications will not introduce any significant impurities into the filtrate. The resins do, however, contain nitrogen so these grades should not be used in Kjeldahl estimations, etc.

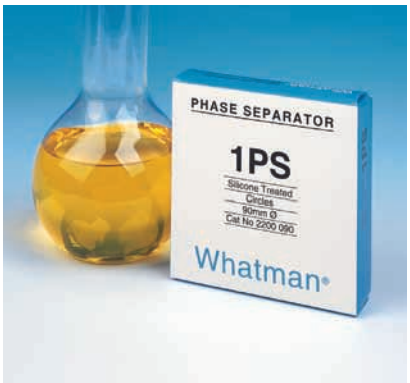
Grade (folded)	Application
1573 ½	A fast filter paper with high wet strength. It has a very smooth surface making it easy to scrape or wash off precipitate.

Grade	Weight	Thickness	Particle retention	Filtration speed
Folded filters				
1573 1/2	88 g/m²	170 µm	12 - 25 µm	25 s (Herzberg)

Grade	Size (mm)	Pk	Cat. No.
Folded filters			
1573 ½	125	100	**515-7004**
1573 ½	150	100	**515-7005**
1573 ½	185	100	**515-7006**
1573 ½	240	100	**515-7007**
1573 ½	270	100	**515-7008**
1573 ½	320	100	**515-7009**

Other grades and sizes are available, please check www.vwr.com.

Phase separating paper, grade 1PS
Whatman (GE Healthcare)



High grade filter paper impregnated with a stabilised silicone that renders it hydrophobic, retaining the aqueous phase and passing the solvent phase through.

- Any number of separations can be processed together
- The cut-off is automatic and complete, can replace traditional separating funnels

Size (mm)	Pk	Cat. No.
70	100	**516-5201**
90	100	**515-0086**
110	100	**515-0087**
125	100	**515-0088**
150	100	**515-0089**
185	100	**515-0090**
240	100	**515-5017**
270	100	**515-5018**

Filtration apparatus
DURAN Group

DURAN® borosilicate glass unit, PTFE insert and anodised aluminium clamp, autoclavable

Typical applications: Coarse and ultrafine filtration, filtration of HPLC media, residue analysis. Filter paper, membrane filters (47 mm) or glass filters can be used for filtration.

- Scaled funnel
- All components are available as spare parts

Description	Pk	Cat. No.
Complete with 1000 ml filtration bottle, PTFE insert and clamp	1	**516-0431**

PALL Life Sciences

Syringe filters, Acrodisc® MS

Water-wettable PTFE membrane with HDPE housing

- Certified syringe filters with extremely low levels of extractables for LC-MS
- Low ion suppression/enhancement
- Excellent chemical resistance, can be used with both organic and aqueous solvents
- Low protein binding

Packaging: Special low extractable tubes with 10 filters each. Each tube is sealed with a cap to protect the filters until they are ready for use.

Ø (mm)	13	25
Inlet/outlet	Female threaded Luer/minispike	Female threaded Luer/male slip Luer
Max. temperature (°C)	55	
Max. pressure (bar)	5,1	
Water flow rate	49 ml/min (2 bar)	140 ml/min (2 bar)

Pore size (µm)	Filtration area (cm^2)	Ø (mm)	Pk	Cat. No.
0,2	1,0	13	60	**514-0627**
0,2	3,9	25	50	**514-0287**

Syringe filters, Anotop™
Whatman (GE Healthcare)

Anopore™ membrane; PP housing

These filters can be used with most organic solvents and aqueous materials. They are suitable for sample volumes up to 100 ml. The hexagonal housing is manufactured from pigment-free PP to eliminate sample contamination. Anotop™ 10 Plus filters have a glass microfibre prefilter for samples that are difficult to filter.

Inlet/outlet: Luer lock female/Luer male

Max. pressure: 6,9 bar

Anotop™ 10

- Inorganic membrane
- Capillary pore structure
- Low protein binding
- Filters sample volume up to 10 ml

Anotop™ 10 Plus

Suitable for filtration of heavily particulate loaded samples prior to HPLC and for removal of solids prior to UV/Vis analysis.

Anotop™ 25

Suitable for cold sterilisation of growth media, phage and virus filtration, removal of high molecular weight proteins or polymers, liposome extrusion and filtration of solvents for spectroanalysis and analytical sample preparation.

Type	Pore size (µm)	Filtration area (cm^2)	Ø (mm)	Sterile	Pk	Cat. No.
Anotop™ 10						
Anotop™ 10	0,2	0,78	10	-	50	**516-1282**
Anotop™ 10 Plus						
Anotop™ 10 Plus	0,2	0,78	10	-	50	**516-1281**
Anotop™ 25						
Anotop™ 25	0,2	4,78	25	-	50	**516-1505**

Syringe filters, GD/X™
Whatman (GE Healthcare)

PP housing, autoclavable

Contain a unique prefiltration stack of GMF 150 and GF/F glass microfibre media, which allows filtration of the most difficult samples with less hand pressure. Compared to an unprotected membrane, these filters can process three to seven times more sample volume. Ideal for hard to filter, heavily particulate laden samples and for dissolution testing.

Inlet/outlet	Max. pressure (bar)	Dimensions	Weight	Ø (mm)
Luer lock female/Luer male	6,9	21,6×29,8 mm	3 g	13
	5,2	20,8×29,8 mm		25

Membrane	Pore size (µm)	Filtration area (cm^2)	Ø (mm)	Sterile	Pk	Cat. No.
GF/B	1,0 *	1,3	13	-	150	**514-0529**
GF/D	2,7 *	1,3	13	-	150	**514-0532**
GF/F	0,7 *	1,3	13	-	150	**514-0534**
Glass microfibre	0,45 *	1,3	13	-	150	**514-0536**
GF/A	1,6 *	4,6	25	-	150	**514-0528**
GF/B	1,0 *	4,6	25	-	150	**514-0530**
GF/C	1,2 *	4,6	25	-	150	**514-0531**
GF/D	2,7 *	4,6	25	-	150	**514-0533**
GF/F	0,7 *	4,6	25	-	150	**514-0535**
GMF glass fibre	0,45 *	4,6	25	-	150	**514-8064**

* contains GMF 150 but no GF/F prefilter

Syringe filters, Puradisc™ FP 30
Whatman (GE Healthcare)

PC housing

For filtration of aqueous solutions up to 100 ml.

Hydrophilic cellulose acetate, with extremely low protein binding.

Hydrophilic cellulose nitrate, versatile membranes for the filtration of aqueous solutions.

Pore size	Inlet/outlet	Max. pressure (bar)	Dimensions	Weight
Cellulose acetate				
0,2 µm	Female Luer lock/male Luer	6,9	26×34 mm	4,7 g
0,45 µm				

Type	Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Colour code	Pk	Cat. No.
Cellulose acetate							
FP 30 CA	0,2	5,7	30	-	Red	50	**514-1117**
FP 30 CA	0,2	5,7	30	-	Red	100	**514-1141**
FP 30 CA	0,2	5,7	30	-	Red	500	**514-1121**
FP 30 CA	0,45	5,7	30	-	White	50	**514-1127**
FP 30 CA	0,45	5,7	30	-	White	100	**514-1140**
FP 30 CA	0,45	5,7	30	-	White	500	**514-1123**

Syringe filters, SPARTAN™
Whatman (GE Healthcare)

Hydrophilic regenerated cellulose membrane, PP housing

HPLC certified filters for the filtration of organic and aqueous solutions in HPLC. Low protein binding and high chemical resistance.

Tested and certified for UV-absorbing substances at wavelengths of 210 and 254 nm with water, methanol and acetonitrile; ensuring consistent quality between batches.

Inlet/outlet: Luer lock female/Luer male.

Pore size (µm)	Ø (mm)	Colour code	Pk	Cat. No.
0,2 *	13	Dark Brown	100	**514-1222**
0,2 *	13	Dark Brown	500	**514-1231**
0,2	13	Dark Brown	100	**514-1223**
0,2	13	Dark Brown	500	**514-1232**
0,45 *	13	Light Brown	100	**514-1226**
0,45 *	13	Light Brown	500	**514-1234**
0,45	13	Light Brown	100	**514-1227**
0,45	13	Light Brown	500	**514-1157**
0,2	30	Dark Brown	100	**514-1224**
0,2	30	Dark Brown	500	**514-1233**
0,45	30	Light Brown	50	**514-0491**
0,45	30	Light Brown	100	**514-1228**
0,45	30	Light Brown	500	**514-1230**

* mini-tip outlet

Syringe filters for automation, Roby 25
Whatman (GE Healthcare)

Roby 25 syringe filters for robotic systems were developed specifically for automated sample filtration systems. They are available with various membranes and also with membranes plus an integral glass fibre prefilter for difficult-to-filter samples.

Filter housing is made of mechanically stable PP. The external geometry of the filter housing ensures simple and smooth filter transport from the storage turntable to the filtration site and easy filter changing.

- Optimised for Sotax,® Caliper® (Zymark®) and Varian® tablet testers
- Can be used in fine filtration of samples in the automatic tablet dissolution test

Delivery information: Roby 25 filter validation kit includes six types of filters in six tubes each with 25 filters and filter validation protocol with filter selection aid.

Ø (mm)	25		
Pore size	0,45 µm	0,7 µm	1 µm
Inlet/outlet	Luer lock female/ Luer male		

Membrane	Description	Pore size (µm)	Ø (mm)	Colour code	Pk	Cat. No.
CA with glass fibre	Roby 25 CA-GF92	0,45	25	Green	200	**514-0692**
CA with glass fibre	Roby 25 CA-GF92	0,45	25	Green	1.000	**514-0691**
RC	Roby 25 RC	0,45	25	Translucent Brown	200	**514-0688**
RC	Roby 25 RC	0,45	25	Translucent Brown	1.000	**514-0687**
RC with glass fibre	Roby 25 RC-GF92	0,45	25	Brown	200	**514-0690**
RC with glass fibre	Roby 25 RC-GF92	0,45	25	Brown	1.000	**514-0689**
Glass fibre	Roby 25/GF55	0,7	25	Natural	200	**514-0693**
Glass fibre	Roby 25/GF55	0,7	25	Natural	1.000	**514-0694**
Glass fibre	Roby 25/GF92	1,0	25	Natural	200	**514-0686**
Glass fibre	Roby 25/GF92	1,0	25	Natural	1.000	**514-0685**

Membrane	Description	Pore size	Ø (mm)	Colour code	Pk	Cat. No.
Roby 25 filter validation kit						
-	Roby 25 filter validation kit	-	25	—	8	**514-0695**

Syringeless filters, Mini-UniPrep™ G2
Whatman (GE Healthcare)

Hand compressor

Multi compressor - 8 positions

Borosilicate glass and PP housing. PTFE, PVDF, RC, nylon, PP, or glass fibre membrane

These filters prepare samples for HPLC/UHPLC analysis three times faster than the traditional syringe filter method. Like the original Mini-UniPrep™, they also reduce solvent and laboratory waste. Thanks to the glass design, the sample will be as pure as possible with minimal risk of plastic leachables.

Equivalent in size to 12×32 mm vials, these filters are designed to be loaded directly into the autosampler.

Filtering capacity: 0,5 ml

Packs of 1000 are also available, please go to www.vwr.com.

Membrane	Pore size (µm)	Colour	Pk	Cat. No.
Standard cap				
PTFE	0,2	Translucent	100	**514-0390**
PTFE *	0,2	Translucent	100	**514-0391**
PTFE	0,2	Translucent	1.000	**514-8144**
PTFE	0,2	Amber	100	**514-8137**
PTFE *	0,2	Amber	100	**514-0386**
PTFE	0,45	Translucent	100	**514-0396**
PTFE *	0,45	Translucent	100	**514-0397**
PTFE	0,45	Translucent	1.000	**514-8149**
PVDF	0,2	Translucent	100	**514-0387**
PVDF *	0,2	Translucent	100	**514-0388**
PVDF	0,2	Translucent	1.000	**514-8142**

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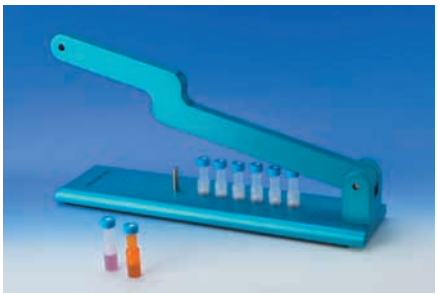
Membrane	Pore size (µm)	Colour	Pk	Cat. No.
Standard cap				
PVDF	0,2	Amber	100	**514-8136**
PVDF *	0,2	Amber	100	**514-0385**
PVDF	0,45	Translucent	100	**514-0394**
PVDF *	0,45	Translucent	100	**514-0395**
PVDF	0,45	Translucent	1.000	**514-8147**
RC	0,2	Translucent	100	**514-7998**
RC *	0,2	Translucent	100	**514-8138**
RC	0,2	Translucent	1.000	**514-8146**
RC	0,45	Translucent	100	**514-7999**
RC *	0,45	Translucent	100	**514-8141**
RC	0,45	Translucent	1.000	**514-8150**
Nylon	0,2	Translucent	100	**514-7997**
Nylon *	0,2	Translucent	100	**514-0389**
Nylon	0,2	Translucent	1.000	**514-8143**
PP	0,2	Translucent	100	**514-0392**
PP *	0,2	Translucent	100	**514-0393**
PP	0,2	Translucent	1.000	**514-8145**
Glass fibre	0,45	Translucent	100	**514-8139**
Glass fibre *	0,45	Translucent	100	**514-8140**
Glass fibre	0,45	Translucent	1.000	**514-8148**
Slit septum cap				
PTFE	0,2	Translucent	100	**516-0470**
PTFE *	0,2	Translucent	100	**514-0398**
PTFE	0,2	Translucent	1.000	**516-0480**
PTFE	0,45	Translucent	100	**516-0477**
PTFE *	0,45	Translucent	100	**514-0399**
PTFE	0,45	Translucent	1.000	**516-0482**
PVDF	0,2	Translucent	100	**516-0466**
PVDF *	0,2	Translucent	100	**516-0467**
PVDF	0,2	Translucent	1.000	**516-0478**
PVDF	0,45	Translucent	100	**516-0473**
PVDF *	0,45	Translucent	100	**516-0474**
PVDF	0,45	Translucent	1.000	**516-0481**
Nylon	0,2	Translucent	100	**516-0468**
Nylon *	0,2	Translucent	100	**516-0469**
Nylon	0,2	Translucent	1.000	**516-0479**
PP	0,2	Translucent	100	**516-0471**
PP *	0,2	Translucent	100	**516-0472**
Glass fibre	0,45	Translucent	100	**516-0475**
Glass fibre *	0,45	Translucent	100	**516-0476**

Type	Pk	Cat. No.
Accessories for syringeless filters, Mini-UniPrep™ G2		
Hand compressor	1	**514-0620**
Multi compressor - 8 positions (includes 1 tray)	1	**511-0228**
Multi compressor tray	1	**511-0229**

* with hand compressor

Syringeless filters, Mini-UniPrep™
Whatman (GE Healthcare)



PTFE, regenerated cellulose or Nylon membranes

Disposable syringeless filters for particle separation of low sample volumes. A filter membrane is housed at one end of a plunger, with a cap/septum on the other. By pressing the plunger through a liquid placed into the chamber, positive pressure forces the filtrate into the reservoir of the plunger.

For HPLC and UHPLC sample preparation and for use in autosamplers with 2 ml vials, 12×32 mm.

PTFE for aggressive samples, high chemical resistance membrane.

Regenerated cellulose for aqueous/organic solvents - low non specific protein binding media.

Nylon for aqueous/organic samples in 3 to 10 pH range.

Filtering capacity: 0,4 ml

Maximum operating temperature: 50 °C

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Membrane	Pore size (µm)	Colour	Pk	Cat. No.
Standard cap				
Nylon	0,2	Translucent	100	**514-8090**
Nylon	0,2	Translucent	1.000	**514-8099**
Nylon	0,45	Translucent	100	**514-8097**
Nylon	0,45	Translucent	1.000	**514-8105**
PTFE	0,2	Translucent	100	**516-6343**
PTFE	0,2	Translucent	1.000	**514-8100**
PTFE	0,45	Translucent	100	**514-8075**
PTFE	0,45	Translucent	1.000	**516-6356**
Regenerated cellulose	0,2	Translucent	100	**514-0120**
Regenerated cellulose	0,2	Translucent	1.000	**514-0124**
Regenerated cellulose	0,45	Translucent	100	**514-0123**
Regenerated cellulose	0,45	Translucent	1.000	**514-0125**

Type	Pk	Cat. No.
Accessories		
6-position compressor	1	**516-6351**

Syringeless filters, UniPrep™
Whatman (GE Healthcare)

Preassembled devices for the filtration and storage of laboratory samples.

Device consists of a 5 ml outer test tube and a filter plunger with cap. The sample is placed in the outer tube and the plunger is pressed through the liquid. Positive pressure forces the filtrate up into the reservoir of the filter plunger, which can then be capped for sample storage. Filtered samples can be decanted into an autosampler vial or can be removed by drawing into a syringe for manual injection.

Nylon: Naturally hydrophilic for filtration of samples containing aqueous or organic solvents with a pH range of 3 - 10.

PTFE: Chemically inert PTFE membrane for filtration of samples containing >50% organic solvent.

Membrane	Pore size (µm)	Filtration area (cm^2)	Capacity (ml)	Pk	Cat. No.
Nylon	0,45	0,3	1 - 5	1.000	**516-0673**
PTFE	0,2	0,3	1 - 5	1.000	**516-0672**
PTFE	0,45	0,3	1 - 5	1.000	**516-0674**

Kjeldahl weighing boats
Whatman (GE Healthcare)

Grade 609

A rapid, safe and comfortable way to transfer Kjeldahl samples that enables a fast analysis.

- Quantitative transfer after weighing
- Nitrogen-free parchment paper does not affect the Kjeldahl assay
- Dissolves residue-free in the digestion solution

Weight 80 g/m^2

Size (mm)	Pk	Cat. No.
50×10×10	100	**611-3990**

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HYGIENE AND DISINFECTION

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environmental control 65

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Test strips, MQuant™

MQuant™ (MQ) test strips can be considered as a mobile laboratory on a few square millimetres of plastic strip. As a screening method they provide the user with a rapid overview of the situation, which helps in making the choice of what, and perhaps if, further analysis is required, possibly leading to substantial savings in time and analytical resources. The strip is a biologically degradable polyester foil and the low reagent content in the reaction zones offers problem-free waste disposal.

- Easy to handle: Just dip, wait and measure visually against colour scale
- Safe: No auxiliary reagents necessary for most kits
- Immediate results within a few minutes enables fast decisions
- Portable: Can be used inside or outside the laboratory

Description	Range	Pk	Cat. No.
Chlorine (free chlorine) test	25-50-100-200-500 mg/l Cl_2	100 Tests	**1.17924.0001**
Formaldehyde test	10-20-40-60-100 mg/l HCHO	100 Tests	**1.10036.0001**
Peracetic acid test	5-10-20-30-50 mg/l CH_3CO_3H	100 Tests	**1.10084.0001**
Peracetic acid test	500-1000-1500-2000 mg/l CH_3CO_3H	100 Tests	**1.17922.0001**
Peracetic acid test	100-150-200-250-300-400-500 mg/l CH_3CO_3H	100 Tests	**1.10001.0001**
Peroxide test	0,5-2-5-10-25 mg/l H_2O_2	100 Tests	**1.10011.0001**
Peroxide test	0,5-2-5-10-25 mg/l H_2O_2	25 Tests	**1.10011.0002**
Quaternary ammonium compounds as benzalkonium chloride	10-25-50-100-250-500	100 Tests	**1.17920.0001**

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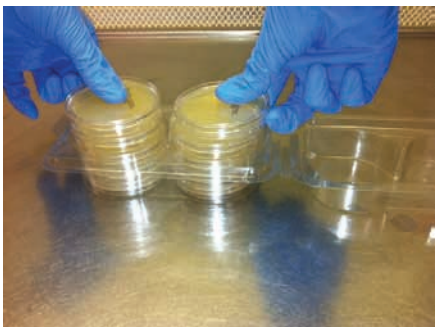
Contact plates with irradiated packaging for microbiological control of air and surfaces



Contact plates are ideal for monitoring the microbiological contamination of surface and air (using an air sampler) inside cleanrooms, isolators, RABS (Restricted Access Barrier), food industries and hospitals. The triple wrapping ensures that the package itself does not contaminate the environment as the first wrapper is removed just before entering the clean area. The packaging of plates containing PCA is not irradiated.

- The plates are packed with a special triple wrapped packaging with irradiation indicator
- Possibility of using the PET transparent reusable container to transport the plates to the laboratory after the sampling
- Special packaging for good protection of the product during transport and storage
- Available with TLHTh (Tween, lecithin, histidine, thiosulphate) disinfectant neutralisers
- Available with certificate of irradiation/dosimetry
- VHP resistance studies available for all triple wrapped plates

Packaging: The box supplied contains 8×10 triple wrapped packs with a total of 80 plates. 8 PET transparent reusable containers are included.

Description	Standard	Pk	Cat. No.
Mannitol salt agar blister double wrapped	-	30	**250560ZA**
PCA contact TLHTh triple wrapped	-	80	**140774TI**
PCA contact triple wrapped	EPA, ISO 4833	80	**140774ZI**
Rose bengal chloramphenicol agar contact triple wrapped	-	80	**140070ZI**
Sabouraud 4% dextrose agar contact TLHTh triple wrapped	Ph. Eur., USP, JP	80	**140884TI**
Sabouraud 4% dextrose agar contact triple wrapped	Ph. Eur., USP, JP	80	**140884ZI**
Sabouraud chloramphenicol contact triple wrapped	-	80	**140884CY**
TSA contact penase TLHTh triple wrapped	-	80	**141114RY**
TSA contact penase triple wrapped	-	80	**141114PY**
TSA contact TLHTh triple wrapped	-	80	**141114TI**
TSA contact triple wrapped	Ph. Eur., USP, JP	80	**141114ZI**

Petri dishes with irradiated packaging for microbiological control of air and surfaces

Available as 90 mm plates acc. to standards. TLHTh (Tween, lecithin, histidine, thiosulphate) are used as disinfectant neutralisers. Bags are available double or triple wrapped. One pack per bag displays the irradiation indicator.

- Available with certificate of irradiation/dosimetry
- VHP resistance studies available for all triple wrapped plates
- Storage at room temperature (2 to 8 °C for TSA Penase)

Packaging: The plates are packed 5 each in a plastic shrink-wrap bag. Each bag contains 2 packs (10 plates). The box supplied contains 2 bags with a total of 20 plates.

Description	Standard	Pk	Cat. No.
PCA double wrapped	EPA, ISO 4833	20	**110774ZI**
Sabouraud-4% chloramphenicol agar double wrapped	-	20	**110884CY**
Sabouraud 4% dextrose agar double wrapped	EP, USP	20	**110884ZI**
TLH Standard I agar	-	20	**111110TI**
TSA penase double wrapped	-	20	**111114PY**
TSA penase with neutralisers TLHTh double wrapped	-	20	**111114RY**
TSA TLHTh double wrapped	Harm Ph	20	**111114TI**
TSA double wrapped	EP, USP, ISO	20	**111114ZI**
Sabouraud 4% dextrose agar triple wrapped	EP, USP	20	**130884ZI**
TSA penase with neutralisers TLHTh triple wrapped	-	20	**131114RY**
TSA TLHTh triple wrapped	Harm Ph	20	**131114TI**
TSA triple wrapped	EP, USP, ISO	20	**131114ZI**
Sabouraud 4% dextrose agar (SDA) with disinfectant neutraliser triple wrapped	-	20	**110884TI**
Sabouraud 4% dextrose agar triple wrapped	EP, USP	20	**130884CY**

Dip slides for surfaces and in liquids, Envirocheck®

Envirocheck® Contact slides are widely used to check critical control points (CCP's) within the HACCP (Hazardous Analysis Critical Control Point) for the microbiological hygiene control of surfaces in production lines and equipment. Additionally these slides can be used to check the microbiological hygiene status of liquids. The use of a variety of media on the contact slides allows the detection of organisms from liquids as well as from surfaces. These slides provide semi-quantitative results for 5 different parameters. The easy incubation in the Cultura® mini incubator also reduces the necessary workspace thereby freeing up the working environment. Each contact slide is packed in a PC tube, which protects the agar media against contamination before and after sampling.

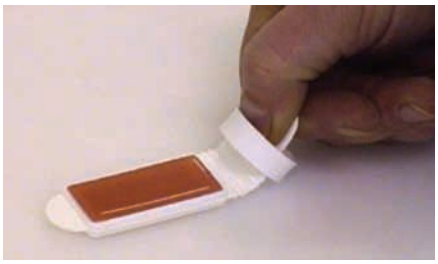
- Flexible contact slide allows sampling even in difficult to reach areas
- Easy to use
- Protected against contamination
- Storage at <15 °C (ideally at 12 - 15 °C)
- The expiry date is written on each box

Packaging: 10 slides/box

Description	Pk	Cat. No.
Contact C for the detection of total coliforms / E.coli, side A: Plate count agar; side B: Chromocult® Coliform agar	10	**1.02136.0001**
Contact DC for disinfectant control, side A: Tryptic soy agar; side B: Tryptic soy agar with neutralisers	10	**1.02147.0001**
Contact E for the detection of Enterobacteriaceae, side A: Plate count agar; side B: VRBD agar	10	**1.02137.0001**
Contact TVC for total colony counts, side A: Nutrient agar with TTC; side B: Nutrient agar	10	**1.02149.0001**
Contact YM(R) for the detection of yeasts and moulds, side A: Tryptic soy agar with TTC; side B: Rose bengal chloramphenicol agar (R)	10	**1.02139.0001**

STERILE

Dip and contact slides for microbiological control of surfaces and liquid



Dip slides for microbiological monitoring of surfaces and in liquids. Each slide has media on 2 sides: Choice of the same medium or two different media on the two sides of the slides; this allows sampling of two surfaces with every single slide. Testing with dip slides is a safe, reliable, economical and fast indicator of the presence of microorganisms. The dip slides with a push cap have a larger contact area.

- Supplied sterile
- Sampling takes only a few seconds
- The results are easily read after just 24-48 hours

Description	Pk	Cat. No.
Nutrient agar with TTC and malt extract agar	10	**535102B**
Nutrient agar with TTC and malt extract agar	100	**535104D**
Nutrient agar with TTC and rose bengal agar	10	**535112D**
Nutrient agar with TTC and rose bengal agar	100	**535114F**
Plate count agar and VRBGA	10	**535162N**
Plate count agar and VRBG with neutralisers	100	**535174R**

Digital incubators, INCU-Line®, IL 10 and IL 23

The IL 10 and IL 23 digital incubators offer an economical and space saving solution for microbiology or haematology applications. The temperature can be freely adjusted in increments of 0,1 °C up to a maximum of 70 °C. Heating elements are incorporated into the housing base and walls to ensure temperature stability and uniformity. The IL 10 is available with a transparent plexiglas® window to provide full visibility or a painted, opaque plexiglas® window to protect photosensitive samples. The housing and door frame are constructed entirely of epoxy coated mild steel.

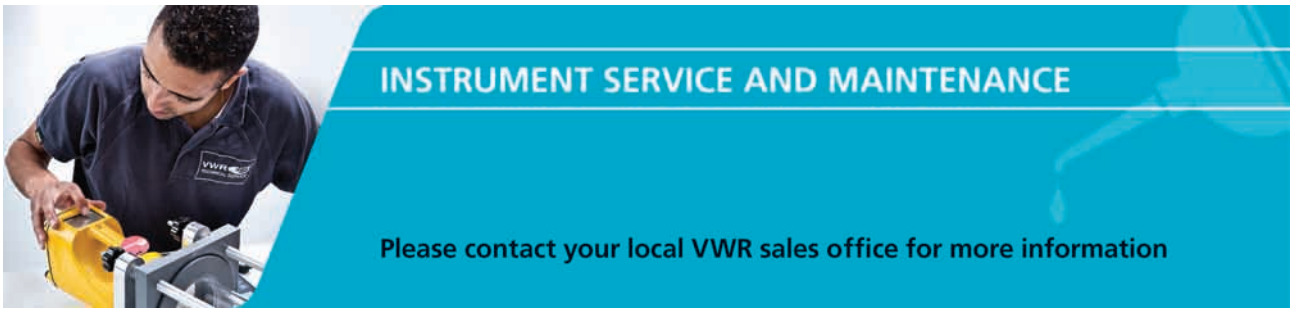
- Compact design (footprint is only 0,08 m^2, IL 10 model)
- Digital PID control with PT100 sensor and LED display, temperature control can be readjusted with a certified reference temperature measuring instrument
- Excellent temperature stability
- Easy to use, safe and reliable

Delivery information: IL 10 is supplied with one perforated stainless steel shelf, IL 23 is supplied with two. The IL 10 can, optionally, be loaded with up to two specially designed aluminium tube racks for vertical incubation of a maximum of 24 dip slide tubes.

Model	IL 10	IL 23
Temperature range (°C)	Ambient +5...70	
Temperature fluctuation (time) (°C)	±0,5 at 37 °C	
Temperature variation (spatial) (°C)		
Capacity (l)	10	23
Convection type	Natural convection	
Shelves supplied (max.)	1 (2)	2 (3)
Internal W×D×H (mm)	230×220×200	290×290×270
External W×D×H (mm)	285×280×335	340×360×400
Nominal power consumption (W)	70	160
Weight (kg)	8,3	12,8

Type	Pk	Cat. No.
IL 10 mini incubator, transparent window	1	**390-0384**
IL 10 mini incubator, painted opaque window	1	**390-0385**
IL 23 incubator, transparent window	1	**390-0482**

Description	Pk	Cat. No.
Accessories		
Tube rack for dip slides, 2×6 positions, Ø 32 mm	1	**390-0386**



Air samplers, SAS Super IAQ

SAS Super is a complete system for the microbiological sampling of air including instrumentation for applications based on active air sampling. Designed specifically for the Indoor Air Quality (IAQ) sector, this SAS Super instrument is particularly lightweight and durable to operate in any environment. Ideal for environmental hygienists and agri-food sector operators, SAS IAQ is supplied with remote control and carrying case. Derived from SAS Super ISO 100 and SAS Super ISO 180, the SAS Super IAQ provides the same efficiency as recorded by the sampling tests conducted by CAMR-UK (Centre for Applied Microbiology & Research).

- Microbiological air monitoring solution for agri-food and environmental operators
- Includes all accessories required for microbiological air sampling
- Easy to use and time saving
- Low operating cost solution

Delivery information: Supplied with aluminium aspirating head for Petri dishes (Ø 90 mm) or contact plates (Ø 55 mm), battery charger, remote control and soft carrying case.

Model	SAS Super IAQ
Airflow rate	100 l/min
Sampling head	Aluminium
W×D×H (mm)	105×110×290
Weight (kg)	1,75

Description	Pk	Cat. No.
SAS Super IAQ sampler for contact plates, 220 V/50 Hz	1	**710-0868**
SAS Super IAQ sampler for Petri dishes, 220 V/50 Hz	1	**710-0919**

Air samplers, DUO SAS Super 360

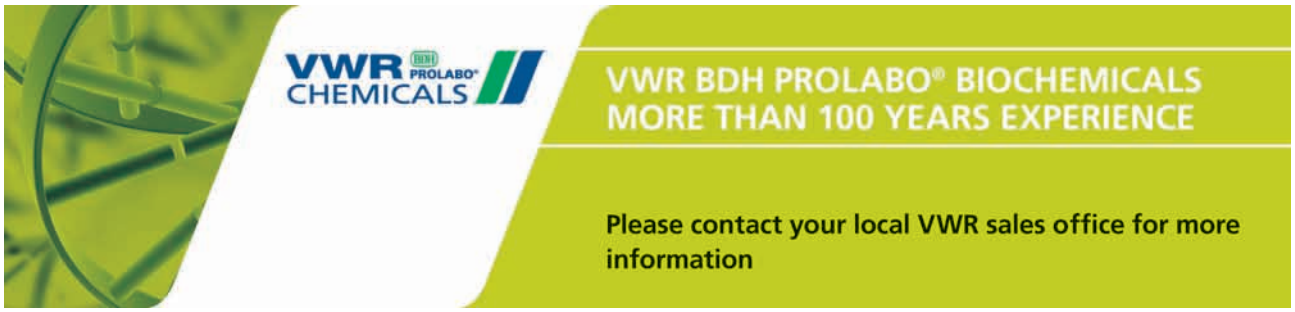
When environmental contamination is very low and the number of samples to be performed is high, operational duration can be an important factor in the choice of SAS instrument. Two sampling heads that operate simultaneously to sample 1000 litres of air in less than 3 minutes is the solution. The simultaneous sampling on two heads also allows you to obtain statistically representative results when using the same type of media in both heads. It is also possible to use two different media for the same sampling cycle (e.g. TSA or PCA for Total Bacterial Count and SDA for yeasts and moulds). Sampling with the two heads can halve sample process time, which is a real advantage for busy users.

- Single body with two aspirating heads
- Fast and consistent results
- Fully compliant with International Standards (ISO 14698 & USP 1116 Pharmacopeia)
- Time saving and low operating cost solutions

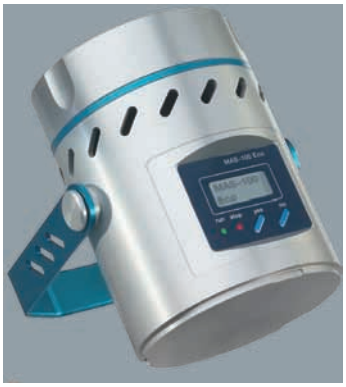
Delivery information: Without aspirating head and battery charger.

Model	DUO SAS Super 360
Airflow rate	180 l/min
Sampling head	Aluminium, stainless steel or plastic (certified ready to use)
W×D×H (mm)	260×110×352
Weight (kg)	2,2

Description	Pk	Cat. No.
DUO SAS Super 360 for contact plates	1	**710-0867**
DUO SAS Super 360 for Petri dishes	1	**710-0866**



Airborne microorganism samplers, MAS-100 Eco®



The MAS-100 Eco® combines many of the advantages of the MAS-100 NT® series. Ideal for air sampling in food and beverage industries.

- Airflow: 100 l/min, uses 90 mm Petri dishes
- Programmable delay before sampling starts and pre-selected volumes, individually adjustable
- According to ISO 14698 - 1/2
- Small and handy, fits perfectly into a HACCP concept
- Six pre-selected volumes
- Operation time: 3 hours
- The display is alphanumeric LCD, 16 digits with real time and date

Delivery information: MAS-100 Eco® is supplied in a small grey carry case.

Description	Pk	Cat. No.
Air sampler MAS-100 Eco®	1	**1.09227.0001**

Description	For	Pk	Cat. No.
Accessories			
Adapter for glass Petri dishes	MAS-100 NT®, MAS-100 NT Ex®, MAS-100 Eco®	1	**1.09082.0001**
Extra dust cover	MAS-100 NT®, MAS-100 Eco®	1	**1.09084.0001**
Additional perforated lid, aluminium, 400×0,7 mm	MAS-100 NT®, MAS-100 Eco®	1	**1.09088.0001**
Adapter for standard tripod	MAS-100 Eco®	1	**1.09127.0001**
Perforated lid for contact plates	MAS-100 NT®, MAS-100 NT Ex®, MAS-100 Eco®	1	**1.09213.0001**
Standard tripod	MAS-100 NT®, MAS-100 NT Ex®, MAS-100 Eco®	1	**1.09326.0001**

Lumitester™ PD-20

The Lumitester™ PD-20 measures the hygiene status in seconds with on-site detection of microorganisms or organic residues using unique, patented ATP and AMP measurement technology. Extremely compact instrument which weighs only 235 g (battery not included). Swab and measure, that's all, so measuring time is only 10 seconds. Detects a wide range of contamination. Best suited for cleanliness control of manufacturing sites, and cleanliness control and hygiene training of kitchens. Defective cleaning is rapidly identified on site, thus helping to prevent incidents by prompting corrective re-cleaning procedures.

- Small size and lightweight
- Simple and rapid measurement
- Super high sensitivity

Delivery information: Lumitester™ PD-20 is supplied with 2 alkali batteries, cleaning brush, tape, short instructions, CD-ROM with PC evaluation software

Description	Pk	Cat. No.
Lumitester™ PD20, 65×175×32 mm, 235 g	1	**710-1480**
Lumitester™ PD20 with 12 LuciPac™ Pen Kits (20×5 pads)	1 KIT	**710-1482**

Description	Pk	Cat. No.
Accessories		
Optional protective cover for storage of device and accessories	1	**710-1481**
LuciPac™ Pen, pad, ATP extraction reagent, including luminescence reagent, 5 aluminium pouches with 20 pads, individually to be removed and reseable	100	**710-1483**
LuciPac™ Pen Aqua, escpecially for water, 5×20 swabs/pack	100	**710-1484**

Hygiene monitoring system, HY-LiTE® 2

Rapid quantitative hygiene monitoring in liquids and on surfaces with ATP-bioluminescence HY-LiTE® 2, contained in a convenient lightweight shoulder bag with data logging and TREND2 software for advanced data management. The HY-LiTE® TREND2 software can be used to compile HACCP plans and individual limits. Graphs showing results make them easy to evaluate and interpret. HY-LiTE® is already used in a wide variety of production and processing fields, like the food industry, packing industry, services (cleaning of buildings), community catering and large scale kitchens, drinks manufacturers, state owned institutions or the pharmaceutical industry.

- Simple to use and easily portable, can be used anywhere by anyone
- Produces results within one minute: Can be used by production workers immediately after cleaning, allowing any corrective action to be taken before production begins
- Luminometer holds data from 2000 tests enabling trends to be identified as well as seeing the 'before and after' effect of cleaning procedures
- Built-in printing, in-depth results on the spot and away from laboratory conditions
- Wide operating temperature range (5 to 35 °C), can be used anywhere from cold stores to hot food processing areas

Delivery information: Luminometer supplied with printer, mains power supply and adapters for international use, printer paper roll, four alkaline batteries, TREND2 Windows software for PCs, PC connector cable.

Description	Pk	Cat. No.
HY-LiTE® 2 system complete with software (CD) in several languages in a bag	1	**1.30100.0301**

Description	Pk	Cat. No.
Accessories		
HY-LiTE®, ATP 1 ng/ml standard	1	**1.30195.0005**
HY-LiTE® plus ATP test	20 Tests	**1.30895.0021**
HY-LiTE® free ATP pens	50	**1.30194.0021**
HY-LiTE® hygiene swab	50	**1.30103.0001**
HY-LiTE® rinse solution	50	**1.30104.0001**
HY-LiTE® refill pack for testing surfaces with swabs	100 Tests	**1.30101.0021**
HY-LiTE® sampling pen, for testing liquids	50 Tests	**1.30102.0021**
HY-LiTE® 2 replacement paper rolls	5	**1.30110.0205**

Igientest HACCP

A simple quick test for hygiene control of work surfaces. Application fields: Food industry, catering, dairy industry, health authority, HACCP consultants. The colorimetric scale to interpret the results is printed on each tube. The comparison between the solution colour and the colorimetric scale confirms if the surface is clean or dirty. It's enough to streak the wet swab on a surface and to insert the swab into the tube. Break the glass vial contained in the tube by using the clamp. At the end of the test the tube can be disposed of as normal waste, room temperature storage.

- Quick - results in only 10 minutes
- Simple to use
- Easy interpretation

Description	Pk	Cat. No.
Igientest HACCP surface hygiene monitoring test	50 Tests	**710-0895**
Clamp to break the glass vial of Igientest HACCP	1	**710-0904**

Short SRK swabs

Swab rinse kits (SRK) for microbiological examination of surfaces. The isotonic salt solution contains substances to neutralise and deactivate disinfectants and sanitising agents. The rinse solution is used to moisten the sterile swab before sampling and to transport the swab after collection. Swab shafts (rayon tip) are attached to the tube caps.

- Can be used for microbial detection or quantitative analysis

Delivery information: Each box contains 50 screw cap tubes.

Description	Length (mm)	Packed	Pk	Cat. No.
SRK rinse solution, 10 ml	80	single wrapped in plastic peel pouch	50	**710-0477**
SRK rinse solution, 10 ml	80	50 tubes/ box	50	**710-0478**
SRK letheen broth, 1,37 ml	80	50 tubes/ box	300	**710-0932**
UNS solution, 4 ml	80	50 tubes/ box	50	**710-0933**

Long SRK swabs

Swab rinse kits (SRK) for microbiological examination of surfaces. The isotonic salt solution contains substances to neutralise and deactivate disinfectants and sanitising agents. The rinse solution is used to moisten the sterile swab before sampling and to transport the swab after collection. Swabs are separate from cap, 14,6 cm.

- Can be used for microbial detection or quantitative analysis

Delivery information: Each box contains 25 pouches (each containing a tube and swab).

Description	Length (mm)	Packed	Pk	Cat. No.
SRK rinse solution, rayon, 10 ml	146	tube and applicator in plastic peel pouch	25	**710-0472**
SRK rinse solution, alginate, 10 ml	146	tube and applicator in plastic peel pouch	25	**710-0473**
SRK rinse solution, alginate, 2,5 ml	146	tube and applicator in plastic peel pouch	25	**710-0476**
SRK rinse solution, rayon, 2,5 ml	146	tube and applicator in plastic peel pouch	25	**710-0431**

Large SRK swabs

612-2680

Swab rinse kits (SRK) for microbiological examination of surfaces. The isotonic salt solution contains substances to neutralise and deactivate disinfectants and sanitising agents. The rinse solution is used to moisten the sterile swab before sampling and to transport the swab after collection. Swabs are separate from cap, 19,50 cm long.

- Can be used for microbial detection or quantitative analysis

Delivery information: Each box contains 25 pouches (each containing a tube and swab).

Description	Length (mm)	Packed	Pk	Cat. No.
SRK rinse solution, fibre tip rayon, 10 ml	195	tube and applicator in plastic peel pouch	25	**710-0474**
SSK square sampling kit, fibre tip rayon, 10 ml	195	tube, large applicator & sterile 10×10 cm template mask in sterile peel pouch	1 KIT	**710-0475**

Handheld airborne particle counters, MET One HHPC

Quickly check or validate ISO Class 5 (FED STD Class 100) or higher cleanrooms and controlled environments. The easy to read, high resolution display is fully configurable, showing only the required data in a clear large font. At only 680 g the slim design of MET One HHPC+ allows single-handed operation. Perfect for effortless troubleshooting of filter leaks in mini environments and workstations. Save analysis time with on-the-spot process profiling to pinpoint particle events. Download to Excel® via Ethernet using industry standard browsers (Internet Explorer®, Safari®, Firefox®, etc.). Plug a USB memory stick in the MET One HHPC+ to transfer your particle data direct to a PC. Plug it in like a camera, the data appears in Excel®. The optional charging cradle provides PC access to particle counting data via ports for Ethernet or USB cables. Leaving the unit on the cradle in the cleanroom ensures the unit is fully charged and ready for use at all times.

- Simple and fast
- Lightweight and comfortable
- Visual particle trending
- Easy data download

Delivery information: The systems are delivered with hard shell carrying case (optional for HHPC 2+), universal 110/240 V, 12 VDC power supply/charger, zero count inlet filter, zero count filter adapter, USB-A to MINI-B-5P cable (1,83 m) with ferrite. The HHPC 6+ is also delivered with charging and communications cradle, without ethernet cable.

Model	MET One HHPC 2+, two channel (0,5 - 5 µm)	MET One HHPC 3+, three channel (0,3 - 10 µm)	MET One HHPC 3+, three channel (0,5 - 5 µm)	MET One HHPC 6+, six channel (0,3 - 10 µm)
Airflow rate	2,83 l/min, 0,5 µm/min	2,83 l/min, 0,3 µm/min	2,83 l/min, 0,5 µm/min	2,83 l/min, 0,3 µm/min
Material	Polycarbonate			
Power	110/240 V			
W×D×H (mm)	99×53×272			
Weight (kg)	0,68			

Description	Pk	Cat. No.
MET One HHPC 2+, two channel (0,5 - 5 µm)	1	**710-0980**
MET One HHPC 3+, three channel (0,3 - 10 µm)	1	**710-0979**
MET One HHPC 3+, three channel (0,5 - 5 µm)	1	**710-0981**
MET One HHPC 6+, six channel (0,3 - 10 µm)	1	**710-0982**

Description	Pk	Cat. No.
Accessories		
Hard shell carrying case	1	**710-0983**
Charging and communications cradle without cable	1	**710-0984**
Zero count filter adapter	1	**710-0985**
Universal 110/240 V, 12 VDC power supply charger	1	**705-0745**
USB-A to MINI-B-5P cable 6' with ferrite	1	**705-0746**
CAT-5E 7' ethernet cable	1	**705-0747**
CAT-5E 7' ethernet cable, shielded grey	1	**705-0748**
User manual	1	**710-0986**
Zero count inlet filter	1	**661-0154**

GENERAL METHODS

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Rotational viscometers, Smart series
Fungilab

Simple robust viscometers for routine measurement in quality control and R&D laboratories. The 6 touch key user interface enables the user to easily navigate the program menu and decide on what is included in the readout of the monochrome graphic display. The readout includes selected speed (min^{-1}); selected spindle; viscosity reading (either cP or cSt); shear rate and shear stress (with coaxial spindles). Temperature data can also be displayed if the optional PT100 sensor is used. Ten language options.

- Precision of ±1% full scale and resolution of 0,1 for viscosity range lower than 10 000 cP
- Time measurement functions – time to torque and time to stop with 10 working memories
- AUTO-TEST, AUTO-RANGE functions
- AISI 316 stainless steel spindles – marked and easily identifiable
- USB interface allows data transfer to a PC in Excel® format using the data logger software

Delivery information: Supplied with standard spindles (four for the L model and six for the R and H models); viscometer stand and spindle protector; carrying case; USB cable and data logger software.

Model	Range (cP)	Revolutions (min^{-1})	No. of speeds	Pk	Cat. No.
Smart L	20 - 2×10^6	0,3 - 100	18	1	**616-0086**
Smart R	100 - 13×10^6	0,3 - 100	18	1	**616-0087**
Smart H	200 - 106×10^6	0,3 - 100	18	1	**616-0088**

Model	Range (cP)	Revolutions (min^{-1})	No. of speeds	Pk	Cat. No.
Smart series Viscometers with external digital Temperature probe PT100					
Smart L + PT100	20 - 2×10^6	0,3 - 100	18	1	**616-0103**
Smart R + PT100	100 - 13×10^6	0,3 - 100	18	1	**616-0102**
Smart H + PT100	200 - 106×10^6	0,3 - 100	18	1	**616-0101**

Description	Pk	Cat. No.
Accessories		
Temperature sensor for Smart series viscometers	1	**616-0107**

1 cP = 1 mPa.s
The Fungilab viscometers are compatible with many major brands of spindles, including Brookfield.

Rotational viscometers, Expert series
Fungilab

A range of advanced programmable viscometers for complex and routine measurement in quality control and R&D laboratories. The 12 touch key user interface enables the user to quickly navigate the program menu and decide on what is included in the readout of the monochrome graphic display. The readout includes selected speed (min^{-1}); selected spindle; viscosity reading (either cP or cSt); shear rate and shear stress (with coaxial spindles). Temperature data is also displayed from the PT100 sensor (included) which enables a wider range of samples to be measured which require temperatures above or below ambient for best results. Ten language options.

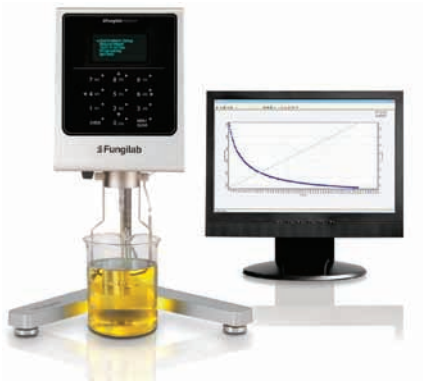
- Precision of ±1% full scale and resolution of 0,1 for viscosity range lower than 10 000 cP
- Temperature range of 0 - 100 °C with resolution of 0,1 °C and precision of ±0,1 °C
- AUTO-TEST, AUTO-RANGE and time measurement functions with ten working memories
- AISI 316 stainless steel spindles – marked and easily identifiable
- USB interface allows data transfer to a PC in Excel® format using the data logger software

Delivery information: Supplied with standard spindles (four for the L model and six for the R and H models); viscometer stand and spindle protector; carrying case; USB cable and data logger software.

Model	Range (cP)	Revolutions (min^{-1})	No. of speeds	Pk	Cat. No.
Expert L	20 - 6×10^6	0,01 - 200	54	1	**616-0091**
Expert R	100 - 40×10^6	0,01 - 200	54	1	**616-0092**
Expert H	200 - 106×10^6	0,01 - 200	54	1	**616-0093**

1 cP = 1 mPa.s
The Fungilab viscometers are compatible with many major brands of spindles, including Brookfield.

Rotational viscometers, Premium series
Fungilab



Premium series viscometers are the 'top of the range' performance digital rotational viscometer for study and documentation of complex behaviour of fluid samples.

- Graphic display for easy menu access and reading of results and to obtain the graphic flow curve behaviour of the sample in real time
- 12 key touch keypad
- Relative, absolute and kinematic viscosity reading automatically
- Autotest and Autorange functions, 10 working memories and programming features step, multistep and ramp, time to torque and time to stop; temperature reading PT100
- Interface: USB connection
- 10 language options
- Data logger software included for downloading data to computer in Excel® format

Data Boss software for rheological studies and viscometer control through the PC is optional. The Fungilab Data Boss software provides instantaneous viscosity flow curves. Up to four data sets may be plotted simultaneously. Mathematical modelling for yield stress calculations (Bingham Plastic, Casson, Power Law, IPC Paste analysis). More than 12 viscosity plots can be configured. Offers simple graphic presentation of data and stores the data in a Microsoft® Access database.

CE certified. TÜV certified. ISO 9001. BS: 6075, 5350. ISO: 2555, 1652. ASTM: 115, 789, 1076, 1084, 1286, 1417, 1439, 1638, 1824, 2196, 2336, 2364, 2393, 2556, 2669, 2849, 2983, 2994, 3232, 3236, 3716.

Delivery information: Supplied complete with standard spindles (4 spindles for L model, and 6 spindles for R and H models), viscometer stand and spindle protector, carrying case, PT100, USB cable, power supply cable and data logger software.

Model	Range (cP)	Revolutions (min^{-1})	No. of speeds	Pk	Cat. No.
Premium H	200 - 106×10^6	0,01 - 250	2600	1	**616-0096**
Premium R	100 - 40×10^6	0,01 - 250	2600	1	**616-0095**
Premium L	20 - 6×10^6	0,01 - 250	2600	1	**616-0094**
Premium H + Data Boss	200 - 106×10^6	0,01 - 250	2600	1	**616-0106**
Premium R + Data Boss	100 - 40×10^6	0,01 - 250	2600	1	**616-0105**
Premium L + Data Boss	20 - 6×10^6	0,01 - 250	2600	1	**616-0104**

1 cP = 1 mPa.s
The Fungilab viscometers are compatible with many major brands of spindles, including Brookfield.

Viscometer, falling ball, VISCO BALL
Fungilab

The VISCO BALL measures the viscosity of transparent Newtonian liquids and gases and is particularly suited to low viscosity materials. It has applications in research and quality control for a wide range of industries including food, cosmetics, petroleum detergents and paints. According to the Hoppler principle, the time is measured for a ball to travel a reference distance through the sample liquid in a cylindrical tube when inclined at 80°, and this measurement correlates to a dynamic viscosity. When the temperature is controlled precisely the viscosity result from this type of viscometer meets DIN 53015 and ISO 12058 standards and has very good accuracy. The VISCO BALL can be also be inclined and secured at angles other than 80°, to meet different individual user requirements.

The tube can be easily turned upside down and the measurement can be repeated. Six different balls are available to give a wide range of measurement.

- Wide dynamic viscosity range: 0,6 to 105 cP (mPa.s)
- Tube can be positioned at other angles, in addition to 80°, to meet different requirements
- High accuracy with reproducibility better than 0,5% and comparability better than 1%
- Extended re-calibration periods
- Ball for gases available as an option, please enquire for details

Delivery information: The instrument is supplied with six balls for liquid measurement, control thermometer (–1 to +26 °C), cleaning tools, calibration sheet and instruction manual.

Ball number	Material	Viscosity range mPa.s
1	Borosilicate glass	0.6 to 10
2	Borosilicate glass	7 to 130
3	Nickel iron alloy	30 to 700
4	Nickel iron alloy	200 to 4800
5	Stainless steel	1500 to 45000
6	Stainless steel	>7500

Description	Pk	Cat. No.
VISCO BALL, falling ball viscometer	1	**645-0005**

Ubbelohde viscometers
SI Analytics

Calibrated with constant for automatic measurement

Viscometers with suspended ball level for determination of absolute and relative viscosity of liquids with Newtonian flow behaviour.

- Calibrated according to DIN 51 562. part 1, ISO/DIS 3105 (BS-IP-SL)
- Filling quantity: 15 to 20 ml
- Recommended minimum flow through time is 200 seconds
- Overall length ~290 mm

Capillary no.	Range (mm^2/s)	Ø int. (mm)	Constant (K)	Pk	Cat. No.
0	0,3 - 1	0,36	0,001	1	**616-3334**
0c	0,5 - 3	0,47	0,003	1	**616-3338**
0a	0,8 - 5	0,53	0,005	1	**616-3339**
I	1,2 - 10	0,63	0,01	1	**616-3340**
Ic	3 - 30	0,84	0,03	1	**616-3341**
Ia	5 - 50	0,95	0,05	1	**616-3335**
II	10 - 100	1,13	0,10	1	**616-3342**
IIc	30 - 300	1,5	0,30	1	**616-3343**
IIa	50 - 500	1,69	0,50	1	**616-3336**
III	100 - 1000	2,01	1	1	**616-3344**
IIIc	300 - 3000	2,65	3	1	**616-3345**
IIIa	500 - 5000	3	5	1	**616-3337**
IV	1000 - 10000	3,6	10	1	**616-3346**

Ubbelohde viscometers (DIN)
SI Analytics

Viscometers with suspended ball level for determination of absolute and relative viscosity of liquids with Newtonian flow behaviour. Calibrated with constant for manual measurement according to DIN 51 562 part 1, ISO/DIS 3105.

- Filling quantity: 15 - 20 ml
- Recommended minimum flow through time is 200 seconds
- Overall length: ~290 mm

Capillary no.	Range (mm^2/s)	Ø int. (mm)	Constant (K)	Pk	Cat. No.
0	0,3 - 1	0,36	0,001	1	**616-1101**
0c	0,5 - 3	0,47	0,003	1	**616-1102**
0a	0,8 - 5	0,53	0,005	1	**616-1103**
I	1,2 - 10	0,63	0,01	1	**616-1104**
Ic	3 - 30	0,84	0,03	1	**616-1105**
Ia	5 - 50	0,95	0,05	1	**616-1106**
II	10 - 100	1,13	0,1	1	**616-1107**
IIc	30 - 300	1,50	0,3	1	**616-1108**
IIa	50 - 500	1,69	0,5	1	**616-1109**
III	100 - 1000	2,01	1	1	**616-1110**
IIIc	300 - 3000	2,65	3	1	**616-1111**
IIIa	500 - 5000	3,00	5	1	**616-1112**
IV	1000 - 10000	3,60	10	1	**616-1113**
IVc	3000 - 30000	4,70	30	1	**616-0029**
V (ISO)	>10000	6,30	100	1	**616-0030**

Pocket pH meter, LAQUAtwin B-712
Horiba

This pocket meter incorporates a flat sensor technology, using the same measurement principle as traditional glass electrodes but in a small and compact flat format. The flat electrode enables quick and accurate direct measurements of solid or liquid micro samples as small as 100 µl (50 µl when using the sampling sheet). Large volume samples can also be measured easily by immersing the sensor. The LAQUAtwin meter is suitable for quick on-site testing in food industries and agriculture as well as for laboratories in universities and research.

- Large LCD display, durable waterproof ABS housing
- Flat glass sensor enables direct measurements, no sample preparation required
- Autocalibration function recognises standards and is user-selectable for either one- or two-point calibrations
- Temperature compensation
- Auto hold, automatic power off after 30 minutes

Delivery information: Supplied with two batteries, pipette, instruction manual, quick manual, storage case, two bottles of standard solutions (pH 7/pH 4), 14 ml each, and five pieces of sampling sheet.

Model	B-712
pH - range	2 - 12
pH - accuracy	±0,1
pH - calibration	1- or 2-point
Temperature compensation	Automatic
Display	Custom (monochrome) digital LCD
Power supply	2 × CR2032 batteries
W×D×H (mm)	164×29×20
Weight (kg)	0,05 (without batteries)
Compliance	IP 67

Description	Pk	Cat. No.
Pocket pH meter LAQUAtwin B-712	1	**662-1492**

Description	Pk	Cat. No.
Accessories		
pH replacement electrode S010 for meter B-712, flat and waterproof	1	**662-1495**
Standard solution (pH 4,01) Y014, in bottle, 14 ml	6	**662-1716**
Standard solution (pH 6,86) Y017, in bottle, 14 ml	6	**662-1715**
Additional sampling sheets, Y046, packed in box	100	**662-1491**
Sampling sheet holder Y048, for samples that contain particulates, for use with sampling sheets B Y046	1	**662-1494**

Ion selective meters, nitrate/calcium, pocket format, LAQUAtwin
Horiba

B-751

B-743

Kit

Measurements of nitrate or calcium

These waterproof pocket meters provide direct measurements of different ions in liquid, solid, viscous or powder samples using unique flat sensor with an ion selective membrane. The user needs to drip a few drops of the sample on to the sensor in order to get quick results – there's no need to dilute or prepare the samples beforehand as these reagent-free meters have a wide measurement range. Samples can be as small as 0,3 ml. The meters are suitable for research and industrial applications in diverse fields, such as agriculture and food testing.

- Autocalibration function recognises standards and is user-selectable for either one- or two-point calibrations
- Auto range change, temperature compensation
- Auto hold, automatic power off after 30 minutes
- Easy to use, very convenient for quick on-site testing
- Use of sampling sheets enables measurements in micro samples as small as 0,05 ml

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Delivery information: B-742T is supplied with two batteries, pipette, instruction manual, quick manual, storage case, two bottles of standard solutions (30 & 300 ppm), 14 ml each, and five pieces of sampling sheet B.
B-742 kit is supplied with two batteries, instruction manual, quick manual, storage case, carrying case, four pipettes, cleaning solution bottle (250 ml), three extraction bottles (100 ml), two sets of spoons for soil sampling, tweezers, sampling sheet B, and two sampling sheet sets.

B-743 is supplied with two batteries, pipette, instruction manual, quick manual, storage case, two bottles of standard solutions (150 & 2000 ppm), 14 ml each, and five pieces of sampling sheet B.

B-751 is supplied with two batteries, pipette, instruction manual, quick manual, storage case, two bottles of standard solutions (150 & 2000 ppm), 14 ml each, and five pieces of sampling sheet B.

Model	B-742 (Nitrate)	B-743 (Nitrate)	B-751 (Calcium)
ISE - range	NO_3^-: 30 - 600 ppm	NO_3^-: 62 - 6200 ppm (10^{-3} to 10^{-1} mol/l)	Ca^{2+}: 40 - 4000 ppm (10^{-3} to 10^{-1} mol/l)
ISE - resolution	0,1 ppm (0 - 1,0 ppm) 1 ppm (0 - 99 ppm) 10 ppm (100 - 990 ppm) 100 ppm (> 990 ppm)		
ISE - accuracy	±10% of reading value		±20% of reading value
ISE - calibration	1- or 2-point		
Display	Custom (monochrome) digital LCD		
Power supply	2 × CR2032 batteries		
W×D×H (mm)	164×29×20		
Weight (kg)	0,05 (without batteries)		
Compliance	IP67		

Description	Pk	Cat. No.
Pocket nitrate meter LAQUAtwin B-742T, for water analysis	1	**662-1712**
Pocket nitrate meter LAQUAtwin B-742, kit	1	**709-0131**
Pocket nitrate meter LAQUAtwin B-743	1	**709-0129**
Pocket calcium meter LAQUAtwin B-751	1	**709-0130**

Description	Pk	Cat. No.
Accessories		
Replacement nitrate ion electrode S040, for B-743	1	**662-1597**
Replacement calcium ion electrode S050, for B-751	1	**662-1499**
Standard solution, nitrate ion (150 ppm) Y045, in bottle (14 ml), for B-743	6	**662-3751**
Standard solution, nitrate ion (2000 ppm) Y043, in bottle (14 ml), for B-743	6	**662-3750**
Standard solution, calcium ion (150 ppm) Y051L, in bottle (14 ml), for B-751	6	**662-3757**
Standard solution, calcium ion (2000 ppm) Y051H, in bottle (14 ml), for B-751	6	**662-3756**
Additional sampling sheets, Y046, packed in box	100	**662-1491**
Sampling sheet holder Y048, for samples that contain particulates, for use with sampling sheets B Y046	1	**662-1494**

IP67

Ion selective meters, sodium/potassium, pocket format, LAQUAtwin
Horiba

B-731

B-722

Measurements of sodium or potassium

These waterproof pocket meters provide direct measurements of different ions in liquid, solid, viscous or powder samples using a unique flat sensor with an ion selective membrane. The user needs to drip a few drops of the sample on to the sensor in order to get quick results – there's no need to dilute or prepare the samples beforehand as these reagent-free meters have a wide measurement range. Samples can be as small as 0,3 ml. The meters are suitable for research and industrial applications in diverse fields, such as agriculture and food testing.

- Autocalibration function recognises standards and is user-selectable for either one- or two-point calibrations
- Auto range change, temperature compensation
- Auto hold, automatic power off after 30 minutes
- Easy to use, very convenient for quick on-site testing
- Usage of sampling sheets enables measurements in micro samples as small as 0,05 ml

Delivery information: Each meter is supplied with two batteries, pipette, instruction manual, quick manual, storage case, two bottles of standard solutions (150 & 2000 ppm), 14 ml each, and five pieces of sampling sheet B.

Model	B-722 (Sodium)	B-731 (Potassium)
ISE - range	23 - 2300 ppm (10^{-3} to 10^{-1} mol/l)	39 - 3900 ppm (10^{-3} to 10^{-1} mol/l)
ISE - resolution	0,1 ppm (0 - 1,0 ppm) 1 ppm (0 - 99 ppm) 10 ppm (100 - 990 ppm) 100 ppm (> 990 ppm)	
ISE - accuracy	±10% of reading value	
ISE - calibration	1- or 2-point	
Display	Custom (monochrome) digital LCD	
Power supply	2 × CR2032 batteries	

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W×D×H (mm)	164×29×20 mm
Weight (kg)	0,05 (without batteries)
Compliance	IP67

Description	Pk	Cat. No.
Pocket sodium meter LAQUAtwin B-722	1	**709-0127**
Pocket potassium meter LAQUAtwin B-731	1	**709-0128**

Description	Pk	Cat. No.
Accessories		
Replacement sodium ion electrode S022, for B-722	1	**662-1497**
Replacement potassium ion electrode S030, for B-731	1	**662-1498**
Standard solution, sodium ion (150 ppm) Y022L, in bottle (14 ml), for B-722	6	**662-3755**
Standard solution, sodium ion (2000 ppm) Y022H, in bottle (14 ml), for B-722	6	**662-3754**
Standard solution, potassium ion (150 ppm) Y041L, in bottle (14 ml), for B-731	6	**662-3753**
Standard solution, potassium ion (2000 ppm) Y041H, in bottle (14 ml), for B-731	6	**662-3752**
Additional sampling sheets, Y046, packed in box	100	**662-1491**
Sampling sheet holder Y048, for samples that contain particulates, for use with sampling sheets B Y046	1	**662-1494**

VWR COLLECTION

3 year warranty
main unit only

SELECTED FOR YOU

pH/mV/°C meter, bench, pHenomenal® pH 1100L

This user friendly instrument with articulated electrode stand and IP 43 rated housing provides high resolution and accuracy for precise measurements. With USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight showing both pH/mV and temperature value simultaneously
- Data logging function selectable between 1 minute and 1 hour; memory capacity of 5000 data sets
- Automatic power shut-off: Adjustable from 10 min to 24 h
- Automatic buffer recognition of DIN and NIST buffers (1,68 / 4,00 / 6,86 / 9,18 / 12,54)
- Three additional technical buffers at 25 °C (4,00 / 7,00 / 10,00) in memory
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when recalibration is required
- Choice of mains supply or 4× AA batteries for over 1000 operating hours

Ordering information: Ready to use pH 1100L set includes instrument, pH glass electrode with built-in temperature sensor 221, 1 m cable and articulated stand, two buffers, plastic beaker and instruction manual (22 languages) on CD ROM.

Model	pH 1100L
pH - range	–2,000...+20,000
pH - resolution	0,1 / 0,01 / 0,001 (selectable)
pH - accuracy	±0,1 / ±0,01 / ±0,001
pH - calibration	Up to 5 points
Automatic buffer recognition	BDH Prolabo® TITRINORM® buffers at 25 °C: 4,00/6,98/9,94 NIST/DIN 19266 (1,68/4,00/6,86/9,18/12,54) Technical buffers at 25 °C: 4,00/7,00/10,00
mV - range	±1200,0 / ±2500
mV - resolution	0,1 / 1 (selectable)
mV - accuracy	±0,3 / ±1
Temperature range (°C)	Auto: –5,0...+105,0; manual: –25...+130
Temperature resolution (°C)	0,1 / 1
Temperature accuracy (°C)	±0,2
Temperature compensation	Auto/manual
Data logging - capacity	5000 data sets
Data logging - log function	Selectable between 1 minute and 1 hour
Display	LCD graphical display with LED backlight
Connections	BNC for pH / banana for temperature
Outputs	USB connection (slave, bidirectional)
Power supply	Mains or 4× AA batteries
Compliance	IP 43 / GLP

Description	Pk	Cat. No.
Bench pH/mV/°C meter pH 1100L, pHenomenal®	1 SET	**662-1657**

Description	Material	Electrolyte	Ø×L (mm)	Diaphr.	Connection	Pk	Cat. No.
pH electrode, pHenomenal®							
pHenomenal® 221 pH electrode, with temperature sensor	Glass	Refillable	12×120	Ceramic	BNC, 1 m cable	1	**662-1161**
pHenomenal® LS 221 (Tris) pH electrode, with temperature sensor	Glass	KCl 3 mol/l, refillable	12×120	Platinum	BNC, 1 m cable	1	**662-1247**
Accessories							
pHenomenal® electrode storage tube						1	**662-1167**
pHenomenal® storage/measuring vessel						1	**662-1248**
pHenomenal® compact survival kit (incl. electrode storage tube, 4 slots for storage of pH buffer, cleaning solution, etc., and 1 slot for a dropper bottle)						1	**662-1166**

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Description	Material	Electrolyte	Ø×L (mm)	Diaphr.	Connection	Pk	Cat. No.
Accessories							
pHenomenal® communication kit (CD-ROM, USB cable, manual)						1	**662-1225**
pHenomenal® electrode stand, holds up to 4 electrodes + 1 temperature sensor						1	**662-1169**
Electrolyte KCl 3 mol/l						100 ml	**83605.180**
Cleaning solution pepsin/hydrochloric acid						100 ml	**83603.180**
Buffer solutions in bottles							
Buffer solution AVS TITRINORM®, ready to use, pH 4						100 ml	**32095.184**
Buffer solution pH 10 (boric acid/sodium hydroxide/potassium chloride) AVS TITRINORM®						100 ml	**32040.185**
Buffer solution AVS TITRINORM®, ready to use, pH 7						100 ml	**32096.187**

VWR COLLECTION

3 year warranty
main unit only

SELECTED FOR YOU

Multi-parameter meter (pH/conductivity/DO), bench, pHenomenal® MU 6100 L

This user friendly instrument with articulated electrode stand and IP 43 rated housing provides high resolution and accuracy for precise multi-parameter measurements. The meter can either measure pH/mV and conductivity or pH/mV and oxygen simultaneously. With USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight shows the measured parameter and the temperature value simultaneously
- Data logging function selectable between 1 minute and 1 hour; memory capacity of 5000 data sets
- Automatic power shut-off: Adjustable from 10 min to 24 h
- Automatic buffer recognition of DIN and NIST buffers (1,68 / 4,00 / 6,86 / 9,18 / 12,54)
- Three additional technical buffers at 25 °C (4,00 / 7,00 / 10,00) in memory
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when recalibration is required
- Choice of mains supply or 4× 'AA' batteries for over 1000 operating hours

Ordering information: Ready to use set **MU 6100 L S1** includes bench multi-parameter meter, pH glass electrode 221 with built-in temperature sensor (1 m cable), conductivity probe CO 11 with built-in temperature sensor (1,5 m cable), articulated stand, two pH buffers, one conductivity standard and one plastic beaker, and instruction manual (22 languages) on CD ROM.

Ready to use set **MU 6100 L S2** includes bench multi-parameter meter, pH glass electrode 221 with built-in temperature sensor (1 m cable), conductivity probe CO 11 with built-in temperature sensor (1,5 m cable), galvanic oxygen probe OX 11-3 with built-in temperature sensor (3 m cable), articulated stand, two pH buffers, one conductivity standard and one plastic beaker, and instruction manual (22 languages) on CD ROM.

Model	MU 6100 L
pH - range	–2,000...+19,999
pH - resolution	0,1 / 0,01 / 0,001 (selectable)
pH - accuracy	±0,1 / ±0,01 / ±0,005
pH - calibration	Up to 5 points
Automatic buffer recognition	BDH Prolabo® TITRINORM® buffers at 25 °C: 4,00/6,98/9,94 NIST/DIN 19266 (1,68/4,00/6,86/9,18/12,54) Technical buffers at 25 °C: 4,00/7,00/10,00
mV - range	±1200,0 / ±2500
mV - resolution	0,1 / 1
mV - accuracy	±0,3 / ±1
Conductivity - range	0,001 µS/cm - 1000 mS/cm
Conductivity - resolution	0,1 µS/cm
Conductivity - accuracy	±0,5% of measured value
Conductivity - cell constant (cm^{-1})	0,001 - 25 (depending on probe)
Conductivity - calibration	1 point
Resistivity - range	1 Ω/cm - 999 MΩ/cm
Resistivity - accuracy	±0,5% of measured value
Salinity - range	0,00 - 70 ppt
TDS - range	0 mg/l - 199,9 g/l
TDS - resolution	0,1 mg/l / 1 mg/l / 0,01 g/l
DO - concentration (mg/l)	0,00 - 20,00; 0,0 - 90,0
DO - resolution (mg/l)	0,1%; 0,01 (depending on sensor)
DO - % saturation	0,0 - 200,0; 0 - 600 (depending on sensor)
DO - accuracy	±0,5% of value (between 5...30 °C)
DO - calibration	Saturated air
Temperature range (°C)	Auto: –5,0...+105,0; manual: –25...+130
Temperature resolution (°C)	0,1 / 1
Temperature accuracy (°C)	±0,2
Temperature compensation	Automatic/manual
Data logging - capacity	5000 data sets
Data logging - log function	Selectable between 1 second and 1 hour
Display	LCD graphical display with LED backlight
Connections	BNC for pH / banana for temperature / 8-pin for conductivity and DO
Outputs	Waterproof USB connection (slave, bidirectional)

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Power supply	Mains supply or 4 × AA batteries
Compliance	IP 43 / GLP

Description	Pk	Cat. No.
Bench top pH/mV/conductivity/DO meter pHenomenal® MU 6100 L, Set 1	1 SET	**665-0309**
Bench top pH/mV/conductivity/DO meter pHenomenal® MU 6100 L, Set 2	1 SET	**665-0310**

Description	Temp. (°C)	Material	Electrolyte	Ø×L (mm)	Diaphr.	Connection	Pk	Cat. No.
Conductivity cell, pHenomenal®								
pHenomenal® CO11, 2-pole graphite, integrated NTC 30	0...+80	Epoxy		15,3×120		8 pin, 1,5 m cable	1	**663-0147**
Dissolved oxygen probe, pHenomenal®								
pHenomenal® OXY11-3, galvanic		Epoxy				3 m cable, 8-pin	1	**664-0042**
pH electrode, pHenomenal®								
pHenomenal® 111 pH electrode, 3 in 1, with temperature sensor		Epoxy	Gel	12×120	Ceramic	BNC, 1 m cable	1	**662-1157**
Accessories								
pHenomenal® electrode storage tube							1	**662-1167**
pHenomenal® storage/measuring vessel							1	**662-1248**
pHenomenal® extension stick, aluminium, 1,5 m							1	**662-1224**
pHenomenal® communication kit (CD-ROM, USB cable, manual)							1	**662-1225**
pHenomenal® dissolved oxygen maintenance kit							1	**664-0049**
pHenomenal® field case							1	**662-1168**
pHenomenal® electrode stand, holds up to 4 electrodes + 1 temperature sensor							1	**662-1169**
Conductivity standard, KCl 0,01 mol/l; 1413 mS/cm							100 ml	**83607.180**
Conductivity standard, KCl 0,1 mol/l; 12 800 µS/cm							500 ml	**83608.260**
Electrolyte KCl 3 mol/l							100 ml	**83605.180**
Electrolyte KCl 3 mol/l + AgCl							500 ml	**83606.260**
Cleaning solution pepsin/hydrochloric acid							100 ml	**83603.180**
Buffer solutions in bottles								
Buffer solution AVS TITRINORM®, ready to use, pH 4							100 ml	**32095.184**
Buffer solution pH 10 (boric acid/sodium hydroxide/potassium chloride) AVS TITRINORM®							100 ml	**32040.185**
Buffer solution AVS TITRINORM®, ready to use, pH 7							100 ml	**32096.187**

VWR COLLECTION

3 year warranty
main unit only

SELECTED FOR YOU

pH/mV/°C/ion meter, bench, pHenomenal® IS 2100L

This user friendly instrument with articulated electrode stand and IP 43 rated housing provides high resolution and accuracy for precise multi-parameter measurements. With USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight shows both pH/mV and temperature value simultaneously
- Data logging function selectable between 1 minute and 1 hour; memory capacity of 5000 data sets
- Automatic power shut-off: Adjustable from 10 min to 24 h
- Automatic buffer recognition of DIN and NIST buffers (1,68 / 4,00 / 6,86 / 9,18 / 12,54)
- Three additional technical buffers at 25 °C (4,00 / 7,00 / 10,00) in memory
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when recalibration is required
- Choice of mains supply or 4× AA batteries for over 1000 operating hours

Ordering information: Ready to use IS 2100L set includes instrument, pH glass electrode with built-in temperature sensor 221, 1 m cable and articulated stand, two buffers, plastic beaker and instruction manual (22 languages) on CD ROM.

Model	IS 2100L
pH - range	–2,000...+20,000
pH - resolution	0,1 / 0,01 / 0,001 (selectable)
pH - accuracy	±0,1 / ±0,01 / ±0,001
pH - calibration	Up to 5 points
Automatic buffer recognition	BDH Prolabo® TITRINORM® buffers at 25 °C: 4,00/6,98/9,94 NIST/DIN 19266 (1,68/4,00/6,86/9,18/12,54) Technical buffers at 25 °C: 4,00/7,00/10,00
mV - range	±1200,0 / ±2500
mV - resolution	0,1 / 1 (selectable)
mV - accuracy	±0,3 / ±1
ISE - range	0,001 - 9999 mg/l; 10-9 - 99,999 mol/l; 0,001 - 99999 ppm
ISE - calibration	2 - 7 points
ISE - units	mol/l, mg/l, ppm
Temperature range (°C)	Auto: –5,0...+105,0; manual: –25...+130
Temperature resolution (°C)	0,1 / 1
Temperature accuracy (°C)	±0,2
Temperature compensation	Auto/manual
Data logging - capacity	5000 data sets

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Data logging - log function	Selectable between 1 minute and 1 hour
Display	LCD graphical display with LED backlight
Connections	BNC for pH / banana for temperature
Outputs	USB connection (slave, bidirectional)
Power supply	Mains or 4× AA batteries
Compliance	IP 43 / GLP

Description	Pk	Cat. No.
Bench pH/mV/°C/ion meter pHenomenal® IS 2100L	1 SET	**662-1658**

Description	Material	Electrolyte	Ø×L (mm)	Connection	Pk	Cat. No.
pH electrode, pHenomenal®						
pHenomenal® 221 pH electrode, with temperature sensor	Glass	Refillable	12×120	BNC, 1 m cable	1	**662-1161**

Description	Pk	Cat. No.
Accessories		
pHenomenal® electrode storage tube	1	**662-1167**
pHenomenal® storage/measuring vessel	1	**662-1248**
pHenomenal® storage/measuring vessel	1	**662-1248**
pHenomenal® compact survival kit (incl. electrode storage tube, 4 slots for storage of pH buffer, cleaning solution, etc., and 1 slot for a dropper bottle)	1	**662-1166**
pHenomenal® communication kit (CD-ROM, USB cable, manual)	1	**662-1225**
pHenomenal® electrode stand, holds up to 4 electrodes + 1 temperature sensor	1	**662-1169**
Electrolyte KCl 3 mol/l	100 ml	**83605.180**
Cleaning solution pepsin/hydrochloric acid	100 ml	**83603.180**
Buffer solutions in bottles		
Buffer solution AVS TITRINORM®, ready to use, pH 4	100 ml	**32095.184**
Buffer solution AVS TITRINORM®, ready to use, pH 7	100 ml	**32096.187**

3 year warranty
main unit only

pH/mV/°C meters, bench, Lab 850 / 860 / 870
SI Analytics

Lab 860

Wireless transmission of electrode identification data

High precision instruments for fast, reliable and accurate results

pH meter Lab 850, starter model

- Plastic foil keypad, polyester, tactile response, and acoustic/optical alarm
- Precise calibration and measurement in shorter time
- Current calibration data can be recalculated
- Automatic calibration with up to 3 points and automatic buffer recognition among 16 selectable buffer sets for enhanced reliability
- CalClock pH calibration system with monitoring and display of the probe condition and the calibration time switch
- Data transmission via RS232

pH meter Lab 860, for demanding routine measurements

Same features as Lab 850, in addition:

- Data transmission via USB slave
- Automatic calibration with up to 5 points

pH meter Lab 870, for chemical and pharmaceutical applications

Same features as Lab 850, in addition:

- No data storage
- Data transmission via USB slave
- Automatic calibration with up to 5 points
- Automatic recognition of the new sensors with unique identification (e.g. BlueLine 14 pH ID - included in set) in order to use the correct calibration for the identified sensor and avoid errors in measurement

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Ordering information: Sets include the meter, power supply, electrode stand, dust cover and BlueLine 14 pH electrode with integrated sensor (Blueline 14 pH ID for Lab 870 Set), and calibrations solutions (NIST).

For qualification, detailed documents and certificates are available for all instruments. Please ask for details.

Model	Lab 850	Lab 860	Lab 870
pH - range	–2...+19,999		
pH - accuracy	±0,005 ±1 digit		
pH - calibration	1, 2 or 3 point	1 - 5 points	
mV - range	±999,9		
mV - accuracy	±0,3 ±1 digit		
Temperature range (°C)	–5...+120		
Temperature accuracy (°C)	±1		
Data logging - capacity	800 points (time controlled: 5 s - 60 min)	800 points (manual)	-
Display	LCD		
Connections	DIN / BNC		
Outputs	RS232	RS232 / USB	
W×D×H (mm)	190×240×80		
Weight (kg)	1		

Description	Pk	Cat. No.
Lab 850 DIN Set	1	**663-0086**
Lab 850 BNC Set	1	**663-0085**
Lab 860 DIN Set	1	**663-0089**
Lab 860 BNC Set	1	**663-0090**
Lab 870 DIN Set	1	**663-0094**
Lab 870 BNC Set	1	**663-0093**

Description	Temp. (°C)	Material	Electrolyte	Diaphr.	Connection	For	Pk	Cat. No.
Accessories								
Universal electrode 14 pH, NTC30 sensor	–5...+100	Glass	KCl 3 mol/l	Platinum	DIN + banana plug	General applications	1	**662-6133**

3 year warranty
main unit only

pH/mV/°C/ion meters, bench, digital, ProLab 1000 / 3000

SI Analytics

ProLab 1000

ProLab 3000

Wireless transmission of electrode identification data

Measurement instruments with advanced technology for precise specification applications in research and process control.

- Graphic display provides crystal clear readability and simultaneous display of measurements and parameters
- Automatic electrode identification and wireless transmission of identification data to the instrument
- Automatic electronic user identification by means of an electronic badge
- 2 distinct pH inputs with galvanic separation enable measurements to be taken with 2 electrodes at the same time in the same container with no interference
- CalClock pH calibration display system with monitoring and display of the probe condition

Compliant with EU 73/23, EN 61010-1: 2001

Ordering information: ProLab 3000, meter only, is supplied with cover, S4D straight support stand and power supply.
The ProLab 1000 sets are supplied with A 161 1M-ID pH/temperature electrode and calibration solutions, cover, universal power supply unit and S4D straight support.
The ProLab 3000 set is supplied with IL-pHT-A170MF-DIN-N pH/temperature electrode and DIN buffers, cover, universal power supply unit and S4D straight support stand.

Model	ProLab 1000	ProLab 3000
pH - range	–2,000...+20,000 / –2,00...+20,00 / –2,0...+20,0	
pH - accuracy	±0,003 / ±0,01	±0,002 / ±0,01
pH - calibration	Automatic from 1 to 5 points with NIST/DIN buffer sets and techniques	Automatic or manual, from 1 to 5 points with NIST/DIN buffer sets and techniques
mV - range	±1999,9 / ±1999	±2200,0 / ±2200

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mV - accuracy	±0,2 / ±1		±0,1 / ±1
ISE - range	0,000 - 999,99 mg/l		10×10^{-39} - $9{,}9\times10^{39}$ mg/l
ISE - calibration	2 - 5 points		2 - 9 points
ISE - units	mg/l		mg/l, %, ppm, mg/kg, mol/l
Temperature range (°C)	–10,0...+120,0		–35,0...+150,0
Temperature accuracy (°C)	±0,1		
Data logging - capacity	Manual or automatic (1500 data points, storage intervals adjustable from 5 s to 60 min)		Manual or automatic (10 000 data points, storage intervals adjustable from 1 s to 60 min)
Display	Backlit, graphic (black/white)		Backlit colour graphic (QVGA)
Connections	DIN	BNC	DIN
Outputs	Bi-directional RS232 interface, USB		
W×D×H (mm)	240×280×80		
Weight (kg)	2,5		
Compliance	EU 73/23, EN 61010-1: 2001		

Description	Pk	Cat. No.
ProLab 1000 Set (DIN connection)	1	**663-4011**
ProLab 1000 Set (BNC connection)	1	**663-4017**
ProLab 3000 (DIN connection), meter only	1	**662-0365**
ProLab 3000 Set (DIN connection)	1	**662-1957**

Description	Temp.	Material	Electrolyte	Ø×L (mm)	Diaphr.	Connection	Pk	Cat. No.
pH combination electrodes with temperature sensor, ScienceLine								
Combination electrode, A 161 1M-DIN-ID, with PT 1000 temperature sensor, Silamid®-reference system, with sensor recognition (ID function)	–5...+100	Glass	KCl 3 mol/l	12×170	Platinum	DIN + 4 mm banana plug, 1 m fixed cable	1	**662-1955**

3 year warranty
main unit only

Multi-parameter meters (pH/ion/conductivity/DO), bench, digital, ProLab 2000 / 4000

SI Analytics

ProLab 2000

ProLab 4000

Wireless transmission of electrode identification data

Advanced technology instruments for high-specification applications in research or process control, capable of measuring a range of parameters (pH, mV, ion concentration, dissolved oxygen, conductivity, TDS, salinity).

- Simultaneous measurement and display of the four parameters on the graphical monitor
- Automatic electrode identification and wireless transmission of identification data to the instrument
- Automatic electronic user identification by means of an electronic badge
- CalClock pH calibration system with monitoring and display of the probe condition

Conform to EU 73/23, EN 61010-1: 2001

Ordering information: ProLab 4000, meter only, is supplied with cover, universal power supply and S4D straight support stand (solid pedestal weighing 1,5 kg and arms can be rotated in 3 axes).
ProLab 2000 Set supplied with one A 161 1M-ID pH/temperature electrode, one LFOX 1400 ID combination probe for conductivity and dissolved oxygen, calibration solutions (DIN) and conductivity test solutions, cover, universal power supply unit and S4D straight support stand.

ProLab 4000 Set supplied with the same items as ProLab 2000 Set with the exception that the LF413T-ID electrode replaces the LFOX 1400 ID.

Model	ProLab 2000	ProLab 4000
pH - range	–2,000...+20,000 / –2,00...+20,00 / –2,0...+20,0	
pH - accuracy	±0,003 / ±0,01	±0,002 / ±0,01
pH - calibration	Automatic from 1 to 5 points with NIST/DIN buffer sets and techniques	Automatic or manual, from 1 to 5 points with NIST/DIN buffer sets and techniques
mV - range	±1999,9 / ±1999	±2200,0 / ±2200
mV - accuracy	±0,2 / ±1	±0,1 / ±1
ISE - range	0,000 - 999,99 mg/l	10×10^{-39} - $9{,}9\times10^{39}$ mg/l
ISE - calibration	2 - 5 points	2 - 9 points
ISE - units	mg/l	mg/l, %, ppm, mg/kg, mol/l
Conductivity - range	0,000 µS/cm - 2000 mS/cm	
Conductivity - accuracy	±0,5	

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Conductivity - cell constant (cm^{-1})	Fixed: 0,010 Adjustable: 0,090 - 0,110/0,250 - 2,500 Calibrated: 0,450 - 0,500/0,585 - 0,715/0,800 - 1,200		
DO - concentration (mg/l)	0 - 20,00 / 0 - 90,0		-
DO - resolution (mg/l)	0,01 / 0,1		
DO - % saturation	0 - 200,0 / 0 - 600		
DO - accuracy	±0,5 %		
DO - calibration	Fast, in a calibration vessel with air filled saturated with water vapour		
DO - barometric pressure range	0 - 200,0 mbar / 0 - 1250 mbar		
Temperature range (°C)	–10,0...+120,0		–35,0...+150,0
Temperature accuracy (°C)	±0,1		
Data logging - capacity	Manual or automatic (1500 data points, storage intervals adjustable from 5 s to 60 min)		Manual or automatic (10 000 data points, storage intervals adjustable from 1 s to 60 min)
Display	Backlit, graphic (black/white)		Backlit colour graphic (QVGA)
Connections	DIN	BNC	DIN
Outputs	Bi-directional RS232 interface, USB		
W×D×H (mm)	240×280×80		
Weight (kg)	2,5		
Compliance	EU 73/23, EN 61010-1: 2001		

Description	Pk	Cat. No.
ProLab 2000 Set (DIN connection)	1	**663-4013**
ProLab 2000 Set (BNC connection)	1	**665-0179**
ProLab 4000 (DIN connection)	1	**665-0184**
ProLab 4000 Set (DIN connection)	1	**662-1958**

Description	Material	Electrolyte	Temp. (°C)	Ø×L (mm)	Diaphr.	Connection	Pk	Cat. No.
pH combination electrodes with temperature sensor, ScienceLine								
Combination electrode, A 161 1M-DIN-ID, with PT 1000 temperature sensor, Silamid®-reference system, with sensor recognition (ID function)	Glass	KCl 3 mol/l	–5...+100	12×170	Platinum	DIN + 4 mm banana plug, 1 m fixed cable	1	**662-1955**
Conductivity cells with fixed cable and 8-pole plug								
Combined 4 pole cond. and galvanic oxygen cell, LFOX 1400 ID, with sensor recognition (ID function), temp. sensor NTC 30 kOhm	Plastic		0...+50	15,3×145		Fixed 3 m cable with 8 pole plug	1	**662-1956**
Accessories								
Logbook ProLab 4000							1	**662-1959**

pH/mV/°C/ion meter, bench, SevenCompact™ S220
Mettler-Toledo

Intuitive, user friendly and powerful meter. Measures pH, ORP and ion concentration in various units. Ideal for a wide range of applications.

- User friendly operation, clear, well arranged colour display
- Menu guidance in 10 languages
- GLP compliant
- Supports ISM® technology (Intelligent Sensor Management)

Ordering information: S220-Basic, meter only, is supplied with electrode holder, protective cover, operating instructions, quick guide, declaration of conformity and test certificate.
S220-Kit includes instrument, InLab® Expert Pro ISM® electrode, guide to pH measurements and 2 buffer sachets for pH 4,01, 7,00, 9,21 and 10,00, electrode holder, protective cover, quick guide, declaration of conformity and test certificate.

S220-Bio supplied with the same items as for S220-Kit with the exception that the InLab® Routine Pro ISM® electrode replaces the InLab® Expert Pro ISM®.

S220-Univ supplied with the same items as for S220-Kit with the exception that the InLab® Versatile Pro electrode replaces the InLab® Expert Pro ISM®.

Model	S220
pH - range	–2,000...+20,000
pH - resolution	0,001 / 0,01 / 0,1
pH - accuracy	±0,002
pH - calibration	Max. 5 points with 8 predefined buffer groups and 1 user-defined buffer group
mV - range	±2000,0
mV - resolution	0,1 / 1
mV - accuracy	±0,2
ISE - range	0,000 - 10000,0 ppm
ISE - resolution	± last significant digit
ISE - accuracy	±0,5%
ISE - units	%, ppm, mg/l, mmol/l, mol/l, px

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Temperature range (°C)	Manual: –30,0...+130,0 Automatic: –5,0...+130,0
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,1
Temperature compensation	Manual/automatic
Data logging - capacity	1000 measurements
Display	TFT
Connections	BNC (pH sensor), Mini-DIN (stirrer), Cinch/RCA (NTC 30 kΩ or PT1000 temperature sensor), 2 mm reference
Outputs	RS232, USB-A, USA-B
W×D×H (mm)	204×174×74
Weight (kg)	0,89
Compliance	IP 54 / GLP

Description	Pk	Cat. No.
SevenCompact™ S220-Basic	1	**662-1378**
SevenCompact™ S220-Kit	1	**663-0194**
SevenCompact™ S220-Bio	1	**663-0195**
SevenCompact™ S220-Univ	1	**663-0196**

Description	Temp. (°C)	Material	Electrolyte	Ø×L (mm)	Diaphr.	Connection	For	Pk	Cat. No.
pH electrodes, InLab® ISM®									
InLab® Routine Pro ISM®	0...+100	Glass	3 mol/l KCl	12×120	Ceramic	MultiPin™	General purpose	1	**663-0197**
InLab® Expert Pro ISM®	0...+100	PEEK	XEROLYT® polymer	12×120	Open junction	1,2 m cable, BNC/RCA (Cinch)	Wastewater, highly saline solutions; gels, soaps and shampoos; proteinaceous media; beverages; suspended solids, oily samples	1	**663-0198**
Economy pH electrodes, InLab® Versatile									
InLab® Versatile Pro	0...+100	Polysulfone	3 mol/l KCl	12×120	Ceramic	1,2 m cable, BNC/RCA (Cinch)	General purpose	1	**662-2825**
Accessories									
Electrode holder uPlace™								1	**662-1824**
Protective cover								1	**662-1825**

pH/mV/°C meters, bench, SevenExcellence™ S400
Mettler-Toledo

Not only do these meters measure pH and ORP with classical sensors, but they also support pH measurement with ISFET technology. The instruments can effectively cope with complex applications and stringent requirements in regulated markets as well as with routine measurement tasks in laboratories.

- Large colour display, user friendly touch screen and menu guidance in 10 languages
- Flexible method concept (17 predefined and 50 user-defined methods) for high reproducibility and security
- Fits three modules in any composition and order, can be expanded with additional measurement parameters at any time
- Extra security thanks to sophisticated user management and Intelligent Sensor Management (ISM®)
- USB, Ethernet and RS232 interfaces allow connection of a barcode scanner, fingerprint reader, Rondolino sample changer, USB stick or network printer
- Electrode arm can be operated with one hand, moving straight up and down to bring the electrode to the perfect position (uPlace™)

Ordering information: Supplied with modules (pH/mV expansion unit, two blank expansion units), uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.

Model	S400
pH - range	–2...+20 ISFET pH: 0...14
pH - resolution	0,001/0,01/0,1
pH - accuracy	±0,002 ISFET pH: ± 0,05
pH - calibration	max. 5 points
Automatic buffer recognition	Automatic or manual, 8 predefined and 20 user-defined buffer groups
mV - range	±2000
mV - resolution	0,1/1
mV - accuracy	±0,1
Temperature range (°C)	–30...+130
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,1
Data logging - capacity	20000 data points, 250 analyses
Display	TFT colour display
Connections	BNC, NTC30 kΩ temperature sensor input, Mini-DIN ISFET sensor input, Mini-LTW digital sensor input, Mini-DIN stirrer connection

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Outputs	USB, RS232, LAN
W×D×H (mm)	235×188×75
Weight (kg)	1,12
Compliance	GLP

Description	Pk	Cat. No.
pH/mV/°C meter S400 Basic	1	**662-1464**
pH/mV/°C meter S400 Kit, with InLab® Expert Pro-ISM, guide to pH measurements and two buffer sachets for pH 4,01/7,00/9,21/10,00	1	**662-1466**
pH/mV/°C meter S400 Bio-Kit, with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM	1	**662-1467**
pH/mV/°C meter S400 ISFET-Kit, with InLab® 490 instead of InLab® Expert Pro-ISM	1	**662-1465**

Description	Pk	Cat. No.
Accessories		
Module, pH/Ion expansion unit	1	**662-1468**
Module, pH/mV expansion unit	1	**662-1474**
Module, conductivity expansion unit	1	**662-1469**
Module, blank expansion unit	1	**662-1470**
uMix™ magnetic stirrer, adjustable stir speed	1	**662-1471**
Semi-transparent cover	1	**662-1472**
Protective film for display	2	**662-1473**
Storage vial for pH electrodes (Ø 12 mm)	1	**662-2889**

pH/mV/°C/ion meter, bench, SevenExcellence™, S500
Mettler-Toledo

This single channel instrument can easily handle the most complex applications and meets stringent requirements in regulated markets. The meter is flexible and can be modularly expanded with additional measurement parameters at any time. Special methods for the most common incremental ion measurement techniques are included, such as standard addition, subtraction and sample addition and subtraction methods.

- Methods for incremental ion measurements, guiding the user through the individual steps
- Full ion support: Twelve most commonly used ion types are pre-programmed in the instrument
- Large colour display, touch screen and user friendly menu guidance in 10 languages
- Flexible method concept for high reproducibility and security
- Extra security thanks to sophisticated user management and Intelligent Sensor Management (ISM®)
- Integrated interfaces (USB, RS232 and Ethernet) for data exchange

Ordering information: Supplied with module (pH/Ion expansion unit, two blank expansion units), uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.

Model	S500
pH - range	–2...+20
pH - resolution	0,001/0,01/0,1
pH - accuracy	±0,002
pH - calibration	max. 5 points
mV - range	±2000
mV - resolution	0,1/1
mV - accuracy	±0,1
ISE - range	0 - 999999 mg/l, ppm 0 - 100 mol/l, % 0 - 100000 mmol/l –2...20 px
ISE - resolution	0,001 - 1 (0 - 999999 mg/l, ppm; 0 - 100000 mmol/l; –2...20 px) 0,0001 (0 - 100 mol/l, %)
ISE - accuracy	±0,5%
ISE - units	mg/l, ppm, %, mol/l, mmol/l, px
Temperature range (°C)	–30...+130
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,1
Data logging - capacity	20 000 data points, 250 analyses
Display	TFT colour display
Connections	BNC (pH/ion sensor input), NTC30 kΩ or PT1000 temperature sensor input, Mini-LTW digital sensor input, Mini-DIN stirrer connection
Outputs	RS232, USB, LAN
W×D×H (mm)	235×188×75
Weight (kg)	1,12
Compliance	GLP

Description	Pk	Cat. No.
pH/mV/°C/ion meter S500 Basic (meter only)	1	**662-1478**
pH/mV/°C/ion meter S500 kit, with InLab® Expert Pro-ISM, guide to pH measurements and two buffer sachets for pH 4,01/7,00/9,21/10,00	1	**662-1479**
pH/mV/°C/ion meter S500 Bio-Kit, with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM	1	**662-1480**
pH/mV/°C/ion meter S500 Fluoride kit, with PerfectION™ Fluoride instead of InLab® Expert Pro-ISM	1	**662-1483**

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Description	Pk	Cat. No.
Accessories		
Module, pH/Ion expansion unit	1	**662-1468**
Module, pH/mV expansion unit	1	**662-1474**
Module, conductivity expansion unit	1	**662-1469**
Module, blank expansion unit	1	**662-1470**
uMix™ magnetic stirrer, adjustable stir speed	1	**662-1471**
Semi-transparent cover	1	**662-1472**
Protective film for display	2	**662-1473**

pH electrodes, InLab® ISM®
Mettler-Toledo

High-performance electrodes combining robustness with state-of-the-art measurement technology. Fully traceable.

The revolutionary Intelligent Sensor Management system (ISM®) offers the user an even greater level of security. The calibration data is stored on the chip in the sensor and is used automatically when the sensor is connected to the meter. This ensures that the meter always uses the latest calibration data.

- Intelligent electrodes - Does not need to be recalibrated when using another Seven-series meter
- Easy to clean, low-maintenance, long lifetime
- Compatible with SevenGo Duo™ (SG23) and SevenGo Duo pro™ (SG78) meters

MultiPin™: pH / temperature
Material: Glass (except InLab® Expert Pro: PEEK)
Temperature range: 0...+100 °C (except InLab® Solids Pro/Pure Pro: 0...+80 °C)
With integrated NTC 30 kOhm temperature probe

Ordering information: Supplied with test certificate.

ISM® pH electrode	Applications
InLab® Routine Pro ISM®	General purpose
InLab® Science Pro ISM®	General purpose; more complex matrices (e.g. emulsions, biological media)
InLab® Expert Pro ISM®	Wastewater, highly saline solutions; gels, soaps and shampoos; proteinaceous media; beverages; suspended solids, oily samples
InLab® Solids Pro ISM®	Cosmetics; dairy products; food
InLab® Micro Pro ISM®	Highly saline solutions; cosmetics; pharmaceutical and biological samples
InLab® Pure Pro ISM®	Pure and ultrapure water; cold samples (<5 °C) with average conductivity; boiler feed water
InLab® Power Pro ISM®	Wastewater with average conductivity; proteinaceous media; dairy products; paints and emulsions; hydrocarbons; corrosive and hot acids/bases

Type	pH	Temp. (°C)	Material	Electrolyte	Diaphr.	Ø×L (mm)	Connection	Pk	Cat. No.
InLab® Routine Pro ISM®	0 - 14	0...+100	Glass	3 mol/l KCl	Ceramic	12×120	MultiPin™	1	**662-1234**
InLab® Routine Pro ISM®	0 - 14	0...+100	Glass	3 mol/l KCl	Ceramic	12×120	MultiPin™	1	**663-0197**
InLab® Expert Pro ISM®	0 - 14	0...+100	PEEK	XEROLYT® polymer	Open junction	12×120	1,2 m cable, BNC/RCA (Cinch)	1	**663-0198**
InLab® Expert Pro ISM®	0 - 14	0...+100	PEEK	XEROLYT® polymer	Open junction	12×120	1,2 m cable, BNC/RCA (Cinch)	1	**662-1153**
InLab® Expert Pro ISM®	0 - 14	0...+100	PEEK	XEROLYT® polymer	Open junction	12×120	5 m cable, BNC/ RCA (Cinch)	1	**662-1750**
InLab® Science Pro ISM®	0 - 12	0...+100	Glass	3 mol/l KCl	Moving, ground glass	12×170	1,2 m cable, BNC/RCA (Cinch)	1	**662-1235**
InLab® Solids Pro ISM®	1 - 11	0...+80	Glass	XEROLYT®PLUS polymer	Open junction	6×25	MultiPin™	1	**662-1236**
InLab® Micro Pro ISM®	0 - 14	0...+100	Glass	3 mol/l KCl	Ceramic	12×130	MultiPin™	1	**662-1237**
InLab® Pure Pro ISM®	1 - 11	0...+80	Glass	3 mol/l KCl	Fixed, ground glass	12×170	MultiPin™	1	**662-1238**
InLab® Power Pro ISM®	0 - 12	0...+100	Glass	DPA gel	Ceramic	12×170	MultiPin™	1	**662-1239**

Description	Pk	Cat. No.
Accessories		
Cable for ISM® electrodes, MultiPin™, 1,8 m	1	**662-1240**
Cable for ISM® electrodes, MultiPin™, 5 m	1	**662-1241**

VWR COLLECTION

SELECTED FOR YOU

pH electrode, pHenomenal®

662-1156

662-1157

662-1159

With BNC connector and cable

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These electrodes are checked at five points during the manufacturing process and then lot stamped to ensure quality. Every electrode is supplied with a soaker storage bottle and cap to ensure the pH-sensitive glass and reference junction remain in top condition and are instantly ready for use.

Type	Material	Electrolyte	Diaphr.	Ø×L (mm)	Connection	Pk	Cat. No.
pHenomenal® 110, gel	Epoxy	Gel	Ceramic	12×120	BNC, 1 m cable	1	**662-1156**
pHenomenal® 111, 3 in 1, gel *	Epoxy	Gel	Ceramic	12×120	BNC, 1 m cable	1	**662-1157**
pHenomenal® 111-3, 3 in 1, gel *	Epoxy	Gel	Ceramic	12×120	BNC, 3 m cable	1	**662-1158**
pHenomenal® 220, refillable	Glass	Refillable	Ceramic	12×120	BNC, 1 m cable	1	**662-1159**
pHenomenal® 221, refillable *	Glass	Refillable	Ceramic	12×120	BNC, 1 m cable	1	**662-1161**
pHenomenal® 211, refillable *	Epoxy	Refillable	Ceramic	12×120	BNC, 3 m cable	1	**662-1162**
pHenomenal® MIC 220, refillable, Micro	Glass	Refillable	Ceramic	6/12×120	BNC, 1 m cable	1	**662-1163**
pHenomenal® SPEAR 220, spear type	Glass	Gel	Ceramic	6/12×120	BNC, 1 m cable	1	**662-1164**
pHenomenal® LS 221 (Tris) *	Glass	KCl 3 mol/l, refillable	Platinum	12×120	BNC, 1 m cable	1	**662-1247**

Type	Material	Connection	Pk	Cat. No.
Temperature sensor pHenomenal® TEMP21				
pHenomenal® TEMP21	Epoxy	4 mm banana, 1 m cable	1	**620-1659**

* integrated temperature probe

pH electrodes, ScienceLine

SI Analytics

Heavy duty laboratory electrodes for practically all applications in the laboratory and in the field.

- Maximum measuring accuracy and consistency, with optimum sensor service life
- Maximum adaptability for all applications, even at high temperatures

Reference system: Silver/silver chloride

Electrolyte: KCl 3 mol/l

Shaft material: Glass

Temperature range: -5 to +100 °C (H 61 / H 63: +10 to + 100 °C)

pH range: 0 - 14

Ordering information: Supplied with serial number and quality certificate.

Type	Temp. (°C)	Diaphr.	Ø×L (mm)	Connection	For	Pk	Cat. No.
A 7780	–5...+100	3× Ceramic	12×120	S7*	Agriculture, dairy products, water analysis	1	**662-0101**
N 61	–5...+100	Platinum	12×170	S7*	Wide range of applications	1	**662-0512**
N 62	–5...+100	Platinum	12×120	S7*		1	**662-6172**
N 6280	–5...+100	Ceramic	12×120	S7*		1	**662-6105**
N 52 BNC	–5...+100	Platinum	12×120	BNC		1	**662-6113**
N 52 A	–5...+100	Platinum	12×120	DIN		1	**662-6112**
N 42 A	–5...+100	Ceramic	12×120	DIN	Water analysis, technical applications	1	**662-6107**
H 61	+10...+100	Platinum	12×170	S7*		1	**662-0513**
H 63	+10...+100	Platinum	12×320	S7*		1	**662-0515**

Description	Pk	Cat. No.
Accessories		
Cable, 1 m, with S7/DIN plug	1	**662-1425**
Cable, 1 m, with S7/BNC plug	1	**662-1327**
Cable, 1 m, with SMEK/DIN plug	1	**662-1311**

* without cable (available separately)

pH and ORP microelectrodes

SI Analytics

For small sample volumes in life science and pharmaceutical applications.

- Reliable and reproducible results
- Highest quality and long lasting
- Accurate and highly precise
- Designed for small volumes and life science applications

Suitable temperature range: –5...+100 °C

pH electrodes are equipped with A-type membrane glass. pH electrodes with integrated temperature measurement are using a PT1000 sensor.

For most accurate results, we recommend using the ProLab 3000 meter in combination with these electrodes.

Description	Type	Diaphr.	Ø×L (mm)	Connection	Pk	Cat. No.
pH/temperature microelectrode, Silamid® reference system, cylindrical membrane shape	A 157	Platinum	12/5×40/130	SMEK plug head	1	**662-6174**
pH/temperature microelectrode, Silamid® reference system, cylindrical membrane shape	A 157 1M-DIN-ID	Platinum	12/5×40/130	DIN + banana plug, 1 m fixed cable	1	**662-1678**
pH/temperature microelectrode, Silamid® reference system, cylindrical membrane shape	A 157 1M-BNC-ID	Platinum	12/5×40/130	BNC + banana plug, 1 m fixed cable	1	**662-1679**
pH microelectrode, Ag/AgCl reference system, cylindrical membrane shape	BlueLine 16 pH	Platinum	12/5×120 (40/80)	Plug head	1	**662-6135**
pH microelectrode, iodine/iodide reference system, cylindrical membrane shape	IL-MICRO-pH-A	Platinum	12/6×170 (130/40)	Screw plug head S7	1	**662-6095**
pH microelectrode, iodine/iodide reference system, cylindrical membrane shape	IL-MICRO-pH-A-DIN	Platinum	12/6×170 (130/40)	DIN plug, 1 m fixed cable	1	**662-6063**
pH microelectrode, iodine/iodide reference system, cylindrical membrane shape	IL-MICRO-pH-A-BNC	Platinum	12/6×170 (130/40)	BNC plug, 1 m fixed cable	1	**662-6096**
pH/temperature microelectrode, iodine/iodide reference system, cylindrical membrane shape	IL-MICRO-pHT-A-DIN-N	Platinum	12/6×170 (130/40)	DIN + banana plug, 1 m fixed cable	1	**662-6069**
pH/temperature microelectrode, iodine/iodide reference system, cylindrical membrane shape	IL-MICRO-pHT-A-BNC-N	Platinum	12/6×170 (130/40)	BNC + banana plug, 1 m fixed cable	1	**662-6070**
pH microelectrode, Silamid® reference system, spear membrane shape, tapper NS 7,5	N 5800 A	3× platinum	5×96	DIN plug, 1 m fixed cable	1	**662-1267**
pH microelectrode, Silamid® reference system, spear membrane shape, tapper NS 7,5	N 5800 BNC	3× platinum	5×96	BNC plug, 1 m fixed cable	1	**662-1675**
pH microelectrode, Silamid® reference system, sphere membrane shape, tapper NS 7,5	N 5900 A	Platinum	5×96	DIN plug, 1 m fixed cable	1	**662-0520**
pH microelectrode, Silamid® reference system, cylindrical membrane shape, tapper NS 7,5	N 6000 A	Platinum	3×96	DIN plug, 1 m fixed cable	1	**662-6109**
pH microelectrode, Silamid® reference system, cylindrical membrane shape, tapper NS 7,5	N 6000 BNC	Platinum	3×96	BNC plug, 1 m fixed cable	1	**662-1676**
pH microelectrode, Silamid® reference system, cylindrical membrane shape, tapper NS 7,5	N 6000 1M-DIN-ID	Platinum	3×96	DIN plug, 1 m fixed cable	1	**662-1680**
pH microelectrode, Silamid® reference system, cylindrical membrane shape, tapper NS 7,5	N 6000 1M-BNC-ID	Platinum	3×96	BNC plug, 1 m fixed cable	1	**662-1681**
pH microelectrode, Silamid® reference system, cylindrical membrane shape	N 6003	Ceramic	3×180	Plug head	1	**662-1673**
ORP microelectrode, Silamid® reference system, rod membrane shape, tapper NS 7,5	Pt 5900 A	Platinum	5×96	DIN plug, 1 m fixed cable	1	**662-1674**
ORP microelectrode, Silamid® reference system, rod membrane shape, tapper NS 7,5	Pt 5900 BNC	Platinum	5×96	BNC plug, 1m fixed cable	1	**662-1677**
ORP microelectrode, Silamid® reference system, rod membrane shape, tapper NS 7,5	Pt 5901	Platinum	5×160	Plug head	1	**662-1672**

pH combination electrodes, IoLine

SI Analytics

662-6071

662-6067

662-6065

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These electrodes have been developed for the most critical pH measurements in research and quality control, pharmacies, biotechnology and the food industry. They are 100% metal ion-free and, hence, ideally suited for measurements that are critical with respect to sample contamination by ions such as silver and for pH measurements in Tris buffers too.

- Longer service life with patented three chamber reservoir in the reference electrode
- Precise, fast measurements and improved stability of measurement values, especially with changing temperatures or at temperatures other than calibration point, due to iodine/iodide reference system with lower temperature sensitivity
- Free choice of the bridge electrolyte for optimum adaptation to the sample due to double electrolyte system

Reference system: Iodine/iodide

Shaft material: Glass

Temperature range: –5...+100 °C

pH range: 0 - 14

Type	pH	Temp. (°C)	Diaphr.	Ø×L (mm)	Connection	For	Pk	Cat. No.
Electrodes without temperature sensor								
IoLine IL-pH-A120MF-DIN, sphere membrane shape	0 - 14	–5...+100	Platinum	12×120	DIN, 1m fixed cable	General applications, low ion media	1	**662-6077**
IoLine IL-pH-A120-DIN, sphere membrane shape	0 - 14	–5...+100	Ceramic	12×120	DIN, 1m fixed cable		1	**662-6076**
IoLine IL-pH-A120MF, sphere membrane shape	0 - 14	–5...+100	Platinum	12×120	S7		1	**662-6090**
IoLine IL-SP-pH-A, spear membrane shape	0 - 14	–5...+100	Ceramic	12×120 (8×50/70)	S7	Insert measurement	1	**662-6071**
Electrodes with temperature sensor								
IoLine IL-pHT-A120MF-DIN-N, sphere membrane shape, PT1000, ID function	0 - 14	–5...+100	Platinum	12×120	DIN + banana plug	General applications, low ion media	1	**662-6067**
IoLine IL-pHT-A170MF-DIN-N, sphere membrane shape, PT1000, ID function	0 - 14	–5...+100	Platinum	12x170	DIN + banana plug		1	**662-6065**

pH combination electrodes, sterilisable

SI Analytics

These sterilisable electrodes are particularly suitable for application in the fields of biotechnology and pharmaceuticals. Electrode with double electrolyte system (S 23128) is ideal for particularly sophisticated applications.

- Can be sterilised at 135 °C, and may be autoclaved
- With electrolyte reservoir vessel

Sensor: Membrane glass type S
Sensor form: Cylinder

Ordering information: Connecting cables need to be ordered separately.

Type	pH	Temp. (°C)	Material	Electrolyte	Diaphr.	Ø×L (mm)	Connection	Pk	Cat. No.
S 22120, KCl vessel 50 mm	2 - 14	+10...+135	Glass	KCl 2 mol/l (L 310)	Ceramic	12×120	Plug head	1	**662-1816**
S 22200, KCl vessel 50 mm	2 - 14	+10...+135	Glass	KCl 2 mol/l (L 310)	Ceramic	12×200	Plug head	1	**662-1817**
S 26120, KCl vessel 130 mm	2 - 14	+10...+135	Glass	KCl 2 mol/l (L 310)	Ceramic	12×120	Plug head	1	**662-1819**
S 26150, KCl vessel 130 mm	2 - 14	+10...+135	Glass	KCl 2 mol/l (L 310)	Ceramic	12×150	Plug head	1	**662-1818**
S 26200, KCl vessel 130 mm	2 - 14	+10...+135	Glass	KCl 2 mol/l (L 310)	Ceramic	12×200	Plug head	1	**662-1820**
S 26250, KCl vessel 130 mm	2 - 14	+10...+135	Glass	KCl 2 mol/l (L 310)	Ceramic	12×250	Plug head	1	**662-1822**
S 23128, double electrolyte system	2 - 14	+10...+135	Glass	KCl 2 mol/l (double electrolyte L 310)	Ceramic	12×120	Plug head	1	**662-1821**

Specialty pH electrodes, InLab®
Mettler-Toledo

662-2834

662-2848

662-2850

- ARGENTHAL™ reference system with silver-ion trap (except InLab® Surface + InLab® Pure with Ag/AgCl; InLab® Viscous with SteadyForce™)
- XEROLYT® polymer electrolyte for InLab® Solids/Solids Pro: No need for a junction (no possibility of contamination)
- MultiPin™: pH/temperature

pH range: 0 - 14 for InLab® Reach + Viscous series; 1 - 11 for InLab® Solids/Solids Pro/Surface/Cool/Hydrofluoric/1010/Pure/Pure Pro

Ordering information: Supplied with test certificate and without cable. Other electrodes on request.

Electrode	Applications
InLab® Reach / Reach Pro / Reach PT1000	Waste water, highly saline solutions; wine and vinegar; photographic and galvanic baths; large sample vessels
InLab® Solids / Solids Pro	Cosmetics; dairy products; food
InLab® Surface	Surface measurements (e.g. skin, leather, textiles, paper, gelled agar)
InLab® Cool	Cold samples (<5 °C); soft surface water; drinking water; beverages
InLab® 1010 (for Knock instruments)	Viscous media, cremes, emulsions, non-aqueous solutions
InLab® Hydrofluoric	HF bearing media (<1 g/l)
InLab® Viscous	Glutinous and fatty of samples (cosmetics, paints or resins)
InLab® Pure	Water
InLab® Pure Pro	Pure and ultrapure water

Type	Temp. (°C)	Material	Electrolyte	Diaphr.	Ø×L (mm)	Connection	Pk	Cat. No.
InLab® Reach	0...+100	Glass	3 mol/l KCl	Ceramic	12×300	S7	1	**662-2834**
InLab® Reach Pro*	0...+100	Glass	3 mol/l KCl	Ceramic	12×400	MultiPin™	1	**662-2835**
InLab® Reach PT1000*	0...+100	Glass	3 mol/l KCl	Ceramic	12×400	MultiPin™	1	**662-2836**
InLab® Solids	0...+80	Glass	XEROLYT® PLUS polymer	Open junction	6×25	S7	1	**662-2848**
InLab® Solids Pro*	0...+80	Glass	XEROLYT® PLUS polymer	Open junction	6×25	MultiPin™	1	**662-2849**
InLab® Surface	0...+50	Polysulfone	3 mol/l KCl, AgCl saturated	ABS-ring	12×110	S7	1	**662-2850**
InLab® Cool	–30...+80	Glass	FRISCOLYT-B®	Immovable glass sleeve	12×120	S7	1	**662-2869**
InLab® 1010*	0...+80	PEEK	Gel	Open junction	12×110	DIN/4 mm, 1,2 m cable	1	**662-2902**
InLab® Hydrofluoric	0...+100	Glass	3 mol/l KCl	Ceramic	12×120	S7	1	**662-2870**
InLab® Viscous	0...+100	Glass	FRISCOLYT-C®	Ceramic	6×40	S7	1	**662-2847**
InLab® Pure	0...+80	Polysulfone	Gel	Porous PTFE	12×120	S7	1	**662-2867**
InLab® Pure Pro*	0...+80	Glass	KCl 3 mol/l	Immovable glass sleeve	12×170	MultiPin™	1	**662-2868**

* Integrated temperature probe

pH electrodes, InLab® Micro
Mettler-Toledo

662-2863

662-2864

662-2866

With S7, BNC or MultiPin™ (pH/temperature) connector

- ARGENTHAL™ reference system with silver-ion trap
- XEROLYT® EXTRA polymer electrolyte: High signal stability, very short response time and high chemical resistance (InLab® Semi-Micro)
- InLab® Flex-Micro features a flexible thin shaft (Ø 6 mm): Ideal for measuring pH in test tubes and other small containers
- InLab® Ultra-Micro features a long thin shaft (Ø 3 mm): Ideal for measuring extremely small sample volumes in very small vessels
- Friscolyte-B® electrolyte enables stable and drift-free readings even when the membrane touches the vial (only InLab® Ultra-Micro)

pH range: 0 - 14 for InLab® Micro/Micro Pro/Semi-Micro-L/Flex-Micro; 0 - 12 for InLab® Semi-Micro; 1 - 11 for InLab® Ultra-Micro

Ordering information: Supplied with test certificate. Other electrodes available on request.

Electrode	Applications
InLab® Semi-Micro / Semi-Micro-L	Highly saline solutions; cosmetics; pharmaceutical and biological samples
InLab® Micro / Micro Pro	Highly saline solutions; cosmetics; pharmaceutical and biological samples; dairy products; water-based paint and oily samples

Type	pH	Temp. (°C)	Material	Electrolyte	Diaphr.	Ø×L (mm)	Connection	Pk	Cat. No.
InLab® Micro	0 - 14	0...+100	Glass	3 mol/l KCl	Ceramic	3×60	MultiPin™	1	**662-2863**
InLab® Micro Pro	0 - 14	0...+100	Glass	3 mol/l KCl	Ceramic	5×130	MultiPin™	1	**662-2865**
InLab® Semi-Micro	0 - 12	0...+100	Glass	XEROLYT® EXTRA Polymer	Open junction	6×100	S7	1	**662-2864**

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Type	pH	Temp. (°C)	Material	Electrolyte	Diaphr.	Ø×L (mm)	Connection	Pk	Cat. No.
InLab® Semi-Micro-L	0 - 14	0...+100	Glass	3 mol/l KCl	Ceramic	6×230	S7	1	**662-2866**
InLab® Ultra-Micro	1 - 11	0...+80	Glass	FRISCOLYT-B®	Ceramic	3×40	S7	1	**662-1346**
InLab® Flex-Micro	0 - 14	0...+80	Plastic	3 mol/l KCl	PTFE	6×180	BNC, 1 m cable	1	**662-1347**

Buffer solutions, 20 °C AVS TITRINORM®

- Solutions prepared from AnalaR® NORMAPUR® grade analytical reagents
- True analytical value on the label to an accuracy of ± 0,02 pH units (pH 1- 10) (± 0,05 for pH 12.00 buffer)
- Traceable to SRM from NIST
- Batch number and packing date for traceability
- Certificate of analysis available from www.vwr.com

For full information concerning health and safety data please see the www.vwr.com website.

Ordering information: If significantly large volumes are required please contact your local VWR sales office for a customised offer.

Description	pH value	Pk	Cat. No.
Buffer solutions in bottles			
Buffer solution pH 4,00 (20 °C) (potassium hydrogen phthalate) ±0,02 pH units AVS TITRINORM®	4,00	500 ml	**32095.264**
Buffer solution pH 4,00 (20 °C) (potassium hydrogen phthalate) ±0,02 pH units AVS TITRINORM®	4,00	1 l	**32095.297**
Buffer solution pH 4,00 (20 °C) (potassium hydrogen phthalate) ±0,02 pH units AVS TITRINORM®	4,00**	5 l	**32095.377**
Buffer solution pH 4,00 (potassium hydrogen phthalate) AVS TITRINORM®	4,00 (red coloured)***	1 l	**32044.290**
Buffer solution pH 4,00 (potassium hydrogen phthalate) AVS TITRINORM®	4,00 (red coloured)	1 l	**32044.292**
Buffer solution pH 7,00 (20 °C) (potassium dihydrogen phosphate/disodium hydrogen phosphate) ±0,02 pH units AVS TITRINORM®	7,00	500 ml	**32096.267**
Buffer solution pH 7,00 (20 °C) (potassium dihydrogen phosphate/disodium hydrogen phosphate) ±0,02 pH units AVS TITRINORM®	7,00	1 l	**32096.291**
Buffer solution pH 7,00 (20 °C) (potassium dihydrogen phosphate/disodium hydrogen phosphate) ±0,02 pH units AVS TITRINORM®	7,00**	5 l	**32096.371**
Buffer solution pH 7,00 (20 °C) (potassium hydrogen phthalate/disodium hydrogen phosphate) ±0,02 pH units AVS TITRINORM®	7,00 (green coloured)***	1 l	**32045.290**
Buffer solution pH 7,00 (20 °C) (potassium hydrogen phthalate/disodium hydrogen phosphate) ±0,02 pH units AVS TITRINORM®	7,00 (green coloured)	1 l	**32045.295**
Buffer solution pH 9,00 (20 °C, borate buffer) ±0,02 pH units AVS TITRINORM®	9,00	1 l	**32039.294**
Buffer solution pH 9,00 (boric acid/potassium chloride/sodium hydroxide) AVS TITRINORM®	9,00 (blue coloured)***	1 l	**32046.290**
Buffer solution pH 9,00 (boric acid/potassium chloride/sodium hydroxide) AVS TITRINORM®	9,00 (blue coloured)	1 l	**32046.298**
Buffer solution pH 10 (boric acid/sodium hydroxide/potassium chloride) AVS TITRINORM®	10,00	1 l	**32040.298**
Buffer solution sets			
Buffer solution set pH 4,00 / 7,00 / 10,00 (3×100 ml), coloured		1	**83610.600**
Buffer solutions set pH 4,00 / 7,00 / 10,00 (3×250 ml), coloured		1	**83610.610**

* 5 litre plastic bottle
** Bag in a box 5 litre
*** 1 litre dosing bottles

Buffer solutions, secondary standards

- Solution standardised at 25 °C, compliant with DIN 17025
- Accurate to ±0,010 pH units (except buffer 12.454 with accuracy 0,050)
- Fully traceable for optimum pH calibration (traceable to NIST)
- Supplied with detailed certificate of analysis
- Temperature dependence data is printed on the labels as are batch number and expiry date

pH value	Pk	Cat. No.
1,679	500 ml	**84580.260**
3,776	500 ml	**84581.260**
4,005	500 ml	**84582.260**
6,865	500 ml	**84583.260**
7,413	500 ml	**84584.260**
9,18	500 ml	**84585.260**
10,012	500 ml	**84586.260**
12,454	500 ml	**84587.260**

Buffer solutions in sachets, Certipur®

For calibration of pH meters.

- Practical 30 ml sachets - one use per sachet - no risk of contamination
- Solutions are always fresh and ready to use
- Batch traceable to NIST
- Reference temperature: +25 °C
- Precision: Deviation is max. ±0,015 pH units

Description	pH value	Pk	Cat. No.
Certipur® buffer solution, pH 9,00, boric acid, sodium hydroxide, potassium chloride	9,00	30	**1.99003.0001**
CertiPur® buffer solution, pH 10,00, boric acid, sodium hydroxide, potassium chloride	10,00	30	**1.99004.0001**

Buffer solutions, ready to use, Certipur®

Materials for the precise calibration and monitoring of pH meters.

- Traceable to NIST primary standard and PTB - deviation max. ±0,01 (except pH 10 with ±0,02)
- Larger 4 and 10 l pack sizes in easy to use Titripac® packaging which eliminates contamination issues
- Reference temperature: +20 °C except 1.99022.4000 which is 25 °C

Measured in an independent accredited calibration laboratory for the pH value measurement (DKD-K-14301).

Packaging: Plastic bottles (1 l) or PE/aluminium Titripac® pack (4 l and 10 l).

Description	pH value	Contents	Pk	Cat. No.
Buffer solution (citric acid/sodium hydroxide/hydrogen chloride), traceable to SRM from NIST and PTB pH 4.00 (20 °C) Certipur®	4,00	Citric acid Sodium hydroxide Hydrogen chloride	1 l	**1.09435.1000**
			4 l	**1.09435.4000**
			10 l	**1.09435.9010**
Buffer solution (disodium hydrogen phosphate/potassium dihydrogen phosphate) traceable to SRM from NIST and PTB pH 7.00 (20 °C) Certipur®	7,00	Disodium hydrogen phosphate Potassium dihydrogen phosphate	1 l	**1.09439.1000**
			4 l	**1.09439.4000**
			10 l	**1.09439.9010**
Buffer solution (boric acid/potassium chloride/sodium hydroxide), traceable to SRM from NIST and PTB pH 9.00 (20 °C) Certipur®	9,00	Boric acid Sodium hydroxide Potassium chloride	1 l	**1.09461.1000**
			4 l	**1.09461.4000**
			10 l	**1.09461.9010**
Buffer solution (boric acid/potassium chloride/sodium hydroxide), traceable to SRM from NIST and PTB pH 10.00 (20 °C) Certipur®	10,00		1 l	**1.09438.1000**
			4 l	**1.09438.4000**
			10 l	**1.09438.9010**
Buffer solution (disodium hydrogen phosphate/sodium hydroxide) traceable to SRM from NIST und PTB pH 12.00 (25 °C) Certipur®	12,00	Disodium hydrogen phosphate Sodium hydroxide	4 l	**1.99022.4000**

Buffer solutions, ready to use, referenced at 25 °C, Certipur®

Materials for the precise calibration and monitoring of pH meters.

- Traceable to NIST primary standard and PTB - deviation max. ±0,01 (except pH 10 with ±0,02)
- Larger 4 litre pack sizes in easy to use Titripac® packaging which eliminates contamination issues
- Colour coded buffers at pH values 4,00 7,00 and 10,00 are available
- Reference temperature: +25 °C

All buffer solutions are measured and qualified in a DIN EN ISO 17025/IEC accredited laboratory for pH measurement.

Packaging: Plastic bottles (500 ml) or PE/aluminium Titripac® pack (4 litre)

pH value	Contents	Pk	Cat. No.
1,00	Glycine, sodium chloride, hydrogen chloride	500 ml	**1.09441.0500**
1,00	Glycine, sodium chloride, hydrogen chloride	4 l	**1.09441.4000**
2,00	Citric acid, sodium hydroxide, hydrogen chloride	500 ml	**1.09442.0500**
2,00	Citric acid, sodium hydroxide, hydrogen chloride	4 l	**1.09442.4000**
3,00	Citric acid, sodium hydroxide, hydrogen chloride	500 ml	**1.09444.0500**
3,00	Citric acid, sodium hydroxide, hydrogen chloride	4 l	**1.09444.4000**
4,00	Citric acid, sodium hydroxide, hydrogen chloride	500 ml	**1.09445.0500**
4,00	Citric acid, sodium hydroxide, hydrogen chloride	4 l	**1.09445.4000**
4,00 (red)	Citric acid, sodium hydroxide, hydrogen chloride	500 ml	**1.99054.0500**
4,00 (red)	Citric acid, sodium hydroxide, hydrogen chloride	4 l	**1.99054.4000**
4,01	Potassium hydrogen phthalate	500 ml	**1.09406.0500**
4,01	Potassium hydrogen phthalate	4 l	**1.09406.4000**
5,00	Citric acid, sodium hydroxide	500 ml	**1.09446.0500**
5,00	Citric acid, sodium hydroxide	4 l	**1.09446.4000**
6,00	Citric acid, sodium hydroxide	500 ml	**1.99036.0500**
6,00	Citric acid, sodium hydroxide	4 l	**1.99036.4000**
7,00	Disodium hydrogen phosphate, potassium dihydrogen phosphate	4 l	**1.09407.4000**
7,00 (yellow)	Disodium hydrogen phosphate, potassium dihydrogen phosphate	500 ml	**1.99057.0500**
7,00 (yellow)	Disodium hydrogen phosphate, potassium dihydrogen phosphate	4 l	**1.99057.4000**
8,00	Boric acid, sodium hydroxide, hydrogen chloride	500 ml	**1.99038.0500**
8,00	Boric acid, sodium hydroxide, hydrogen chloride	4 l	**1.99038.4000**
9,00	Boric acid, sodium hydroxide, potassium chloride	500 ml	**1.09408.0500**
9,00	Boric acid, sodium hydroxide, potassium chloride	4 l	**1.09408.4000**
10,00	Boric acid, sodium hydroxide, potassium chloride	500 ml	**1.09409.0500**
10,00	Boric acid, sodium hydroxide, potassium chloride	4 l	**1.09409.4000**
10,00 (blue)	Boric acid, sodium hydroxide, potassium chloride	500 ml	**1.99050.0500**
10,00 (blue)	Boric acid, sodium hydroxide, potassium chloride	4 l	**1.99050.4000**
11,00	Boric acid, sodium hydroxide, potassium chloride	500 ml	**1.99041.0500**
11,00	Boric acid, sodium hydroxide, potassium chloride	4 l	**1.99041.4000**
12,00	Disodium hydrogen phosphate Sodium hydroxide	4 l	**1.99022.4000**

Pocket conductivity meter, LAQUAtwin B-771
Horiba

This meter features a unique flat sensor that enables quick, accurate and direct measurements of micro samples as small as 0,12 ml. The sensor does not need to be dipped into the sample, a few drops are sufficient. Ideal for quick field testing of fresh water (rain, rivers, lakes, hot springs) and soil, as well as for an accurate analysis of surface cleanliness prior to coating and painting.

- Measures conductivity, salt and TDS
- Auto range change, automatic temperature compensation
- Auto hold, automatic power off after 15 minutes
- Durable waterproof ABS housing
- Replaceable electrode

Delivery information: Supplied with two batteries, pipette, instruction manual, quick manual, storage case, standard solution (1,41 mS/cm) and treatment reagent (14 ml).

Model	B-771
Conductivity - range	0 - 19,9 mS/cm
Conductivity - resolution	1 µS/cm (0 - 199 µS/cm) 0,01 mS/cm (0,20 - 1,99 mS/cm) 0,1 mS/cm (2,0 - 19,9 mS/cm) 1 mS/cm (20 - 199 mS/cm)
Conductivity - accuracy	±2% F.S. (for each range) ±1digit
Conductivity - calibration	1- or 2-point
Salinity - range	0 - 1,1%
TDS - range	0 - 9900 ppm
Display	Custom (monochrome) digital LCD
Power supply	2 × CR2032 batteries
W×D×H (mm)	164×29×20
Weight (kg)	0,045 (without batteries)
Compliance	IP67

Description	Pk	Cat. No.
Pocket conductivity meter LAQUAtwin B-771	1	**663-0229**

Description	Pk	Cat. No.
Accessories		
Conductivity standard solution (12,9 mS/cm) Y071H, in bottle, 14 ml	6	**663-0238**
Conductivity standard solution (1,41 mS/cm) Y071L, in bottle, 14 ml	6	**663-0239**
Replacement conductivity sensor S070, flat and waterproof, for B-771	1	**662-1493**

main unit only

Conductivity meter, handheld, VARIO Cond
WTW

Ultra-pure water cell

VARIO Cond

Compact, light, easy to use conductivity meter, perfect for measuring conductivity of pure water in the semiconductor industry or cell culture laboratories, and for maintaining water treatment equipment.

- Rubber casing for more convenient handling
- Extremely wide measurement range
- TetraCon® measurement 4-electrode cell or LR/01 V cell for measuring conductivity of ultrapure water, with drainage reservoir
- Touch screen
- Battery provides power for up to 500 hours of continuous operation; the device switches off automatically if not used for 10 minutes

Ordering information: Supplied in a carrying case serving as a kit with one measurement cell for ultrapure water or one four-electrode TetraCon® cell and a 0,01 mol/l solution of KCl.

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Model	VARIO Cond with TetraCon V	VARIO Cond with LR/01 V
Conductivity - range	0,00 - 19,99 / 0,0 - 199,9 mS/cm	0,00 - 19,99 / 0,0 - 199,9 / 0 - 1999 µS/cm
Conductivity - cell constant	0,475 cm^{-1}	0,1 cm^{-1}
Resistivity - range	0,000 - 1,999 / 0,00 - 19,99 / 0,0 - 199,9 / 0 - 1999 MΩ/cm	
Salinity - range	0,0 - 70,0 ppt	
TDS - range	0 - 1999 mg/l	
Temperature range (°C)	–5,0...+105,0	
Temperature resolution (°C)	0,1	
W×D×H (mm)	140×80×33 (without probe)	
Weight (kg)	0,115 (without probe and battery)	
Compliance	IP 65	

Description	Pk	Cat. No.
VARIO Cond Set, incl. TetraCon® 4-electrode cell	1	**663-1922**
VARIO Cond Set, incl. ultrapure water cell LR/01 V	1	**663-1923**

VWR COLLECTION

main unit only

Conductivity/TDS/°C meter, bench, pHenomenal® CO 3100 L

This user friendly instrument with articulated electrode stand and IP 43 rated housing provides high resolution and accuracy for precise measurements. With USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight showing both conductivity/TDS and temperature values simultaneously
- Data logging function selectable between 1 minute and 1 hour; memory capacity of 5000 data sets
- Automatic power shut-off: Adjustable from 10 min to 24 h
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when re-calibration is required
- Choice of mains supply or 4× 'AA' batteries for over 1000 operating hours

Ordering information: Ready to use conductivity CO 3100 L set includes instrument, conductivity probe CO 11 with built-in temperature sensor, 1,5 m cable and articulated stand, standard and plastic beaker and instruction manual (22 languages) on CD ROM.

Model	CO 3100 L
Conductivity - range	0,001 µS/cm - 1000 mS/cm
Conductivity - resolution	Min. 0,001 µS/cm (depending on probe)
Conductivity - accuracy	±0,5% of measured value
Conductivity - cell constant	0,001 - 25 (depending on probe)
Conductivity - calibration	1-point
Resistivity - range	1 Ω/cm - 999 MΩ/cm
Resistivity - resolution	Min. 1 Ω/cm
Resistivity - accuracy	±0,5% of measured value
Salinity - range	0,00 - 70 ppt
TDS - range	0 mg/l - 199,9 g/l
TDS - resolution	0,1 mg/l / 1 mg/l / 0,01 g/l
TDS - accuracy	±0,5% of measured value
Temperature range (°C)	–5...+105,0
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,2
Temperature compensation	Automatic and manual: 0,001 to 2,500%/°C or without compensation
Display	Graphic LCD display with LED backlight
Data logging - capacity	5000 data sets
Data logging - log function	Selectable between 1 minute and 1 hour
Connections	8-pin connection for conductivity and temperature
Outputs	Watertight (IP 43) USB connection (slave, bidirectional)
Power supply	4× AA batteries
Compliance	IP 43 / GLP

Description	Pk	Cat. No.
Bench conductivity/TDS/°C meter CO 3100 L, pHenomenal®	1 SET	**663-0233**

Description	Pk	Cat. No.
Conductivity cell, pHenomenal®		
pHenomenal® CO11, 2-pole graphite, integrated NTC 30	1	**663-0147**
Accessories		
pHenomenal® electrode storage tube	1	**662-1167**
pHenomenal® storage/measuring vessel	1	**662-1248**
pHenomenal® communication kit (CD-ROM, USB cable, manual)	1	**662-1225**
pHenomenal® electrode stand, holds up to 4 electrodes + 1 temperature sensor	1	**662-1169**
Conductivity standard, KCl 0,01 mol/l; 1413 mS/cm	100 ml	**83607.180**
Conductivity standard, KCl 0,1 mol/l; 12 800 µS/cm	500 ml	**83608.260**

main unit only

Conductivity meters, bench, Lab 960 / 970
SI Analytics

Lab 960 Set

Wireless transmission of electrode identification data

High-precision instruments which guarantee fast, reliable and accurate results.

- Membrane keypad, wide LCD and visible and audible alarm
- With integral RS232 interface and USB port for transmitting data to a PC without the need for a specific adapter
- Lab 970: Automatic detection of connected electrodes via sensors with wireless transmission of data to the instrument
- Certificates of quality available for all instruments

Ordering information: Lab 960 Set includes the meter, one conductivity cell LF 813 T (polymer) and one conductivity testing solution KCl 0,01 mol/l; Lab 970 Set includes the meter, one conductivity cell LF 913 T ID (glass) and one conductivity testing solution KCl 0,01 mol/l.

Model	Lab 960	Lab 970
Conductivity - range	0,000 µS/cm - 500 mS/cm	
Conductivity - accuracy	±0,5%	
Conductivity - cell constant	Fixed: 0,010 Adjustable: 0,090 - 0,110/0,250 - 2,500 Calibrated: 0,450 - 0,500/0,585 - 0,715/0,800 - 1,200	
Temperature range (°C)	–5...+120	
Temperature accuracy (°C)	±0,1	
Display	Wide screen LCD monitor	
Data logging - capacity	800 data points (manual or automatic)	-
Connections	PT1000 / NTC30 kOhm temperature probes	
Outputs	Bidirectional RS232 interface, USB port	
W×D×H (mm)	190×240×80 mm	
Weight (kg)	1	
Compliance	GLP	

Description	Pk	Cat. No.
Lab 960 Set (incl. cover, arm stand and power supply)	1	**663-0096**
Lab 970 Set (incl. cover, arm stand and power supply)	1	**663-0108**

Conductivity cells
SI Analytics

Robust conductivity cells for on-line measuring. Cells are either available with POM shaft or with glass shaft for high chemical resistance.

- Screw plug head with thread Pg 13.5
- LF 1101 versions and LF 1051 with platinum plates
- LF 5101 versions and LF 71 T with platinum rings
- HD electrode: Certified pressure and temperature consistency according to DIN EN 10204

Pressure range: 10 bar

Delivery information: All electrodes (except LF 1101 T HD) supplied with washer 9980/52 and O-ring type 9932/07. LF 1101 T HD is supplied with HD sealing type 9980/51. Connecting cables need to be ordered separately.

Description	Type	Conductivity	Cell constant	Temp. (°C)	Material	Ø×L (mm)	Connection	Pk	Cat. No.
2-pole conductivity cell	LF 1101	0 - 200	1,0 cm^{-1}	–30...+100	Glass	12×120	Screw plug head	1	**662-1754**
2-pole conductivity cell, with PT1000 temperature sensor	LF 1101 T	0 - 200	1,0 cm^{-1}	–30...+100	Glass	12×120	SMEK screw plug head	1	**662-1755**
2-pole conductivity cell	LF 1051	0 - 100	0,5 cm^{-1}	–30...+100	Glass	12×120	Screw plug head	1	**662-1753**
2-pole conductivity cell	LF 5101	0 - 200	1,0 cm^{-1}	0...+80	POM	12×120	Screw plug head	1	**662-1756**
2-pole conductivity cell, with PT1000 temperature sensor	LF 5101 T	0 - 200	1,0 cm^{-1}	0...+80	POM	12×120	Screw plug head	1	**662-1757**

Combined conductivity electrode, MultiSens
SI Analytics

Multifunctional 4-pole conductivity cell with integrated temperature sensor (PT1000).

- Screw plug head with thread Pg 13.5
- Four platinum rings

Pressure range: 6 bar

Delivery information: Supplied with washer 9980/52 and O-ring type 9932/07. Connecting cable needs to be ordered separately.

Type	Conductivity	Cell constant	Temp. (°C)	Material	Ø×L (mm)	Connection	Pk	Cat. No.
LF 4TH 60-120	0 - 1000	1,0 cm^{-1}	–5...+80	Glass	12×120	VP plug head	1	**662-1758**

Conductivity/°C meter, bench, SevenCompact™ S230
Mettler-Toledo

Intuitive and powerful meter combining precise electrochemical measurement technologies with flexibility, innovative design and ease of use. Measures conductivity, salinity, total dissolved solids, resistivity and conductivity ash. Ideal for a wide range of applications.

Regulations
Pure & ultra-pure water: USP/EP compliant
Bioethanol: ABNT NBR 10547:2006
Sugar analysis: ICUMSA GS2/3-17 and GS 1/3/4/7/8-13

- User friendly operation, clear, well arranged colour display
- Menu guidance in 10 languages
- GLP-compliant
- Service offering, including IQ/OQ
- Supports ISM® technology (Intelligent Sensor Management)

Ordering information: S230-Basic includes instrument (without electrode), electrode holder, protective cover, operating instructions, quick guide, declaration of conformity and test certificate.
S230-Kit includes instrument, InLab® 731-ISM conductivity probe, guide to conductivity and dissolved oxygen, 2 calibration sachets for 1413 µS/cm and 12,88 mS/cm, electrode holder, protective cover, quick guide, declaration of conformity and test certificate.

S230-USP/EP supplied with the same items as for S230-Kit with the exception that the InLab® 741-ISM electrode replaces the InLab® 731-ISM, and without 12,88 mS/cm calibration sachets.

Model	S230
Conductivity - range	0,001 µS/cm - 1000 mS/cm
Conductivity - resolution	0,001 - 1
Conductivity - accuracy	±0,5%
Conductivity - calibration	1-point with 13 predefined calibration standards or 1 user-defined calibration standard
Resistivity - range	0,00 - 100,0 MΩ/cm
Resistivity - resolution	0,00 - 1,0 MΩ/cm
Resistivity - accuracy	±0,5%
Salinity - range	0,00 - 80,00 ppt
Salinity - resolution	0,00 - 1,0
Salinity - accuracy	±0,5%
TDS - range	0,00 mg/l - 1000 g/l
TDS - resolution	0,1 - 1
TDS - accuracy	±0,5%
Temperature range (°C)	Manual: –30,0...+130,0 Automatic: –5,0...+130,0
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,1
Temperature compensation	Manual / automatic
Display	TFT
Data logging - capacity	1000 measurements
Connections	Mini-DIN (conductivity and temperature sensor, combined), Mini-DIN (stirrer), mini-LTW (digital sensor)
Outputs	RS232, USB-A, USA-B
W×D×H (mm)	204×174×74
Weight (kg)	0,89
Compliance	IP 54; GLP; Pure & ultrapure water - USP/EP compliant, Bioethanol - ABNT NBR 10547:2006, Sugar analysis - ICUMSA GS2/3-17 and GS 1/3/4/7/8-13

Description	Pk	Cat. No.
SevenCompact™ S230-Basic	1	**663-0179**
SevenCompact™ S230-Kit	1	**663-0192**
SevenCompact™ S230-USP/EP	1	**663-0193**

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Description	Material	Conductivity (mS/cm)	Cell constant	Temp. (°C)	Connection	Ø×L (mm)	Pk	Cat. No.
Conductivity cells, ISM®								
InLab® 731-ISM®	Epoxy / Graphite	0,01 - 1000	0,57 cm^{-1}	0...+100	Fixed cable (1,2 m), Mini-DIN	12×120	1	**663-0176**
InLab® 731-ISM®-2m	Epoxy / Graphite	0,01 - 1000	0,57 cm^{-1}	0...+100	Fixed cable (2 m), Mini-DIN	12×120	1	**663-0177**
InLab® 741-ISM®	Stainless steel	0,001 - 500	0,105 cm^{-1}	0...+100	Fixed cable (1,2 m), Mini-DIN	12×120	1	**663-0178**

Conductivity meter, bench, SevenExcellence™, S700

Mettler-Toledo

This convenient, reliable instrument is suitable for complex applications and stringent requirements in regulated markets as well as for routine measurement tasks in laboratories. It offers various conductivity based measurement parameters and can also be modularly expanded with additional measurement parameters at any time. For special applications such as USP/EP and conductivity ash it guides users through the measurement steps and notifies them when a measurement is out of range.

Regulations
Pure & ultra-pure water: USP/EP compliant
Bioethanol: ABNT NBR 10547:2006
Sugar Analysis: ICUMSA GS2/3-17 and GS 1/3/4/7/8-13

- Large colour display, user friendly touch screen and menu guidance in 10 languages
- Flexible method concept (13 predefined and 20 user-defined methods) for high reproducibility and security
- Fits three modules in any composition and order, can be expanded with additional measurement parameters at any time
- Extra security thanks to sophisticated user management and Intelligent Sensor Management (ISM®)
- USB, Ethernet and RS232 interfaces allow connection of a barcode scanner, fingerprint reader, Rondolino sample changer, USB stick or network printer
- Electrode arm can be operated with one hand, moving straight up and down to bring the electrode to the perfect position (uPlace™)

Ordering information: S700 Basic, meter only, supplied with modules (conductivity expansion unit, two blank expansion units), uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.
S700 Kit: As S700-Basic but also with InLab® 731-ISM, guide to conductivity measurements and two calibration sachets for 1413 µS/cm and 12,88 mS/cm.
S700 Trace kit: As S700 kit but with InLab® Trace instead of InLab® 731-ISM, and flow cell, without calibration sachets.

Model	S700
Conductivity - range	0,001 µS/cm - 2000 ms/cm
Conductivity - resolution	0,001 - 1 (0,001 - 999999 µS/cm; 0,001 - 2000 mS/cm; 0,1 - 999999 µS/m) 0,0001 - 1 (0,001 - 200 S/m; 0,001 - 200000 mS/m)
Conductivity - accuracy	±0,5%
Conductivity - calibration	1-point
Resistivity - range	0,01 - 100 MΩcm
Resistivity - resolution	0,0001 - 1 (0,01 - 100 MΩcm) 0,01 - 1 (0,01 - 999999 Ωcm)
Resistivity - accuracy	±0,5%
Salinity - range	0,01 - 80 ppt
Salinity - resolution	0,01 - 0,1
Salinity - accuracy	±0,5%
TDS - range	0,001 - 1000 g/l, ppt 0,001 - 999999 mg/l, ppm
TDS - resolution	0,001 - 1
TDS - accuracy	±0,5%
Temperature range (°C)	–30...+130
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,1
Temperature compensation	Linear, non linear, off, pure water
Reference temperature	20/25 °C
Display	TFT colour display
Data logging - capacity	20000 data points, 250 analyses
Connections	Mini-DIN (conductivity + temperature), NTC30 kΩ or PT1000 (external temperature input), Mini-LTW digital sensor input, Mini-DIN stirrer connection
Outputs	USB, RS232, LAN
W×D×H (mm)	235×188×75
Weight (kg)	1,12
Compliance	GLP, USP/EP compliant, ABNT NBR 10547:2006, ICUMSA GS2/3-17 and GS 1/3/4/7/8-13

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Description	Pk	Cat. No.
Conductivity meter S700 Basic	1	**662-1475**
Conductivity meter S700 Kit	1	**662-1476**
Conductivity meter S700 Trace kit	1	**662-1477**

Description	Pk	Cat. No.
Accessories		
Module, pH/Ion expansion unit	1	**662-1468**
Module, pH/mV expansion unit	1	**662-1474**
Module, conductivity expansion unit	1	**662-1469**
Module, blank expansion unit	1	**662-1470**
uMix™ magnetic stirrer, adjustable stir speed	1	**662-1471**
Semi-transparent cover	1	**662-1472**
Protective film for display	2	**662-1473**

IP67

Conductivity cells, ISM®
Mettler-Toledo

High-performance electrodes combining robustness with state-of-the-art measurement technology. Compatible with either SevenExcellence™ and SevenCompact™ meters (663-0176/663-0177/663-0178) or with SevenGo Duo™ SG23 and SevenGo Duo pro™ SG78 meters (663-000/663-0145). Fully traceable.

The revolutionary intelligent sensor management system (ISM®) offers the user an even greater level of security. The calibration data is stored on a chip in the sensor and is used automatically when the sensor is connected to the meter. This ensures that the meter always uses the latest calibration data.

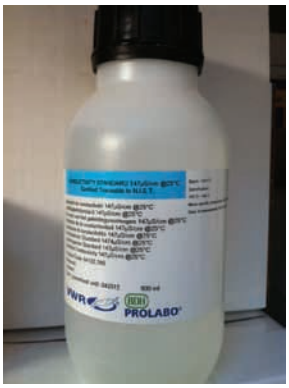
Temperature range: 0...+100 °C (with NTC 30 kΩ)
Ø×L: 12×120 mm

Ordering information: Supplied with test certificate.

Type	Conductivity (mS/cm)	Cell constant	Temp. (°C)	Material	Ø×L (mm)	Connection	Pk	Cat. No.
InLab® 731-ISM®	0,01 - 1000	0,57 cm^{-1}	0...+100	Epoxy / Graphite	12×120	Fixed cable (1,2 m), Mini-DIN	1	**663-0176**
InLab® 731-ISM®-2m	0,01 - 1000	0,57 cm^{-1}	0...+100	Epoxy / Graphite	12×120	Fixed cable (2 m), Mini-DIN	1	**663-0177**
InLab® 738-ISM®	0,01 - 1000	0,57 cm^{-1}	0...+100	Epoxy / Graphite	12×120	Fixed cable (1,8 m), LTW	1	**663-0000**
InLab® 741-ISM®	0,001 - 500	0,105 cm^{-1}	0...+100	Stainless steel	12×120	Fixed cable (1,2 m), Mini-DIN	1	**663-0178**
InLab® 742-ISM®	0,001 - 500	0,105 cm^{-1}	0...+100	Stainless steel	12×120	Fixed cable (1,8 m), LTW	1	**663-0145**

VWR CHEMICALS PROLABO

Conductivity standard solutions



A complete range of certified control standards with values ranging from 20 to 100 000 µS to meet all the requirements for electrochemical analysis.

- Accurate to ±1%
- Traceable to NIST, meeting Eur. Ph. and USP requirements
- Tested using INAB accredited test methods to ISO 17025

Standard values (25 °C)

Used for determining cell constant - see recommendations of instrument manufacturer for the relevant cell design.

Premium values (25 °C)

These standards are for verifying that the measuring system (instrument, probe and operator) can accurately detect sample values in the area of interest (e.g. 20 µS/cm for pharmaceutical water, or 100 000 µS/cm for environmental samples).

- Stable aqueous-based 20 µS conductivity standard

Description	Pk	Cat. No.
Standard values		
Conductivity standard 84 µS/cm (25 °C)	100 ml	**84131.180**
Conductivity standard 84 µS/cm (25 °C)	500 ml	**84131.260**
Conductivity standard 147 µS/cm (25 °C)	100 ml	**84132.180**
Conductivity standard 147 µS/cm (25 °C)	500 ml	**84132.260**
Conductivity standard 1413 µS/cm (25 °C)	100 ml	**84135.180**
Conductivity standard 1413 µS/cm (25 °C)	500 ml	**84135.260**
Conductivity standard 12880 µS/cm (25 °C)	100 ml	**84136.180**
Conductivity standard 12880 µS/cm (25 °C)	500 ml	**84136.260**

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Description	Pk	Cat. No.
Premium values		
Premium conductivity standard 10 µS/cm	500 ml	**84137.260**
Premium conductivity standard 20 µS/cm	500 ml	**84140.260**
Premium conductivity standard 50 µS/cm	500 ml	**84143.260**
Premium conductivity standard 100 µS/cm	500 ml	**84139.260**
Premium conductivity standard 200 µS/cm	500 ml	**84145.260**
Premium conductivity standard 500 µS/cm	500 ml	**84138.260**
Premium conductivity standard 1000 µS/cm	500 ml	**84141.260**
Premium conductivity standard 10000 µS/cm	500 ml	**84146.260**
Premium conductivity standard 50000 µS/cm	500 ml	**84142.260**
Premium conductivity standard 100000 µS/cm	500 ml	**84144.260**

Conductivity standards, Certipur®

The conductivity sachets are convenient, easy to use and ensure accurate and reliable results both in the field or in the laboratory. The 30 ml sachets always provide a fresh solution and prevent contamination by microorganisms, CO_2 or other substances. The conductivity sensor can be simply inserted in the sachet.

- Traceable to PTB and NIST
- Tested against primary reference standards

Description	Pk	Cat. No.
Conductivity standard (water), 0 µS/cm, in plastic bottles, 5×100 ml	500 ml	**1.01810.0105**
KCl 0,0001 mol/l, 15 µS/cm, in plastic bottles, 5×100 ml	5	**1.01811.0105**
KCl 0,001 mol/l, 147 µS/cm, sachets of 30 ml	30	**1.01586.0001**
KCl 0,001 M, 147 µS/cm, in 500 ml plastic bottle	500 ml	**1.01557.0500**
KCl 0,01 M, 1410 µS/cm, sachets of 30 ml	30	**1.01553.0001**
KCl 0,01 M, 1410 µS/cm, in 500 ml plastic bottle	500 ml	**1.01203.0500**
KCl 0,1 M, 12 800 µS/cm, sachets of 30 ml	30	**1.01554.0001**
KCl 0,1 M, 12 800 µS/cm, in 500 ml plastic bottle	500 ml	**1.01254.0500**
KCl 1 M, 111 000 µS/cm, in 500 ml plastic bottle	500 ml	**1.01255.0500**

Burettes, straight stopcock

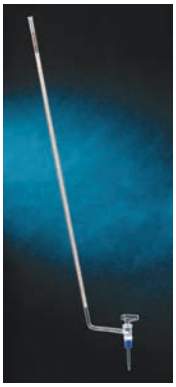
Borosilicate 3.3 glass, class AS

- Schellbach stripe, stopcock with glass key
- High contrast blue enamel graduations
- Batch certificate included

DIN EN ISO 385

Capacity (ml)	Division (ml)	Tolerance (± ml)	Scale length (mm)	Pk	Cat. No.
10	0,05	0,02	500	1	**612-4139**
25	0,05	0,03	500	1	**612-4140**
50	0,1	0,05	500	1	**612-4141**

Burettes, lateral stopcock



Borosilicate 3.3 glass, class AS

- Schellbach stripe, stopcock with glass key
- High contrast blue enamel graduations
- Batch certificate included

DIN EN ISO 385

Capacity (ml)	Division (ml)	Tolerance (± ml)	Scale length (mm)	Pk	Cat. No.
10	0,05	0,02	500	1	**612-4142**
25	0,1	0,03	500	1	**612-4143**
50	0,1	0,05	500	1	**612-4144**

Titrator, compact, G20, One Click Titration™
Mettler-Toledo

This reliable titrator is designed for basic routine applications and titrations in the analysis of food, water and chemicals. The One Click™ user interface is optimised for direct access to all routine tasks and provides clear information to the user. It offers four shortcut buttons for immediate start of routine operations and user-specific home screens with customisable shortcuts and user-defined operation languages.

- Easy to use, large, colour touch screen with One Click™ user interface enables users to execute routine procedures with just one touch
- Plug & Play: Titrant and sensor are automatically detected upon connection to the titrator and all applicable data is stored on the burette or sensor chip
- More than 20 pre-programmed standard methods from diverse application areas can be used directly or adapted to user needs
- Wide selection of standard calculations which can also be adapted to modified method parameters
- Sensor inputs: Potentiometric/polarised; Reference; PT1000 temperature

Ordering information: Supplied with integrated burette drive, DGi115-SC Plug & Play sensor, compact rod stirrer and 20 ml burette. Other accessories, such as software, printers and dosing units, need to be ordered separately.

Model	G20
Display	QVGA 5,7" colour TFT
Stirrer connection	Yes
Dosing accuracy	0,2% of the burette volume
Filling time	20 s
Burette resolution	1 µl (20 ml burette)
Method storage	>20 pre-programmed; 5 user methods
mV - range	± 2000
mV - resolution	0,1
Polarisation - range (µA)	0 - 200
Polarisation - resolution (µA)	0,1

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Polarisation - accuracy (µA)	0,2
Measurement units	mV, µA, °C
Connections	Ethernet, COM, USB, CAN Bus, TTL-I/O
W×D×H (mm)	210×333×320
Weight (kg)	4,2

Description	Pk	Cat. No.
Titrator G20	1	**661-0159**

Description	Diaphr.	Electrolyte	Connection	Temp. (°C)	Pk	Cat. No.
Combined pH electrodes						
Combined glass pH electrode DG111-SC, with integrated glass sleeve	Ceramic frit	3 mol/l KCl	S7 screw cap, detachable cable	0...+80	1	**662-1653**
Combined glass pH electrode DG113-SC, with integrated glass sleeve	Movable PTFE sleeve junction	LiCl 1 mol/l	S7 screw cap, detachable cable	0...+60	1	**662-2736**
Combined glass pH electrode DG115-SC, with integrated glass sleeve	Fixed ground glass sleeve junction	3 mol/l KCl	S7 screw cap, detachable cable	0...+100	1	**662-2737**
Combined glass pH electrode DG115-SC, Plug & Play, with integrated glass sleeve and sensor chip	Fixed ground glass sleeve junction	3 mol/l KCl	S12 plug	0...+100	1	**662-1669**
Redox combined electrodes						
Combined platinum ring electrode DM140-SC, with integrated glass sleeve	Ceramic frit junction	KCl 3 mol/l saturated with AgCl	S7 screw cap, detachable cable	0...+80	1	**662-1654**
Combined silver ring electrode DM141-SC, with integrated glass sleeve	Ceramic frit junction	KNO_3 1 mol/l	S7 screw cap, detachable cable	0...+80	1	**662-1655**
Double platinum electrode, DM143-SC						
Double pin platinum electrode, DM143-SC, with integrated glass sleeve	-	-	S7 screw cap, detachable cable	0...+80	1	**661-1002**

Description	Pk	Cat. No.
Accessories		
Standard beaker, PP, 100 ml	120	**661-0175**
Glass beaker, 80 ml	20	**661-0156**
Standard beaker, PP, 100 ml	480	**661-0120**
DP5 Phototrode™ with 5 selectable wavelengths, for two-phase titrations, incl. Y cable and power supply unit	1	**661-0174**
LEMO cable for electrode connection	1	**661-0155**
Interchangeable burette DV1005, 5 ml	1	**661-0165**
Interchangeable burette DV1020, 20 ml	1	**661-0166**
Compact overhead stirrer with two propellers	1	**661-0173**
Compact printer USB-P25, with USB interface, for standard paper (57,5 mm)	1	**661-0157**
OKI B401d A4 laser printer, EU-plug	1	**661-0122**
USB cable 1.8 m for PC or printer	1	**661-0103**
Ink cartridge OKI B401d, black	1	**661-0123**
Replaceable protective sheet for touch screen	1	**661-0097**

Titrators, Titronic® 500 and TitroLine® 6000 / 7000
SI Analytics

TitroLine® 6000 / 7000

Titronic® 500

Automatic titrators TitroLine® 6000 and TitroLine® 7000 are used in the laboratories of water supply companies and wastewater treatment plants, and the food and chemical industries. Typical applications include analysis of alkalinity and carbon dioxide, nitrogen (Kjeldahl), chloride, COD, acid number, iodine number, and others. The piston burette Titronic® 500 is used in all industry sectors. Applications include all manual titration and dosing tasks and sample preparation.

- Brilliant, high contrast TFT display
- Compact exchangeable units (5/10/20/50 ml) can store all reagent specific data plus the unit size (TitroLine® 6000/7000 only)
- Connection of stirrer, keyboard, printer, balance, PC and USB storage media can be done via 3 USB and 2 RS232 ports
- Standard methods and formulae allow easy generation of up to 50 user-defined methods
- Common functions: Manual titration, dosing tasks, formulae for miscellaneous calculations

Ordering information: Titronic® 500 basic unit: Supplied with magnetic stirrer TM 235, exchangeable unit (20 ml), stand rod TZ 1510, electrode clamp Z 305,

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manual controller TZ 3880 and power supply (100 - 240 V).

TitroLine® 6000 basic unit: Supplied with magnetic stirrer TM 235, exchangeable unit (10, 20 or 50 ml), incl. brown glass bottle for titration reagent, GL 45 and S 40 bottle adapters, hoses, drip off tube and titration tip.

TitroLine® 7000 basic unit: Supplied with magnetic stirrer TM 235, exchangeable unit (10, 20 or 50 ml), incl. brown glass bottle for titration reagent, GL 45 and S 40 bottle adapters, hoses, drip off tube and titration tip.

Model	Titronic® 500	TitroLine® 6000	TitroLine® 7000
Display	High contrast TFT display		
Dosing volume	20 ml	10 / 20 / 50 ml	
Functions	Preparation of solvents (manual or automatic with connected balance)	pH/mV measuring input with reference input; Titration to mV and pH end point; Dynamic and linear titration to equivalence point (EQ), mV and pH; Dead stop titration	pH/mV measuring input with reference input; Titration to mV and pH end point; Dynamic and linear titration to equivalence point (EQ), mV and pH; Dead stop titration; pH-stat titration; Especially suitable for non aqueous titration
Method storage	5	10	50
Measuring input electrode	-	2×4 mm socket	
Connections	3×USB, 2×RS232		
W×D×H (mm)	153×296×450		
Weight (kg)	3,5 kg		

Description	Pk	Cat. No.
Titronic® 500 with magnetic stirrer and 20 ml exchangeable unit	1	**661-0121**
TitroLine® 6000 with magnetic stirrer and 10 ml exchangeable unit	1	**661-0111**
TitroLine® 6000 with magnetic stirrer and 20 ml exchangeable unit	1	**661-0112**
TitroLine® 6000 with magnetic stirrer and 50 ml exchangeable unit	1	**661-0113**
TitroLine® 7000 with magnetic stirrer and 10 ml exchangeable unit	1	**661-0114**
TitroLine® 7000 with magnetic stirrer and 20 ml exchangeable unit	1	**661-0115**
TitroLine® 7000 with magnetic stirrer and 50 ml exchangeable unit	1	**661-0116**

Description	Pk	Cat. No.
Accessories		
Exchangeable unit, 5 ml	1	**661-0124**
Exchangeable unit, 10 ml	1	**661-0125**
Exchangeable unit, 20 ml	1	**661-0126**
Exchangeable unit, 50 ml	1	**661-0127**
Stop pin for titration clamp	1	**661-0181**
Titration software TitriSoft 3.0	1	**661-1010**
USB thermal printer, TZ 3863, 112 mm	1	**661-1008**
Thermal paper TZ 3864, for printer TZ 3863, very high durability (5 rolls)	5	**661-1009**
PC keyboard, USB connection	1	**661-0128**

VWR BDH PROLABO CHEMICALS

Volumetric solutions AVS TITRINORM®

- Traceable to SRM from NIST
- No costly preparation time
- Variety of pack sizes/pack types: 250 ml up to 20 l, in bottles, bag-in-box or bulk packs
- Manufactured from analytical grade products, within an accuracy of 0,2%
- High reproducibility, labelled with minimum shelf life/batch number

Description	Pk	Cat. No.
Acetic acid 1 mol/l (1 N) AVS TITRINORM® volumetric solution	1 l	**30010.292**
Ammonium cerium (IV) sulphate 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**2678.1000**
Calcium chloride 1 mol/l in aqueous solution AVS TITRINORM® volumetric solution	1 l	**190464K**
Cerium (IV) sulphate 0.05 mol/l (0.05 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31307.294**
Cerium (IV) sulphate 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	2,5 l	**190475N**
EDTA disodium salt 0.01 mol/l (0.02 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**160226G**
EDTA disodium salt 0.05 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30031.294**
EDTA disodium salt 0.1 mol/l (0.2 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**28662.290**
EDTA disodium salt 0.1 mol/l (0.2 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**28662.370**
Hydrochloric acid 0.01 mol/l (0.01 N) VOLUSOL® volumetric solution	1 l	**311341.1000**
Hydrochloric acid 0.02 mol/l (0.02 N) AVS TITRINORM® volumetric solution	1 l	**98052.296**
Hydrochloric acid 0.04 mol/l (0.04 N) AVS TITRINORM® according to the NF T 90-036 standard, volumetric solution	1 l	**30022.293**
Hydrochloric acid 0.1 mol/l (0.1 N) AVS TITRINORM® Reag. Ph. Eur. volumetric solution	1 l	**31955.293**
Hydrochloric acid 0.1 mol/l (0.1 N) AVS TITRINORM® Reag. Ph. Eur. volumetric solution	5 l	**31955.373**
Hydrochloric acid 0.2 mol/l (0.2 N) AVS TITRINORM® volumetric solution	1 l	**31983.290**
Hydrochloric acid 0.2 mol/l (0.2 N) AVS TITRINORM® volumetric solution	5 l	**31983.370**
Hydrochloric acid 0.357 mol/l (N/2.8) AVS TITRINORM® volumetric solution	1 l	**30023.296**
Hydrochloric acid 0.5 mol/l (0.5 N) AVS TITRINORM® Reag. Ph. Eur. volumetric solution	1 l	**31954.290**
Hydrochloric acid 0.5 mol/l (0.5 N) AVS TITRINORM® Reag. Ph. Eur. volumetric solution	5 l	**31954.368**
Hydrochloric acid 1 mol/l (1 N) AVS TITRINORM® volumetric solution	1 l	**30024.290**
Hydrochloric acid 1 mol/l (1 N) AVS TITRINORM® volumetric solution	5 l	**30024.370**

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Description	Pk	Cat. No.
Hydrochloric acid 2 mol/l (2 N) AVS TITRINORM® volumetric solution	1 l	**30025.293**
Hydrochloric acid 2 mol/l (2 N) AVS TITRINORM® volumetric solution	5 l	**30025.362**
Hydrochloric acid 2 mol/l (2 N) AVS TITRINORM® volumetric solution	5 l	**30025.373**
Hydrochloric acid 4 mol/l (4 N) VOLUSOL® volumetric solution	1 l	**310701.1000**
Hydrochloric acid 5 mol/l (5 N) AVS TITRINORM® volumetric solution	1 l	**30018.298**
Hydrochloric acid 5 mol/l (5 N) AVS TITRINORM® volumetric solution	5 l	**30018.360**
Hydrochloric acid 6 mol/l (6 N) AVS TITRINORM® Reag. Ph. Eur. 3001500 volumetric solution	5 l	**2611.5000**
Iodine 0.05 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30917.295**
Iodine 0.5 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	250 ml	**30914.238**
Iodine 0.5 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30914.295**
Nitric acid 1 mol/l (1 N) AVS TITRINORM® volumetric solution	1 l	**30065.291**
Oxalic acid 0.05 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30093.297**
Oxalic acid 0.5 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30086.293**
Perchloric acid 0.1 mol/l (0.1 N) in anhydrous acetic acid AVS TITRINORM® volumetric solution	1 l	**30110.297**
Perchloric acid 1 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30111.291**
Potassium chloride 3 mol/l (3 N) in aqueous solution AVS TITRINORM® electrolytic solution	500 ml	**83605.260**
Potassium chloride saturated with silver chloride aqueous solution 3 mol/l (3 N) in aqueous solution AVS TITRINORM® for filling electrodes	500 ml	**83606.260**
Potassium dichromate 0.04 mol/l (0,24 N) with mercury (II) sulphate 80 g/l in sulphuric acid solution AVS TITRINORM® volumetric solution, for COD determination in water	1 l	**30891.295**
Potassium dichromate 0.04 mol/l (0.24 N) in aqueous solution AVS TITRINORM® volumetric solution, for COD determination according to NFT 90-101 standard	1 l	**30892.298**
Potassium dichromate 1/6 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31396.291**
Potassium hydroxide 0.05 mol/l (0.05 N) in ethanol AVS TITRINORM® volumetric solution	1 l	**31305.297**
Potassium hydroxide 0.1 mol/l (0.1 N) AVS TITRINORM® volumetric solution	1 l	**31780.298**
Potassium hydroxide 0.1 mol/l (0.1 N) in ethanol AVS TITRINORM® volumetric solution	1 l	**31303.291**
Potassium hydroxide 0.1 mol/l (0.1 N) in methanol AVS TITRINORM® volumetric solution	1 l	**32304.291**
Potassium hydroxide 0.5 mol/l (0.5 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31950.296**
Potassium hydroxide 0.5 mol/l (0.5 N) in ethanol AVS TITRINORM® volumetric solution	1 l	**31308.297**
Potassium hydroxide 0.5 mol/l (0.5 N) in methanol AVS TITRINORM® volumetric solution	1 l	**31984.293**
Potassium hydroxide 1 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31300.291**
Potassium hydroxide 2 mol/l (2 N) in methanol AVS TITRINORM® volumetric solution	1 l	**32199.296**
Potassium permanganate 0.02 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31455.295**
Potassium permanganate 0.2 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31451.292**
Potassium thiocyanate 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31481.295**
Silver nitrate 0.01 mol/l (0.01 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30476.291**
Silver nitrate 0.05 mol/l (0.05 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30475.297**
Silver nitrate 0.0855 mol/l (0.0855 N; 14.52 g/l; 1 ml = 5 mg NaCl) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30488.292**
Silver nitrate 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30472.297**
Silver nitrate 1 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	250 ml	**30471.237**
Silver nitrate 1 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30471.294**
Silver sulphate 10 g/l in sulphuric acid AVS TITRINORM® volumetric solution, for COD determination according to NFT 90-101 standard	1 l	**30491.247**
Sodium carbonate 0.5 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31524.294**
Sodium chloride 1 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31535.292**
Sodium hydroxide 0.04 mol/l (0.04 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31769.290**
Sodium hydroxide 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31770.294**
Sodium hydroxide 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**31770.363**
Sodium hydroxide 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**31770.374**
Sodium hydroxide 0.25 mol/l (0.25 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31956.296**
Sodium hydroxide 0.2 mol/l (0.2 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31952.293**
Sodium hydroxide 0.5 mol/l (0.5 N) in aqueous solution AVS TITRINORM® Reag. Ph. Eur. volumetric solution	1 l	**31951.290**
Sodium hydroxide 0.5 mol/l (0.5 N) in aqueous solution AVS TITRINORM® Reag. Ph. Eur. volumetric solution	5 l	**31951.370**
Sodium hydroxide 0.5 mol/l (0.5 N) in aqueous solution AVS TITRINORM® Reag. Ph. Eur. volumetric solution	10 l	**31951.404**
Sodium hydroxide 10 mol/l (10 N) in aqueous solution VOLUSOL® volumetric solution	1 l	**310933.1000**
Sodium hydroxide 1 mol/l (1 N) in aqueous solution AVS TITRINORM® Reag. Ph. Eur. volumetric solution	1 l	**31627.290**
Sodium hydroxide 1 mol/l (1 N) in aqueous solution AVS TITRINORM® Reag. Ph. Eur. volumetric solution	5 l	**31627.368**
Sodium hydroxide 2 mol/l (2 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**98108.290**
Sodium hydroxide 2 mol/l (2 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**98108.360**
Sodium hydroxide 4 mol/l (4 N) in aqueous solution AVS TITRINORM® volumetric solution low in carbonate	5 l	**191376P**
Sodium hydroxide 4 mol/l (4 N) in aqueous solution AVS TITRINORM® volumetric solution low in carbonate	1 l	**191373M**
Sodium hydroxide 5 mol/l (5 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31624.290**
Sodium metaarsenite 0.05 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31531.298**
Sodium thiosulphate 0.01 mol/l (0.01 N) in aqueous solution VOLUSOL® volumetric solution	1 l	**309337.1000**
Sodium thiosulphate 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31553.294**
Sodium thiosulphate 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**31553.363**
Sodium thiosulphate 1 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**31547.293**
Sulphuric acid 0.01 mol/l (0.02 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**191736T**
Sulphuric acid 0.02 mol/l (0.04 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30146.291**
Sulphuric acid 0.05 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30150.295**
Sulphuric acid 0.05 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**30150.375**
Sulphuric acid 0.1 mol/l (0.2 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30145.297**
Sulphuric acid 0.25 mol/l (0.5 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30143.291**
Sulphuric acid 0.5 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30144.294**
Sulphuric acid 0.5 mol/l (1 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**30144.363**
Sulphuric acid 1 mol/l (2 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30149.291**
Sulphuric acid 1 mol/l (2 N) in aqueous solution AVS TITRINORM® volumetric solution	5 l	**30149.371**

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Description	Pk	Cat. No.
Sulphuric acid 2.5 mol/l (5 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30138.293**
Sulphuric acid 4 mol/l (8 N) in aqueous solution AVS TITRINORM® volumetric solution, for COD determination according to NFT 90-101 standard	1 l	**30148.297**
Tetrabutylammonium hydroxide 0.1 mol/l (0.1 N) in 2-propanol 90% (v/v) / Methanol 10% (v/v) AVS TITRINORM® volumetric solution	500 ml	**28533.261**
Tetrabutylammonium hydroxide 0.1 mol/l (0.1 N) in toluene 90% (v/v) / Methanol 10% (v/v) AVS TITRINORM® volumetric solution	500 ml	**28532.267**
Zinc sulphate 0.1 mol/l (0.1 N) in aqueous solution AVS TITRINORM® volumetric solution	1 l	**30498.296**

Volumetric solutions

Description	Pk	Cat. No.
Benzethonium chloride 0.004 mol/l	1 l	**1.15480.1000**
Cerium (IV) sulphate 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09092.1000**
Hydrochloric acid 0.1 mol/l (0.1 N) TitriPUR® volumetric solution	1 l	**1.09060.1000**
Hydrochloric acid 0.1 mol/l (0.1 N) TitriPUR® volumetric solution	10 l	**1.09060.9010**
Hydrochloric acid 1 mol/l (1 N) TitriPUR® volumetric solution	1 l	**1.09057.1000**
Hydrochloric acid 1 mol/l (1 N) TitriPUR® volumetric solution	2,5 l	**1.09057.2500**
Hydrochloric acid 1 mol/l (1 N) TitriPUR® volumetric solution	10 l	**1.09057.9010**
Potassium permanganate 0.02 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09122.1000**
Sulphuric acid 0.05 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09074.1000**
Sulphuric acid 0.05 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	4 l	**1.09074.4000**
Sulphuric acid 0.05 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	10 l	**1.09074.9010**
Sulphuric acid 0.25 mol/l (0.5 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09073.1000**
Sulphuric acid 0.25 mol/l (0.5 N) in aqueous solution TitriPUR® volumetric solution	4 l	**1.09073.4000**
Sulphuric acid 0.25 mol/l (0.5 N) in aqueous solution TitriPUR® volumetric solution	10 l	**1.09073.9010**

Concentrates in ampoules for volumetric solutions, Titrisol®

- Each ampoule is designed to produce 1 litre of volumetric solution
- Space saving, flexible and easy to use
- Individual concentrations can be prepared

Description	Pk	Cat. No.
Hydrochloric acid 1 mol concentrated aqueous solution Titrisol®	1 Ampoul	**1.09970.0001**
Sodium thiosulphate 0.1 mol concentrated aqueous solution Titrisol®	1 Ampoul	**1.09950.0001**
Sulphuric acid 0.5 mol concentrated aqueous solution Titrisol®	1 Ampoul	**1.09981.0001**
Titriplex® III	1 Ampoul	**1.09992.0001**

Volumetric solutions, TitriPUR®

- Certified and consistently high level of quality
- Traceable to NIST standard reference materials

Description	Pk	Cat. No.
Hydrochloric acid 0.1 mol/l (0.1 N) TitriPUR® volumetric solution	1 l	**1.09060.1000**
Hydrochloric acid 0.1 mol/l (0.1 N) TitriPUR® volumetric solution	10 l	**1.09060.9010**
Hydrochloric acid 1 mol/l (1 N) TitriPUR® volumetric solution	1 l	**1.09057.1000**
Hydrochloric acid 1 mol/l (1 N) TitriPUR® volumetric solution	2,5 l	**1.09057.2500**
Hydrochloric acid 1 mol/l (1 N) TitriPUR® volumetric solution	4 l	**1.09057.4000**
Hydrochloric acid 1 mol/l (1 N) TitriPUR® volumetric solution	10 l	**1.09057.9010**
Iodine 0.05 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09099.1000**
Potassium hydroxide 0.5 mol/l (0.5 N) in ethanol TitriPUR® volumetric solution	1 l	**1.09114.1000**
Potassium hydroxide 0.5 mol/l (0.5 N) in ethanol TitriPUR® volumetric solution	2,5 l	**1.09114.2500**
Silver nitrate 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09081.1000**
Silver nitrate 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	2,5 l	**1.09081.2500**
Silver nitrate 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	4 l	**1.09081.4000**
Sodium hydroxide 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09141.1000**
Sodium hydroxide 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	4 l	**1.09141.4000**
Sodium hydroxide 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	10 l	**1.09141.9010**
Sodium hydroxide 1 mol/l (1 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09137.1000**
Sodium hydroxide 1 mol/l (1 N) in aqueous solution TitriPUR® volumetric solution	2,5 l	**1.09137.2500**
Sodium hydroxide 1 mol/l (1 N) in aqueous solution TitriPUR® volumetric solution	4 l	**1.09137.4000**
Sodium hydroxide 1 mol/l (1 N) in aqueous solution TitriPUR® volumetric solution	10 l	**1.09137.9010**
Sodium thiosulphate 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	1 l	**1.09147.1000**
Sodium thiosulphate 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	4 l	**1.09147.4000**

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Description	Pk	Cat. No.
Sodium thiosulphate 0.1 mol/l (0.1 N) in aqueous solution TitriPUR® volumetric solution	10 l	**1.09147.9010**
Titriplex® III volumetric solution	1 l	**1.08431.1000**
Titriplex® III volumetric solution	2,5 l	**1.08431.2500**
Titriplex® III volumetric solution	4 l	**1.08431.4000**
Titriplex® III volumetric solution	10 l	**1.08431.9010**

Secondary reference materials in volumetry

Proper titer determination is an important prerequisite for accurate and comparable analysis in the titration laboratory. Influential factors such as temperature, instrument variances, different methods of handling, weighing errors, etc. and the volumetric solution itself can impact the titration results. To compensate for these factors, titer determination under working conditions is necessary in the respective laboratory. Certipur® – secondary reference materials (volumetric standards) are very pure, high-grade and stable solid substances that meet the requirements.

Description	Pk	Cat. No.
Potassium hydrogen phthalate*# Certipur®	80 g	**1.02400.0080**
Sodium carbonate* Certipur®	80 g	**1.02405.0080**
Sodium chloride*# Certipur®	80 g	**1.02406.0080**
Tris(hydroxymethyl)aminomethane# (TRIS, Trometamol) Certipur®	80 g	**1.02408.0080**

*Solution according to Reag. Ph. Eur.
#Solution according to the reagents chapter of USP

Disposable weighing dishes

Aluminium

For moisture determination.

- Diameter 100 mm
- Height of rim 7 mm

l-Ø×H (mm)	Pk	Cat. No.
100×7	80	**611-9000**

Moisture analysers, MB 160 and MBT 160

MB 160

MBT 160

Rugged compact instruments for moisture determination of raw materials and finished products in the food, cosmetics, dairy, pharmaceutical, chemical and ceramics industries.

- Halogen-infrared heat source
- Double case design to protect the weighing unit from irradiated heat
- PT100 temperature sensor ensures process repeatability
- Time and date information is available with printed output

MBT 160 moisture analyser with remote touch screen indicator

The remote indicator gives the option of improved and immediate monitoring of the drying process, potentially in a cleaner remote location.

- User friendly interface
- Graphic display of the drying process
- Ideal for in-process quality control near the production line

Ordering information: The balances are also available with a calibration certificate. Please contact your local VWR sales office for details of this option.

Model	MB 160	MBT 160
Capacity (g)	160	
Display	LCD, backlit	Remote, large, graphic, colour touch screen
Displayed results	Moisture %, dry residual %, ATRO, temperature	
Endpoint/analysis mode	Manual, timer, autostop %	Manual, timer, autostop %, absolute autostop
Heater calibration	2 points, 80 - 150 (°C) selectable, with optional temperature calibration kit	1 or 2 points, default values 80 and 150 (°C), with optional temperature calibration kit
Heater type	Halogen-infrared lamp	
Moisture precision (%)	0,5 for 2 g sample; 0,05 for 10 g sample	0,05 for 2 g sample 0,02 for 10 g sample
Moisture range (%)	0 - 100	
Pan size (Ø mm)	100	
Program memory	5	300
Readability (%) / (mg)	0,01% / 1 mg	
Repeatability (Std. Dev. %)	0,02%	0,02% (10 g sample)
Temperature programs	5	Standard, rapid, ramp, levels
Temperature range (°C)	35 - 160	
Timer	1 - 99 min (1 min intervals)	
W×D×H (mm)	205×325×200	

Description	Pk	Cat. No.
Moisture analyser MB 160	1	**611-2318**
Moisture analyser MBT 160 with remote touch screen indicator	1	**611-2578**

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Description	Pk	Cat. No.
Accessories		
Thermal printer for VWR LA and LP balances, MB moisture analysers, EU-plug	1	**630-1485**
Thermal printer with RS232 and interface for 611-2312, 611-2313, 611-2314, 611-2315 and 611-2316 balances UK-plug	1	**630-1486**
Paper roll for thermal printer	1	**630-1488**
Labels, self-adhesive, 500 on a roll for thermal printer	1	**630-1487**

Moisture analysers, MB35 and MB45

Ohaus

MB35

MB45

The compact MB series moisture analysers incorporate halogen heating with precision weighing to give fast and accurate results for moisture content. The units are ideal for applications in the pharmaceutical, chemical and research industries, yet rugged enough for in-process quality control operations in wider industrial applications.

The halogen heating performs up to 40% faster than traditional infrared (IR) technology, with the test area reaching full temperature in less than 1 minute.

Features common to MB35 and MB45

- GLP compliant
- RS232 interface

Additional MB45 features

- Four selectable automatic drying programs
- Statistical function
- Four selectable heating profiles - standard, fast, ramp, step
- User can custom design the test endpoint criteria
- Can store 50 drying programs

Model	MB35	MB45
Capacity (g)	35	45
Display	Graphical 128×64 pixel backlit LCD 66×33 mm	
Displayed results	% moisture, time, temperature, weight	% MC, % DC, % regain, grams or custom units, time, temperature and weight
Heater calibration	100 °C and 160 °C with optional heater calibration kit	
Heater type	Halogen	
Moisture range (%)	0,01 to 100	0,01 to 100; 0,01 to 1000 for Regain mode
Pan size (Ø mm)	90 (pan handler optional)	90
Readability (%) / (mg)	0,01 / 1	
Repeatability (Std. Dev. %)	0,05 (3 g sample) 0,015 (10 g sample)	
Temperature range (°C)	50 - 160 (5 °C increments)	50 - 200 (1 °C increments)
W×D×H (mm)	190×360×152	

Description	Pk	Cat. No.
MB35 moisture analyser	1	**611-4531**
MB45 moisture analyser	1	**617-1190**

Description	Pk	Cat. No.
Printers		
SF40A impact printer for Ohaus balances (supplied with printer cables 611-2571 and 611-2572)	1	**611-2573**
STP103 thermal printer for Ohaus balances, UK-plug	1	**611-2539**
Accessories		
Printer cable SF40A for Discovery/Explorer®/Adventurer™ Pro/Pioneer™/Defender™ 3000/5000/MB series/Ranger™	1	**611-2571**
Printer cable kit (STP103) for MB series, Discovery, Adventurer™ Pro, Pioneer™ and Defender™ models with ABS indicator (D31P and D51P)	1	**611-2541**
Temperature calibration kit	1	**611-0606**
Sample pans, disposable	80	**611-0604**
Sample pans, reusable	3	**611-0605**
Pads, glass fibre	200	**611-1884**
Pan handler (not included with MB35)	1	**611-1863**
In use display cover for MB35/45 (pack of 2)	1	**611-1867**

Moisture analysers, MA series
Sartorius

MA37

MA160

Easy to use, efficient, compact moisture analysers, introduced in 2014, to give fast repeatable results with an improved user interface.

- Convenient process tracking with status light indicator
- Rapid heat up with powerful heating elements reduces overall process time
- BetterClean design enables the user to remove the sample chamber plate and heating module and clean in a dishwasher
- Easy to operate with touch screen and intuitive user interface
- Mini-USB and automatic printer recognition for data communication

MA37

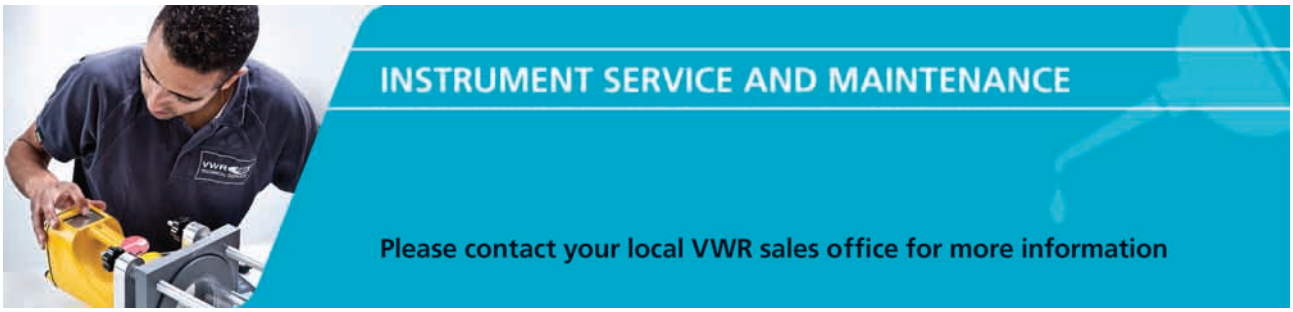
A basic moisture analyser for routine daily tasks, a replacement for the MA35, that is designed to improve the overall operational efficiency from parameter set up through the heating process to final cleaning.

MA160

The MA160 is designed for routine work and method development for the QC laboratory that needs fast, highly repeatable moisture results, management of several methods for different products and transfer of methods between instruments. The MA160 ensures easy method development and management, as well as simple sample handling and instrument performance testing. The Method Assistant function enables the user to easily develop new methods. Three simple steps are all it takes to develop a new method in less than 45 minutes.

Model	MA37	MA160
Capacity (g)	70	200
Display	Touch screen and status light indicator	Touch screen, graphic display with drying curve and status light indicator
Displayed results	Moisture content % M and g; Solid content % S and g; ATRO in % M/S	
Endpoint/analysis mode	Fully automatic; semi-automatic; time setting; manual	
Heater type	Infrared metal heating elements	AURI heating elements
Housing W×D×H (mm)	215×400×210	
Program memory	1 program saved in a non volatile memory	Up to 100 methods
Readability (%) / (mg)	0,01% / 1 mg	
Repeatability (Std. Dev. %)	±0,2% (1 g sample) ±0,05% (5 g sample)	
Sample size (ml)	5 - 15 g typical	
Temperature programs	Standard drying, gentle drying	
Temperature range (°C)	40...160	

Description	Pk	Cat. No.
MA37 moisture analyser	1	**611-2888**
MA160 moisture analyser	1	**611-2887**



Titrators, Karl Fischer, Coulometric, TitroLine® 7500 KF Trace
SI Analytics

These very compact, easy to operate instruments are ideal for the coulometric water determination according to Karl Fischer in low water contents, as well as for the bromine number determination. They are suitable for small liquid or gaseous sample amounts and can be used for quality control in the chemical, petrochemical, pharmaceutical and food industries.

- High visibility, full colour display with online titration curve
- With standard methods for different applications (for example blank value)
- Include three USB and two RS232 ports for expansion and connection of devices
- Storage of results on PDF and CSV
- Module 2 and 4 include a solvent pump

Ordering information: All units are supplied with keyboard, stand rod TZ 1748 and retaining clamp TZ 1749, power supply, electrode KF 1150 and KF starter kit TZ 1789 with molecular sieve, glass wool and a set of syringes with needles.
Module 1 additionally includes: Magnetic stirrer TM 235, titration vessel TZ 1751 and generator electrode TZ 1752 without diaphragm.
Module 2 additionally includes: KF titration stand (pump and stirrer) TM 235 KF including waste (1 L clear bottle), solvent (1 L amber bottle) and moisture bottle (100 ml) with all tubes, titration vessel TZ 1754 and generator electrode TZ 1752 without diaphragm.
Module 3 additionally includes: Magnetic stirrer TM 235, titration vessel TZ 1751 and generator electrode TZ 1753 with diaphragm.
Module 4 additionally includes: KF titration stand (pump and stirrer) TM 235 KF including waste (1 L clear bottle), solvent (1 L amber bottle) and moisture bottle (100 ml) with all tubes, titration vessel TZ 1754 and generator electrode TZ 1753 with diaphragm.

Model	TitroLine® 7500 KF Trace
Display	Graphic TFT display
Keypad	Front keypad or external USB keyboard TZ 3835
Stirrer connection	Plug-and-socket connection for magnetic stirrer TM 235/TM 235 KF
Resolution	0,1 µg
Dosing accuracy	±3 µg at 10 - 1000 µg / 0,3% at > 1 mg
Dosing volume	10 µg - 5 mg
Dosing speed	2 mg/min
Method storage	50
Power supply	100 - 240 V, 50/60 Hz
Connections	2 × USB-A, 1 × USB-B, 2 × RS232
W×D×H (mm)	130×250×80 mm
Weight (kg)	1,0

Description	Pk	Cat. No.
Karl Fischer titrator, TitroLine® 7500 KF Trace, Module 1, with titration vessel TZ 1751 with 3 openings	1	**661-0141**
Karl Fischer titrator, TitroLine® 7500 KF Trace, Module 2, with titration vessel TZ 1754 with 5 openings and pump	1	**661-0142**
Karl Fischer titrator, TitroLine® 7500 KF Trace, Module 3, with titration vessel TZ 1751 with 3 openings	1	**661-0143**
Karl Fischer titrator, TitroLine® 7500 KF Trace, Module 4, with titration vessel TZ 1754 with 5 openings and pump	1	**661-0144**

Description	Pk	Cat. No.
Accessories		
Titration stand with integrated pump and stirrer TM 235 KF	1	**661-0145**

Titrators, Karl Fischer, volumetric, TitroLine® 7500 KF
SI Analytics

TitroLine® 7500 KF is a volumetric generalist for a wide range of uses. Applications include KF volumetry, dead stop titrations (SO_2, bromine number), dosing tasks and preparation of solutions. Ideal for KF analysis in pharmaceutical, chemical, food and mineral oil industries.

- Fast, easy and precise
- With ready to use methods for different applications (e.g. titre determination, blank value)
- High visibility, full colour display with online titration curve, can be easily viewed from a distance and extreme angles
- Storage of results via USB port (PDF and CSV format)
- With intelligent interchangeable modules (5, 10, 20 ml)

Ordering information: Supplied with interchangeable module WA 05, 10 or 20, TM 235 KF titration stand with integrated stirrer and pump (incl. all bottles and tubes), titration vessel TZ 1770, micro-dual platinum electrode KF 1100, starter kit (consisting of molecular sieve, needles with syringes and glass wool) and power supply 100 - 240 V.

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Model	TitroLine® 7500 KF
Display	Graphic TFT display
Keypad	Front keypad or external USB keyboard TZ 3835
Stirrer connection	Plug-and-socket connection for magnetic stirrer TM 235/TM 235 KF
Resolution	0,5 µg
Dosing accuracy	Systematic measuring deviation: 0,1 - 0,15% Random measuring deviation: 0,05 - 0,07%
Dosing volume	5 / 10 / 20 ml
Burette resolution	10000 steps
Method storage	50
Measurement units	% ppm, mg, mg/l, mg/piece, ml
Measuring input electrode	KF / Dead stop (µA)- indicator electrode input (2×4 mm socket)
Power supply	100 - 240 V, 50/60 Hz
Connections	2 × USB-A, 1 × USB-B, 2 × RS232
W×D×H (mm)	153×296×450
Weight (kg)	3,5
Compliance	GLP

Description	Pk	Cat. No.
Karl Fischer titrator, TitroLine® 7500 KF, complete with interchangeable module WA 05	1	**661-0138**
Karl Fischer titrator, TitroLine® 7500 KF, complete with interchangeable module WA 10	1	**661-0139**
Karl Fischer titrator, TitroLine® 7500 KF, complete with interchangeable module WA 20	1	**661-0140**

Description	Pk	Cat. No.
Accessories		
Titration stand with integrated pump and stirrer TM 235 KF	1	**661-0145**

Titrators, Karl Fischer, volumetric and coulometric, V20 / C20
Mettler-Toledo

V20

C20

These routine KF titrators combine fast and precise water content determination. The V20 is designed to analyse samples from any industry with water content between 100 ppm to 100% and the C20 can determine water content between 1 ppm to 5%.

- Simple and quick to operate: One Click™ user interface in 9 languages with large colour touch screen and user-dedicated home screen
- Solvent Manager liquid handling device for user protection against chemicals
- Powerful LabX titration PC software connected via USB or direct Ethernet (TCP/IP)
- V20 features intelligent burettes with RFID chip saving all relevant titration data
- C20 features a generator cell with or without diaphragm: The generator cell without diaphragm is more convenient to analyse the majority of samples, as no catholyte is needed, but can also be used for very precise low water thanks to its unique design

Ordering information: V20 supplied with built-in burette motor, burette DV1005 (5 ml), KF DM143–SC sensor, titration vessel with stoppers and tubes, magnetic stirrer and magnetic stirring bar, 2× brown glass bottles for reagents and waste and bottle of molecular sieve.

C20D supplied with complete coulometric cell and electrode with diaphragm, KF DM143–SC sensor, titration vessel with stoppers and tubes, magnetic stirrer and magnetic stirring bar, brown glass bottle for waste and bottle of molecular sieve.

C20X supplied with complete coulometric cell and electrode without diaphragm, KF DM143–SC sensor, titration vessel with stoppers and tubes, magnetic stirrer and magnetic stirring bar, brown glass bottle for waste and bottle of molecular sieve.

Model	V20	C20D	C20X
Display	Touch screen, VGA 5,7 inch, colour TFT, 320×240 pixels		
mV - range	±2000		
mV - resolution	0,1		
mV - accuracy	±2		
Polarisation - range (µA)	0 - 24		
Polarisation - resolution (µA)	0,1		
Polarisation - accuracy (µA)	±1		
W×D×H (mm)	680×300×430	700×300×440	700×300×430
Weight (kg)	3,2	3,0	3,2

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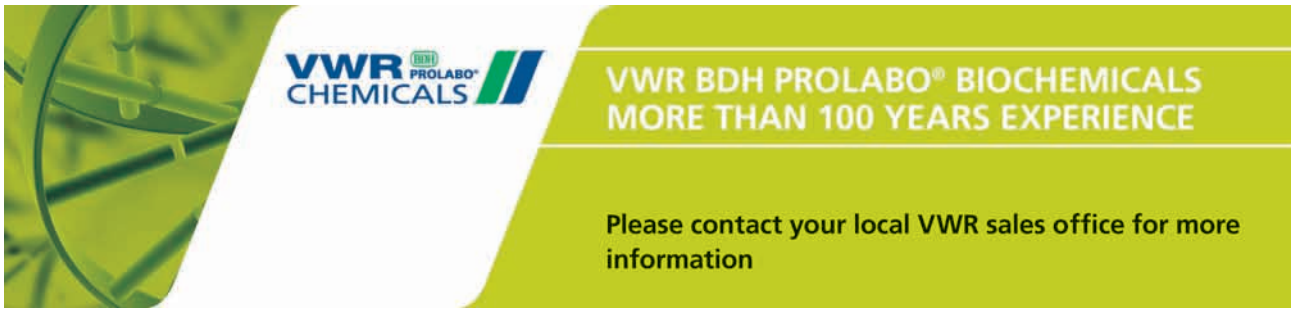
Description	Pk	Cat. No.
Volumetric titrator V20	1	661-0094
Coulometric titrator C20D with generator cell with diaphragm	1	661-0095
Coulometric titrator C20X with generator cell without diaphragm	1	661-0096

Description	Pk	Cat. No.
Accessories		
Tubing, PTFE, 800 mm	1	662-1639
Glass beaker, 80 ml	20	661-0156
Glass beaker, for 10 - 20 ml samples	1	662-1632
Bottle, 1 l, brown glass	1	662-1651
Gasket for 1 l brown glass bottle	1	662-1645
Screw cap for solvent bottles	1	662-1640
Centring ring for DV1005 (5 ml)	1	661-0168
Centring ring for DV1020 (20 ml)	1	661-0169
Glass cylinder for DV1005 (5 ml)	1	661-0160
Glass cylinder for DV1020 (20 ml)	1	661-0161
Piston for DV1005 (5 ml)	1	661-0162
Piston for DV1020 (20 ml)	1	661-0163
Set of labels for DV1000	1	661-0167
Suction tubing, 830 mm	1	662-1648
Silicone tube 850 mm to connect Solvent Manager to solvent bottle	1	661-0098
Silicone tube 800 mm for volumetric cell draining	1	661-0099
Dispensing tube with siphon tip, 1000 mm	1	662-1650
Dispensing tube with siphon tip, 700 mm	1	662-1647
Drying tube with cover	1	662-1644
Drying tube holder for DL31/DL38	1	662-1638
Light protection tube (UV)	1	662-1633
Stopper, ST 7,5	5	661-5658
Stopper NS 14,5, for DV1000 series burettes	1	662-1635
Septum-stopper, ST10	10	662-1641
Septum-stopper, ST24	10	662-1642
Stopper adapter, ST10 and ST7,5	1	662-1646
Set of stoppers for three hole adapter (ST10 and ST7,5, 6 needle stopper)	1	662-1649
Stopcock with PTFE valve disc (standardl)	1	661-0171
Stopcock with ceramic valve disc (optional)	1	661-0170
Solvent Manager set for replacement of KF reagents	1 SET	661-0100
Tubing connection for DV1000/DV900 burettes	1	661-0164
Bottle of molecular sieve	1	662-1652
Bottle top adapter, Ø 37,5 mm, slope 5 mm	1	662-1637
Bottle top adapter, Ø 40,5 mm, slope 3,5 mm	1	662-1636
Burette holder	1	662-1634
Anti-diffusion burette tip	5	662-1631
Burette tip holder	1	662-1643
Visco-Spoon™, for DL31 Karl Fischer titrator	1	661-0172
Compact printer RS-P26 with RS232C interface cable	1	661-0118
OKI B401d A4 laser printer, EU-plug	1	661-0122
Paper rotary axis, for printers	1	661-0158
USB cable 1.8 m for PC or printer	1	661-0103
Ink cartridge OKI B401d, black	1	661-0123
Coulometer reagent exchange set for reagent filing	1	661-0101
Replaceable protective sheet for touch screen	1	661-0097
External power supply 100-240 V AC	1	661-0102
KF tutorial DVD with multimedia tutorial and operating instructions	1	661-0104
Operating instructions for DV1000 (English/German/French/Spanish/Italian)	1	661-0176



Reagents for Karl Fischer titrations, apura®

The apura® range is designed to provide reagents for the determination of water by Karl Fischer titration of a wide range of substrates and by a variety of methodologies. These include reagents for one or two component systems; combined coulometric reagents; solvents for oils and fats; reagents and solvents for determination of water in ketones and aldehydes. Calibration standards are also available. The water standards in ampoules are tested against NIST and each pack contains the batch specific certificate with the exact water content, uncertainty data, measuring method, NIST batch and shelf life.

- CombiTitrants and CombiSolvents are non toxic
- Very accurate and reproducible results
- Rapid and reliable

Description	Pk	Cat. No.
CombiCoulomat fritless apura®, KF reagent for coulometric water determination for cells with and without diaphragm	500 ml	**1.09257.0500**
CombiCoulomat fritless apura®, KF reagent for coulometric water determination for cells with and without diaphragm	2,5 l	**1.09257.2500**
CombiTitrant 2 apura® 1 ml/2 mg H_2O with 1-component reagent for volumetric KF titration	1 l	**1.88002.1000**
CombiTitrant 5 apura® 1 ml/5 mg H_2O with 1-component reagent for volumetric KF titration	500 ml	**1.88005.0500**
CombiTitrant 5 apura® 1 ml/5 mg H_2O with 1-component reagent for volumetric KF titration	1 l	**1.88005.1000**
CombiTitrant 5 apura® 1 ml/5 mg H_2O with 1-component reagent for volumetric KF titration	2,5 l	**1.88005.2500**
CombiSolvent apura®, methanol-free solvent with 1-component reagent for volumetric KF titration	1 l	**1.88008.1000**
CombiSolvent apura®, methanol-free solvent with 1-component reagent for volumetric KF titration	2,5 l	**1.88008.2500**
CombiMethanol apura® with 1-component reagent max. 0,01% H_2O for volumetric KF titration	1 l	**1.88009.1000**
CombiMethanol apura® with 1-component reagent max. 0,01% H_2O for volumetric KF titration	2,5 l	**1.88009.2500**
Titrant 5 apura® 1 ml/5 mg H_2O with 2-component reagents for volumetric KF titration	2,5 l	**1.88010.2500**
Solvent apura® with 2-component reagents for volumetric KF titration	2,5 l	**1.88015.2500**
Water standard 0.1% 1 g/1 mg H_2O apura® for coulometric KF titration, 10×8 ml ampoules	10 Amp	**1.88051.0010**

Water activity handheld sets, HP23-AW-A

The water activity can be measured in production or storage rooms for the inspection of bulk materials, QC checks of cheese, meat, tobacco, building materials, animal feeds, bakery products, paper, medicines, horticulture and agriculture. The sets include advanced features for the shelf life of foods, pharmaceutical and cosmetic products during storage. They document the occurrence and growth of microorganisms.

- Battery charging function
- Audible alarm to indicate completed measurement
- Recalibration by the customer with the appropriate standards
- Saves up to 20 000 data records with % RH, °C/°F, date and time
- Quick function for fast measurement results - Typically four to five minutes
- Measurement of relative humidity, temperature and all psychrometric calculations

Delivery information: Supplied with a battery and a factory adjustement certificate.

Description	Range	Accuracy	Pk	Cat. No.
Water activity HP23-AW-A-Set-14 incl. handheld instrument (HP23-AW-A), measurement probe (HC2-AW), sample holder (WP-14-S), disposable sample containers (PS-14), humidity standards (100 pcs.) for 10 % RH, 35 % RH, 50 % RH, 80 % RH and a plastic case	–10…+60 °C; 0 - 1 aw; 0 - 100 % RH	±0,1 K; 0,008 aw; ±0,8 % RH	1 SET	**710-0994**
Water activity HP23-AW-A-Set-40 incl. handheld instrument (HP23-AW-A), measurement probe (HC2-AW), sample holder (WP-40-S), disposable sample containers (PS-40), humidity standards (100 pcs.), humidity standards 10 % RH, 35 % RH, 50 % RH, 80 % RH, and a plastic case	–10…+60 °C; 0 - 1 aw; 0 - 100 % RH	±0,1 K; 0,008 aw; ±0,8 % RH	1 SET	**710-0995**
Handheld instrument for two HC2 probes, HP23-AW-A	–10…+60 °C; 0 - 1 aw; 0 - 100 % HR	±0,1 K; 0,008 aw; ±0,8 % RH	1	**620-2753**

Description	Range	Accuracy	Ø×L (mm)	Pk	Cat. No.
Probes for HygroPalm					
Measurement probe HC2-AW with UART interface	–40…+85 °C; 0 - 1 aw*; 0 - 100 % RH	±0,5 °C; ±0,008 aw*; ±0,8 % RH	68×60	1	**710-0997**
Insertion probe HC2-P05 with two-metre cable for dust-free materials (tablets, gel capsules, grain and plastic granules), 160 g	–40…+85 °C; 0 - 1 aw*; 0 - 100 % RH	±0,3 °C; ±0,015 aw*; 1,5 % RH	5×200	1	**620-2232**
Insertion probe HC2-HP28 for dusty bulk materials (flour, sugar), 200 g	–40…+85 °C; 0 - 1 aw*; 0 - 100 % RH	±0,5 °C; ±0,008 aw*; 0,8 % RH	10×280	1	**620-2230**
Insertion probe HC2-HP50 for dusty bulk materials (flour, sugar), 300 g	–40…+85 °C; 0 - 1 aw*; 0 - 100 % RH	±0,5 °C; ±0,008 aw*; 0,8 % RH	10×500	1	**620-2231**
Standards					
Certified standards 10% RH				5 Ampoul	**620-2223**
Certified standards 35% RH				5 Ampoul	**620-2224**
Certified standards 50% RH				5 Ampoul	**620-2225**
Certified standards 80% RH				5 Ampoul	**620-2226**
Accessories					
Push on calibration device, Ø: 4 - 5 mm, nickel plated brass, for one probe incl. gasket with O-ring and thumb screw, ER-05				1	**620-2280**
Sample holder, V2A steel, H: 14 mm, 350 g, WP 14 S				1	**620-2239**
Sample holder, H: 40 mm, 1250 g, WP 40				1	**620-2240**
Sample holder, nickel plated brass, thermostatable when linked to a water bath, H: 40 mm, 1550 g, WP-40TH				1	**620-2241**
Sealing clamp for use with sample holder to prevent external conditions influencing the sample, AW-KHS				1	**620-1998**
Disposable sample containers, H: 14 mm, PS 14				100	**620-0680**
Disposable sample containers, H: 40 mm, PS 40				100	**620-2238**

* Only for water activity meters i.e. HygroPalm 23-AW-A and HygroLab C1.

Bench top water activity meter, HygroLab C1

The HygroLab C1 provides a high-end device for water activity measurements. Versatile and intuitive, the grade indicator software can be used on a PC to provide remote monitoring with charting and data recording functions. It provides an important indicator for the shelf life of foods, pharmaceutical and cosmetic products which contribute to the occurrence and growth of microorganisms.

- Four-input channels for HC2 probes
- Audible alarm to indicate completed measurement
- Recalibration by the customer with the appropriate standards
- Quick function for fast measurement results: Four to five minutes
- Measurement of water activity, relative humidity and temperature
- Saves up to 2000 data records with aw, % RH, °C/°F, date and time

Delivery information: The set includes a bench top indicator, a measurement probe, accessories, and a software on a CD.

Description	Range	W×D×H (mm)	Weight (g)	Pk	Cat. No.
Water activity set incl. bench instrument (HygroLab C1), measurement probe (HC2-AW), USB cable, sample holder (WP-40-S), disposable sample containers (PS-40: 100 pcs.), humidity standards 10%, 35% , 50% , 80% RH and software (HW4-P-Quick-V3)	–40…+60 °C; 0 - 1 aw; 0 - 100% RH	225×170×70	1100	1 SET	**710-0996**

Description	Range	Accuracy	Ø×L (mm)	Pk	Cat. No.
Probes for HygroPalm					
Measurement probe HC2-AW with UART interface	–40…+85 °C; 0 - 1 aw*; 0 - 100 % RH	±0,5 °C; ±0,008 aw*; ±0,8 % RH	68×60	1	**710-0997**
Insertion probe HC2-P05 with two-metre cable for dust-free materials (tablets, gel capsules, grain and plastic granules), 160 g	–40…+85 °C; 0 - 1 aw*; 0 - 100 % RH	±0,3 °C; ±0,015 aw*; 1,5 % RH	5×200	1	**620-2232**
Insertion probe HC2-HP28 for dusty bulk materials (flour, sugar), 200 g	–40…+85 °C; 0 - 1 aw*; 0 - 100 % RH	±0,5 °C; ±0,008 aw*; 0,8 % RH	10×280	1	**620-2230**
Insertion probe HC2-HP50 for dusty bulk materials (flour, sugar), 300 g	–40…+85 °C; 0 - 1 aw*; 0 - 100 % RH	±0,5 °C; ±0,008 aw*; 0,8 % RH	10×500	1	**620-2231**
Cables					
Extension cable for HC2 probe, one metre				1	**620-2221**
Extension cable for HC2 probe, black, 2 m, E2-02A				1	**620-2222**
Software					
Standard software for fast measurement (typically 4 - 5 minutes) results (included), HW4-E-V3				1	**620-2281**
Professional software, HW4-P-W3				1	**620-2236**
Standards					
Certified standards 0,5% RH				5 Ampoul	**620-2272**
Certified standards 20% RH				5 Ampoul	**620-2758**
Certified standards 35% RH				5 Ampoul	**620-2224**
Certified standards 50% RH				5 Ampoul	**620-2225**
Certified standards 65% RH				5 Ampoul	**ROTREA65-SCS**
Certified standards 80% RH				5 Ampoul	**620-2226**
Certified standards 95% RH				5 Ampoul	**ROTREA95-SCS**
Accessories					
Push on calibration device, Ø: 4 - 5 mm, nickel plated brass, for one probe incl. gasket with O-ring and thumb screw, ER-05				1	**620-2280**
Sample holder, V2A steel, H: 14 mm, 350 g, WP 14 S				1	**620-2239**
Sample holder, H: 40 mm, 1250 g, WP 40				1	**620-2240**
Sample holder, nickel plated brass, thermostatable when linked to a water bath, H: 40 mm, 1550 g, WP-40TH				1	**620-2241**
Sealing clamp for use with sample holder to prevent external conditions influencing the sample, AW-KHS				1	**620-1998**
Disposable sample containers, H: 14 mm, PS 14				100	**620-0680**
Disposable sample containers, H: 40 mm, PS 40				100	**620-2238**

* Only for water activity meters i.e. HygroPalm 23-AW-A and HygroLab C1.

VWR COLLECTION

2 year warranty

SELECTED FOR YOU

Spectrophotometers, Vis V-1200 or UV/Vis UV-1600PC

V-1200

UV-1600PC

The V-1200 and UV-1600PC are basic Visible and UV/Vis spectrophotometers for routine daily quality control requirements, in-process control and teaching laboratories. The instruments are reliable, robust and easy to use. The wide range of different accessories available will help to adapt and fine tune the units to meet the user's demands. With the support of the standard software, stored results and data can be downloaded from internal memory to PC (V-1200). The application software offers all the important methods for routine measurements (UV-1600PC).

- Large LCD display (128×64 pixels)
- Can save up to a total of 200 results and 200 standard curves
- Download data to PC via USB interface
- Application software, allows PC control of the spectrophotometers (delivered with UV-1600PC), includes the following methods: Basic mode, quantitative, wavelength scan, kinetics, multi-wavelength, DNA/proteins
- Variety of optional accessories including an automatic 8-cell changer

Delivery information: Accessories supplied as standard with the V-1200: Four optical glass cells, 4-position cell holder, power cable with UK and EU plug, dust cover. Accessories supplied as standard with the UV-1600PC: Four optical glass cells, two quartz cells, 4-position cell holder, power cable with UK and EU plug, dust cover, application software for PC control.

Model	V-1200	UV-1600PC
Light source	Tungsten halogen	Deuterium/tungsten halogen
Optical system	Single beam, grating 1200 lines/mm silicon photodiode detector	
Wavelength range (nm)	325 - 1000	190 - 1100
Spectral bandwidth (nm)	4	
Wavelength accuracy (nm)	±2	±0,5
Wavelength repeatability (nm)	≤0,8	≤0,3
Photometric range	–0,3 to 3 A; 0 - 200% T	
Photometric accuracy	±0,5% T	±0,5% T
Photometric stability	±0,002 A/h @ 500 nm	
Photometric reproducibility	±0,3% T	±0,2% T
Stray light	≤0,3% T	±0,05% T @ 220, 360 nm
Display	Graphic LCD (128×64 pixels)	
Interfaces	USB port to PC / parallel port to printer	
Languages	EN, DE, ES, FR	
Power requirements	220 V / 50 Hz	
W×D×H (mm)	490×360×210	490×360×240
Weight (kg)	12	14

Description	Pk	Cat. No.
V-1200 Vis spectrophotometer including 4-cell changer	1	**634-6000**
UV-1600PC UV/Vis scanning spectrophotometer including 4-cell changer	1	**634-6001**

Description	For	Pk	Cat. No.
Accessories			
Cell holder for microcells with beam height 15 mm	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0687**
Cell holder, 4-cell, 10 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC	1	**634-6003**
Cell holder, 4-cell, 10 to 100 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6005**
Cell holder, for cylindical cell, Ø 22 mm with path length 10 to 100 mm	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6006**
Cell holder, water jacketed, 1 cell, 10 mm path length	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6007**
Cell holder for test tubes	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6009**
Cell holder, solid sample, 10 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6011**
Cell holder, water jacketed, 4-cell, 10 mm path length	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6012**
A-102, constant temperature (Peltier) system with beam height 15 mm	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0698**
Thermal printer	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6039**
Thermal paper for printer, 57 mm	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	2 Rolls	**634-6043**
Lamp, halogen, 12 V/20 W	V-1200, UV-1600PC, V-3000PC, UV-3100PC	1	**634-6037**
Lamp, deuterium	UV-1600PC, UV-3100PC, UV-6300PC	1	**634-6038**

VWR COLLECTION

2 year warranty

SELECTED FOR YOU

Spectrophotometers, scanning, visible V-3000PC and UV/Vis UV-3100PC

Two fully scanning spectrophotometers for advanced measurements and quality control. Reliable, robust and easy to use instruments with a range of accessories that will support the creation of a personal spectrophotometer measuring station. The application software offers all the important methods expected from a 'universal' instrument. All housed in a robust casing with a well designed optical bench.

- Large LCD display (320×240 pixels)
- Full scan mode
- Easily accessible USB port for data import and export
- Supplied application software 'UV/Vis Analyst' allows PC control of the spectrophotometer
- Methods for PC control or stand-alone include: Basic mode, quantitative, wavelength scan, kinetics, multi-wavelength, DNA/protein
- The range of accessories includes an automatic 8-cell changer and Peltier thermostated single cell holder

Delivery information: Supplied with 4 optical glass cells, 2 quartz cells (not V3000-PC), dust cover, USB cable, USB (8 GB) stick, UV/Vis Analyst software for PC control, 4-position cell holder (10 mm), power cables with UK, CH and EU plugs.

Model	V-3000PC	UV-3100PC UV/Vis
Light source	Tungsten halogen	Deuterium/tungsten halogen
Optical system	Single beam, grating 1200 lines/mm, silicon photodiode detector	
Wavelength range (nm)	320 - 1100	190 - 1100
Spectral bandwidth (nm)	4	2
Wavelength accuracy (nm)	±0,5	
Wavelength repeatability (nm)	≤0,2	
Photometric range	–0,3 to 3 A; 0 - 200% T; 0 - 9999 Conc	
Photometric accuracy	≤±0,5% T or 0,005 A at 1 A	
Photometric stability	±0,002 A/h @ 500 nm	
Photometric reproducibility	±0,2% T	
Stray light	±0,05% T at 360 nm	±0,05% T @ 220, 360 nm
Baseline flatness	±0,002 A (320 - 1000 nm)	±0,002 A (200 - 1000 nm)
Scan speed (nm/min)	Low, medium, high (max. 3000 nm/min)	
No. of standards	200 standard curves	
Display	5" graphic LCD (320×240 pixels)	
Results storage	200	
Interfaces	USB port to PC / USB to memory stick/ parallel port to printer	
Languages	EN, DE, ES, FR	
Power requirements	220 V/50 Hz	
W×D×H (mm)	490×360×240	
Weight (kg)	12	14

Description	Pk	Cat. No.
V-3000PC, visible scanning spectrophotometer	1	**634-6040**
UV-3100PC, UV/Vis scanning spectrophotometer	1	**634-6042**

Description	For	Pk	Cat. No.
Accessories			
Cell holder for microcells with beam height 15 mm	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0687**
Cell holder, 4-cell, 10 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC	1	**634-6003**
Cell holder, 4-cell, 10 to 100 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6005**
Cell holder, for cylindical cell, Ø 22 mm with path length 10 to 100 mm	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6006**
Cell holder, water jacketed, 1 cell, 10 mm path length	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6007**
Cell holder for test tubes	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6009**
Cell holder, 8-position auto cell changer	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6010**
Cell holder, solid sample, 10 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6011**
Cell holder, water jacketed, 4-cell, 10 mm path length	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6012**
A-100, constant temperature (Peltier) sipper system, beam height 15 mm, (appropriate flow cell required)	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0763**
A-101 sipper system with beam height 15 mm, (appropriate flow cell required)	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0699**
A-102, constant temperature (Peltier) system with beam height 15 mm	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0698**
Flow cell, optical glass, 10 mm path length, beam height 15 mm	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0691**
Flow cell, quartz glass, 10 mm path length, beam height 15 mm	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0695**
Thermal printer	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6039**
Lamp, halogen, 12 V/20 W	V-1200, UV-1600PC, V-3000PC, UV-3100PC	1	**634-6037**
Lamp, deuterium	UV-1600PC, UV-3100PC, UV-6300PC	1	**634-6038**
Replacement battery type CR2032	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0653**

VWR COLLECTION

SELECTED FOR YOU

Spectrophotometer, UV/Vis, double beam, UV-6300PC

A double beam spectrophotometer suitable for a wide range of applications including general research, pharmaceutical, biochemical and clinical laboratory use, new material development and quality control. The instrument can be used in stand-alone mode or in conjunction with a PC using the supplied UV-Vis Analyst software which then delivers more powerful data processing, expanded data collecting, and removes the limit on storage capability.
Stand-alone functionality includes:

- Standard photometrics - absortpion, transmission, concentration
- Quantitative analysis and kinetics
- Multi-wavelength scan, spectrum scan
- DNA/RNA and protein analysis

Delivery information: Supplied with 4 optical glass cells, 2 quartz cells, dust cover, USB cable, USB (8 GB) stick, UV-Vis Analyst software for PC control, single cell holders for sample and reference, power cables with UK, CH and EU plugs.

Model	UV-6300PC
Light source	Deuterium and tungsten halogen lamps
Optical system	Double beam
Wavelength range (nm)	190 - 1100
Spectral bandwidth (nm)	1
Wavelength accuracy (nm)	±0,3
Photometric range	–0,3 to 3,0 A; 0 to 200% T; 0 - 9999C
Photometric accuracy	±0,002 A at 1 A; ≤0,3% T
Photometric stability	0,001 A/h at 500 nm
Stray light	≤0,05% T at 220 and 360 nm
Baseline flatness	0,001 A (200 - 1000 nm)
Scan speed (nm/min)	100 - 3000
Scan	Scan intervals: 0,1; 0,2; 0,5; 1,0 and 5,0 nm
PC software	UV-Vis Analyst
Display	LCD 320×240 pixel
Control	Internal control via keypad with optional PC control
Storage capacity	200 results and 200 standard curves
Interfaces	USB and parallel printer interface
Languages	English, French, German and Spanish
W×D×H (mm)	590×420×260
Weight (kg)	26

Description	Pk	Cat. No.
UV-6300PC, double beam spectrophotometer	1	**634-6041**

Description	For	Pk	Cat. No.
Accessories			
Cell holder (sample), 1 position, for 10 mm path length standard cells	UV-6300PC	1	**634-0777**
Cell holder (reference), 1 position, for 10 mm path length standard cells	UV-6300PC	1	**634-0778**
Cell holder, 4-position, for 20 to 50 mm rectangular cells	UV-6300PC	1	**634-6045**
Cell holder, 4-cell, 10 to 50 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC	1	**634-6004**
Cell holder, 4-position, for 100 mm rectangular cells	UV-6300PC	1	**634-6046**
Cell holder, 4-cell, 10 to 100 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6005**
Cell holder, single position, for 100 mm rectangular cells	UV-6300PC	1	**634-6047**
Cell holder, for cylindical cell, Ø 22 mm with path length 10 to 100 mm	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6006**
Cell holder, single position, for cylindrical cells	UV-6300PC	1	**634-6048**
Cell holder, water jacketed, 1 cell, 10 mm path length	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6007**
Cell holder, single position, thermostattable, for 10 mm standard cells (external water bath required)	UV-6300PC	1	**634-6049**
Cell holder, 4-position, thermostattable, for 10 mm standard cells (external water bath required)	UV-6300PC	1	**634-6050**
Cell holder for test tubes	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6009**
Cell holder, single position, for test tubes, max. height 100 mm	UV-6300PC	1	**634-6051**
Cell holder, 8-position auto cell changer	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6010**
Cell holder, solid sample, 10 mm path length	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6011**
Cell holder, for solid samples, max. thickness 3,5 mm	UV-6300PC	1	**634-6052**
Cell holder, water jacketed, 4-cell, 10 mm path length	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6012**
A-100, constant temperature (Peltier) sipper system, beam height 15 mm, (appropriate flow cell required)	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0763**
A-101 sipper system with beam height 15 mm, (appropriate flow cell required)	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0699**
A-102, constant temperature (Peltier) system with beam height 15 mm	UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-0698**
Thermal printer	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	1	**634-6039**
Thermal paper for printer, 57 mm	V-1200, UV-1600PC, V-3000PC, UV-3100PC, UV-6300PC	2 Rolls	**634-6043**
Lamp, deuterium	UV-1600PC, UV-3100PC, UV-6300PC	1	**634-6038**
Halogen lamp, 12 V, 20 W, Osram	UV-6300PC	1	**634-0776**
Dust cover	UV-6300PC	1	**634-6044**

Spectrophotometer, double beam, UV/Vis, UH5300

Hitachi

The high end, double beam, version of the Hitachi 5000 series (U-5100) with connectivity for the modern laboratory.

- Double beam instrument with achievable wavelength resolution of 1 nm
- Long life xenon flash lamp
- Remote operation by PC or tablet terminals such as the iPad® via wireless LAN

Ordering information: For details of the full range of accessories please contact the local VWR sales office.

Model	UH5300
Light source	Xenon flash lamp
Detector	Silicon photodiode
Wavelength range (nm)	190 - 1100
Spectral bandwidth (nm)	1
Wavelength accuracy (nm)	±0,3 (Xe: 260,6; 484,3; 881;9 nm; Hg: 253,7; 435,8; 546,1 nm)
Wavelength repeatability (nm)	±0,1
Photometric range	–3,3 to 3,3 A; 0 - 300% T
Photometric accuracy	±0,002 A (0 - 0,5 A); ±0,004 A (0,5 - 1,05 A)
Stray light	<1% at 198 nm (KCl); 0,05% at 220 nm (NaI); 0,05% at 340 nm ($NaNO_2$)
Noise (RMS) (A)	<0,0001 (260 nm, 0 A)
Baseline flatness	±0,0009 A/h (260 nm, 2 hours after power on)
Scan speed (nm/min)	10, 40, 100, 200, 400, 800, 1200, 2400, 4800, 6000
Interfaces	USB, LAN port
Standard cell holder	Automatic 6-cell turret
W×D×H (mm)	510×490×280
Weight (kg)	19

Description	Pk	Cat. No.
UH5300	1	**634-0829**

Description	Pk	Cat. No.
Accessories		
Auto sipper for the UH5300, cell capacity 50 µl	1	**634-0798**
Water circulated cell holder with magnetic stirrers for agitation of sample solution	1	**634-0799**
Single cell holder for 10 mm path length cell for UH5300	1	**634-0800**
Holder base for single cell holder and a selection of other holders	1	**634-0801**
IQ/OQ documentation for UH5300	1	**634-1062**

VWR COLLECTION

SELECTED FOR YOU

Cuvettes, disposable

Macro

Disposable cuvettes made from optical polystyrene (PS) with optimal transmittance from 340 to 900 nm or PMMA with a range of 300 to 900 nm.

- Minimal variation of extinction values
- Recessed windows
- Resealable packaging

Type	Window material	Optical path length (mm)	Volume (ml)	Range	Pk	Cat. No.
Macro	PS	10	2,5 - 4	340 - 900 nm	100	**634-0675**

UV/Vis cuvettes, disposable
Brand

Semi-micro

Macro

Micro

Disposable UV cuvettes made of plastic often replace expensive and sensitive cuvettes made from glass and/or quartz glass. The high chemical resistance permits use with most polar solvents, as well as acids and caustic solutions. The UV micro cuvettes can be used for measurements from as low as 230 nm and with small sample quantities (70 µl is sufficient for measurement). The light path of each cuvette is 10 mm. Two different centre heights enable use in most commercial photometers.

- Specially developed for photometric measurements of proteins, DNA and RNA within the UV range
- Ideally suited for measurements at 260 nm, 280 nm and in the visible wavelength range
- Round coloured caps, for microcuvettes only, ensure easy sample identification and provide a tight seal to –20 °C
- Individually wrapped micro UV cuvettes are free of DNase, DNA and RNase

Type	Volume	Pk	Cat. No.
Semi-micro UV cuvette, window 4,5×23 mm	1500 - 3000 µl	100	**612-5684**
Macro UV cuvette, window 10×35 mm	2500 - 4500 µl	100	**612-5685**
Micro UV cuvette, CH=15 mm, window 2×3,5 mm	70 - 550 µl	100	**612-5688**
Micro UV cuvette, CH=15 mm, window 2×3,5 mm	70 - 550 µl	500	**612-5689**
Micro UV cuvette, CH=15 mm, window 2×3,5 mm, individually wrapped	70 - 550 µl	100	**612-2506**
Micro UV cuvette, CH=8,5 mm, window 2×3,5 mm	70 - 850 µl	100	**612-5686**
Micro UV cuvette, CH=8,5 mm, window 2×3,5 mm	70 - 850 µl	500	**612-5687**
Micro UV cuvette, CH=8,5 mm, window 2×3,5 mm, individually wrapped	70 - 850 µl	100	**612-2505**

Colour	Pk	Cat. No.
Caps for micro UV cuvettes, PE		
Blue	100	**612-5690**
Yellow	100	**612-5691**
Green	100	**612-5692**
Orange	100	**612-5693**

CH = Centre height of the light path

Solvents for spectroscopy, SPECTRONORM®

Description	Pk	Cat. No.
2-Propanol SPECTRONORM® for spectroscopy	1 l	**84706.290**
2-Propanol SPECTRONORM® for spectroscopy	2,5 l	**84706.320**
Acetone SPECTRONORM® for spectroscopy	1 l	**84700.290**
Acetone SPECTRONORM® for spectroscopy	2,5 l	**84700.320**
Acetonitrile SPECTRONORM® for spectroscopy	1 l	**84701.290**
Acetonitrile SPECTRONORM® for spectroscopy	2,5 l	**84701.320**
Chloroform SPECTRONORM® for spectroscopy	1 l	**22715.293**
Dimethyl sulphoxide SPECTRONORM® for spectroscopy	1 l	**84711.290**
Dimethyl sulphoxide SPECTRONORM® for spectroscopy	2,5 l	**84711.320**
Ethanol 95-97% (v/v) SPECTRONORM® for spectroscopy	1 l	**20822.290**
Methanol SPECTRONORM® for spectroscopy	1 l	**84705.290**
Methanol SPECTRONORM® for spectroscopy	2,5 l	**84705.320**
n-Hexane SPECTRONORM® for spectroscopy	2,5 l	**140096E**
Tetrachloroethylene SPECTRONORM® for spectroscopy	1 l	**83950.290**

Solvents for spectroscopy, Uvasol®

Description	Pk	Cat. No.
2-Propanol Uvasol® for spectroscopy	1 l	**1.00993.1000**
2-Propanol Uvasol® for spectroscopy	2,5 l	**1.00993.2500**
Cyclohexane Uvasol® for spectroscopy	500 ml	**1.02822.0500**

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Description	Pk	Cat. No.
Cyclohexane Uvasol® for spectroscopy	2,5 l	**1.02822.2500**
Dichloromethane Uvasol® for spectroscopy	500 ml	**1.06048.0500**
Dimethyl sulphoxide Uvasol® for spectroscopy	500 ml	**1.02950.0500**
Ethanol absolute Uvasol® for spectroscopy	500 ml	**1.00980.0500**
Ethanol absolute Uvasol® for spectroscopy	2,5 l	**1.00980.2500**
Isooctane Uvasol® for spectroscopy	500 ml	**1.04718.0500**
Isooctane Uvasol® for spectroscopy	2,5 l	**1.04718.2500**
N,N-Dimethylformamide Uvasol® for spectroscopy	500 ml	**1.02937.0500**
N,N-Dimethylformamide Uvasol® for spectroscopy	2,5 l	**1.02937.2500**
n-Heptane Uvasol® for spectroscopy	500 ml	**1.04366.0500**
n-Hexane Uvasol® for spectroscopy	2,5 l	**1.04372.2500**
Potassium bromide Uvasol® for IR spectrophotometry	100 g	**1.04907.0100**
Potassium bromide Uvasol® for IR spectrophotometry	500 g	**1.04907.0500**
tert-Butyl methyl ether Uvasol® for spectroscopy	1 l	**1.01984.1000**
Tetrachloroethylene Uvasol® for spectroscopy	500 ml	**1.00965.0500**
Tetrachloroethylene Uvasol® for spectroscopy	2,5 l	**1.00965.2500**
Tetrahydrofuran Uvasol® for spectroscopy	500 ml	**1.08110.0500**
Tetrahydrofuran Uvasol® for spectroscopy	2,5 l	**1.08110.2500**
Trifluoroacetic acid Uvasol® for spectroscopy	25 ml	**1.08262.0025**

VWR BDH PROLABO® CHEMICALS

SELECTED FOR YOU

UV-visible spectroscopy standards

Description	Pack type	Pk	Cat. No.
Bandwidth Standard – Blank			
Bandwidth Standard - Blank - Ratio of 268.7 nm peak to 266.8 nm trough	Glass bottle	100 ml	**84795.180**
Wavelength standards (certified at 0,1; 0,2; 0,5; 1; 2 and 5 nm slit widths)			
Samarium solution UV/VISible wavelength standard at 235 to 480 nm, certified at 0.1 nm, 0.2 nm, 0.5 nm, 1.0 nm, 2.0 nm and 5 nm slit widths (single permanently sealed UV cuvette)	Set of items	1 SET	**84773.600**
Holmium oxide solution UV/VISible wavelength standard at 240 to 640 nm, certified at 0.1 nm, 0.2 nm, 0.5 nm, 1.0 nm, 2.0 nm and 5 nm slit widths (single permanently sealed UV cuvette)	Set of items	1 SET	**84774.600**
Wavelength standards (certified at 0,1; 0,2; 0,5; 1; 2 and 5 nm slit widths)			
Didymium solution UV/VISible wavelength standard at 298 to 865 nm, certified at 0.1 nm, 0.2 nm, 0.5 nm, 1.0 nm, 2.0 nm and 5 nm slit widths (single permanently sealed UV cuvette)	Set of items	1 SET	**84772.600**
Linearity standards at 213 and 261 nm			
Nicotinic acid linearity standrad set - 0 mg/l, 6 mg/l, 12 mg/l, 18 mg/l, 24 mg/l at 213 and 261 nm (set of 5 permanently sealed UV cuvettes plus blank)	Set of items	1 SET	**84762.600**
Nicotinic acid absorbance/transmission standard 6 mg/l at 213 and 261 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84763.600**
Nicotinic acid absorbance/transmission linearity standard 12 mg/l at 213 and 261 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84764.600**
Nicotinic acid absorbance/transmission linearity standard 18 mg/l at 213 and 261 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84765.600**
Nicotinic acid absorbance/transmission linearity standard 24 mg/l 213 and 261 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84766.600**
Linearity standards at 235, 257, 313 and 350 nm			
Potassium Dichromate linearity standards at 235, 257, 313 and 350 - 0 mg/l, 20 mg/l, 40 mg/l, 60 mg/l, 80 mg/l, 100 mg/l (six permanently sealed UV cuvettes plus blank)	Set of items	1 SET	**84750.600**
Potassium dichromate absorbance/transmission linearity standard at 235, 257, 313 and 350 nm, 20 mg/l (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84751.600**
Potassium dichromate absorbance/transmission linearity standard at 235, 257, 313 and 350 nm, 40 mg/l (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84752.600**
Potassium dichromate absorbance/transmission linearity standard at 235, 257, 313 and 350 nm, 60 mg/l (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84753.600**
Potassium dichromate absorbance/transmission linearity standard at 235, 257, 313 and 350 nm, 80 mg/l (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84754.600**
Potassium dichromate absorbance/transmission linearity standard at 235, 257, 313 and 350 nm, 100 mg/l (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84755.600**

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Description	Pack type	Pk	Cat. No.
Stray light standards			
Potassium chloride stray light standard, inorganic cut-off filter at 200 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84783.600**
Sodium Chloride stray light standard, inorganic cut-off filter at 205 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84782.600**
Lithium carbonate stray light standard, inorganic cut-off filter at 227 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84781.600**
Sodium iodide stray light standard, inorganic cut-off filter at 260 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84780.600**
Potassium Iodide stray light standard, inorganic cut-off filter at 260 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84779.600**
Sodium nitrite stray light standard, inorganic cut-off filter at 390 nm (single permanently sealed UV cuvette plus blank)	Set of items	1 SET	**84778.600**

UV/Vis standards

For spectrophotometer calibration according to Ph. Eur.

The checking of UV/Vis spectrophotometers is incorporated in the European Pharmacopoeia and is indispensable in the pharmaceutical industry. However, all other users who operate according to standards and guidelines such as GLP, GMP, USP and ISO 9001 are required to check their analytical systems at regular intervals and to document such checks.

The following parameters can be checked:

- Wavelength accuracy
- Stray light
- Spectral resolution power
- Absorption

Description	Pk	Cat. No.
UV/Vis standards		
UV/Vis Standard 1: Potassium dichromate solution for absorbance according to Ph. Eur.	8 Ampoul	**1.08160.0001**
UV/Vis Standard 1a: Potassium dichromate solution (600 mg/l) for the absorbance at 430 nm according to Ph. Eur.	1 Ampoul	**1.04660.0001**
UV/Vis Standard 2: Sodium nitrite solution for stray light testing according to Ph. Eur.	3 Ampoul	**1.08161.0001**
UV/Vis Standard 3: Sodium iodide solution for stray light testing according to Ph. Eur.	3 Ampoul	**1.08163.0001**
UV/Vis Standard 4: Potassium chloride solution for stray light testing according to Ph. Eur.	3 Ampoul	**1.08164.0001**
UV/Vis Standard 5: Toluene solution in n-hexane for testing of the resolution power acc. Ph. Eur.	8 Ampoul	**1.08165.0001**
UV/Vis Standard 6: Holmium oxide solution reference material for the wavelength according to Ph. Eur.	3 Ampoul	**1.08166.0001**
Rectangular cells		
Rectangular cells, 10 mm, quartz	2	**1.00784.0001**

Reagents for IR spectroscopy, Uvasol®

The technique of potassium bromide pelletising for infrared spectroscopy places high quality requirements on the potassium bromide used. Potassium bromide Uvasol®, prepared by a special method of purification and subsequent treatment, is adjusted to a mean particle size of 150 µm.

Description	Pk	Cat. No.
1,1,2-Trichlorotrifluoroethane Uvasol® for IR spectrophotometry	2,5 l	**1.08239.2500**
Potassium bromide Uvasol® for IR spectrophotometry	100 g	**1.04907.0100**
Potassium bromide Uvasol® for IR spectrophotometry	500 g	**1.04907.0500**

VWR COLLECTION

Deuterated NMR solvents

- Packed in 10x 0,6 (0,75) ml glass ampoules or 10, 25 or 100 ml glass bottles
- Packed also in 10 ml with special septum caps (see codes ending in 0011)
- More than 99,9% purity, 99,8% deuteration degree, with and without TMS
- These solvents also have a very low water content
- Isotopic enrichment (FT NM R 400 MH z) min. 99,80% D (99,5%for acetic acid D4)

Description	Pk	Cat. No.
Acetic acid-[D4] (99,5% D) for NMR spectroscopy	10 ml	**87151.0010**
Acetone-[D6] (99,8% D) for NMR spectroscopy	10 ml	**87152.0011**
Acetone-[D6] (99,8% D) for NMR spectroscopy	25 ml	**87152.0025**
Acetonitrile-[D3] (99,8% D) for NMR spectroscopy	10 ml	**87155.0011**
Benzene-[D6] (99,8% D) for NMR spectroscopy	10 ml	**87160.0011**
Benzene-[D6] (99,8% D) for NMR spectroscopy	25 ml	**87160.0025**
Chloroform-[D1] (99,8% D) for NMR spectroscopy	25 ml	**84111.0025**
Chloroform-[D1] (99,8% D) for NMR spectroscopy	100 ml	**84111.0100**
Chloroform-[D1] (99,8% D) for NMR spectroscopy	25 ml	**87153.0025**
Chloroform-[D1] (99,8% D) for NMR spectroscopy	100 ml	**87153.0100**
Deuterium oxide (99,96% D) for NMR spectroscopy	10 ml	**87156.0011**
Deuterium oxide (99,96% D) for NMR spectroscopy	25 ml	**87156.0025**
Deuterium oxide (99,96% D) for NMR spectroscopy	100 ml	**87156.0100**
Dichloromethane-[D2] (99,8% D) for NMR spectroscopy	10 ml	**87161.0010**
Dichloromethane-[D2] (99,8% D) for NMR spectroscopy	25 ml	**87161.0025**
Dimethyl sulphoxide-[D6] (99,8% D) for NMR spectroscopy	25 ml	**84113.0025**
Dimethyl sulphoxide-[D6] (99,8% D) for NMR spectroscopy	100 ml	**84113.0100**
Dimethyl sulphoxide-[D6] (99,8% D) for NMR spectroscopy	10 ml	**87154.0011**
Dimethyl sulphoxide-[D6] (99,8% D) for NMR spectroscopy	25 ml	**87154.0025**
Dimethyl sulphoxide-[D6] (99,8% D) for NMR spectroscopy	100 ml	**87154.0100**
Methanol-[D4] (99,8% D) for NMR spectroscopy	10 ml	**87157.0011**
Methanol-[D4] (99,8% D) for NMR spectroscopy	25 ml	**87157.0025**
Methanol-[D4] (99,8% D) for NMR spectroscopy	100 ml	**87157.0100**
Methanol-[D4] (99.8% D) with 0.03% TMS for NMR spectroscopy	10 ml	**84116.0010**
Tetrahydrofuran-[D8] (99,5% D) for NMR spectroscopy	10 ml	**87158.0010**
Toluene-[D8] (99,5% D) for NMR spectroscopy	25 ml	**87159.0025**

VWR BDH PROLABO CHEMICALS

SELECTED FOR YOU

Mono-element standards for ICP, ARISTAR®

A very large range of standards produced from high purity acids, water ASTM I (18 MΩ) and salts 99,999%.

- Solution assayed by titration
- Final concentration verified against ICP Standards from NIST
- Total maximum uncertainty: ±1%
- Delivered with complete Certificate of Analysis
- Produced by accredited supplier ISO guide 34 and ISO 17025

Description	Pk	Cat. No.
Aluminium standard solution, 1,000 mg/l Al in dil. nitric acid (from $Al(NO_3)_3.9H_2O$) ARISTAR® standard for ICP	100 ml	455002C
Aluminium standard solution, 10,000 mg/l Al in dil. nitric acid (from $Al(NO_3)_3$) ARISTAR® standard for ICP	100 ml	455012E
Antimony standard solution, 1,000 mg/l Sb in dil. nitric acid with tartaric acid (max. 1%) (from Sb) ARISTAR® standard for ICP	100 ml	455022G
Arsenic standard solution, 1,000 mg/l As in dil. nitric acid (from As) ARISTAR® standard for ICP	100 ml	455042K
Arsenic standard solution, 10,000 mg/l As in dil. nitric acid (from As) ARISTAR® standard for ICP	100 ml	455052M
Barium standard solution, 1,000 mg/l Ba in dil. nitric acid (from $Ba(NO_3)_2$) ARISTAR® standard for ICP	100 ml	455062X
Barium standard solution, 10,000 mg/l Ba in dil. nitric acid (from $Ba(NO_3)_2$) ARISTAR® standard for ICP	100 ml	455072Q
Beryllium standard solution, 1,000 mg/l Be in dil. nitric acid (from $BeO.(Be(OAc)_2)_3$) ARISTAR® standard for ICP	100 ml	455082S
Beryllium standard solution, 10,000 mg/l Be in dil. nitric acid (from $BeO.(Be(OAc)_2)_3$) ARISTAR® standard for ICP	100 ml	455092U
Bismuth standard solution, 1,000 mg/l Bi in dil. nitric acid (from Bi) ARISTAR® standard for ICP	100 ml	455102F
Boron standard solution, 1,000 mg/l B in ammonium hydroxide solution (max. 1%) (from $B(OH_3)$) ARISTAR® standard for ICP	100 ml	455122J
Boron standard solution, 10,000 mg/l B in ammonium hydroxide solution (max. 1%) (from $B(OH_3)$) ARISTAR® standard for ICP	100 ml	455132L
Cadmium standard solution, 1,000 mg/l Cd in dil. nitric acid (from Cd) ARISTAR® standard for ICP	100 ml	455142N
Cadmium standard solution, 10,000 mg/l Cd in dil. nitric acid (from Cd) ARISTAR® standard for ICP	100 ml	455152P
Calcium standard solution, 1,000 mg/l Ca in dil. nitric acid (from $CaCO_3$) ARISTAR® standard for ICP	100 ml	455162R
Calcium standard solution, 10,000 mg/l Ca in dil. nitric acid (from $CaCO_3$) ARISTAR® standard for ICP	100 ml	455172T
Cerium standard solution, 1,000 mg/l Ce in dil. nitric acid (from $(NH_4)_2Ce(NO_3)_6$) ARISTAR® standard for ICP	100 ml	455182V
Cerium standard solution, 10,000 mg/l Ce in dil. nitric acid (from $(NH_4)_2Ce(NO_3)_6$) ARISTAR® standard for ICP	100 ml	455192A
Cesium standard solution, 1,000 mg/l Cs in dil. nitric acid (from $CsNO_3$) ARISTAR® standard for ICP	100 ml	455202Y
Cesium standard solution, 10,000 mg/l Cs in dil. nitric acid (from $CsNO_3$) ARISTAR® standard for ICP	100 ml	455212K
Chromium standard solution, 1,000 mg/l Cr in 10% hydrochloric acid (from $(NH_4)_2Cr_2O_7$) ARISTAR® standard for ICP	100 ml	455242Q
Chromium standard solution, 1,000 mg/l Cr in dil. nitric acid (from $(NH_4)_2Cr_2O_7$) ARISTAR® standard for ICP	100 ml	455222M
Chromium standard solution, 10,000 mg/l Cr in 10% hydrochloric acid (from $(NH_4)_2Cr_2O_7$) ARISTAR® standard for ICP	100 ml	455252S
Chromium standard solution, 10,000 mg/l Cr in dil. nitric acid (from $(NH_4)_2Cr_2O_7$) ARISTAR® standard for ICP	100 ml	455232X
Cobalt standard solution, 1,000 mg/l Co in dil. nitric acid (from Co) ARISTAR® standard for ICP	100 ml	455262U
Cobalt standard solution, 10,000 mg/l Co in dil. nitric acid (from Co) ARISTAR® standard for ICP	100 ml	455272W
Copper standard solution, 1,000 mg/l Cu in dil. nitric acid (from Cu) ARISTAR® standard for ICP	100 ml	455282B
Copper standard solution, 10,000 mg/l Cu in dil. nitric acid (from Cu) ARISTAR® standard for ICP	100 ml	455292D
Dysprosium standard solution, 1,000 mg/l Dy in dil. nitric acid (from Dy_2O_3) ARISTAR® standard for ICP	100 ml	455302L
Europium standard solution, 1,000 mg/l Eu in dil. nitric acid (from Eu_2O_3) ARISTAR® standard for ICP	100 ml	455342T
Gadolinium standard solution, 1,000 mg/l Gd in dil. nitric acid (de Gd_2O_3) ARISTAR® standard for ICP	100 ml	455362A
Gallium standard solution, 1,000 mg/l Ga in dil. nitric acid (from Ga) ARISTAR® standard for ICP	100 ml	455382E
Gallium standard solution, 10,000 mg/l Ga in dil. nitric acid (from Ga) ARISTAR® standard for ICP	100 ml	455392G
Germanium standard solution, 1,000 mg/l Ge in water with hydrofluoric acid (max. 1%) (from $(NH_4)_2GeF_6$) ARISTAR® standard for ICP	100 ml	455402X
Germanium standard solution, 10,000 mg/l Ge in water with hydrofluoric acid (max. 1%) (from $(NH_4)_2GeF_6$) ARISTAR® standard for ICP	100 ml	455412Q
Gold standard solution, 1,000 mg/l Au in 10% hydrochloric acid (from Au) ARISTAR® standard for ICP	100 ml	455422S
Gold standard solution, 10,000 mg/l Au in 10% hydrochloric acid (from Au) ARISTAR® standard for ICP	100 ml	455432U
Hafnium standard solution, 1,000 mg/l Hf in dil. nitric acid with hydrofluoric acid (max. 1%) (from HfO_2) ARISTAR® standard for ICP	100 ml	455442W
Holmium standard solution, 1,000 mg/l Ho in dil. nitric acid (de Ho_2O_3) ARISTAR® standard for ICP	100 ml	455462D
Indium standard solution, 1,000 mg/l In in dil. nitric acid (from In) ARISTAR® standard for ICP	100 ml	455482H
Indium standard solution, 10,000 mg/l In in dil. nitric acid (from In) ARISTAR® standard for ICP	100 ml	455492J
Iridium standard solution, 1,000 mg/l Ir in 10% hydrochloric acid (from $IrCl_3$) ARISTAR® standard for ICP	100 ml	455502R
Iron standard solution, 1,000 mg/l Fe in dil. nitric acid (from Fe) ARISTAR® standard for ICP	100 ml	455522V
Iron standard solution, 10,000 mg/l Fe in dil. nitric acid (from Fe) ARISTAR® standard for ICP	100 ml	455532A
Lanthanum standard solution, 1,000 mg/l La in dil. nitric acid (from La_2O_3) ARISTAR® standard for ICP	100 ml	455542C
Lead standard solution, 1,000 mg/l Pb in dil. nitric acid (from $Pb(NO_3)_2$) ARISTAR® standard for ICP	100 ml	455562G
Lead standard solution, 10,000 mg/l Pb in dil. nitric acid (from $Pb(NO_3)_2$) ARISTAR® standard for ICP	100 ml	455572Y
Lithium standard solution, 1,000 mg/l Li in dil. nitric acid (from Li_2CO_3) ARISTAR® standard for ICP	100 ml	455582K
Lutetium standard solution, 1,000 mg/l Lu in dil. nitric acid (from Lu_2O_3) ARISTAR® standard for ICP	100 ml	455602U
Magnesium standard solution, 1,000 mg/l Mg in dil. nitric acid (from MgO) ARISTAR® standard for ICP	100 ml	455622B
Magnesium standard solution, 10,000 mg/l Mg in dil. nitric acid (from MgO) ARISTAR® standard for ICP	100 ml	455632D
Manganese standard solution, 1,000 mg/l Mn in dil. nitric acid (from $Mn(OAc)_2$) ARISTAR® standard for ICP	100 ml	455642F
Manganese standard solution, 10,000 mg/l Mn in dil. nitric acid (from $Mn(OAc)_2$) ARISTAR® standard for ICP	100 ml	455652H
Mercury standard solution, 1,000 mg/l Hg in dil. nitric acid (from Hg) ARISTAR® standard for ICP	100 ml	455662J
Mercury standard solution, 10,000 mg/l Hg in dil. nitric acid (from Hg) ARISTAR® standard for ICP	100 ml	455672L
Molybdenum standard solution, 1,000 mg/l Mo in ammonium hydroxide solution (max. 1%) (from $(NH_4)_2MoO_4$) ARISTAR® standard for ICP	100 ml	455682N
Molybdenum standard solution, 10,000 mg/l Mo in ammonium hydroxide solution (max. 1%) (from $(NH_4)_2MoO_4$) ARISTAR® standard for ICP	100 ml	455692P
Neodymium standard solution, 1,000 mg/l Nd in dil. nitric acid (from Nd_2O_3) ARISTAR® standard for ICP	100 ml	455702A
Nickel standard solution, 1,000 mg/l Ni in dil. nitric acid (from Ni) ARISTAR® standard for ICP	100 ml	455722E
Nickel standard solution, 10,000 mg/l Ni in dil. nitric acid (from Ni) ARISTAR® standard for ICP	100 ml	455732G
Niobium standard solution, 1,000 mg/l Nb in water with hydrofluoric acid (max. 1%) (from Nb_2O_5) ARISTAR® standard for ICP	100 ml	455742Y
Niobium standard solution, 10,000 mg/l Nb in water with hydrofluoric acid (max. 1%) (from Nb_2O_5) ARISTAR® standard for ICP	100 ml	455752K
Palladium standard solution, 1,000 mg/l Pd in 10% hydrochloric acid (from Pd) ARISTAR® standard for ICP	100 ml	455762M

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Description	Pk	Cat. No.
Palladium standard solution, 10,000 mg/l Pd in 10% hydrochloric acid (from Pd) ARISTAR® standard for ICP	100 ml	455772X
Phosphorus standard solution, 1,000 mg/l P in water (from $(NH_4)PO_4H_2$) ARISTAR® standard for ICP	100 ml	455782Q
Phosphorus standard solution, 10,000 mg/l P in water (from $(NH_4)PO_4H_2$) ARISTAR® standard for ICP	100 ml	455792S
Platinum standard solution, 1,000 mg/l Pt in 10% hydrochloric acid (from Pt) ARISTAR® standard for ICP	100 ml	455802D
Potassium standard solution, 1,000 mg/l K in dil. nitric acid (from KNO_3) ARISTAR® standard for ICP	100 ml	455822H
Potassium standard solution, 10,000 mg/l K in dil. nitric acid (from KNO_3) ARISTAR® standard for ICP	100 ml	455832J
Praseodymium standard solution, 1,000 mg/l Pr in dil. nitric acid (from Pr_6O_{11}) ARISTAR® standard for ICP	100 ml	455842L
Rhenium standard solution, 1,000 mg/l Re in water with nitric acid (max. 1%) (from Re) ARISTAR® standard for ICP	100 ml	455862P
Rhenium standard solution, 10,000 mg/l Re in water with nitric acid (max. 1%) (from Re) ARISTAR® standard for ICP	100 ml	455872R
Rhodium standard solution, 1,000 mg/l Rh in 10% hydrochloric acid (from $RhCl_3$) ARISTAR® standard for ICP	100 ml	455882T
Rubidium standard solution, 1,000 mg/l Rb in dil. nitric acid (from $RbNO_3$) ARISTAR® standard for ICP	100 ml	455902G
Rubidium standard solution, 10,000 mg/l Rb in dil. nitric acid (from $RbNO_3$) ARISTAR® standard for ICP	100 ml	455912Y
Ruthenium standard solution, 1,000 mg/l Ru in 10% hydrochloric acid (from $RuCl_3$) ARISTAR® standard for ICP	100 ml	455922K
Ruthenium standard solution, 10,000 mg/l Ru in 10% hydrochloric acid (from $RuCl_3$) ARISTAR® standard for ICP	100 ml	455932M
Samarium standard solution, 1,000 mg/l Sm in dil. nitric acid (from Sm_2O_3) ARISTAR® standard for ICP	100 ml	455942X
Scandium standard solution, 1,000 mg/l Sc in dil. nitric acid (from Sc_2O_3) ARISTAR® standard for ICP	100 ml	455962S
Scandium standard solution, 10,000 mg/l Sc in dil. nitric acid (from Sc_2O_3) ARISTAR® standard for ICP	100 ml	455972U
Selenium standard solution, 1,000 mg/l Se in dil. nitric acid (from Se) ARISTAR® standard for ICP	100 ml	455982W
Selenium standard solution, 10,000 mg/l Se in dil. nitric acid (from Se) ARISTAR® standard for ICP	100 ml	455992B
Silicon standard solution, 1,000 mg/l Si in water with hydrofluoric acid (max. 1%) (from $(NH_4)_2SiF_6$) ARISTAR® standard for ICP	100 ml	456002G
Silicon standard solution, 10,000 mg/l Si in water with hydrofluoric acid (max. 1%) (from $(NH_4)_2SiF_6$) ARISTAR® standard for ICP	100 ml	456012Y
Silver standard solution, 1,000 mg/l Ag in dil. nitric acid (from $AgNO_3$) ARISTAR® standard for ICP	100 ml	456022K
Silver standard solution, 10,000 mg/l Ag in dil. nitric acid (from $AgNO_3$) ARISTAR® standard for ICP	100 ml	456032M
Sodium standard solution, 1,000 mg/l Na in dil. nitric acid (from $NaNO_3$) ARISTAR® standard for ICP	100 ml	456042X
Sodium standard solution, 10,000 mg/l Na in dil. nitric acid (from $NaNO_3$) ARISTAR® standard for ICP	100 ml	456052Q
Strontium standard solution, 1,000 mg/l Sr in dil. nitric acid (from $Sr(NO_3)_2$) ARISTAR® standard for ICP	100 ml	456062S
Strontium standard solution, 10,000 mg/l Sr in dil. nitric acid (from $Sr(NO_3)_2$) ARISTAR® standard for ICP	100 ml	456072U
Sulphur standard solution, 1,000 mg/l S in water (from $(NH_4)_2SO_4$) ARISTAR® standard for ICP	100 ml	456082W
Sulphur standard solution, 10,000 mg/l S in water (from $(NH_4)_2SO_4$) ARISTAR® standard for ICP	100 ml	456092B
Tantalum standard solution, 1,000 mg/l Ta in water with hydrofluoric acid (max. 1%) (from Ta) ARISTAR® standard for ICP	100 ml	456102J
Tellurium standard solution, 1,000 mg/l Te in 20% hydrochloric acid (from Te) ARISTAR® standard for ICP	100 ml	456122N
Tellurium standard solution, 10,000 mg/l Te in 40% hydrochloric acid (from Te) ARISTAR® standard for ICP	100 ml	456132P
Terbium standard solution, 1,000 mg/l Tb in dil. nitric acid (from Tb_4O_7) ARISTAR® standard for ICP	100 ml	456142R
Thallium standard solution, 1,000 mg/l Tl in dil. nitric acid (from Tl) ARISTAR® standard for ICP	100 ml	456162V
Thallium standard solution, 10,000 mg/l Tl in dil. nitric acid (from Tl) ARISTAR® standard for ICP	100 ml	456172A
Tin standard solution, 1,000 mg/l Sn in 10% hydrochloric acid (from Sn) ARISTAR® standard for ICP	100 ml	456242U
Tin standard solution, 1,000 mg/l Sn in dil. nitric acid with hydrofluoric acid (max. 1%) (from Sn) ARISTAR® standard for ICP	100 ml	456222Q
Tin standard solution, 10,000 mg/l Sn in 10% hydrochloric acid (from Sn) ARISTAR® standard for ICP	100 ml	456252W
Tin standard solution, 10,000 mg/l Sn in dil. nitric acid with hydrofluoric acid (max. 1%) (from Sn) ARISTAR® standard for ICP	100 ml	456232S
Titanium standard solution, 10,000 mg/l Ti in water with hydrofluoric acid (max. 1%) (from $(NH_4)_2TiF_6$) ARISTAR® standard for ICP	100 ml	456262B
Tungsten standard solution, 1,000 mg/l W in water (from W) ARISTAR® standard for ICP	100 ml	457182G
Tungsten standard solution, 10,000 mg/l W in water (from W) ARISTAR® standard for ICP	100 ml	457172E
Vanadium standard solution, 1,000 mg/l V in dil. nitric acid (from V2O5) ARISTAR® standard for ICP	100 ml	456322T
Vanadium standard solution, 10,000 mg/l V in dil. nitric acid (from V2O5) ARISTAR® standard for ICP	100 ml	456332V
Yttrium standard solution, 1,000 mg/l Y in dil. nitric acid (from Y2O3) ARISTAR® standard for ICP	100 ml	456362E
Yttrium standard solution, 10,000 mg/l Y in dil. nitric acid (from Y2O3) ARISTAR® standard for ICP	100 ml	456372G
Zinc standard solution, 1,000 mg/l Zn in dil. nitric acid (from Zn) ARISTAR® standard for ICP	100 ml	456382Y
Zinc standard solution, 10,000 mg/l Zn in dil. nitric acid (from Zn) ARISTAR® standard for ICP	100 ml	456392K
Zirconium standard solution, 1,000 mg/l Zr in dil. nitric acid (from ZrO(NO3)2) ARISTAR® standard for ICP	100 ml	456402S

VWR BDH PROLABO CHEMICALS

SELECTED FOR YOU

ICP and ICP-MS multi-element standards, ARISTAR®

Description	Pk	Cat. No.
Interference check A in dil. nitric acid ARISTAR® for ICP-MS	100 ml	456562K
Interference check A in nitric acid 1% ARISTAR® for ICP-MS	100 ml	456552Y
Multi-element calibration standard 1 in dil. nitric acid ARISTAR® for ICP	100 ml	456452F
Multi-element calibration standard 1 in dil. nitric acid ARISTAR® for ICP-MS	100 ml	456622F
Multi-element calibration standard 2 in dil. nitric acid ARISTAR® for ICP	100 ml	456462H
Multi-element calibration standard 2 in dil. nitric acid ARISTAR® for ICP-MS	100 ml	456502V
Multi-element calibration standard 3 in dil. nitric acid ARISTAR® for ICP	100 ml	456472J
Multi-element calibration standard 3 in hydrochloric acid 10% ARISTAR® for ICP-MS	100 ml	456512A
Multi-element calibration standard 4 in water with a trace of hydrofluoric acid ARISTAR® for ICP-MS	100 ml	456522C
Multi-element quality control standard 1,000 mg/l {Ag; As; Al; B; Ba; Bi; Cd; Co; Cr; Cu; Fe; Ga; In; Li; Mn; Ni; Pb; Si; Sr; Tl; Zn} in nitric acid 4% ARISTAR® for ICP	100 ml	87629.180
Multi-element quality control standard 100 mg/l {Ag; Al; Ba; Bi; Ca; Cd; Co; Cr; Cu; Fe; Ga; Ge; In; K; Li; Mg; Mn; Mo; Na; Nb; Ni; P; Pb; Re; Sb; Si; Sn; Ta; Ti; V; W; Zn} in nitric acid 5% ARISTAR® for ICP	100 ml	89186.180
Multi-element quality control standard 100 mg/l {Al; Ag; As; B; Ba; Be; Bi; Ca; Cd; Co; Cr; Cu; Fe; K; Li; Mg; Mn; Mo; Na; Ni; Pb; Sb; Se; Sr; Ti; Tl; V; Zn} in nitric acid 2% ARISTAR® for ICP	100 ml	05200.185
Multi-element quality control standard 100 mg/l {Al; Ag; As; B; Ba; Be; Bi; Ca; Cd; Co; Cr; Cu; Fe; K; Li; Mg; Mn; Mo; Na; Ni; Pb; Sb; Se; Sr; Ti; Tl; V; Zn} in nitric acid 2% ARISTAR® for ICP	100 ml	85006.186
Multi-element quality control standard 100 mg/l {Al; Ag; As; B; Ba; Be; Bi; Ca; Cd; Cs; Co; Cr; Cu; Fe; In; K; Li; Mg; Mn; Mo; Na; Ni; Nb; Pb; Rb; Sb; Se; Sr; Ti; Tl; V; U; Zn} in nitric acid 5% ARISTAR® for ICP	100 ml	84791.180

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Description	Pk	Cat. No.
Multi-element quality control standard 100 mg/l {Al; As; B; Ca; Cd; Cr; Co; Cu; Fe; K; Mg; Mn; Mo; Na; Ni; Pb; P; Si; S; Ti; Zn} in nitric acid 5% ARISTAR® for ICP	100 ml	**89166.180**
Multi-element quality control standard 100 mg/l {As; Be; Bi; Ca; Cd; Co; Cr; Cu; Fe; Li; Mg; Mn; Mo; Ni; Pb; Sb; Se; Sr; Ti; Tl; V; Zn} in nitric acid 5% ARISTAR® for ICP	100 ml	**84790.180**
Multi-element quality control standard 100 mg/l {As; Be; Ca; Cd; Co; Cr; Cu; Fe; Li; Mg; Mn; Mo; Ni; P; Pb; Sb; Se; Sn; Sr; Ti; Tl; V; Zn} in nitric acid 2-5% / Hydrofluoric acid < 0.1% ARISTAR® 1 for ICP	100 ml	**456422W**
Multi-element quality control standard 100 mg/l {As; Be; Ca; Cd; Co; Cr; Cu; Fe; Li; Mg; Mn; Mo; Ni; P; Pb; Sb; Se; Sn; Sr; Ti; Tl; V; Zn} in nitric acid 2-5% / Hydrofluoric acid < 0.1% ARISTAR® 1 for ICP	500 ml	**456424B**
Multi-element quality control standard 100 mg/l {Au; Ir; Os; Pd; Pt; Rh; Ru; Sn; Te} in hydrochloric acid 10% ARISTAR® for ICP	100 ml	**84792.180**
Multi-element quality control standard 100 mg/l {Be; I; Bi; Li; Cr; Mg; Co; Pb; U} in nitric acid 5% ARISTAR® for ICP-MS	250 ml	**88175.230**
Multi-element quality control standard 10 mg/l {Al; Ag; As; B; Ba; Ca; Cd; Ce; Co; Cr; Cu; Dy; Er; Eu; Fe; Gd; Ho; K; La; Li; Lu; Mg; Mn; Na; Nd; Ni; P; Pb; Rb; Se; Sm; Sr; Tl; Tm; V; Zn} in nitric acid 2% ARISTAR® for ICP-MS	100 ml	**84793.180**
Multi-element quality control standard 10 mg/l {As; Ba; Be; Cd; Co; Cr; Cu; Fe; Al; Mn; Mo; Ni; Pb; Sb; Se; Sn; Ti; Tl; V; U; Te; Zn} in nitric acid 5% ARISTAR® for ICP	50 ml	**88724.150**
Multi-element quality control standard 10 mg/l {Hf; Ge; Mo; Nb; Sb; Si; Sn; Ta; Te; Ti; W; Zr} in nitric acid 2% / Hydrofluoric acid < 0.1% ARISTAR® for ICP-MS	100 ml	**84794.180**
Multi-element quality control standard 1 in dil. nitric acid ARISTAR® for ICP-MS	100 ml	**456592Q**
Multi-element quality control standard 2 in dil. nitric acid ARISTAR® for ICP-MS	100 ml	**456602B**
Multi-element quality control standard 2 in dil. nitric acid with a trace of hydrofluoric acid ARISTAR® for ICP	100 ml	**456432B**
Multi-element quality control standard 2 in dil. nitric acid with a trace of hydrofluoric acid ARISTAR® for ICP	500 ml	**456434D**
Multi-element quality control standard 3 in dil. nitric acid ARISTAR® for ICP	100 ml	**456442D**
Multi-element quality control standard 3 in dil. nitric acid ARISTAR® for ICP	500 ml	**456444F**
Tuning solution 1 in dil. nitric acid ARISTAR® for ICP-MS	100 ml	**456532E**
Tuning solution 2 in dil. nitric acid ARISTAR® for ICP-MS	100 ml	**456542G**

Standards and reference materials for ICP, Certipur®

Description	Pk	Cat. No.
Barium standard solution, 1,000 mg/l Ba in dil. nitric acid (from $Ba(NO_3)_2$) Certipur® standard for ICP	100 ml	**1.70304.0100**
Boron standard solution, 1,000 mg/l B in water (from $B(OH_3)$) Certipur® standard for ICP	100 ml	**1.70307.0100**
Cesium standard solution, 1,000 mg/l Cs in dil. nitric acid (from $CsNO_3$) Certipur® standard for ICP	100 ml	**1.70310.0100**
Iron standard solution, 1,000 mg/l Fe in dil. nitric acid (from $Fe(NO_3)_3$) Certipur® standard for ICP	100 ml	**1.70326.0100**
Manganese standard solution, 1,000 mg/l Mn in dil. nitric acid (from $Mn(NO_3)_2$) Certipur® standard for ICP	100 ml	**1.70332.0100**
Phosphorus standard solution, 1,000 mg/l P in water (from H_3PO_4) Certipur® standard for ICP	100 ml	**1.70340.0100**
Potassium standard solution, 1,000 mg/l K in dil. nitric acid (from KNO_3) Certipur® standard for ICP	100 ml	**1.70342.0100**
Sodium standard solution, 10,000 mg/l Na in dil. nitric acid (from $NaNO_3$) Certipur® standard for ICP	100 ml	**1.70381.0100**
Titanium standard solution, 1,000 mg/l Ti in water (from $(NH_4)_2TiF_6$) Certipur® standard for ICP	100 ml	**1.70363.0100**

Atomic absorption spectrocopy (AAS) standards, AVS TITRINORM®

1000 mg/litre concentration

- NIST SRM traceability and complete certificate of analysis included with each standard
- Accurate to ± 0.2% of actual value stated on label and/or C of A
- Tested by two independent methods

Safety note: These standards are in acid solution, for full details of hazards and specification, please see www.vwr.com and the links to Material Safety Data Sheets (MSDS) and Technical Data sheets.

Element	Matrix	Pk	Cat. No.
Aluminum	5% HCl	500 ml	**86660.260**
Arsenic	2% HNO_3	500 ml	**86661.260**
Barium	2% HNO_3	500 ml	**86664.260**
Boron	H_2O	500 ml	**86663.260**
Cadmium	2% HNO_3	500 ml	**86668.260**
Calcium	2% HNO_3	500 ml	**86667.260**
Chromium	2% HNO_3	500 ml	**86671.260**
Cobalt	5% HNO_3	500 ml	**86670.260**
Copper	2% HNO_3	500 ml	**86673.260**
Iron	0,5 M HNO_3	500 ml	**86677.260**
Lead	2% HNO_3	500 ml	**86699.260**
Lithium	2% HNO_3	500 ml	**86688.260**
Magnesium	2% HNO_3	500 ml	**86690.260**
Manganese	2% HNO_3	500 ml	**86691.260**
Mercury	10% HNO_3	500 ml	**86682.260**
Molybdenum	H_2O	500 ml	**86692.260**
Nickel	2% HNO_3	500 ml	**86696.260**
Potassium	2% HNO_3	500 ml	**86686.260**
Selenium	2% HNO_3	500 ml	**86709.260**

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Element	Matrix	Pk	Cat. No.
Silver	2% HNO_3	500 ml	**86659.260**
Sodium	2% HNO_3	500 ml	**86693.260**
Zinc	2% HNO_3	500 ml	**86725.260**

AAS standards, Certipur®

Atomic absorption spectroscopy standards are traceable to standard reference material from NIST. The AAS standards are measured according to ISO 17025. Analysis of content is carried out by ICP-OES.

Description	Pk	Cat. No.
Aluminium standard solution, 1,000 mg/l Al in 0.5 M nitric acid (from $Al(NO_3)_3$) Certipur® standard for AAS	100 ml	**1.19770.0100**
Arsenic standard solution, 1,000 mg/l As in 0.5 M nitric acid (from H_3AsO_4) Certipur® standard for AAS	100 ml	**1.19773.0100**
Bismuth standard solution, 1,000 mg/l Bi in 0.5 M nitric acid (from $Bi(NO_3)_3$) Certipur® standard for AAS	100 ml	**1.19804.0100**
Calcium standard solution, 1,000 mg/l Ca in 0.5 M nitric acid (from $Ca(NO_3)_2$) Certipur® standard for AAS	100 ml	**1.19778.0100**
Copper standard solution, 1,000 mg/l Cu in 0.5 M nitric acid (from $Cu(NO_3)_2$) Certipur® standard for AAS	100 ml	**1.19786.0100**
Iron standard solution, 1,000 mg/l Fe in 0.5 M nitric acid (from $Fe(NO_3)_3$) Certipur® standard for AAS	100 ml	**1.19781.0100**
Lead standard solution, 1,000 mg/l Pb in 0.5 M nitric acid (from $Pb(NO_3)_2$) Certipur® standard for AAS	100 ml	**1.19776.0100**
Zinc standard solution, 1,000 mg/l Zn in 0.5 M nitric acid (from $Zn(NO_3)_2$) Certipur® standard for AAS	100 ml	**1.19806.0100**

High purity reagents for trace metal analysis, NORMATOM®

In trace analysis, it's crucial to use an homogenous solution, so samples are usually prepared using a digestion method with a mineral acid. The high purity of these acids is essential to avoid inaccuracy in the final results caused by impurities in these ancillary reagents. NORMATOM® acids have been created to satisfy these exacting purity requirements. Ultrapure products have 63 specifications <20 ppt for the range.

- Very high purity (specifications in ppb)
- Produced by sub-boiling distillation
- Supplied in special polyethylene bottles
- Delivered with Certificate of Analysis

Description	Pk	Cat. No.
Acetic acid 99% NORMATOM® for trace metal analysis	500 ml	**83876.270**
Ammonia 20% NORMATOM® for trace metal analysis	500 ml	**83870.270**
Hydrochloric acid 32% ULTRAPURE NORMATOM®, ultrapure for trace metal analysis	500 ml	**83878.270**
Hydrochloric acid 34% NORMATOM® for trace metal analysis	500 ml	**83871.270**
Hydrofluoric acid 47% NORMATOM® for trace metal analysis	500 ml	**83873.260**
Nitric acid 67% NORMATOM® for trace metal analysis	500 ml	**83872.270**
Nitric acid 67% ULTRAPURE NORMATOM® for trace metal analysis	500 ml	**83879.270**
Perchloric acid 65% NORMATOM® for trace metal analysis	500 ml	**83874.260**
Sulphuric acid 93% NORMATOM® for trace metal analysis	500 ml	**83875.270**
Water NORMATOM® for trace metal analysis	500 ml	**83877.260**

High purity acids for trace analysis, Ultrapur®, Suprapur® and Tracepur®

Description	Pk	Cat. No.
Acetic acid glacial Suprapur® for trace analysis	250 ml	**1.00066.0250**
Acetic acid glacial Suprapur® for trace analysis	1 l	**1.00066.1000**
Ammonia 25% Suprapur® for trace analysis	250 ml	**1.05428.0250**
Ammonia 25% Suprapur® for trace analysis	1 l	**1.05428.1000**
Formic acid 98-100% Suprapur® for trace analysis	1 l	**1.11670.1000**
Hydrochloric acid 30% Suprapur® for trace analysis	250 ml	**1.00318.0250**
Hydrochloric acid 30% Suprapur® for trace analysis	1 l	**1.00318.1000**
Hydrogen peroxide 30% Suprapur® for trace analysis	250 ml	**1.07298.0250**
Hydrogen peroxide 30% Suprapur® for trace analysis	1 l	**1.07298.1000**
Nitric acid 65% Suprapur® for trace analysis	250 ml	**1.00441.0250**
Nitric acid 65% Suprapur® for trace analysis	1 l	**1.00441.1000**
Perchloric acid 70% Suprapur® for trace analysis	250 ml	**1.00517.0250**
Sulphuric acid 96% Suprapur® for trace analysis	250 ml	**1.00714.0250**
Water Ultrapur® for trace analysis	1 l	**1.01262.1000**

Polarimeter, fully automatic, ADP440+

Bellingham + Stanley

The ADP440+ is a general purpose, fully automatic digital polarimeter suitable for measuring the rotation of optically active samples across a wide range of laboratory applications and is especially suited for use in pharmaceutical laboratories. Data handling is in accordance with GLP and can also be configured to meet the operational requirements of FDA regulation 21 CFR part 11.

Operation is simple with touch-of-a-button control for automatic read, print, scale change and zero setting. Both Angular Degree and International Sugar (ISS) scales are selectable. Results are displayed digitally and can be printed directly or sent to a computer. On screen menus in English, French, Spanish or German are selectable. Polarimeter tubes from 20 mm up to 220 mm in length can be used. The exterior power supply means low heat generation within the instrument and hence rapid stabilisation. Temperature compensation can be achieved from a single sensor, which can measure either the temperature within the sample chamber or, when placed in the centre-filling arm of the measurement tube, the temperature of the actual sample. Optional water-jacketed tubes can be used for precise temperature control.

- Refractometer port for connection to RFM (for Purity applications, no PC required)
- Multiple scales incl. Specific Rotation, concentration and purity
- Real time clock for recording date and time of result and RFID operator identification and protection
- Response times can be selected depending on precision required
- Quartz control plates available for verification and calibration

Conforms to USP/EP/BP/JP & technical requirements of FDA 21 CFR Part 11 & ICUMSA.

Delivery information: Polarimeter supplied with 1×200 mm straight centre tube (635-0027), pack of three RFID (radio frequency identification) tags, power supply and instruction manual.

Ordering information: Validation documentation available on request. For flow and water jacketed tubes, special slotted lids are required. Please see ADP410 accessories for details.

Model	ADP440+
Angular scale - accuracy (°A)	±0,01
Angular scale - range (°A)	–355...+355 (7 selectable ranges)
Angular scale - resolution (°A)	0,001
Interfaces	2× RS232, parallel printer
Light source - beam diameter (mm)	4
Light source - type	LED with interference filter (589 nm)
Optical density range (OD)	0,0 - 3,0
Sugar scale - accuracy (°Z)	±0,03
Sugar scale - range (°Z)	–225...+225
Sugar scale - resolution (°Z)	0,001
Temperature compensation	None, sugar, quartz, user-defined
Weight (kg)	9
W×D×H (mm)	550×280×150

Description	Pk	Cat. No.
ADP440+ EU-plug	1	635-0380
ADP440+ UK-plug	1	635-0379
ADP440+ CH-plug	1	635-0377
ADP440+ DK-plug	1	635-0378

Description	Pk	Cat. No.
Quartz Control Plates		
Standard quartz control plate +15 °Z, +5,2 °A	1	635-0023
Standard quartz control plate +100 °Z, +34,6 °A	1	635-0022
Accessories		
Thermal block for quartcontrol plates	1	635-0666
RFID tags – pack of 3	3	635-0493
RFID tags – pack of 10	10	635-0494
Standard glass sample tube with bulb, 100 mm	1	635-0024
Centre filling glass tube with straight central arm, 100 mm	1	635-0026
Centre filling glass tube with cup shaped centre filler, 100 mm	1	635-0028
Centre filling glass tube with nickel plated brass outer water jacket, 100 mm	1	635-0503
Standard glass sample tube with bulb, 200 mm	1	635-0025
Centre filling glass tube with straight central arm, 200 mm	1	635-0027
Centre filling glass tube with cup shaped centre filler, 200 mm	1	635-0029
Centre filling glass tube with nickel plated brass outer water jacket, 200 mm	1	635-0504
Low strain cover glasses for glass tubes	12	635-0289
Rubber washers for use between cover glasses and end cap of glass tubes	12	635-0290
End caps, plastic	2	635-0030

IC standards

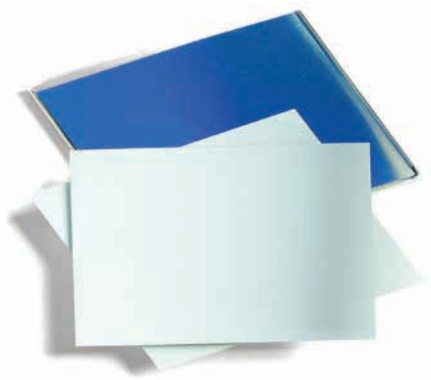
Description	Pk	Cat. No.
3-Methoxypropylamine 1000 mg/l in water standard for ion chromatography	100 ml	84978.180
Acetate 1000 mg/l in water standard for ion chromatography	100 ml	84951.180
Ammonium (in N) 1000 mg/l in water standard for ion chromatography	100 ml	84953.180
Ammonium 1000 mg/l in water standard for ion chromatography	100 ml	84952.180
Barium 1000 mg/l in water standard for ion chromatography	100 ml	84954.180
Benzoate 1000 mg/l in water standard for ion chromatography	100 ml	84955.180
Bromate 1000 mg/l in water standard for ion chromatography	100 ml	84956.180
Bromide 1000 mg/l in water standard for ion chromatography	100 ml	84957.180
Calcium 1000 mg/l in water standard for ion chromatography	100 ml	84958.180
Cesium 1000 mg/l in water standard for ion chromatography	100 ml	84959.180
Chlorate 1000 mg/l in water standard for ion chromatography	100 ml	84960.180
Chloride 1000 mg/l in water standard for ion chromatography	100 ml	84962.180
Chlorite 1000 mg/l in NaOH solution standard for ion chromatography	100 ml	84961.180
Chromate (in Cr(VI)) 1000 mg/l in water standard for ion chromatography	100 ml	84963.180
Citrate 1000 mg/l in water standard for ion chromatography	100 ml	84964.180
Diethanolamine 1000 mg/l in water standard for ion chromatography	100 ml	84965.180
Fluoride 1000 mg/l in water standard for ion chromatography	100 ml	84966.180
Formiate 1000 mg/l in water standard for ion chromatography	100 ml	84967.180
Glyconate 1000 mg/l in water standard for ion chromatography	100 ml	84968.180
Hydrogenphthalate 1000 mg/l in water standard for ion chromatography	100 ml	84969.180
Hyrogensulphite 1000 mg/l in water standard for ion chromatography	100 ml	84970.180
Iodate 1000 mg/l in water standard for ion chromatography	100 ml	84971.180
Iodide 1000 mg/l in water standard for ion chromatography	100 ml	84972.180
Lactate 1000 mg/l in water standard for ion chromatography	100 ml	84973.180
Lithium 1000 mg/l in water standard for ion chromatography	100 ml	84974.180
Magnesium 1000 mg/l in water standard for ion chromatography	100 ml	84975.180
Maleate 1000 mg/l in water standard for ion chromatography	100 ml	84976.180
Methane sulphonate 1000 mg/l in water standard for ion chromatography	100 ml	84977.180
Monoethanolamine 1000 mg/l in water standard for ion chromatography	100 ml	84979.180
Monomethylamine 1000 mg/l in water standard for ion chromatography	100 ml	84980.180
Nitrate (in N) 1000 mg/l in water standard for ion chromatography	100 ml	84982.180
Nitrate 1000 mg/l in water standard for ion chromatography	100 ml	84981.180
Nitrilotriacetate 1000 mg/l in water standard for ion chromatography	100 ml	84983.180
Nitrite (in N) 1000 mg/l in water standard for ion chromatography	100 ml	84985.180
Nitrite 1000 mg/l in water standard for ion chromatography	100 ml	84984.180
Oxalate 1000 mg/l in water standard for ion chromatography	100 ml	84986.180
Perchlorate 1000 mg/l in water standard for ion chromatography	100 ml	84987.180
Phosphate (in P) 1000 mg/l in water standard for ion chromatography	100 ml	84989.180
Phosphate 1000 mg/l in water standard for ion chromatography	100 ml	84988.180
Potassium 1000 mg/l in water standard for ion chromatography	100 ml	84990.180
Propionate 1000 mg/l in water standard for ion chromatography	100 ml	84991.180
Silicate 1000 mg/l in water standard for ion chromatography	100 ml	84992.180
Sodium 1000 mg/l in water standard for ion chromatography	100 ml	84993.180
Strontium 1000 mg/l in water standard for ion chromatography	100 ml	84994.180
Succinate 1000 mg/l in water standard for ion chromatography	100 ml	84995.180
Sulfite (in HSO3-) 1000 mg/l in water standard for ion chromatography	100 ml	84997.180
Sulphate 1000 mg/l in water standard for ion chromatography	100 ml	84996.180
Tartrate 1000 mg/l in water standard for ion chromatography	100 ml	84998.180
Thiocyanate 1000 mg/l in water standard for ion chromatography	100 ml	84999.180
Thiosulfate 1000 mg/l in amylic alcohol standard for ion chromatography	100 ml	85000.180
Triethanolamine 1000 mg/l in water standard for ion chromatography	100 ml	85001.180
Triethylamine 1000 mg/l in water standard for ion chromatography	100 ml	85002.180
Trimethylamine 1000 mg/l in water standard for ion chromatography	100 ml	85003.180

Ion chromatography standards, Certipur®

Ready to use calibration standards for ion chromatography which are traceable to NIST standard reference materials.

Description	Pk	Cat. No.
Ammonium standard solution, 1,000 mg/l NH4 in water (from $(NH_4)Cl$) Certipur® standard for ion chromatography	500 ml	1.19812.0500
Bromide standard solution, 1,000 mg/l Br- in water (from NaBr) Certipur®	500 ml	1.19896.0500
Chloride standard solution, 1,000 mg/l Cl- in water (from NaCl) Certipur®	500 ml	1.19897.0500
Fluoride standard solution, 1,000 mg/l F- in water (from NaF) Certipur®	500 ml	1.19814.0500
Nitrate standard solution, 1,000 mg/l NO3- in water (from $NaNO_3$) Certipur®	500 ml	1.19811.0500
Nitrite standard solution, 1,000 mg/l NO_2^- in water (from $NaNO_2$) Certipur®	500 ml	1.19899.0500
Phosphate standard solution, 1,000 mg/l PO4(3-) in water (from KH_2PO_4) Certipur®	500 ml	1.19898.0500
Sulphate standard solution, 1,000 mg/l SO4(2-) in water (from Na_2SO_4) Certipur®	500 ml	1.19813.0500

HPTLC and GLP plates, silica gel 60, unmodified layers, glass backed



HPTLC plates, unmodified silica gel 60

This range of plates uses an optimised Merck silica gel 60 with a particle size of only 5 - 6 µm, which results in higher packing density and a smoother surface and therefore reduced band diffusion. Less sample is required, 0,1 to 0,5 µl than for classical TLC.

- Faster analysis, only 3 - 20 min for optimum separations
- 5 - 10 fold increased sensitivity compared to classical TLC
- Extra thin (100 µm) HPTLC automated multiple development (AMD) plates

HPTLC plates, concentrating zone

HPTLC concentrating zone plates that allow easy application of large volumes of diluted samples.

- Quick and easy sample application
- Includes a purification and concentration step

GLP plates

Laser coded GLP plates that are individually marked with item, batch and individual plate number. Based on the same proven Merck silica 60, GLP plates perform exactly as the corresponding TLC or HPTLC plates.

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
HPTLC silica gel 60	100×100	200	25	**1.05631.0001**
HPTLC silica gel 60	100×100	200	100	**1.05633.0001**
HPTLC silica gel 60	200×100	200	50	**1.05641.0001**
HPTLC silica gel 60 F254**	50×100	200	25	**1.05616.0001**
HPTLC silica gel 60 F254**	100×100	200	25	**1.05628.0001**
HPTLC silica gel 60 F254**	100×100	200	100	**1.05629.0001**
HPTLC silica gel 60 F254**	200×100	200	50	**1.05642.0001**
HPTLC silica gel 60 F254** AMD, extra thin	200×100	100	25	**1.11764.0001**
HPTLC silica gel 60 F254** with concentrating zone 25×50	50×100	200	25	**1.13187.0001**
HPTLC silica gel 60 F254** with concentrating zone 25×200 mm	200×100	200	50	**1.13728.0001**
HPTLC silica gel 60 F254** with concentrating zone 25×100 mm	100×100	200	25	**1.13727.0001**
HPTLC silica gel 60 F254s***	200×100	200	25	**1.15696.0001**
HPTLC silica gel 60 RP-18 F254s*** with concentrating zone 25×200 mm	200×100	200	25	**1.15498.0001**
HPTLC silica gel 60 W*RF254s***	200×100	200	25	**1.15552.0001**
HPTLC silica gel 60 W*RF254s*** AMD, extra thin	200×100	100	25	**1.12363.0001**
HPTLC silica gel 60 with concentrating zone 25×100 mm	100×100	200	25	**1.13748.0001**
HPTLC silica gel 60 with concentrating zone 25×200 mm	200×100	200	50	**1.13749.0001**
GLP silica gel 60 F254**	100×100	200	25	**1.05564.0001**
GLP silica gel 60 F254**	100×200	200	25	**1.05613.0001**

* W: wettable with water
** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

HPTLC and TLC plates, silica gel 60, MS-grade

Coupling TLC plates to mass spectrometry is a new field of high interest, which will contribute strongly to the progress of planar chromatography. The MS-grade plates are much cleaner than standard TLC/HPTLC plates providing higher sensitivity and reduced background signals. This allows trace analysis with mass spectrometry detection in lower nanogram range.

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
HPTLC silica gel 60 F254** MS-grade, 25 glass plates	200×100	100	25	**1.00934.0001**
TLC silica gel 60 F254** MS-grade, 25 glass plates	200×200	200	25	**1.00933.0001**

** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

HPTLC plates with spherical particles, LiChrospher®

HPTLC LiChrospher® plates are based on spherical shaped silica 60 with a particle size of 7 µm and narrow particle size distribution similar to the phases used in HPLC. LiChrospher® HPTLC plates possess a selectivity that is comparable to the respective HPTLC plates, however plate height and separation numbers are further improved resulting in shorter analysis times.

- 20% reduced running times
- Highly compact spots or zones
- Lower detection limits and better resolution

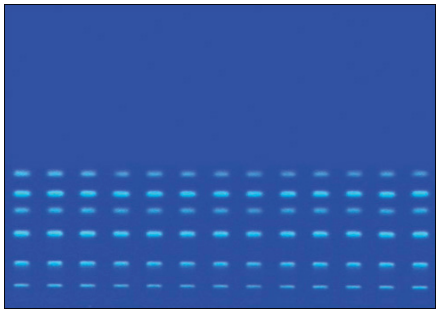
Analysis times on a HPTLC LiChrospher® compared with a normal HPTLC plate:

Eluent	Migration distance (mm)	Analysis times (min) Lichrospher® silica gel 60 F254s	Analysis times (min, sec) HPTLC silica gel 60 F254
Toluene	40	4	5, 45
Ethyl acetate/toluene (95-5)	50	6	7, 50
Methyl ethyl keton/1-propanol/water/acetic acid (40+40+20+5)	50	20	26, 30
n-Hexane/toluene/acetone (70+20+10)	70	13	19

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
HPTLC LiChrospher® silica gel 60 F254*, glass, unmodified	200×200	200	25	**1.15445.0001**
HPTLC LiChrospher® silica gel 60 F254s**, aluminium, unmodified	200×100	200	25	**1.05586.0001**
HPTLC LiChrospher® silica gel 60 AMD WR F254s**, glass	200×100	100	25	**1.05647.0001**
HPTLC LiChrospher® silica gel 60 RP-18 WF254s**, glass	200×100	200	25	**1.05646.0001**

* F254: fluorescent indicator
** F254s: acid stable fluorescent indicator

HPTLC plates silica gel 60, modified layers, glass



RP-modified silica plates

RP-2, RP-8 and RP-18 are based on silica gel 60 modified with aliphatic hydrocarbons. The chain length in combination with the degree of modification defines the ability to tolerate water in the solvent system and strongly affects retention. Migration time increases in the order RP-2, RP-8 and RP-18 using the same solvent composition. Plates exhibit higher polarity and high affinity of aqueous solutions tolerating up to 60 to 80% water. The innovative HPTLC RP 18 W can be used even with pure water.

CN, DIOL, NH_2 modified silica plates

The CN and DIOL modified silica plates are moderately polar and suited for both normal and reversed phase systems. The amino modified NH_2 plate provides weak basic ion exchange characteristics with special selectivity for charged compounds. It offers an alternative to PEI cellulose.

HPTLC concentrating zone plates

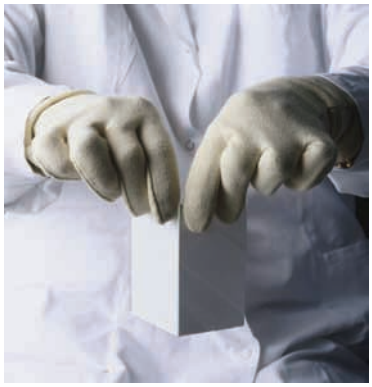
HPTLC concentrating zone plates that allow easy application of large volumes of diluted samples.

- Quick and easy manual sample application
- Includes a purification and concentration step

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
HPTLC silica gel 60 CN F254s***	100×100	200	25	**1.16464.0001**
HPTLC silica gel 60 DIOL F254s***	200×100	200	25	**1.05636.0001**
HPTLC silica gel 60 DIOL F254s***	100×100	200	25	**1.12668.0001**
HPTLC silica gel 60 NH_2	200×100	200	25	**1.12572.0001**
HPTLC silica gel 60 NH_2 F254s***	200×100	200	25	**1.13192.0001**
HPTLC silica gel 60 NH_2 F254s***	100×200	200	25	**1.15647.0001**
HPTLC silica gel 60 RP-18	200×100	200	25	**1.05914.0001**
HPTLC silica gel 60 RP-18 F254s***	100×100	200	25	**1.13724.0001**
HPTLC silica gel 60 RP-18 F254s***	200×100	200	1	**1.16225.0001**
HPTLC silica gel 60 RP-18 PAH with concentrating zone 25×200 mm	200×100	200	25	**1.15037.0001**
HPTLC silica gel 60 RP-18 W*	200×100	200	25	**1.14296.0001**
HPTLC silica gel 60 RP-18 W* F254s***	100×100	200	25	**1.13124.0001**
HPTLC silica gel 60 RP-2 F254s***	100×100	200	25	**1.13726.0001**
HPTLC silica gel 60 RP-8 F254s***	100×100	200	25	**1.13725.0001**

* W: fully wettable with water
*** F254s: acid stable fluorescent indicator

Multiformat plates, silica gel 60 Å



Merck Multiformat plates are pre-scored glass plates for easy breaking into various sizes. The plates use the same silica coating as the corresponding TLC or HPTLC plate delivering chromatograms that are identical to those of the non scored plates.

- Easy snapping to smaller sizes
- Up to 7 formats in one plate (mm): 200×200, 150×200, 100×200, 50×200, 100×150, 100×100, 50×10

Description	Format (mm)	Plates	Type	Pk	Cat. No.
HPTLC Multiformat silica gel 60 F254** plates	100×100	Max. 100	Scored: 50×50 mm	100	**1.05635.0001**
HPTLC Multiformat silica gel 60 plates	100×100	Max. 400	Scored: 50×50 mm	100	**1.05644.0001**
Multiformat silica gel 60 F254** plates	200×200	Max. 80	Scored: 50×200 mm	80	**1.05608.0001**
Multiformat silica gel 60 F254** plates	200×200	Max. 200	Scored: 50×100 mm	25	**1.05620.0001**

** F254: fluorescent indicator

PLC plates, unmodified silica gel 60, glass

PLC (Preparative layer chromatography) plates are based on the same proven Merck silica-binder technology as analytical TLC plates. Plates are available with layers of unmodified silica gel in several layer thickness ranging from 500 µm up to 2000 µm, with or without fluorescent indicator and with glass backing.

- Enables high sample loading
- Separation and purification of mg up to g quantities

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
PLC silica gel 60	200×200	500	20	**1.13894.0001**
PLC silica gel 60	200×200	2000	12	**1.05745.0001**
PLC silica gel 60 F254**	200×200	500	20	**1.05744.0001**
PLC silica gel 60 F254**	200×200	1000	15	**1.13895.0001**
PLC silica gel 60 F254**	200×200	2000	12	**1.05717.0001**
PLC silica gel 60 RP-18 F254s ***	200×200	1000	15	**1.05434.0001**
PLC silica gel 60 F254** with concentrating zone 40×200 mm	200×200	500	20	**1.13794.0001**
PLC silica gel 60 F254** with concentrating zone 40×200 mm	200×200	1000	15	**1.13792.0001**
PLC silica gel 60 F254** with concentrating zone 40×200 mm	200×200	2000	12	**1.13793.0001**

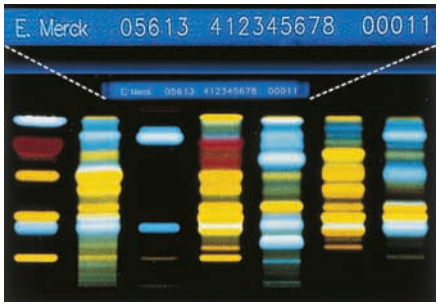
** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

LOOKING FOR MORE? CHECK OUT OUR "ALL YOU NEED FOR BIOBANKING" BROCHURE

- Sample storage
- Sample handling
- Safety

Request your copy from your local VWR sales office or vwr.com

TLC and GLP plates, silica gel 60, unmodified layers, glass backed



TLC plates, unmodified silica gel 60

Merck silica gel 60 with a unique polymeric binder that results in a uniform and hard surface that will not easily crack or blister. The smooth and extremely dense plate coating ensures narrow bands and maximum separation efficiency with the lowest background noise

- Layer thickness 250 µm, particle size of 10 - 12 µm
- Two inorganic fluorescent indicators for UV detection of colourless substances

TLC plates, concentrating zone

These plates are based on different adsorption properties of two silica adsorbents: An inert large pore concentrating adsorbent where the samples are applied and a selective layer for the separation. Independent of the shape, size or position of the spots the sample always concentrates within seconds as a narrow band at the interface of the two adsorbents, where the separation begins.

- Quick and easy sample application
- Includes a purification and concentration step

GLP plates

Laser coded GLP plates that are individually marked with item, batch and individual plate number. Based on the same proven Merck silica gel 60, GLP plates perform exactly as the corresponding TLC or HPTLC plates.

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC silica gel 60, unmodified	25×75	250	100	**1.15326.0001**
TLC silica gel 60, unmodified	50×200	250	100	**1.05724.0001**
TLC silica gel 60, unmodified	100×200	250	50	**1.05626.0001**
TLC silica gel 60, unmodified	200×200	250	25	**1.05721.0001**
TLC silica gel 60 F254**, unmodified	25×75	250	100	**1.15327.0001**
TLC silica gel 60 F254**, unmodified	25×75	250	500	**1.15341.0001**
TLC silica gel 60 F254**, unmodified	50×100	250	200	**1.05719.0001**
TLC silica gel 60 F254**, unmodified	50×100	250	25	**1.05789.0001**
TLC silica gel 60 F254**, unmodified	50×200	250	100	**1.05714.0001**
TLC silica gel 60 F254**, unmodified	50×200	250	25	**1.05808.0001**
TLC silica gel 60 F254**, unmodified	100×200	250	50	**1.05729.0001**
TLC silica gel 60 F254**, unmodified	200×200	250	25	**1.05715.0001**
TLC silica gel 60 F254** with concentrating zone	100×200	250	50	**1.11846.0001**
TLC silica gel 60 F254** with concentrating zone	200×200	250	25	**1.11798.0001**
TLC silica gel 60 W* F254s***, unmodified	200×200	250	25	**1.16485.0001**
TLC silica gel 60 with concentrating zone	100×200	250	50	**1.11844.0001**
TLC silica gel 60 with concentrating zone	200×200	250	25	**1.11845.0001**
GLP silica gel 60 F254**	100×200	250	25	**1.05702.0001**
GLP silica gel 60 F254**	200×200	250	25	**1.05566.0001**

* W: wettable with water
** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

TLC and PLC plates, aluminium oxide 60

TLC plates, aluminium oxide 60

Merck TLC aluminium oxide plates use neutral or basic aluminium oxide with 60 Å pore size with or without fluorescent indicator to suit different application needs.

- Distinct separation advantages with regard to the pH
- 250 µm layer thickness for basic or 200 µm layer thickness for neutral plates

PLC plates, aluminium oxide 60

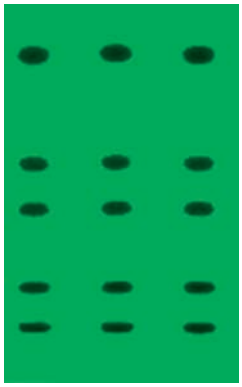
PLC (Preparative layer chromatography plates) are perfectly suited for cleaning up synthetic reaction mixtures, natural products, plant extracts and biotech products. The plates are based on the same proven Merck silica-binder technology as analytical TLC plates.

- Enable high sample loading
- Separation and purification of mg up to g quantities
- 1,5 mm layer thickness

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC aluminium oxide 60 F254 basic, glass	200×200	250	25	**1.05713.0001**
TLC aluminium oxide 60 F254 basic, glass	50×200	250	100	**1.05731.0001**
TLC aluminium oxide 60 F254 neutral, aluminium	200×200	200	25	**1.05550.0001**
TLC aluminium oxide 60 F254 neutral, plastic	200×200	200	25	**1.05581.0001**
PLC aluminium oxide 60 F254, glass	200×200	1500	12	**1.05788.0001**

* F254: fluorescent indicator

TLC LuxPlate® silica gel 60, unmodified layers, glass



The LuxPlate® range of high fluorescence TLC plates contains an increased amount of fluorescent dye making it easier to identify small amounts of isolated material. Furthermore the amount of binder added is elevated, resulting in a significantly brighter TLC plate with an even more stable and robust surface.

- Twice as bright under UV light compared to conventional TLC plates
- Easy identification of the developed bands due to better contrast against plate background

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC LuxPlate® Silica gel 60 F254	25×75	250	100	**1.05801.0001**
TLC LuxPlate® Silica gel 60 F254	50×100	250	25	**1.05802.0001**
TLC LuxPlate® Silica gel 60 F254	100×200	250	50	**1.05804.0001**
TLC LuxPlate® Silica gel 60 F254	200×200	250	25	**1.05805.0001**

TLC plates, modified silica gel 60, glass

RP-2, RP-8 and RP-18 are based on silica gel 60 modified with aliphatic hydrocarbons. The chain length in combination with the degree of modification defines the ability to tolerate water in the solvent system and strongly affects retention. Migration time increases in the order RP-2, RP-8 and RP-18 using the same solvent composition. RP-8 and RP-18 can be run with up to 60% water in the solvent system.

- Results less dependent on atmospheric humidity
- Allows the use of aqueous solvent systems
- RP-modified silica provides a ready correlation with HPLC

Description	Format (mm)	Pk	Cat. No.
TLC silica gel 60 RP-18 F254s***	50×100	25	**1.15685.0001**
TLC silica gel 60 RP-18 F254s***	50×200	50	**1.15683.0001**
TLC silica gel 60 RP-18 F254s***	100×200	50	**1.15423.0001**
TLC silica gel 60 RP-18 F254s***	200×100	25	**1.15389.0001**
TLC silica gel 60 RP-2 (silanised)	200×200	25	**1.05746.0001**
TLC silica gel 60 RP-2 F254** (silanised)	200×200	25	**1.05747.0001**
TLC silica gel 60 RP-8 F254**	50×100	25	**1.15684.0001**
TLC silica gel 60 RP-8 F254**	100×200	50	**1.15424.0001**
TLC silica gel 60 RP-8 F254**	200×200	25	**1.15388.0001**

** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

TLC plates, silica gel 60, unmodified and chemically modified layers, aluminium backed

TLC plates, unmodified silica gel 60

This range of plates uses Merck silica gel 60 with a unique polymeric binder that results in a uniform and hard surface that will not easily crack or blister. The smooth and extremely dense plate coating ensures narrow bands and maximum separation efficiency with the lowest background noise.

- Layer thickness 200 µm, particle size of 10 - 12 µm
- Flexible aluminium plates that can easily be cut to match individual separation requirements
- Two inorganic fluorescent indicators for UV detection of colourless substances
- Samples which absorb shortwave UV at 254 nm are detected due to fluorescence quenching

TLC plates, concentrating zone

These plates are based on the different adsorption properties of two silica adsorbents: An inert large pore concentrating adsorbent where the samples are applied and a selective layer for the separation. Independent of the shape, size or position of the spots the sample always concentrates within seconds as a narrow band at the interface of the two adsorbents, where the separation begins.

- Quick and easy sample application
- Includes a purification and concentration step
- Better resolution due to sharp bands

TLC plates, modified silica gel 60

Modified silica layers (layer thickness 200 µm) are well suited for most problem separations that cannot be adequately resolved using unmodified silica.

- Results less dependent on atmospheric humidity
- Allows use of aqueous solvent systems
- RP-modified silica provides a ready correlation with HPLC
- No catalytic activity for unstable substances (oxidative degradation)

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC silica gel 60, unmodified	50×100	200	50	**1.16835.0001**
TLC silica gel 60, unmodified	200×200	200	25	**1.05553.0001**
TLC silica gel 60 F254**, unmodified	50×75	200	20	**1.05549.0001**
TLC silica gel 60 F254**, unmodified	50×100	200	50	**1.16834.0001**
TLC silica gel 60 F254**, unmodified	100×200	200	25	**1.05570.0001**
TLC silica gel 60 F254**, unmodified	200×200	200	25	**1.05554.0001**
TLC silica gel 60 F254**, unmodified	5000×200	200	1 Roll	**1.05562.0001**
TLC silica gel 60 W*, unmodified	200×200	200	25	**1.16487.0001**
TLC silica gel 60 W* F254s***, unmodified	200×200	200	25	**1.16484.0001**
TLC silica gel 60 F254** with concentrating zone 25×200 mm	200×200	200	25	**1.05583.0001**
TLC silica gel 60 with concentrating zone 25×200 mm	200×200	200	25	**1.05582.0001**
TLC silica gel 60 NH_2 F254**, modified	200×200	200	20	**1.05533.0001**
TLC silica gel 60 RP-18 F254s***, modified	50×75	200	20	**1.05560.0001**
TLC silica gel 60 RP-18 F254s***, modified	200×200	200	20	**1.05559.0001**

* W: wettable with water
** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

TLC plates, silica gel 60, unmodified, plastic

TLC plates, that feature the smooth and extremely dense plate coating, ensure narrow bands and maximum separation efficiency with the lowest background noise. Flexible plastic plates can easily be cut to match individual separation requirements.

- Layer thickness 200 µm, particle size of 10 - 12 µm
- Inorganic fluorescent indicator for UV detection of colourless substances

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC silica gel 60, unmodified	200×200	200	25	**1.05748.0001**
TLC silica gel 60 F254**, unmodified	40×80	200	50	**1.05750.0001**
TLC silica gel 60 F254**, unmodified	200×200	200	25	**1.05735.0001**
TLC silica gel 60 F254**, unmodified	5000×200	200	1	**1.05749.0001**

** F254: fluorescent indicator

TLC plates, silica gel 60G, glass backed

Highly robust plates with gypsum as binder, fully compliant with international pharmacopoeia (Ph Eur and USP).

Traditionally, TLC monographs in the pharmacopoeia refer to products using silica G, containing gypsum as binder, or silica H with no foreign binder. There are about 200 monograph methods in the European Pharmacopoeia (Ph Eur) referring to these plates*. Fully compliant with international pharmacopoeia, these new TLC silica gel 60G plates are recommended for customers in QA/QC labs using older Ph Eur monograph methods, which require TLC plates with a gypsum binder and who do not wish to switch to classical Merck Millipore TLC plates with organic binders. Merck Millipore's classical TLC plates fulfill the performance test requirements of Ph Eur for G plates with gypsum, even though they use modern organic binders. Today, many customers routinely use these classical TLC plates in place of gypsum plates and indeed several monographs have been updated to officially confirm this change.

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC silica gel 60G	200×200	250	25	**1.00384.0001**
TLC silica gel 60G F254**	200×200	250	25	**1.00390.0001**

* The United States Pharmacopoeia (USP) does not distinguish between TLC plates with gypsum or organic binder, thus Merck Millipore standard plates can always be used.
** F254: fluorescent indicator

TLC sprayer

The Merck Millipore TLC sprayer allows derivatisation reagents to be sprayed homogeneously onto developed chromatograms. It is equipped with two different spray heads, 0,8 and 1,25 mm, optimised for low and high viscosity solutions respectively. The electro-pneumatically operated sprayer uses compressed air driven by accumulator power and inductive charging.

Description	Pk	Cat. No.
TLC sprayer with two spray heads, 1×0,8 and 1×1,25 mm	1	**1.08540.0001**

Description	Pk	Cat. No.
Accessories		
Spray heads for TLC sprayer, 5×0,8 and 1×1,25 mm	6	**1.08541.0001**
Molybdatophosphoric acid spray solution for TLC	100 ml	**1.00480.0100**
Dragendorff's spray solution for TLC	100 ml	**1.02035.0100**
Ninhydrin spray solution for TLC	100 ml	**1.06705.0100**

HPLC column accessories

Merck columns come in three formats:

1. The Hibar® RT is a traditional column with standard 1/16" female end fittings. The Hibar® stand-alone guard cartridge holder in conjunction with the LiChrospher® 4-4 guard cartridges can be used to protect the column.

2. The LiChroCART® cartridge columns utilise the manuCART® removable end fittings, which have standard 1/16" female connections. ManuCART® end fittings incorporate a guard cartridge holder as an integral part of the assembly which minimises dead volume. It can be used with any Merck column between 75 and 250 mm in length.

3. Chromolith® columns - monolithic silica rods are clad in PEEK and are in ready to use format with end fittings, see relevant catalogue entry for details and pictures of columns and guard columns.

LiChroCART® cartridge with LiChroCART® pre-cartridges and coupling kit

Connecting a LiChroCART® cartridge with LiChroCART 25-4 and 25-2 pre-cartridge with coupling kit.

LiChroCART® cartridge with manuCART® end fittings

The manuCART® system incorporates a guard cartridge holder and will take 2, 3 and 4 mm I.D. columns with lengths from 75 to 250 mm.

Guard cartridges

Merck 4-4 mm pre-columns or guard cartridges offer excellent value. With the appropriate holder they can be used with both Merck and non-Merck columns. Use the ManuCART® integral fittings for Merck cartridge columns and the Hibar® 4-4 pre-column holder for end-fitted columns. Merck 4-4 guard cartridges are available in C18, C8 RP Select B, Si, NH_2, CN and DIOL phases.

- Minimal loss of column efficiency
- Economical an easy to use
- Increases lifetime of analytical column

Description	Pk	Cat. No.
LiChroCART® cartridge accessories		
ManuCART® "10"-II cartridge holder for 10 mm I.D. LiChroCART® cartridges	1	**1.51419.0001**
ManuCART® coupling kit to connect 2 LiChroCART® cartridges	1	**1.50083.0001**
ManuCART® holder 30 mm for 30-2, 30-3 and 30-4 LiChroCART® cartridges	1	**1.50227.0001**
ManuCART® holder 55 mm for 55-2, 55-3 and 55-4 LiChroCART® cartridges	1	**1.50226.0001**
ManuCART® NT cartridge holder for 2, 3, 4 and 4,6 mm I.D. LiChroCART® cartridges	1	**1.51486.0001**
Pre-column holder for direct coupling of LiChroCART® 4-4 pre-columns	1	**1.51487.0001**

HPLC columns, Purospher® STAR Phenyl

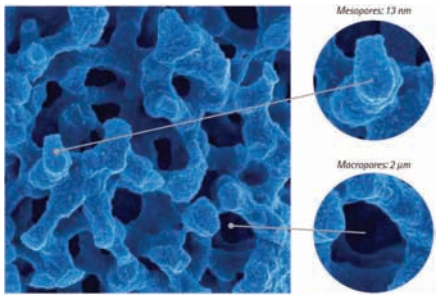
Purospher® STAR Phenyl HPLC columns show an enhanced selectivity compared to standard alkyl phases. They are the first alternative to RP-8 or RP-18 selectivities for separation of aromatic compounds, fatty acids, purines and pyrimidines due to π-π interactions.

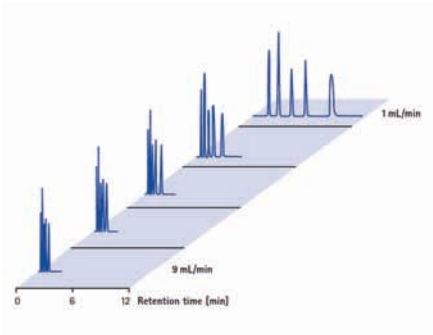
The new Purospher® STAR Phenyl columns are based on high purity silica particles providing symmetrical peaks for basic compounds, high stability and excellent reproducibility.

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR Phenyl, stainless steel LiChroCART® cartridges				
Purospher® STAR Phenyl LiChroCART®	5	4,6×250	1	**1.51921.0001**
Purospher® STAR Phenyl LiChroCART®	5	4,6×150	1	**1.51922.0001**
Purospher® STAR Phenyl, stainless steel Hibar® RT columns				
Purospher® STAR Phenyl Hibar® RT	5	4,6×250	1	**1.51918.0001**
Purospher® STAR Phenyl Hibar® RT	5	4,6×150	1	**1.51919.0001**
Purospher® STAR Phenyl Hibar® RT	5	3×150	1	**1.51920.0001**

The LiChroCART® cartridges (150 and 250 mm length) in the list above (4,6 mm i.d.) require part number 1.51486.0001 manu-CART® cartridge column holder.
The Hibar® RT columns are complete with end fittings.

HPLC columns, Chromolith®





Monolithic silica technology: A new age in chromatography

Chromolith® columns are based on silica so existing methods can be easily transferred with only minimal investment in new method development work. "Sol-Gel" technology allows highly porous monolithic rods of silica to be formed. These feature a bimodal pore structure which provides a unique combination of macropores and mesopores.

- Due to the extremely high porosity of the Chromolith® column very high flow rates can be used with low pressures
- Reduce separation time, for high-speed analysis
- Long lifetime of columns and HPLC systems
- Several hundred scientific papers published

Macroporous structure

Each macropore is on average 2 µm in diameter and in total forms a dense network of pores through which the eluent can rapidly flow. This dramatically reduces separation times.

Mesoporous structure

These mesopores form the further fine porous structure (13 nm) of the column interior and create a very large surface area over which adsorption of the target compounds can occur. This unique combination of macropores, to allow rapid transit of the eluent, and mesopores to create a large surface area, means that Chromolith® columns can provide excellent separations in a fraction of the time that a standard column will take. Separations, which previously may have taken up to 30 minutes, can now be performed in a few minutes with Chromolith® HPLC columns.

Chromolith® SpeedROD RP-18e endcapped

Acceleration of the analysis process has become one of the most important issues in high performance liquid chromatography. High-throughput analysis using conventional particle packed columns has always been a compromise between column efficiency and pressure drop. The demands of the pharmaceutical industry, especially in the field of drug discovery where the number of samples is constantly increasing, is clearly focused on new methods and tools to dramatically reduce the time of analysis and significantly increase productivity. This cannot be sufficiently realised by using particulate HPLC columns due to the problem of high column back pressure associated with small silica particles. An answer to this "high-throughput" demand is the Chromolith® SpeedROD column, which opens the door to an era of chromatographic high-speed separations. Chromolith® SpeedROD RP-18e possesses a selectivity comparable to common C18 reversed phase columns and provides the user with an excellent tool to solve separation problems.

Chromolith® Performance RP-18e endcapped

For high-speed analysis just like the Chromolith® SpeedROD columns, but with a higher separation efficiency due to the doubled column length of 100 mm. Chromolith Performance is the best tool for the scientist who wants to combine rapid analysis with the separation performance of a true analytical column. Even more impressively, by using a simple column coupler it is possible to further increase the plate count by coupling several columns in series. This creates a column with a theoretical plate count which is significantly higher than any particulate column available, while still producing pressures well below the HPLC system limit. This added column performance is the key to solving even the most critical separation problems where resolution is often the limiting factor.

Chromolith® Flash RP-18e endcapped

Faster than modern high-speed columns (typically column length of 50 mm), but with a separation efficiency that is still better than a normal guard column. At 25 mm long, the number of theoretical plates is sufficient for easy separations. The major focus of this column is clearly speed of analysis, since it provides the chromatographer with the fastest HPLC column on the market.

Chromolith® RP-18e columns: Technical information:

- Silica type: High purity
- Selectivity equivalent to: L1 (USP)
- Macropore size: 2 µm
- Mesopore size: 13 nm
- Pore volume: 1 ml/g
- Surface area: 300 m^2/g
- Carbon content: 18%

For more information and the latest applications contact VWR to receive a copy of the Merck ChromBook.

Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® SpeedROD RP-18 endcapped	4,6×50	1	**1.51450.0001**
Chromolith® Performance RP-18 endcapped	2,0×100	1	**1.52006.0001**
Chromolith® Performance RP-18 endcapped	3,0×100	1	**1.52001.0001**
Chromolith® Performance RP-18 endcapped	4,6×100	1	**1.02129.0001**
Chromolith® Performance RP-8 endcapped	4,6×100	1	**1.51468.0001**

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Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® Performance Si	4,6×100	1	1.51465.0001
Chromolith® Flash RP-18 endcapped	2,0×25	1	1.52014.0001
Chromolith® Flash RP-18 endcapped	3,0×25	1	1.52003.0001
Chromolith® RP-18 endcapped, guard column	2,0×5	3	1.52009.0001
Chromolith® RP-18 endcapped, guard column	3,0×5	3	1.52005.0001
Chromolith® RP-18 endcapped, guard column	4,6×5	3	1.51451.0001
Chromolith® RP-18 endcapped, guard column	4,6×10	3	1.51452.0001
Chromolith® RP-18 endcapped guard column kit (1 holder & 3 guard cartridges)	2,0×5	1	1.52008.0001
Chromolith® RP-18 endcapped guard column kit (1 holder & 3 guard cartridges)	3,0×5	1	1.52004.0001
Chromolith® RP-18 endcapped guard column kit (1 holder & 3 guard cartridges)	4,6×5	1	1.51470.0001
Chromolith® RP-18 endcapped guard column kit (1 holder & 3 guard cartridges)	4,6×10	1	1.51471.0001
Chromolith® RP-8 endcapped, guard column	4,6×5	1	1.52013.0001
Chromolith® RP-8 endcapped guard column kit (1 holder & 3 guard cartridges)	4,6×5	1	1.52012.0001
Chromolith® FastGradient RP-18 endcapped	2,0×50	1	1.52007.0001
Chromolith® FastGradient RP-18 endcapped	3,0×50	1	1.52002.0001
Chromolith® SemiPrep RP-18 endcapped	10,0×100	1	1.52016.0001
Chromolith® SemiPrep RP-18 endcapped, guard column	10,0×10	1	1.52036.0001
Chromolith® SemiPrep Si	10,0×100	1	1.52015.0001
Chromolith® SemiPrep Si, guard column	10,0×10	1	1.52035.0001
Chromolith® Si, guard column	4,6×5	1	1.52011.0001
Chromolith® Si guard column kit (1 holder & 3 guard cartridges)	4,6×5	1	1.52010.0001
Validation kit Chromolith® Performance RP-18 endcapped (3 columns from different batches)	4,6×100	3	1.51466.0001

Description	Pk	Cat. No.
Accessories for Chromolith®		
Chromolith® SemiPrep guard cartridge holder	1	1.52037.0001
Chromolith® column coupler	1	1.51467.0001

HPLC columns, Purospher® STAR RP-18 endcapped

Fast method development of complex samples across the pH range from 1,5 to 10,5 with different mobile phases and temperature conditions.

Purospher® STAR RP-18 endcapped HPLC columns are designed for universal use. Basic, neutral and metal chelating compounds can easily be separated with simple mobile phases – naturally without peak tailing. Thanks to its outstanding performance and stability, Purospher® STAR RP-18 endcapped offers maximum flexibility in method development. Robust methods can be developed over the entire pH range from 1,5 to 10,5. The high pH-stability up to pH 10,5 allows the separation of strongly basic compounds with alkaline eluents. The combination of high purity silica, best all-round retention characteristics, outstanding pH stability up to pH 10,5, and suitability for up to 100% aqueous mobile phases, make Purospher® STAR RP-18 endcapped an all-round top performance column, almost universal in its range of applications.

- Highest silica purity (99,999%) for excellent peak symmetry
- High separation efficiency
- Absolutely reproducible results from run-to-run and from batch-to-batch
- Best all-round RP-selectivity
- No phase collapse when using highly aqueous mobile phases
- Good suitability for LC-MS applications

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR RP-18e, stainless steel LiChroCART® cartridges				
Purospher® STAR RP-18e LiChroCART® cartridge set (includes 1 cartridge and 1 cartridge holder)	3	2×30	1 SET	1.50237.0001
Purospher® STAR RP-18e LiChroCART® cartridge set (includes 1 cartridge and 1 cartridge holder)	3	2×55	1 SET	1.50240.0001
Purospher® STAR RP-18e LiChroCART®	3	2×55	3	1.50241.0001
Purospher® STAR RP-18e LiChroCART®	5	2×100	1	1.50623.0001
Purospher® STAR RP-18e LiChroCART®	5	2×125	1	1.50255.0001
Purospher® STAR RP-18e LiChroCART®	5	2×150	1	1.50624.0001
Purospher® STAR RP-18e LiChroCART®	5	2×250	1	1.50256.0001
Purospher® STAR RP-18e LiChroCART®	5	3×100	1	1.50625.0001
Purospher® STAR RP-18e LiChroCART®	5	3×125	1	1.50253.0001
Purospher® STAR RP-18e LiChroCART®	5	3×150	1	1.50626.0001
Purospher® STAR RP-18e LiChroCART®	5	3×250	1	1.50254.0001
Purospher® STAR RP-18e LiChroCART® cartridge set (includes 1 cartridge and 1 cartridge holder)	3	4×30	1 SET	1.50239.0001
Purospher® STAR RP-18e LiChroCART®	3	4×30	3	1.50225.0001
Purospher® STAR RP-18e LiChroCART®	3	4×55	3	1.50231.0001
Purospher® STAR RP-18e LiChroCART®	3	4×75	1	1.51460.0001
Purospher® STAR RP-18e LiChroCART®	5	4×4	10	1.50250.0001
Purospher® STAR RP-18e LiChroCART®	5	4×125	1	1.50251.0001
Purospher® STAR RP-18e LiChroCART®	5	4×250	1	1.50252.0001
Purospher® STAR RP-18e LiChroCART®	5	4,6×100	1	1.50627.0001
Purospher® STAR RP-18e LiChroCART®	5	4,6×150	1	1.50358.0001
Purospher® STAR RP-18e LiChroCART®	5	4,6×250	1	1.50359.0001
Purospher® STAR RP-18e LiChroCART®	5	10×250	1	1.50257.0001

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Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR RP-18e, stainless steel Hibar® RT columns				
Purospher® STAR RP-18e Hibar® RT	3	3×125	1	**1.50413.0001**
Purospher® STAR RP-18e Hibar® RT	3	3×150	1	**1.50414.0001**
Purospher® STAR RP-18e Hibar® RT	3	3×250	1	**1.50427.0001**
Purospher® STAR RP-18e Hibar® RT	3	4×125	1	**1.50431.0001**
Purospher® STAR RP-18e Hibar® RT	3	4×250	1	**1.50468.0001**
Purospher® STAR RP-18e Hibar® RT	3	4,6×100	1	**1.50469.0001**
Purospher® STAR RP-18e Hibar® RT	3	4,6×150	1	**1.50470.0001**
Purospher® STAR RP-18e Hibar® RT	3	4,6×250	1	**1.50471.0001**
Purospher® STAR RP-18e Hibar® RT	5	2×125	1	**1.50596.0001**
Purospher® STAR RP-18e Hibar® RT	5	2×250	1	**1.50597.0001**
Purospher® STAR RP-18e Hibar® RT	5	2×250	1	**1.50598.0001**
Purospher® STAR RP-18e Hibar® RT	5	3×125	1	**1.50615.0001**
Purospher® STAR RP-18e Hibar® RT	5	3×150	1	**1.50617.0001**
Purospher® STAR RP-18e Hibar® RT	5	3×250	1	**1.50620.0001**
Purospher® STAR RP-18e Hibar® RT	5	4×125	1	**1.50036.0001**
Purospher® STAR RP-18e Hibar® RT	5	4×250	1	**1.50037.0001**
Purospher® STAR RP-18e Hibar® RT	5	4,6×100	1	**1.50622.0001**
Purospher® STAR RP-18e Hibar® RT	5	4,6×150	1	**1.51455.0001**
Purospher® STAR RP-18e Hibar® RT	5	4,6×250	1	**1.51456.0001**

These LiChroCART® cartridges require part number 1.51486.0001 manu-CART® cartridge column holder, which can be used to hold one cartridge column with or without a 4×4 mm guard column. LiChroCART® columns 250×10 mm require part number 1.51419.0001 manu-CART® 10. The short LiChroCART® columns can be ordered as a set including the corresponding cartridge holder and one cartridge, or as a pack of 3 cartridges without cartridge holder. The separate part numbers for the cartridge are as follows: 1.50227.0001 LiChroCART® cartridge holder for 30 mm cartridge and 1.50226.0001 LiChroCART® cartridge holder for 55 mm cartridge.
The Hibar® RT columns are complete with end fittings. When using a guard column with a Hibar® RT column, we recommend part number 1.51487.0001 guard column cartridge holder for 4×4 mm guard column cartridges LiChroCART®.

HPLC columns, Purospher® STAR RP-8 endcapped

Purospher® STAR RP-8 endcapped, like Purospher® STAR RP-18 endcapped, is based on high purity silica and an almost complete surface coverage. Thus, Purospher® STAR RP-8 provides excellent peak symmetry for acidic, basic and even chelating compounds, highest column efficiency in terms of the number of theoretical plates, and exceptional stability from pH 1,5 to 10,5. In addition, Purospher® STAR RP-8 endcapped columns offer a wide applicability. As the sorbent is less hydrophobic than Purospher® STAR RP-18 endcapped, analytes will typically elute faster on the C8 phase. Purospher® STAR RP-8 endcapped provides enhanced selectivity for positional isomers and symmetrical peak shapes for strongly basic and less hydrophobic compounds.

- Enhanced selectivity for positional isomers
- Excellent peak symmetry for polar and basic compounds

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR RP-8e, stainless steel LiChroCART® cartridges				
Purospher® STAR RP-8e LiChroCART®	3	2×30	1	**1.50229.7220**
Purospher® STAR RP-8e LiChroCART®	3	2×55	1	**1.50234.7220**
Purospher® STAR RP-8e LiChroCART®	3	4×55	1	**1.50228.7220**
Purospher® STAR RP-8e LiChroCART®	3	4×75	1	**1.50171.7220**
Purospher® STAR RP-8e LiChroCART®	5	2×125	1	**1.50274.0001**
Purospher® STAR RP-8e LiChroCART®	5	2×250	1	**1.50275.0001**
Purospher® STAR RP-8e LiChroCART®	5	3×125	1	**1.50038.0001**
Purospher® STAR RP-8e LiChroCART®	5	3×250	1	**1.50273.0001**
Purospher® STAR RP-8e LiChroCART®	5	4×4	10	**1.50270.0001**
Purospher® STAR RP-8e LiChroCART®	5	4×125	1	**1.50271.0001**
Purospher® STAR RP-8e LiChroCART®	5	4×250	1	**1.50272.0001**
Purospher® STAR RP-8e LiChroCART®	5	4,6×150	1	**1.50031.0001**
Purospher® STAR RP-8e LiChroCART®	5	4,6×250	1	**1.50032.0001**
Purospher® STAR RP-8e LiChroCART®	5	10×250	1	**1.50276.0001**
Purospher® STAR RP-8e, stainless steel Hibar® RT columns				
Purospher® STAR RP-8e Hibar® RT	5	4×125	1	**1.50033.0001**
Purospher® STAR RP-8e Hibar® RT	5	4×250	1	**1.50035.0001**
Purospher® STAR RP-8e Hibar® RT	5	4,6×150	1	**1.51453.0001**
Purospher® STAR RP-8e Hibar® RT	5	4,6×250	1	**1.51454.0001**

These LiChroCART® cartridges require part number 1.51486.0001 manu-CART® cartridge column holder, which can be used to hold one cartridge column with or without a 4×4 mm guard column. LiChroCART® columns 250×10 mm require part number 1.51419.0001 manu-CART® 10.
The Hibar® RT columns are complete with end fittings. When using a guard column with a Hibar® RT column, part number 1.51487.0001 guard column cartridge holder for 4×4 mm guard column cartridges LiChroCART® is recommended.

HPLC columns, Purospher® STAR Si and NH_2

Purospher® STAR HPLC columns based on highest purity silica are also available for normal phase separations.

Purospher® STAR Si (silica) offers the highest separation efficiency for normal phase chromatography of low molecular weight compounds soluble in organic solvents.

Purospher® STAR NH_2 (amino phase) is primarily designed for carbohydrate analysis with a typical mobile phase consisting of acetonitrile and water. Additionally, Purospher® STAR NH_2 can also be used in the normal phase retention mode.

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR Si LiChroCART®	5	4×4	10	**1.50249.0001**
Purospher® STAR Si LiChroCART®	5	4×125	1	**1.50268.0001**
Purospher® STAR Si LiChroCART®	5	4×250	1	**1.50269.0001**
Purospher® STAR Si LiChroCART®	5	4,6×150	1	**1.50356.0001**
Purospher® STAR Si LiChroCART®	5	4,6×250	1	**1.50357.0001**
Purospher® STAR NH_2 LiChroCART®	5	4×4	10	**1.50267.0001**
Purospher® STAR NH_2 LiChroCART®	5	4×125	1	**1.50244.0001**
Purospher® STAR NH_2 LiChroCART®	5	4×250	1	**1.50245.0001**
Purospher® STAR NH_2 LiChroCART®	5	4,6×150	1	**1.50247.0001**

These LiChroCART® cartridges require part number 1.51486.0001 manu-CART® cartridge column holder, which can be used to hold one cartridge column with or without a 4×4 mm guard column.

UHPLC columns, Purospher® STAR RP-18 endcapped

Available with optimised 2 µm particulate silica, these UHPLC columns based on Purospher® STAR RP-18 endcapped are ideal for ultra-fast applications, where resolution, sensitivity and sample throughput are crucial. They are the first choice for high-throughput screening & QC analyses, process monitoring, method development, and LC/MS applications.

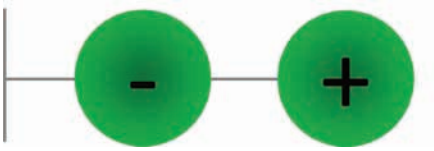
Due to its balanced selectivity, Purospher® STAR RP-18 endcapped UHPLC columns cover almost all demanding separations with tailing-free chromatograms. The Purospher® STAR RP-18 endcapped 3 µm columns are recommended for difficult samples where clogging and back pressure present an issue.

- In UHPLC environment, speed is increased by a factor of 10
- Solvent consumption is drastically cut
- Excellent peak shape for all types of acidic, basic and metal chelating analytes
- Extraordinary pH stability from pH 1,5 - 10,5 for an extremely wide application range
- Enhanced sensitivity due to improved signal-to-noise ratio

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR RP-18e Hibar® HR	2	2,1×30	1	**1.50645.0001**
Purospher® STAR RP-18e Hibar® HR	2	2,1×50	1	**1.50646.0001**
Purospher® STAR RP-18e Hibar® HR	2	2,1×100	1	**1.50648.0001**
Purospher® STAR RP-18e Hibar® HR	2	2,1×150	1	**1.50649.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×30	1	**1.50650.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×50	1	**1.50651.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×100	1	**1.50653.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×150	1	**1.50654.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×250	1	**1.50655.0001**

Hibar® HR columns are complete with end fittings and pressure stable (600 bar) for UHPLC use.

HPLC columns, SeQuant® ZIC®-cHILIC



ZIC®-cHILIC is based on the same technology platform as ZIC®-HILIC, but has a different functional group and an improved manufacturing procedure. The different charge orientation of the zwitterionic functional group leads to a different – and complementary – selectivity for polar hydrophilic compounds.

The selectivity is especially beneficial for hydrophilic compounds that are negatively charged, positively charged, zwitterionic or neutral, for example organic acids, amino acids, metabolites, aminoglycosides and nucleotides.

- Complementary selectivity by reoriented charges in zwitterionic functional group
- Perfect LC-MS compatibility due to low eluent buffer strengths and very low bleeding
- High-density bonded phosphorylcholine zwitterionic stationary phase
- Very high stability and excellent batch-to-batch reproducibility

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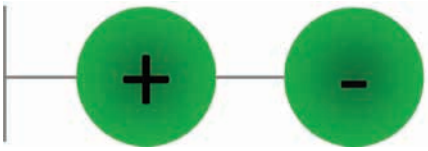
Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ZIC®-cHILIC, analytical columns					
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	2,1×50	1	**1.50656.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	2,1×100	1	**1.50657.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	2,1×150	1	**1.50658.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	4,6×50	1	**1.50659.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	4,6×100	1	**1.50660.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	4,6×150	1	**1.50661.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	4,6×250	1	**1.50662.0001**
ZIC®-cHILIC guard column kit with coupler	100	5	2,1×20	1	**1.50664.0001**

HPLC columns, SeQuant® ZIC®-HILIC



The selectivity offered by ZIC®-HILIC is suitable for a wide variety of molecules containing hydrophilic or ionisable functional groups. This includes compounds such as carbohydrates, metabolites, acids and bases, organic and inorganic ions, metal complexes, amino acids, peptides, protein digests, plant and cell extracts, plus much more. Such compounds are normally characterised by a small or negative LogP value and have poor retention on reversed phase columns.

- Straightforward separation of polar and hydrophilic compounds
- Orthogonal selectivity compared to reversed phase
- High-density bonded sulphobetaine zwitterionic stationary phase
- Low cost per analysis due to robust stationary phase

* HILIC = Hydrophilic Interaction Liquid Chromatography. *LogP = Octanol-water partition coefficient.

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ZIC®-HILIC, analytical columns					
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×20	1	**1.50439.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×50	1	**1.50440.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×100	1	**1.50441.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×150	1	**1.50442.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×250	1	**1.50443.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	4,6×150	1	**1.50444.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	2,1×50	1	**1.50445.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	2,1×100	1	**1.50447.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	2,1×150	1	**1.50448.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	4,6×50	1	**1.50446.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	4,6×150	1	**1.50449.0001**
ZIC®-HILIC metal-free HPLC column	200	5	2,1×50	1	**1.50450.0001**
ZIC®-HILIC metal-free HPLC column	200	5	2,1×100	1	**1.50452.0001**
ZIC®-HILIC metal-free HPLC column	200	5	2,1×150	1	**1.50454.0001**
ZIC®-HILIC metal-free HPLC column	200	5	2,1×250	1	**1.50457.0001**
ZIC®-HILIC metal-free HPLC column	200	5	4,6×50	1	**1.50451.0001**
ZIC®-HILIC metal-free HPLC column	200	5	4,6×100	1	**1.50453.0001**
ZIC®-HILIC metal-free HPLC column	200	5	4,6×150	1	**1.50455.0001**
ZIC®-HILIC metal-free HPLC column	200	5	4,6×250	1	**1.50458.0001**
ZIC®-HILIC guard fitting column kit	200	5	1,0×14	5	**1.50434.0001**
ZIC®-HILIC guard column	200	5	2,1×20	1	**1.50435.0001**
ZIC®-HILIC guard column kit with coupler	200	5	2,1×20	3	**1.50436.0001**

HPLC columns, SeQuant® ZIC®-pHILIC

ZIC®-pHILIC is polymer-based

ZIC®-pHILIC has the same stationary phase as ZIC®-HILIC, but is instead based on a polymeric particle for enhanced pH stability. The lack of silica practically nullifies background in high-sensitivity detectors such as charged aerosol used for determination of organic and inorganic ions.

- Solves extra challenging separations of polar and hydrophilic compounds
- Enhanced selectivity optimisation potential due to very broad pH application range
- Extremely low background with high-sensitivity charged aerosol evaporative ion detectors

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ZIC®-pHILIC metal-free HPLC column	5	2,1×50	1	**1.50459.0001**
ZIC®-pHILIC metal-free HPLC column	5	2,1×100	1	**1.50462.0001**
ZIC®-pHILIC metal-free HPLC column	5	2,1×150	1	**1.50460.0001**
ZIC®-pHILIC metal-free HPLC column	5	4,6×50	1	**1.50463.0001**
ZIC®-pHILIC metal-free HPLC column	5	4,6×100	1	**1.50464.0001**
ZIC®-pHILIC metal-free HPLC column	5	4,6×150	1	**1.50461.0001**
ZIC®-pHILIC guard column	5	2,1×20	1	**1.50437.0001**

Ion pair reagents for analytical HPLC LiChropur®

Description	Pk	Cat. No.
1-Butanesulphonic acid sodium salt	25 g	**1.18303.0025**
1-Dodecanesulphonic acid sodium salt	25 g	**1.18308.0025**
1-Dodecylhydrogensulphate acid sodium salt	25 g	**1.18309.0025**
1-Heptanesulphonic acid sodium salt	25 g	**1.18306.0025**
1-Hexanesulphonic acid sodium salt	25 g	**1.18305.0025**
1-Octanesulphonic acid sodium salt	25 g	**1.18307.0025**
1-Pentanesulphonic acid sodium salt	25 g	**1.18304.0025**
Cetyltrimethylammonium hydrogen sulphate	25 g	**1.18313.0025**
Tetrabutylammonium hydrogen sulphate	25 g	**1.18312.0025**
Tetramethylammonium hydrogen sulphate	25 g	**1.18310.0025**

HPLC columns, preparative scale, Hibar®

Manufactured under strictly controlled conditions to ensure both excellent results and reproducibility. Each column is supplied with a Certificate of Analysis.

The columns are ready to use and can be easily connected to any HPLC system. Methods developed using a particular sorbent at analytical scale can be directly scaled up to preparative scale, for problem-free use.

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
LiChrospher® Si 60	60	5	25×250	1	**1.51485.0001**

HPLC columns, Acclaim™ 120 C18

Thermo Scientific

High-density, monolayer C18 reversed phase columns for very good resolution in a variety of applications.

- Very high surface coverage and very low metal content
- Reproducible column-to-column performance
- Extremely low bleed, fully compatible with MS
- Stable between pH 2 and 8

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
HPLC column	120	3	2,1×50	1	**554-4438**
HPLC column	120	3	2,1×100	1	**554-4439**
HPLC column	120	3	2,1×150	1	**554-4440**
HPLC column	120	3	2,1×250	1	**554-4464**
HPLC column	120	3	3,0×33	1	**554-4453**
HPLC column	120	3	3,0×50	1	**554-4458**
HPLC column	120	3	3,0×75	1	**554-4454**
HPLC column	120	3	3,0×100	1	**554-4463**
HPLC column	120	3	3,0×150	1	**554-4452**
HPLC column	120	3	3,0×250	1	**554-4459**
HPLC column	120	3	4,6×50	1	**554-4441**
HPLC column	120	3	4,6×100	1	**554-4442**
HPLC column	120	3	4,6×150	1	**554-4443**
HPLC column	120	5	2,1×50	1	**554-4444**
HPLC column	120	5	2,1×100	1	**554-4445**
HPLC column	120	5	2,1×150	1	**554-4446**
HPLC column	120	5	2,1×250	1	**554-4447**
HPLC column	120	5	4,6×50	1	**554-4448**
HPLC column	120	5	4,6×100	1	**554-4449**
HPLC column	120	5	4,6×150	1	**554-4450**
HPLC column	120	5	4,6×250	1	**554-4451**

HPLC columns, Acclaim™ mixed-mode HILIC-1
Thermo Scientific

These columns utilise a unique silica-based, mixed-mode stationary phase that combines both reversed phase (RP) and hydrophilic interaction liquid chromatography (HILIC) properties. The column functional group features a hydrophobic alkyl chain and hydrophilic diol functionality. This combination allows both hydrophobic interaction and hydrophilic interaction to be utilised to optimise separations.

Suitable for separation of both polar and non-polar molecules with selectivity complementary to RP columns and suitable for a broad range of applications, including drug metabolites, lipids, polyethylene glycols (PEGs), ethoxylated surfactants and more.

- Retains highly polar molecules
- Unique selectivity complementary to RP columns
- Superior performance compared to conventional diol-based columns

Particle type: High purity, spherical silica

Max. pressure: 8500 psi (4800 psi for 3,0×50 mm column)

Flow rate range: 0,2 - 0,5 ml/min for 2,1 mm ID formats; 0,4 - 1,0 ml/min for 3,0 mm ID formats; 0,8 - 2,0 ml/min for 4,6 mm ID formats

pH range: 2,5 - 7,5

Max. temperature: 50 °C

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
120	3	2,1×150	1	**554-4461**
120	3	3,0×50	1	**554-4462**
120	3	3,0×150	1	**554-4460**
120	5	2,1×150	1	**554-4457**
120	5	4,6×150	1	**554-4455**
120	5	4,6×250	1	**554-4456**

HPLC columns, Acclaim™ Surfactant Plus
Thermo Scientific

These columns have been designed specifically for the HPLC separation of surfactants including anionic, non ionic, cationic and amphoteric used in a wide range of samples, such as customer products, pharmaceutical, food and beverages, environmental samples etc.

- Unique polarity provides significantly improved resolution compared with conventional C18 columns
- Designed for use with charged aerosol detectors and mass spectrometers
- Can be used with evaporative light scattering detectors, suppressed conductivity detectors and UV-Vis detectors

Particle type: Ultra pure, spherical silica

Bonded phase: Mixed-mode reversed phase and anion exchange

Hydrophobicity: Moderate to low

Carbon load: 5%

pH range: 2,5 - 7,5

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
120	3	2,1×100	1	**554-4470**
120	3	2,1×150	1	**554-4469**
120	3	2,1×250	1	**554-4468**
120	3	3,0×100	1	**554-4467**
120	3	3,0×150	1	**554-4466**
120	3	4,6×150	1	**554-4465**
120	5	4,0×150	1	**554-4503**

HPLC columns, Hypersil GOLD™ Amino
Thermo Scientific

A high performance aminopropyl phase that gives excellent chromatographic properties in three modes: weak anion exchange, reversed phase and normal phase.

- Retains anions and organic acids in weak anion exchange mode when used with common buffers and an organic modifier
- Excels for carbohydrate analysis in reversed phase mode
- Offers an alternative selectivity to silica columns in normal phase chromatography

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	1,9	2,1×50	1	**554-4317**
175	3	4,6×150	1	**554-4318**
175	5	4,6×250	1	**554-4319**

HPLC columns, Hypersil GOLD™ aQ
Thermo Scientific

Hypersil GOLD™ aQ polar endcapped C18 columns provide a controlled interaction mechanism by which polar analytes can be retained and resolved.

- Polar endcapped C18 phase for alternative selectivity
- Retention and resolution of polar analytes
- Excellent peak shape
- Stable in 100% aqueous mobile phase

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	3	4,6×150	1	**554-4309**
175	5	4,6×250	1	**554-4310**

HPLC columns, Hypersil GOLD™ AX
Thermo Scientific

A novel polymeric ligand bonded to highly pure base deactivated silica.

- Outstanding peak shape and selectivity
- High stability under demanding pH conditions
- Higher efficiency than polymer-based ion exchange columns
- Improved speed with 1,9 µm particle size columns

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	1,9	2,1×50	1	**554-4326**
175	3	4,6×150	1	**554-4327**
175	5	4,6×250	1	**554-4328**

HPLC columns, Hypersil GOLD™ C18
Thermo Scientific

Endcapped, ultrapure, silica-based columns with exceptional peak shape and resolution designed for HPLC and LC/MS.

- Significant reduction in peak tailing while retaining C18 selectivity
- Excellent resolution, efficiency and sensitivity
- Confidence in the accuracy and quality of analytical data

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	3	2,1×50	1	**554-4287**
175	3	2,1×100	1	**554-4289**
175	3	2,1×150	1	**554-4291**
175	3	4,6×150	1	**554-4292**
175	5	4,6×50	1	**554-4294**
175	5	4,6×150	1	**554-4298**
175	5	4,0×250	1	**554-4381**

HPLC columns, Hypersil GOLD™ C4
Thermo Scientific

These columns feature lower hydrophobicity than C18 or C8 and are recommended for very hydrophobic analytes.

- Ideal for analysis of hydrophobic polypeptides and proteins
- Highly symmetrical peak shapes
- 1,9 µm particle size columns improve speed and efficiency

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	1,9	2,1×50	1	**554-4314**
175	3	4,6×150	1	**554-4315**
175	5	4,6×250	1	**554-4316**

HPLC columns, Hypersil GOLD™ C8
Thermo Scientific

Recommended for analytes with medium hydrophobicity or when a less hydrophobic phase is required to obtain optimum retention.

- Lower hydrophobicity allows compounds to elute quicker from the column
- Similar selectivity to C18 columns but reduced retention
- Faster separations, excellent peak shape
- High efficency, outstanding sensitivity

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Hypersil GOLD™ C8				
175	1,9	2,1×50	1	**554-4303**
175	3	4,6×150	1	**554-4305**
175	5	4,6×250	1	**554-4306**
Hypersil GOLD™ C8 KAPPA capillary columns				
175	1,9	0,32×100	1	**554-4480**
175	3	0,32×100	1	**554-4485**
175	3	0,5×100	1	**554-4486**
175	5	0,32×100	1	**554-4494**
Hypersil GOLD™ C8 drop-in guard cartridges				
175	3	1,0×10	4	**554-4481**
175	3	2,1×10	4	**554-4482**
175	3	3,0×10	4	**554-4483**
175	3	4,0/4,6×10	4	**554-4484**
175	5	1,0×10	4	**554-4487**
175	5	2,1×10	4	**554-4488**
175	5	3,0×10	4	**554-4490**
175	5	4,0/4,6×10	4	**554-4492**
Hypersil GOLD™ C8 Javelin direct-connection guard columns				
175	5	2,1×10	4	**554-4489**
175	5	3,0×10	4	**554-4491**
175	5	4,0×10	4	**554-4493**

HPLC columns, Hypersil GOLD™ CN
Thermo Scientific

Columns for normal and reversed phase separations.

- Alternate selectivity with lower hydrophobicity
- Excellent peak shape, outstanding sensitivity
- Less retention for faster analysis

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Hypersil GOLD™ CN analytical columns				
175	1,9	2,1×50	1	**554-4320**
175	3	4,6×150	1	**554-4321**
175	5	4,6×250	1	**554-4322**

HPLC columns, Hypersil GOLD™ HILIC
Thermo Scientific

Retain highly polar and hydrophilic analytes, which are difficult to analyse with conventional C18 columns.

- Excellent peak symmetry
- Narrow peaks for great efficiency
- Enhanced sensitivity and improved resolution
- Solutions for high-throughput screening

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	1,9	2,1×50	1	**554-4332**
175	3	4,6×150	1	**554-4333**
175	5	4,6×250	1	**554-4334**

HPLC columns, Hypersil GOLD™ PFP
Thermo Scientific

Efficient separation of difficult mixtures containing closely related halogenated and polar compounds. The introduction of a fluorine group into the stationary phase causes significant changes in solute-stationary phase interaction and increases the selectivity and extra retention.

- Increased retention and selectivity for positional isomers of halogenated compounds
- Excellent selective analysis of non halogenated compounds - in particular polar compounds containing hydroxyl, carboxyl, nitro, or other polar groups

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Hypersil GOLD™ PFP columns				
175	1,9	2,1×50	1	**554-4311**
175	3	4,6×150	1	**554-4312**
175	5	4,6×250	1	**554-4313**

HPLC columns, Hypersil GOLD™ Phenyl
Thermo Scientific

Contains a C4 linker which alows for superior alignment of the phenyl ring with aromatic molecules.

- Enhancing pi-pi interactions and improving the retention of the molecules
- Moderate hydrophobicity
- Outstanding peak shape results in greater sensitivity

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	1,9	2,1×50	1	**554-4323**
175	3	4,6×150	1	**554-4495**
175	5	4,6×250	1	**554-4325**

HPLC columns, Hypersil GOLD™ SAX
Thermo Scientific

These quaternary amine strong anion-exchange columns are highly stable for aqueous and low pH mobile phases.

- Analyse smaller organic molecules, including nucleotides and organic acids
- Outstanding peak shape and sensitivity

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	1,9	2,1×50	1	**554-4329**
175	3	4,6×150	1	**554-4330**
175	5	4,6×250	4	**554-4331**

HPLC columns, Hypersil GOLD™ Silica
Thermo Scientific

The unbonded, highly pure, base-deactivated silica media efficiently separates non-polar and moderately polar organic compounds by normal phase chromatography.

- Outstanding peak shape and sensitivity

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Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	1,9	2,1×50	1	**554-4300**
175	3	4,6×150	1	**554-4301**
175	5	4,6×250	1	**554-4302**

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Drop-in guard cartridges				
175	3	1,0×10	4	**554-4472**
175	3	2,1×10	4	**554-4473**
175	3	3,0×10	4	**554-4474**
175	3	4,0/4,6×10	4	**554-4475**
175	5	1,0×10	4	**554-4476**
175	5	2,1×10	4	**554-4477**
175	5	3,0×10	4	**554-4478**
175	5	4,0/4,6×10	4	**554-4479**

Hydrophilic interaction chromatography columns (HILIC), Asahipak NH2P
Showa Denko

Polymer-based packed columns ideal for saccharides analysis

- Excellent chemical stability and resistance to degradation over time
- Washable with alkaline solutions
- Suitable for evaporative light scattering detector, corona-charged aerosol detector and LC-MS
- NH2P-40 is the high performance version of NH2P-50

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Asahipak NH2P-50 4B	100	5	4,6×50	1	**554-4437**
Asahipak NH2P-50 4D	100	5	4,6×150	1	**554-0879**
Asahipak NH2P-50 4E	100	5	4,6×250	1	**554-0880**
Asahipak NH2P-50G 4A guard column	-	5	4,6×10	1	**554-2234**
Asahipak NH2P-50 2D	100	5	2,0×150	1	**554-0878**
Asahipak NH2P-50G 2A guard column	-	5	2,0×10	1	**554-2236**
Asahipak NH2P-40 3E	100	4	3,0×250	1	**554-1776**
Asahipak NH2P-50G 3A guard column	-	5	3,0×10	1	**554-1773**
Asahipak NH2P-LF line filter	-	-	8,0×75	1	**554-2235**
Asahipak NH2P-40 2B	100	4	2,0×50	1	**554-4500**
Asahipak NH2P-40 2D	100	4	2,0×150	1	**554-4501**
Asahipak NH2P-40 2E	100	4	2,0×250	1	**554-4502**

Ion exclusion chromatography columns, KC-811
Showa Denko

Columns for the analysis of organic acids, cyanide ions and cyanogen chloride.

- Highly selective detection with post-column method
- KC-811 6E is suitable for the analysis of cyanide ions and cyanogen chloride in accordance with the Japanese Water Supply Act

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
RSpak KC-811	6	8,0×300	1	**554-4496**
RSpak KC-811 6E	6	6,0×250	1	**554-4497**
RSpak KC-G guard column	10	6,0×50	1	**554-4499**
RSpak KC-LG guard column	13	8,0×50	1	**554-4498**

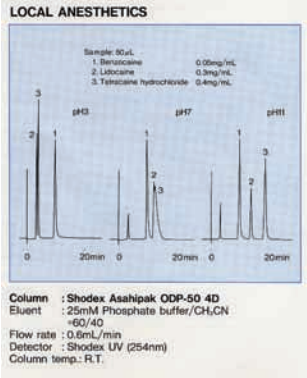
Multimode columns, Asahipak GS-HQ Series
Showa Denko

- SEC is the main separation mode
- Depends on the eluent selected, the column adds multimode features of reversed phase, HILIC and ion exchange modes to SEC
- Suitable for the separation of peptides or nucleic acids with similar molecular weights
- Suitable for desalting samples or substituting buffer in protein analysis

Description	Exclusion limit (Pullulan)	I-Ø×L (mm)	Particle size (µm)	Pore size	Pk	Cat. No.
Standard columns						
Asahipak GS-220 HQ	3000	7,5×300	6	150	1	**554-1972**
Asahipak GS-320 HQ	40000	7,5×300	6	400	1	**554-1973**
Asahipak GS-520 HQ	300000	7,5×300	7	2000	1	**554-1974**
Asahipak GS-620 HQ	2000000*	7,5×300	7	7000	1	**554-1975**
Asahipak GS-2G 7B	-	7,5×50	9	-	1	**554-1976**

* Estimated value

Reversed phase HPLC columns, Asahipak ODP-40, ODP-50, C4P-50 and C8P-50
Showa Denko



- Polymer-based amino columns that incorporate an amino group in the polyvinyl alcohol-based gel, they are suitable for analysis of saccharides in normal phase C18 (octadecyl) and C8 (octyl): for pharmaceutical products and metabolites that are soluble in physiological fluids
- Polarity: ODP<C8P
- ODP-40 (particle size: 4 µm) improved version of ODP-50 (particle size: 5 µm)

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Asahipak ODP-40 4D	250	4	4,6×150	1	**554-0881**
Asahipak ODP-40 4E	250	4	4,6×250	1	**554-0882**
Asahipak ODP-50 6D	250	5	6,0×150	1	**554-0886**
Asahipak ODP-50 6E	250	5	6,0×250	1	**554-0887**
Asahipak ODP-50G 6A	-	5	6,0×10	1	**554-0889**
Asahipak ODP-50 4B	250	5	4,6×50	1	**554-2432**
Asahipak ODP-50 4D	250	5	4,6×150	1	**554-0884**
Asahipak ODP-50 4E	250	5	4,6×250	1	**554-0885**
Asahipak ODP-50G 4A	-	5	4,6×10	1	**554-0888**
Asahipak ODP-50 2D	250	5	2,0×150	1	**554-0883**
Asahipak ODP-50G 2A	-	5	2,0×10	1	**554-2433**

Size exclusion and ligand exchange chromatography columns
Showa Denko

SC1011, SC1821, SP0810, KS-801 and KS-802

- Separates saccharides by combining ligand exchange and size exclusion modes
- Three types of counter ions are available: Ca, Pb, and Na ions
- Solvents other than water are not required for the analysis of neutral sugars

KS-803 to KS-807

- Suitable for separation of polysaccharides in the size exclusion mode
- Available in combination with KS-802 and KS-801
- Solvents other than water are not required for the analysis of neutral sugars

EP SC1011-7F

- Suitable for Ca-type ligand exchange chromatography
- For the analysis of sugar alcohols and saccharides in conformity with EP

Description	Exclusion limit (Pullulan)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
SUGAR SC1011	1000	6	8,0×300	1	**554-2223**
SUGAR SC1821	10000	6	8,0×300	1	**554-2224**
SUGAR SC-LG guard column	-	10	6,0×50	1	**554-2231**
SUGAR SP0810	1000	7	8,0×300	1	**554-2225**
SUGAR SP-G guard column	-	10	6,0×50	1	**554-2230**
SUGAR KS-801	1000	6	8,0×300	1	**554-2214**
SUGAR KS-802	10000	6	8,0×300	1	**554-2215**
SUGAR KS-803	50000	6	8,0×300	1	**554-2216**
SUGAR KS-804	400000	7	8,0×300	1	**554-2217**
SUGAR KS-805	5000000	17	8,0×300	1	**554-2218**
SUGAR KS-806	50000000*	17	8,0×300	1	**554-2219**
SUGAR KS-G guard column	-	10	6,0×50	1	**554-2227**
SUGAR KS-807	200000000*	30	8,0×300	1	**554-2220**
SUGAR KS-807G guard column	-	30	8,0×50	1	**554-2228**

* Estimated value

Size exclusion chromatography columns, Asahipak GF-HQ series
Showa Denko

The GF-HQ series are designed for aqueous (GFC) and organic (GPC) size exclusion chromatography. High performance analysis of samples containing hydrophilic and hydrophobic parts, such as surfactants is possible.

- Polymer-based SEC columns with excellent solvent resistance
- Supports both aqueous and organic solvent systems

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Description	Exclusion limit (Pullulan)	I-Ø×L (mm)	Particle size (µm)	Pore size	Pk	Cat. No.
GF-1G 7B	-	7,5×50	9	-	1	**554-1763**
GF-310 HQ	40000	7,5×300	5	400	1	**554-1757**
GF-510 HQ	300000	7,5×300	5	2000	1	**554-1756**
GF-710 HQ	10000000*	7,5×300	9	10 000	1	**554-1755**
GF-7M HQ	10000000*	7,5×300	9	10 000	1	**554-1758**

* Estimated value

Size exclusion chromatography columns, GPC KF-800 series

Showa Denko

A complete range of general purpose gel permeation columns (GPC) packed with tetrahydrofuran (THF). Columns packed with other solvents are also available. Please enquire for further details.

- Column types KF-801 to 802.5 for compounds with a molecular weight of less than 2000 g.mol^{-1}, such as liposoluble vitamins (KF-801), oligomers (KF-802-803) and polymer additives (KF-801-802)
- Column types KF-802.5 to 807L for compounds with a molecular weight of 2000 g.mol^{-1} or more, such as THF-soluble synthetic polymers (KF803-807L) and oligomers (KF802-803)
- L represents "linear column" which exhibits linearity in the calibration curve over a wide range of molecular weights

Description	Exclusion limit (PS)	I-Ø×L (mm)	Particle size (µm)	Pore size (Å)	Pk	Cat. No.
GPC KF-801	1500	8,0×300	6	50	1	**554-0864**
GPC KF-802.5	20000	8,0×300	6	300	1	**554-0865**
GPC KF-802	5000	8,0×300	6	150	1	**554-0866**
GPC KF-803	70000	8,0×300	6	500	1	**554-0867**
GPC KF-803L	70000	8,0×300	6	500	1	**554-0868**
GPC KF-804	400000	8,0×300	7	1500	1	**554-0869**
GPC KF-804L	400000	8,0×300	7	1500	1	**554-0870**
GPC KF-805	4000000	8,0×300	10	5000	1	**554-0871**
GPC KF-805L	4000000	8,0×300	10	5000	1	**554-0872**
GPC KF-806	20000000*	8,0×300	10	10000	1	**554-0873**
GPC KF-806M	20000000*	8,0×300	10	10000	1	**554-0875**
GPC KF-806L	20000000*	8,0×300	10	10000	1	**554-0874**
GPC KF-807	20000000*	8,0×300	18	20000	1	**554-0876**
GPC KF-807L	20000000*	8,0×300	18	20000	1	**554-0877**
GPC KF-G	-	4,6×10	8	-	1	**554-1765**

* Estimated value

Size exclusion chromatography columns, OHpak SB series

Showa Denko

SB-800 HQ are polyhydroxymethacrylate-based SEC columns for the molecular weight distribution analysis of water-soluble polymers. The solvent can be substituted with DMF (except for SB-802 HQ and SB-807 HQ columns), enabling the analysis of polar polymers.

- Polymer-based SEC (GFC) columns for aqueous systems
- Support a wide range of molecular weight
- SB-807 HQ with an exclusion limit of 500,000,000 is available for the analysis of macromolecules

Description	Exclusion limit (Pullulan)	I-Ø×L (mm)	Particle size (µm)	Pore size (Å)	Pk	Cat. No.
SB-802 HQ	4000	8,0×300	8	100	1	**554-1752**
SB-802.5 HQ	10000	8,0×300	6	200	1	**554-1751**
SB-803 HQ	10000	8,0×300	6	800	1	**554-1750**
SB-804 HQ	1000000	8,0×300	10	2000	1	**554-1749**
SB-805 HQ	4000000	8,0×300	13	7000	1	**554-1748**
SB-806 HQ	20000000*	8,0×300	13	15 000	1	**554-1747**
SB-806M HQ	20000000*	8,0×300	13	15 000	1	**554-1746**
SB-807 HQ	500000000*	8,0×300	35	30 000	1	**554-1745**
SB-G	-	6,0×50	10	-	1	**554-1754**

* Estimated value

Size exclusion chromatography columns, protein KW series

Showa Denko

KW series HPLC columns are specifically designed for protein analysis by aqueous size exclusion chromatography (GFC). They are packed with porous silica particles coated with a hydrophilic copolymer.

Standard columns

- Silica-based packing material for the aqueous SEC analysis
- Suitable for the analysis of proteins and enzymes

High performance semi-micro columns

- Reduced particle size has enhanced column performance
- Three or four times higher sensitivity than KW-800 columns

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Description	Exclusion limit (Pullulan)	Exclusion limit (Protein)	I-Ø×L (mm)	Particle size (µm)	Pore size	Pk	Cat. No.
Standard columns							
KW-G	-	-	6×50	7	-	1	**554-1739**
KW-802.5	60000	150000	8×300	5	400	1	**554-1735**
KW-803	170000	700000	8×300	5	1000	1	**554-1736**
KW-804	500000	1000000*	8×300	7	1500	1	**554-1737**
High performance semi-micro columns							
KW400G-4A	-	-	4,6×10	5	-	1	**554-1744**
KW402.5-4F	60000	150000	4,6×300	3	400	1	**554-1740**
KW403-4F	150000	600000	4,6×300	3	800	1	**554-1741**
KW404-4F	500000	1000000*	4,6×300	5	1500	1	**554-1742**
KW405-4F	1300000	20000000*	4,6×300	5	2000	1	**554-1743**

* Estimated value

UHPLC columns, Hypersil GOLD™ C18

Thermo Scientific

Endcapped, ultrapure, silica-based columns with exceptional peak shape and resolution for HPLC and LC/MS.

- Significant reduction in peak tailing while retaining C18 selectivity
- Excellent resolution, efficiency and sensitivity
- Confidence in the accuracy and quality of analytical data

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	1,9	2,1×50	1	**554-4282**
175	1,9	1,0×100	1	**554-4471**

VWR BDH PROLABO CHEMICALS

Solvents for HPLC, HiperSolv CHROMANORM®

An extensive range of high purity solvents for HPLC applications, filtered at 0,2 µm and bottled under nitrogen.
Specified to meet the most demanding requirements of HPLC and LC-UV applications.

- High UV transmission
- Gradient test at 210, 235 and 254 nm
- Low residue on evaporation
- Excellent batch to batch reproducibility

Description	Pk	Cat. No.
Acetonitrile HiPerSolv CHROMANORM®, gradient grade for HPLC	1 l	**20060.290**
Acetonitrile HiPerSolv CHROMANORM®, gradient grade for HPLC	2,5 l	**20060.320**
Acetonitrile HiPerSolv CHROMANORM® for LC-MS	1 l	**83640.290**
Acetonitrile HiPerSolv CHROMANORM® for LC-MS	2,5 l	**83640.320**
Acetonitrile HiPerSolv CHROMANORM® Reag. Ph. Eur., super gradient grade for HPLC	1 l	**83639.290**
Acetonitrile HiPerSolv CHROMANORM® Reag. Ph. Eur., super gradient grade for HPLC	2,5 l	**83639.320**
Acetonitrile HiPerSolv CHROMANORM® Reag. Ph. Eur., super gradient grade for HPLC	5 l	**83639.360**
Dichloromethane HiPerSolv CHROMANORM® for HPLC	1 l	**23373.290**
Dichloromethane HiPerSolv CHROMANORM® for HPLC	2,5 l	**23373.320**
Dichloromethane HiPerSolv CHROMANORM® for HPLC	1 l	**83623.290**
Dichloromethane HiPerSolv CHROMANORM® for HPLC	2,5 l	**83623.320**
Ethanol 95-97% (v/v) HiPerSolv CHROMANORM® for HPLC	1 l	**20825.290**
Ethanol 95-97% (v/v) HiPerSolv CHROMANORM® for HPLC	2,5 l	**20825.324**
Methanol HiPerSolv CHROMANORM® for LC-MS	1 l	**83638.290**
Methanol HiPerSolv CHROMANORM® for LC-MS	2,5 l	**83638.320**
Methanol HiPerSolv CHROMANORM® Reag. Ph. Eur., gradient grade for HPLC	1 l	**20864.290**
Methanol HiPerSolv CHROMANORM® Reag. Ph. Eur., gradient grade for HPLC	2,5 l	**20864.320**
Methanol HiPerSolv CHROMANORM® Reag. Ph. Eur., gradient grade for HPLC	5 l	**20864.360**
n-Heptane HiPerSolv CHROMANORM® for HPLC	1 l	**24539.290**
n-Heptane HiPerSolv CHROMANORM® for HPLC	2,5 l	**24539.320**
n-Hexane HiPerSolv CHROMANORM® for HPLC	1 l	**24575.290**
n-Hexane HiPerSolv CHROMANORM® for HPLC	2,5 l	**24575.320**
n-Pentane 99% HiPerSolv CHROMANORM® for HPLC	2,5 l	**83632.320**
Tetrahydrofuran HiPerSolv CHROMANORM® for HPLC	1 l	**28559.290**
Tetrahydrofuran HiPerSolv CHROMANORM® for HPLC	2,5 l	**28559.320**
Water HiPerSolv CHROMANORM®, gradient grade for HPLC	2,5 l	**83650.320**
Water HiPerSolv CHROMANORM® for HPLC	1 l	**23595.294**

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Description	Pk	Cat. No.
Water HiPerSolv CHROMANORM® for HPLC	2,5 l	**23595.328**
Water HiPerSolv CHROMANORM® for LC-MS	1 l	**83645.290**
Water HiPerSolv CHROMANORM® for LC-MS	2,5 l	**83645.320**

Mobile phase additives, high purity reagents for HPLC, HiperSolv, CHROMANORM®

These very high purity salts are very important to modify the pH of the mobile phases or can be used as ion pair reagents. Some acids can improve the peak resolution.

Description	Pack type	Pk	Cat. No.
1-Heptanesulphonic acid sodium salt HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	100 g	**152783K**
1-Hexanesulphonic acid sodium salt HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	25 g	**152792L**
1-Hexanesulphonic acid sodium salt HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	100 g	**152793M**
1-Octanesulphonic acid sodium salt HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	25 g	**152802T**
1-Octanesulphonic acid sodium salt HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	100 g	**152803U**
1-Pentanesulphonic acid sodium salt HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	25 g	**152812V**
1-Pentanesulphonic acid sodium salt HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	100 g	**152813W**
Acetic acid glacial for HPLC	Glass bottle	250 ml	**20108.230**
Acetic acid glacial for HPLC	Glass bottle	1 l	**20108.292**
Ammonia 32% HiPerSolv CHROMANORM® for HPLC	Glass bottle	100 ml	**153312K**
Potassium dihydrogen phosphate HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	500 g	**153184U**
Sodium chloride HiPerSolv CHROMANORM® for HPLC	Plastic bottle	500 g	**153274V**
Sodium perchlorate monohydrate HiPerSolv CHROMANORM® for HPLC	Plastic bottle for solids	250 g	**153233M**
Trifluoroacetic acid 100% HiPerSolv CHROMANORM® for HPLC	Glass bottle SAFEBREAK	100 ml	**153112E**

Solvents for HPLC, LiChrosolv®

Offering a high degree of UV transmittance, low particle count, low acidity and alkalinity, and low evaporation residue level, LiChrosolv® solvents are ideal for reproducible separations. They are produced from specially selected raw materials, and undergo a number of purification steps prior to final packaging. Since separations are normally carried out under gradient conditions in analytical HPLC, Merck Millipore offer solvents in 'gradient grade' as well as 'isocratic grade'. This enables you to minimise the gradient effect of the solvent involved.

The LC-MS LiChrosolv® hypergrade quality solvents are accurately tested for LC-MS suitability, and meet all the requirements of modern LC-MS ionisation methods (ESI/ APCI – positive and negative mode) with low level of ionic background and low ion suppression, they ensure high reproducibility and high ionisation efficiency.

Description	Pk	Cat. No.
2-Propanol gradient grade for liquid chromatography LiChrosolv®	1 l	**1.01040.1000**
Acetonitrile gradient grade for liquid chromatography LiChrosolv® Reag. Ph. Eur.	2,5 l	**1.00030.2500**
Acetonitrile hypergrade for LC-MS LiChrosolv®	1 l	**1.00029.1000**
Acetonitrile hypergrade for LC-MS LiChrosolv®	2,5 l	**1.00029.2500**
Acetonitrile isocratic grade for liquid chromatography LiChrosolv®	1 l	**1.14291.1000**
Acetonitrile isocratic grade for liquid chromatography LiChrosolv®	2,5 l	**1.14291.2500**
Ethanol gradient grade for liquid chromatography LiChrosolv®	1 l	**1.11727.1000**
Ethanol gradient grade for liquid chromatography LiChrosolv®	2,5 l	**1.11727.2500**
Methanol for liquid chromatography LiChrosolv®	1 l	**1.06018.1000**
Methanol gradient grade for liquid chromatography LiChrosolv® Reag. Ph. Eur.	2,5 l	**1.06007.2500**
Methanol gradient grade for liquid chromatography LiChrosolv® Reag. Ph. Eur.	30 l	**1.06007.9030**
Methanol hypergrade for LC-MS LiChrosolv®	1 l	**1.06035.1000**
Methanol hypergrade for LC-MS LiChrosolv®	2,5 l	**1.06035.2500**
n-Heptane for liquid chromatography LiChrosolv®	1 l	**1.04390.1000**
n-Heptane for liquid chromatography LiChrosolv®	2,5 l	**1.04390.2500**
n-Hexane for liquid chromatography LiChrosolv®	1 l	**1.04391.1000**
n-Hexane for liquid chromatography LiChrosolv®	2,5 l	**1.04391.2500**
Tetrahydrofuran for liquid chromatography LiChrosolv®	1 l	**1.08101.1000**
Tetrahydrofuran for liquid chromatography LiChrosolv®	2,5 l	**1.08101.2500**
Water for chromatography LiChrosolv®	1 l	**1.15333.1000**
Water for chromatography LiChrosolv®	2,5 l	**1.15333.2500**

LC-MS solvents, LiChrosolv®

Description	Pk	Cat. No.
Acetonitrile LiChrosolv®, hypergrade for LC-MS	1 l	**1.00029.1000**
Acetonitrile LiChrosolv®, hypergrade for LC-MS	2,5 l	**1.00029.2500**
Methanol LiChrosolv® for HPLC	1 l	**1.06035.1000**
Methanol LiChrosolv® for HPLC	2,5 l	**1.06035.2500**
Water LiChrosolv® for chromatography	1 l	**1.15333.1000**
Water LiChrosolv® for chromatography	2,5 l	**1.15333.2500**

Low temperature evaporative light scattering detectors

ELSD 90 LT

ELSD 85 LT

ELSD 80 LT

These detectors include a number of innovative features including the ability to select the best nebuliser and a unique low temperature technology. The evaporation drift tube design optimises both resolution and sensitivity. In addition, you can control the system locally or via a PC. A remote shut down mode is provided to minimise cost and enhance system lifetime.

These systems allow for detection of essentially all compounds. Detection is based on a universal property of all analytes and does not require the presence of a chromophoric group, electroactive group, etc.

- Complete remote control
- Sensitivity is enhanced by digital signal treatment
- Full SOP protocols are provided for GLP compliance and validation procedures

Model	ELSD 90 LT	ELSD 85 LT	ELSD 80 LT
Components			
Detector	High sensitivity photomultiplier	High sensitivity photomultiplier	High sensitivity photomultiplier
Light source	10 mW – 405 nm laser (class 3B) Elapsed time counter	Selected high efficiency blue LED (470 nm) Elapsed time counter	Selected high efficiency blue LED (470 nm) Elapsed time counter
Temperature range	Ambient to 100 °C	Ambient to 100 °C	Ambient to 100 °C
Nebuliser	Standard HPLC: 5 µl/min to 5 ml/min with 4 nebulisers UHPLC with 1 nebuliser SFC with 1 nebuliser	Standard HPLC: 5 µl/min to 5 ml/min with 4 nebulisers UHPLC with 1 nebuliser SFC with 1 nebuliser	HPLC: 100 µl/min to 2,5 ml/min Combined chemistry: 1 ml/min to 4 ml/min Flash chromatography: 100 µl/min to 5 ml/min
Sensitivity	Mid-picogram level (LOD stearic acid = 500 pg)	<1 ng caffeine (LOD)	<5 ng caffeine (LOD)
Dynamic range	Over 4 orders of magnitude	-	-
Linearity	Correlation coefficient on full range $R^2 > 0,99$	-	-
Data			
Analogue output	0 – 1 V	0 – 1 V	0 – 1 V
Gain setting	1 – 12 factor 2^{11} (2048)	1 – 12 factor 2^{11} (2048)	1 – 12 factor 2^{11} (2048)
Filter	Moving average (0 – 10 s)	Moving average (0 – 10 s)	Moving average (0 – 10 s)
Date rate	Analogue: 100 Hz Digital: 60 Hz	Analogue: 100 Hz Digital: 60 Hz	Analogue: 40 Hz
Communication			
Selection and display	Liquid crystal display and keypad	Liquid crystal display and keypad	Liquid crystal display and keypad
Event	Contact closure, TTL for ready, auto-zero, power down	Contact closure for ready, auto-zero	Contact closure for ready, auto-zero
Power down methods	Shut-off: Gas, led, heating and/or PMT cleaning method	Shut-off: Gas, led, heating and/or PMT cleaning method	Shut-off: Gas, led, heating and/or PMT cleaning method
Computer interface	RS232, USB	RS232	RS232
Software	Drivers available for Chromeleon®, OpenLab, EZChrom Elite™, ChemStation™, Xcalibur™ and Clarity™ with full control of ELSD parameters	Drivers available for Chromeleon®, OpenLab, EZChrom Elite™, ChemStation™, Xcalibur™ and Clarity™ with full control of ELSD parameters	Drivers available for Chromeleon®, OpenLab, EZChrom Elite™, ChemStation™, Xcalibur™ and Clarity™ with full control of ELSD parameters

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External requirements			
Power	230 V/50 Hz – 115 V/60 Hz	230 V/50 Hz – 115 V/60 Hz	230 V/50 Hz – 115 V/60 Hz
Gas pressure (nitrogen or air)	3,5 bar with gas control and patented auxiliary gas flow (less than 3 l/min, less than 4 l/min for CC nebuliser)	3,5 bar (less than 3 l/min)	3,5 bar (less than 3 l/min)
W×D×H (mm)	250×550×480	250×550×480	250×550×480
Weight (kg)	16	18,5	18,5

Description	Pk	Cat. No.
Detectors		
ELSD 90 HPLC low temperature evaporative light scattering detector, 230 V, EU-plug	1	**903-0271**
ELSD 90 UHPLC low temperature evaporative light scattering detector, 230 V, EU-plug	1	**903-0273**
ELSD 85 HPLC low temperature evaporative light scattering detector, 230 V, EU-plug	1	**903-0234**
ELSD 85 UHPLC low temperature evaporative light scattering detector, 230 V, EU-plug	1	**903-0236**
ELSD 85 HPLC low temperature evaporative light scattering detector for use with lower flow rates, 230 V, EU-plug	1	**903-0238**
ELSD 85 HPLC low temperature evaporative light scattering detector for use with micro flow rates, 230 V, EU-plug	1	**903-0240**
ELSD 85 HPLC low temperature evaporative light scattering detector for use with combinatorial chemistry applications, 230 V, EU-plug	1	**903-0242**
ELSD 85 HPLC low temperature evaporative light scattering detector for use with super critical fluid chromatography, 230 V, EU-plug	1	**903-0244**
ELSD 80 HPLC low temperature evaporative light scattering detector, 230 V, EU-plug	1	**903-0247**

Description	Pk	Cat. No.
Drivers		
Chromeleon® driver for HPLC low temperature evaporative light scattering detector (ELSD) for models ELSD 80, ELSD 85 and ELSD 90	1	**903-0278**
ChemStation™ B driver for HPLC low temperature evaporative light scattering detector (ELSD) for models ELSD 80, ELSD 85 and ELSD 90	1	**903-0279**
OpenLAB ChemStation™ driver for HPLC low temperature evaporative light scattering detector (ELSD) for models ELSD 80, ELSD 85 and ELSD 90	1	**903-0280**
OpenLAB EZChrom driver for HPLC low temperature evaporative light scattering detector (ELSD) for models ELSD 80, ELSD 85 and ELSD 90	1	**903-0281**
Accessories		
Nebuliser for ELSD 90 LT HPLC	1	**903-0275**
Nebuliser for ELSD 90 LT U-HPLC	1	**903-0276**
Nebuliser for ELSD 85 LT HPLC	1	**903-0252**
Nebuliser for ELSD 85 LT U-HPLC	1	**903-0253**
Nebuliser for ELSD 85 LT low flow	1	**903-0254**
Nebuliser for ELSD 85 LT micro flow	1	**903-0255**
Nebuliser for ELSD 85 LT CC	1	**903-0256**
Nebuliser for ELSD 80 LT HPLC	1	**903-0258**
Nebuliser for ELSD 80 LT CC	1	**903-0259**
Nebuliser for ELSD 80 LT flash	1	**903-0260**
SFC nebuliser	1	**903-0257**
Glassware for ELSD 80-85 LT	1	**903-0261**
Glassware for ELSD 85 LT micro HPLC	1	**903-0262**
Complete glassware for ELSD 85 LT micro HPLC	1	**903-0263**
Power cable, CH-plug	1	**903-0264**
Power cable, UK-plug	1	**903-0265**
Power cable, US-plug	1	**903-0266**
USB cable	1	**560-0175**
Start-up kit	1	**560-0174**

The E-DIO cable is necessary for transferring the start signal.

VWR COLLECTION

SELECTED FOR YOU

Preparative HPLC system, LaPrep Sigma

The LaPrep Sigma is a highly robust and compact preparative chromatography system running on the intuitive EZChrom platform. Being a truly modular system with many possible configurations, it has one of the smallest footprints in the market (242×352 mm). With an easy to use touch screen panel and ethernet connection, it is an ideal addition to any laboratory needing a flexible preparative HPLC solution.

The LaPrep Sigma has capabilities ranging from analytical to preparative scale, pump capacity from 1 ml to 600 ml/min and can be easily connected to a fully automated fraction collector. Along with the options of a single or multiple wavelength UV detector and autosampler or single injection sample delivery, the LaPrep Sigma is an excellent choice for any preparative laboratory whatever the configuration requirements.

Key to the flexibility of LaPrep Sigma is the assistant module. The assistant houses the fractionation valve, injection valve and automated injection pump, meaning that minimal bench space is used. A variety of configuration options are available.

For further information, demo requests or application support please get in touch with your local VWR chromatography specialist or email chromatography@eu.vwr.com.

Description	For	Pk	Cat. No.
Main modules			
LaPrep Sigma LP 1100 semi-preparative solvent pump with 20 ml titanium pump head and integrated quaternary low pressure gradient		1	**905-0502**
LaPrep Sigma LP 1200 preparative solvent pump with 100 ml titanium pump head		1	**905-0550**
LaPrep Sigma LP 1200 preparative solvent pump with 200 ml titanium pump head		1	**905-0503**
LaPrep Sigma LP 1200 preparative solvent pump with 600 ml titanium pump head		1	**905-0504**
LaPrep Sigma LP 3101 UV detector, 1 channel		1	**905-0505**

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Description	For	Pk	Cat. No.
Main modules			
LaPrep Sigma assistant module for sample delivery and fractionation. Includes: 1/8": LP 1000 pump with 50 ml pump head without pressure sensor, LP 2002 injection valve, LP 2012 fractionation valve		1	**905-0515**
LaPrep Sigma assistant module for sample delivery and fractionation. Includes: 1/16": LP 1000 pump with 10 ml pump head without pressure sensor, LP 2002 injection valve, LP 2016 fractionation valve		1	**905-0514**
LaPrep Sigma assistant module, 1/8": two LP 2002 valves, for fractionation, solvent selection or column switching, 242×352×137 mm		1	**905-0516**
LaPrep Sigma assistant module, 1/16": two LP 2002 valves, for fractionation, solvent selection or column switching, 242×352×137 mm		1	**905-0517**
Flow cells for LaPrep Sigma UV detectors			
LaPrep Sigma analytical flow cell, 1/16'', 3 mm path length, max. flow rate 50 ml/min, 2 µl volume, max. pressure 300 bar	LaPrep Sigma LP 3101 and LP 3104 UV detectors	1	**905-0529**
LaPrep Sigma preparative flow cell, 1/8'', 0,5/1,25/2 mm selectable path length, max. flow rate 1000 ml/min, 25 µl volume, max. pressure 200 bar	LaPrep Sigma LP 3101 and LP 3104 UV detectors	1	**905-0530**
LaPrep Sigma semi-preparative flow cell, 1/16'', 0,5 mm path length, max. flow rate 250 ml/min, 3 µl volume, max. pressure 200 bar	LaPrep Sigma LP 3101 and LP 3104 UV detectors	1	**905-0531**
Low pressure gradient accessories			
LaPrep Sigma LPG accessory with ternary low pressure gradient flow rate of 10 to 220 ml/min	LaPrep Sigma LP 1200 preparative solvent pump with 200 ml titanium pump head	1	**905-0522**
LaPrep Sigma LPG accessory with binary low pressure gradient flow rate of 10 to 1000 ml/min	LaPrep Sigma LP 1200 preparative solvent pump with 600 ml titanium pump head	1	**905-0521**
Capillary start-up kits for LaPrep Sigma			
LaPrep Sigma start-up kit, 1/8", necessary for 1/8" systems. Contains all fittings and tubing needed for 1/8" set up	The connection of modules with a 1/8" flow path	1	**905-0519**
LaPrep Sigma start-up kit, 1/16", necessary for 1/16" systems. Contains all fittings and tubing needed for 1/16" set up	The connection of modules with a 1/16" flow path	1	**905-0520**
Other modules and accessories - Modules with single LP1000 pump in one module			
LaPrep Sigma LP 1000 sample injection pump with 10 ml titanium pump head		1	**905-0500**
LaPrep Sigma LP 1000 sample injection pump with 50 ml titanium pump head		1	**905-0501**
Other modules and accessories - LaPrep Sigma single valves in one module			
LaPrep Sigma manual injection valve, 6 port/3 channel/2 positions, 1/16", with signal cable and mounting bracket. For LaPrep Sigma LP 1000 sample injection pumps		1	**905-0512**
LaPrep Sigma mounting bracket. For manual injection valve		1	**905-0513**
LaPrep Sigma LP 2002 injection valve and drive, 6 port/3 channel/2 positions, 1/16", 122×188×140 mm		1	**905-0507**
LaPrep Sigma LP 2002 injection valve and drive, 6 port/3 channel/2 positions, 1/8", 122×188×140 mm		1	**905-0508**
LaPrep Sigma injection valve module with 6-port/3-channel, 1/8". For injection with LP 1000 pump		1	**905-0525**
LaPrep Sigma injection valve module with 6-port/3-channel, 1/16". For injection with LP 1000 pump		1	**905-0524**
LaPrep Sigma switching valve module, 17-port/1-channel, 1/16"		1	**905-0523**
LaPrep Sigma switching valve module, 13-port/1-channel, 1/8"		1	**905-0526**
LaPrep Sigma switching valve module, 7-port/1-channel, 1/16"		1	**905-0527**
LaPrep Sigma switching valve module, 7-port/1-channel, 1/8"		1	**905-0528**
LaPrep Sigma LP 2006 fractionation valve module, 7 port/1 channel/7 positions, 1/8", 122×188×140 mm		1	**905-0509**
LaPrep Sigma LP 2012 fractionation valve module, 13 port/1 channel/13 positions, 1/8", 122×188×140 mm		1	**905-0510**
LaPrep Sigma LP 2016 fractionation valve module, 17 port/1 channel/17 positions, 1/16", 122×188×140 mm		1	**905-0511**
LaPrep Sigma pump extension required to allow stacking of units of different suppliers		1	**905-0518**

VWR HITACHI

HPLC system, Chromaster

The VWR Hitachi Chromaster delivers highly reliable results. This is achieved with the high precision delivered by the pump, the low carry-over and high precision of the autosampler, the stability of the column oven and the sensitivity of the detectors.

VWR's relationship with Hitachi started over 30 years ago as a Merck Hitachi cooperation. During this time, the robustness and reliability of the Hitachi HPLC instruments has helped to build and develop a strong partnership.

Chromaster key parameters:

- 600 bar (60 MPa) maximum operating pressure as standard
- Very low carry-over (<0,003%)
- Highly sensitive fluorescence detector (optimised 30 nm slit)
- Very low drift diode array detector ($1{,}0 \times 10^{-4}$ AU hr^{-1})
- Excellent gradient reproducibility
- Automatic wavelength check in UV and DAD detectors
- Unique touch screen user interface

Chromaster HPLC 5160 pump	Key features
Pumping system	Dual plunger reciprocating pump system Series connection, pulsation elimination system
Operating flow rate range	0,001 to 5,000 ml/min
Maximum operating pressures	60 MPa (0,001 to 2,500 ml /min) 30 MPa (2,501 to 5,000 ml /min)

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Chromaster HPLC 5260 autosampler	Key features
Sample capacity	195×1 ml (optional) 120×1,5 ml (standard) 72×4 ml (optional) 2×MTP (in 96 well or 384 well) (optional)
Sample injection system	Loop injection method (Cut injection, all volume injection, full loop injection method)
Syringe volume	175 µl (standard)
Chromaster HPLC 5310 column oven	**Key features**
Temperature control system	Heating/cooling block with air circulation system
Temperature setting range	1 to 85 °C (1 °C step)
Temperature control range	RT -15 to RT+60 °C and range of the temperature setting
Chromaster HPLC 5410 UV detector	**Key features**
Optical system	Double beam ratio photometric system
Light source	D_2 lamp, Hg lamp for checking wavelength
Wavelength range	190 - 600 nm
Chromaster HPLC 5420 UV-VIS detector	**Key features**
Optical system	Double beam ratio photometric system
Light source	D_2 lamp, W lamp, Hg lamp for checking wavelength
Wavelength range	190 - 900 nm
Chromaster HPLC 5430 diode array detector	**Key features**
Detection type	1,024 bit PDA
Light source	D_2 lamp, W lamp, Hg lamp for checking wavelength
Wavelength range	190 - 900 nm
Chromaster HPLC 5440 fluorescence detector	**Key features**
Light source	Xe lamp, Hg lamp for checking wavelength
Wavelength range	Ex: 200 to 850 nm Em: 250 to 900 nm (change photomultiplier at 731 nm or more)
Wavelength accuracy	±3 nm
Chromaster HPLC 5450 RI detector	**Key features**
Refractive index range	1 - 1,75
Noise	≤2,5 x 10^{-9} RIU
Drift	≤0,2 x 10^{-6} RIU/h
Chromaster HPLC System Manager Software	**Key features**
For control of	VWR Hitachi Chromaster system
PC requirements	Windows 7 Professional English 32 bit version
Functions	Method creation, data acquisition, chromatograph data processing, DAD data processing and report generation

Description	Pk	Cat. No.
Main modules		
Chromaster 5160 pump with manual purge valve. 600 bar max. operating pressure	1	**903-0554**
Chromaster 5160 pump with auto-purge valve. 600 bar max. operating pressure	1	**903-0555**
Chromaster 5260 autosampler with 175 µl syringe. 600 bar max. operating pressure	1	**903-0556**
Chromaster 5260 autosampler with thermostat and 175 µl syringe. 600 max. operating pressure	1	**903-0557**
Chromaster 5310 column oven	1	**903-0520**
Chromaster 5410 UV detector	1	**903-0524**
Chromaster 5420 UV-VIS detector	1	**903-0525**
Chromaster 5430 diode array detector without flow cell	1	**903-0597**
Chromaster 5440 fluorescence detector	1	**903-0527**
Chromaster 5450 refractive index detector	1	**903-0528**
Chromaster organiser for solvent placement and power supply	1	**903-0537**

Description	For	Pk	Cat. No.
Chromaster System Manager			
Chromaster system manager software for control and data acquisition		1	**906-0144**
System accessories for HPLC system, Chromaster			
Chromaster HPLC low pressure internal gradient unit. Includes proportioning valves, conventional mixer and capillaries	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0562**
Chromaster HPLC 6-channel degassing unit. 6-channel (4 for solvents, 2 for AS washing solution), 480 µl/flow path	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0503**
Chromaster HPLC built-in dedicated mini pump for washing the plunger of the main pump	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0563**
Chromaster HPLC Interface Control Board for Chromaster system control. USB cable and e-line cable (0,5 m) included. Built into the autosampler upon installation in laboratory. If no autosampler is used, then the interface box (S) must be ordered instead	Chromaster HPLC connection of all modules via one USB connection (built into the autosampler upon installation in laboratory)	1	**903-0545**
Chromaster HPLC graphical user interface (GUI) touch screen controller for Chromaster 5000 series.	Chromaster HPLC operation of all modules	1	**903-0546**
Accessories			
Chromaster HPLC dynamic mixer 2000 µl	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0564**
Chromaster HPLC 200 µl semi-micro mixer for flow rates of 0,4 ml/min or less	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0507**
Chromaster HPLC 700 µl static mixer for conventional use with flow rates between 0,4 and 1,8 ml/min	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0565**

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Description	For	Pk	Cat. No.
Accessories			
Chromaster HPLC manual injector holder panel. Manual injector valve must be ordered seperately	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0508**
Chromaster HPLC hexane and other non-polar solvents resistant 6-channel degassing unit	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0567**
Chromaster HPLC adaption kit for THF (max pressure 400 bar)	Chromaster HPLC 5110 and 5160 pumps with manual purge valve (built into the pump upon installation in laboratory)	1	**903-0568**
Chromaster HPLC adaption kit for THF (max pressure 400 bar)	Chromaster HPLC 5110 and 5160 pumps with autopurge valve (built into the pump upon installation in laboratory)	1	**903-0569**
Chromaster HPLC THF resistant Vespel® packing	Chromaster conventional mixer for use up to 400 bar	1	**903-0570**
Chromaster HPLC user interface keypad. Mounting parts included	Chromaster HPLC 5110 and 5160 pumps	1	**903-0540**
Chromaster HPLC sample rack for 120 × 1,5 ml sample vials. Supplied as standard with the 5260 autosamplers	Chromaster HPLC 5260 autosamplers	1	**903-0511**
Chromaster HPLC sample rack for 72 × 4 ml sample vials	Chromaster HPLC 5260 autosamplers	1	**903-0512**
Chromaster HPLC sample rack for 195 × 1 ml sample vials. Rack for ambient use	Chromaster HPLC 5260 autosamplers	1	**903-0513**
Chromaster HPLC sample rack for 2 × 96-well or 384-well micro titre plates	Chromaster HPLC 5260 autosamplers	1	**903-0514**
Chromaster HPLC sample rack for 120 × 1,5 ml sample vials. Supplied as standard with the the 5260 thermostat autosamplers	Chromaster HPLC 5260 autosamplers	1	**903-0406**
Chromaster HPLC sample rack for 72 × 4 ml sample vials	Chromaster HPLC 5260 autosamplers with thermostat	1	**903-0516**
Chromaster HPLC sample rack for 195 × 1 ml sample vials	Chromaster HPLC 5260 autosamplers with thermostat	1	**903-0517**
Chromaster HPLC sample rack for 2 × 96-well or 384-well microtitre plates	Chromaster HPLC 5260 autosamplers with thermostat	1	**903-0518**
Chromaster HPLC 70 µl syringe kit	Chromaster HPLC 5260 autosamplers	1	**560-0173**
Chromaster HPLC 700 µl syringe kit	Chromaster HPLC 5260 autosamplers	1	**903-0560**
Chromaster HPLC 3000 µl syringe kit	Chromaster HPLC 5260 autosamplers	1	**903-0596**
Chromaster HPLC hexane resistant autosampler washing pump	Chromaster HPLC 5260 autosamplers	1	**903-0571**
Chromaster HPLC sample loop kit (5 µl)	Chromaster HPLC 5260 autosamplers	1	**903-0573**
Chromaster HPLC sample loop kit (10 µl)	Chromaster HPLC 5260 autosamplers	1	**903-0574**
Chromaster HPLC sample loop kit (20 µl)	Chromaster HPLC 5260 autosamplers	1	**903-0575**
Chromaster HPLC sample loop kit (100 µl)	Chromaster HPLC 5260 autosamplers	1	**903-0576**
Chromaster HPLC sample loop (200 µl)	Chromaster HPLC 5260 autosamplers	1	**903-0577**
Chromaster HPLC sample loop (1000 µl)	Chromaster HPLC 5260 autosamplers	1	**903-0561**
Chromaster HPLC sample loop (4000 µl)	Chromaster HPLC 5260 autosamplers	1	**903-0578**
Chromaster HPLC 2-channel degassing unit. Only needed if pump degasser is not used	Chromaster HPLC 5260 autosamplers (built into the autosampler upon installation in laboratory)	1	**903-0519**
Chromaster HPLC THF resistant autosampler kit	Chromaster HPLC 5210 autosamplers (built into the autosampler upon installation in the laboratory)	1	**903-0572**
Chromaster HPLC user interface keypad. Mounting parts included	Chromaster HPLC 5260 autosamplers (built into the autosampler upon installation in laboratory)	1	**903-0541**
Chromaster HPLC AC adapter (60 W)	Chromaster HPLC interface boxes (S) and (L)	1	**903-0539**
Chromaster HPLC 3-column selection valve. Pressure stability to 345 bar. For 1/16" capillaries. Power unit, control board and tubes are included. One valve per oven only	Chromaster HPLC 5310 column ovens (built into the column oven upon installation in laboratory)	1	**903-0521**
Chromaster HPLC valve mounting kit	Chromaster HPLC 3-column selection valve	1	**903-0579**
Chromaster HPLC 2-position, 6-port valve. Power unit, control board and tubes are included	Chromaster HPLC 5310 column oven (built into the column oven upon installation in laboratory)	1	**903-0522**
Chromaster HPLC column management system. Three column electronic data tags are included	Chromaster HPLC 5310 column oven (built into the column oven upon installation in laboratory)	1	**903-0523**
Chromaster HPLC column holder	Chromaster HPLC use when an oven is not ordered (built into the detector upon installation in laboratory)	1	**903-0566**
Chromaster HPLC user interface keypad. Mounting parts included	Chromaster HPLC 5310 column ovens (built into the column oven upon installation in laboratory)	1	**903-0542**
Chromaster HPLC thermo cell. Flow cell control unit for 5410 UV detector and 5420 UV-VIS detector is also required	Chromaster HPLC 5410 UV detectors and 5420 UV-VIS detectors (built into the detector upon installation in laboratory)	1	**903-0529**
Chromaster HPLC thermostat cell control unit. Necessary for thermo cell for 5410 UV detectors and 5420 UV-VIS detectors	Chromaster HPLC 5410 UV detectors and 5420 UV-VIS detectors (built into the detector upon installation in laboratory)	1	**903-0535**
Chromaster HPLC standard flow cell	Chromaster HPLC 5430 diode array detectors (built into the detector upon installation in laboratory)	1	**903-0320**
Chromaster HPLC high pressure semi-micro flow cell, 150 bar, 3,2 µl, 5 mm	Chromaster HPLC 5410 UV detectors and 5420 UV-VIS detectors	1	**903-0581**
Chromaster HPLC preparative flow cell, 5 mm, 2.6 µl, 10 bar	Chromaster HPLC 5410 UV detectors and 5420 UV-VIS detectors	1	**903-0583**
Chromaster HPLC user interface keypad. Mounting parts included	Chromaster HPLC 5410 UV detectors and 5420 UV-VIS detectors (built into the detector upon installation in laboratory)	1	**903-0543**
Chromaster HPLC thermo cell. The thermostat cell control unit for 5430 diode array detector is also required	Chromaster HPLC 5430 diode array detectors (built into the detector upon installation in laboratory)	1	**903-0530**
Chromaster HPLC thermostat cell control unit. Necessary for thermo cell for 5430 diode array detector	Chromaster HPLC 5430 diode array detectors (built into the detector upon installation in laboratory)	1	**903-0536**
Chromaster HPLC high pressure semi-micro flow cell, 150 bar, 3,2 µl, 5 mm	Chromaster HPLC 5430 diode array detectors	1	**903-0584**
Chromaster HPLC preparative flow cell, 5 mm, 2,6 µl, 10 bar	Chromaster HPLC 5430 diode array detectors	1	**903-0586**
Chromaster HPLC 2-channel analogue signal output unit	Chromaster HPLC 5430 diode array detectors (built into the detector upon installation in laboratory)	1	**903-0531**
Chromaster HPLC thermostat flow cell. Thermostat flow cell control unit for 5440 fluorescence detectors is also required	Chromaster HPLC 5440 fluorescence detectors (built into the detector upon installation in laboratory)	1	**903-0532**
Chromaster HPLC thermostat flow cell control unit. For use with thermostat flow cell for 5440 fluorescence detectors	Chromaster HPLC 5440 fluorescence detectors (built into the detector upon installation in laboratory)	1	**903-0533**
Chromaster HPLC user interface keypad. Mounting parts included	Chromaster HPLC 5440 fluorescence detectors (built into the detector upon installation in laboratory)	1	**903-0544**

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Description	For	Pk	Cat. No.
Accessories			
Chromaster HPLC AC adapter (150 W)	Chromaster HPLC 5110/5160 pumps, 5260 autosamplers, 5410 UV detectors, 5420 UV-VIS detectors, 5430 diode array detectors and 5450 refractive index detectors. When no organiser is used	1	**903-0538**
Chromaster HPLC 1-channel analogue signal output unit	Chromaster HPLC 5410 UV detectors, 5420 UV-VIS detectors and 5440 fluorescence detectors (built into the detector upon installation in laboratory)	1	**903-0534**
Chromaster HPLC interface box (L) with Interface Control Board (IFCB), USB-analogue input device (AID). AC adapter (60 W) is required	Chromaster HPLC systems without autosampler	1	**903-0547**
Chromaster HPLC interface box (S). AC adapter (60 W) is required	Chromaster HPLC systems without autosampler	1	**903-0548**
Chromaster HPLC tubing kit. Includes tubing and cables	Chromaster HPLC system in a two tower configuration	1 KIT	**903-0587**
Chromaster HPLC USB-analogue input device. Maximum 2 USB-AID allowed per system. Interface Control Board is required	Chromaster HPLC with 1 channel for analogue signal acquisition for Chromatography Data System	1	**903-0549**

* Low pressure gradient, degasser and piston wash pump for 5110 and 5160 pumps must be ordered separately as required.

VWR HITACHI

UHPLC systems, ChromasterUltra Rs

The ChromasterUltra Rs is the result of many years of research, development and customer consultation leading to the introduction of one of the most advanced, robust and easy to use UHPLC system available on the market today. Hitachi-High Technologies is a world leader in fluid control and optical analysis technology as well as in high performance electronics. Hitachi has focused on combining the knowledge of these three key disciplines to give the world of Chromatography one of the best instruments for today's demands.

Resolution - Very high pressure rating (1400 bar) for high resolution columns.

Owing to the high pressure capabilities of the ChromasterUltra Rs, 250 mm or 300 mm UHPLC columns can be used. It is possible to couple two 3×250 mm 1,9 µm columns together in series in order to give the highest possible number of theoretical plates.
Band broadening is kept low owing to a low system delay volume of 120 µl (including one 55 µl mixer). The novel double corkscrew mixer ensures excellent mixing with a very low composition ripple of ≤0,1 mAU. (Conditions: A H20 + 0,1% TFA, B: MeCN + 0,1% TFA, flow rate: 0,5 ml/min, A:B = 45:55 at 25 °C)

Sensitivity - Extra long optional total internal reflection flow cell.

The diode array detector is equipped with a 10 mm total internal capillary flow cell for low noise and high sensitivity. An optional 65 mm total internal reflection flow cell is available with very low noise and the highest sensitivity, meaning that the best in resolution and sensitivity is obtained with the ChromasterUltra Rs.

Easy column fitting with ChromasterUltra Rs MEM fitting.

The MEM column fitting in the oven allows for the easy installation of columns from all manufacturers with near zero dwell volume. Fitted with a patented, spring loaded coupling mechanism, the MEM fitting allows the user complete flexibility on column choice with no concern about the pre-frit volume variability between different columns.

To arrange a demonstration with one of our experts, please email chromatography@eu.vwr.com.

ChromasterUltra Rs UHPLC 6170 pump	**Key features**
Pumping system	High pressure binary gradient solution. With Liquid Beat Technology for maintaining a highly stable gradient
Maximum pressure	1400 bar (140 MPa)
Mixer	55 µl double cork mixer for optimal gradient performance. (Two mixers included as standard)
Solvent treatment	Degassing unit for 6 solvents. Solvent selector for 4 solvents (Two per pump)
ChromasterUltra Rs UHPLC 6270 autosampler	**Key features**
Injection volume range	0,1 to 500 µl (dependent upon loop installed)
Carry-over	<0,001%
Sample capacity	120 x 1,5 ml vials (other optional sample trays available)
Heating/Cooling	1 - 45 °C (Peltier block)
ChromasterUltra Rs 6310 UHPLC peltier column oven	**Key features**
Temperature range	4 - 90 °C
Capacity	3×300 mm columns without MEM fitting, 3×250 mm columns with MEM fitting
Column coupling	MEM column fitting – near zero dead volume column connection suitable for all column manufacturers
ChromasterUltra Rs 6430 diode array detector	**Key features**
Wavelength range	190 - 650 nm (D_2 Lamp with Hg lamp for wavelength check)
Flow cell	Total reflection capillary 10 mm flow cell. 2,2 µl volume (Optional 65 mm flow cell: 14 µl volume)
Noise	≤0,5 x 10^{-5} AU/hr (4 nm slit width, response time = 2 sec at 250 nm with 0,5 ml/min MeOH)
Absorbance linearity	2,0 AU (5%) at 250 nm
ChromasterUltra Rs 6420 UV-VIS detector	**Key features**
Wavelength range	190 - 900 nm (D_2&W lamps with Hg lamp for wavelength check)
Flow cell	Standard flow cell with 5 mm optical path, 3,5 µl
Noise	<0,5 x 10^{-5} AU/hr

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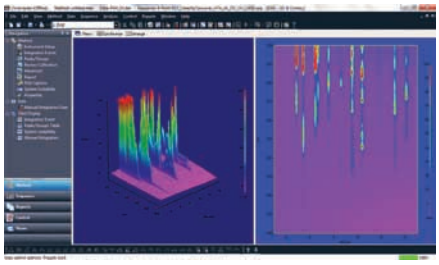
Description	Pk	Cat. No.
Main modules		
ChromasterUltra Rs UHPLC system including 6170 binary pump, 6270 autosampler with cooling, 6310 column oven, 6430 diode array detector, organiser (including interface control board)	1	**903-0400**
ChromasterUltra Rs UHPLC system including 6170 binary pump, 6270 autosampler with cooling, 6310 column oven, 6420 UV-VIS detector, organiser (including interface control board)	1	**903-0401**

OpenLAB CDS EZChrom Edition



Scalable and compliant chromatography software platform with multi-instrument control.

OpenLAB CDS EZChrom Edition is part of the Agilent software suite OpenLAB for the analytical laboratory and enterprise. Its multi-instrument control capabilities, scalability and compliance are ideal to fulfil the requirements of today's chromatography laboratories and to optimise their efficiency. Central administration functions have been arranged in the OpenLAB Shared Services/Control Panel module while keeping the existing user interface and workflows for the EZChrom Elite™ chromatography data system. Many exciting functions are now available, from the Result Package mode and Result Review/ Result Sequence mode to the new Intelligent Reporting mode. OpenLAB CDS EZChrom Edition can be easily complemented by further software modules belonging to the OpenLAB software suite.

- Scalable from workstations to fully featured Client/Server systems
- Configurable compliance
- Multi-instrument control (many different LC and GC instrument control drivers available)
- Intelligent reporting
- Result Package mode

For further information and additional articles, please contact our specialists at VWR or email chromjournal@eu.vwr.com.

Description	Pk	Cat. No.
OpenLAB CDS EZChrom edition workstation with Hitachi HPLC Control driver, without software subscription	1	**906-0151**
OpenLAB CDS EZChrom edition workstation with Hitachi HPLC Diode Array Control driver	1 SET	**906-0146**
OpenLAB CDS EZChrom edition workstation with Hitachi HPLC Diode Array Control driver, without software subscription	1	**906-0152**
OpenLab CDS EZChrom edition licence for additional Hitachi HPLC with Diode Array on the same PC	1 SET	**906-0148**
OpenLab CDS EZChrom edition licence for additional Hitachi HPLC on the same PC	1 SET	**906-0147**
PerkinElmer Clarus Gas Chromatograph Control instrument driver for EZChrom Elite™ and OpenLAB CDS EZChrom edition	1	**906-0136**
OpenLAB CDS EZChrom edition workstation, basic workstation chromatography software including 1 year software subscription	1	**906-0093**
OpenLAB CDS EZChrom edition workstation, basic workstation software for upgrade/migration of an existing EZChrom Elite™ software including 1 year software subscription	1	**906-0095**

Empower 3 chromatography data software

Empower 3 is Waters's compliant-ready chromatography data software (CDS) package for advanced data acquisition, management, processing, reporting and distribution. Empower 3's interface is designed to maximise laboratory efficiency, improving collection, processing and printing chromatography data. Capabilities include:

- Customisable data reports
- Integrated custom calculations
- Relational data base so all the meta data is traceable back to the raw data
- Optimised workflow for different users and different analyses

With enhanced 21 CFR Part 11 compliance capabilities, Empower 3 takes the laboratory's ability to manage data integrity, advanced security features and audit trails to new levels. Empower 3 can grow seamlessly from a single workstation to an enterprise-wide system with Empower 3's scalable, modular architecture, which fits into the most modern, secure, HA (high availability) corporate architecture.

Description	Pk	Cat. No.
Empower 3 Personal Single System Add-On Software	1	**906-0158**
Empower 3 Personal Multi System Add-On Software	1	**906-0159**
Empower 3 Personal System Suitability Option	1	**906-0160**
Hitachi Chromaster Control Empower 2/3 for 1 system	1	**906-0156**
Hitachi LCE/LCU Control Empower 2/3 for 1 system	1	**906-0090**
Hitachi LCE/LCU Control Empower 2/3 for 4 systems	1	**906-0091**

Gas chromatograph, Clarus® 480 GC

The dual-channel design and optional 108-vial liquid autosampler of the Clarus® 480 GC provide the flexibility to meet diverse analytical requirements, while delivering the accuracy and precision essential for both non routine and quality control analyses.

- Single or dual-channel configurations available
- Optional liquid autosampler with 108 vial positions
- Robust, proven design provides reliable performance through manual pneumatics for injectors and detectors
- Flexible configurations with integrated headspace or thermal desorption
- Multiple language support
- Scalable TotalChrom® Chromatography Data Systems (CDS) for easy data management and reporting
- Complete instrument control through TotalChrom® and TurboMass™ as well as Waters® Empower™ 2 and Agilent® EZChrom Elite™ drivers

Ambient temperature: 10 to 32 °C

Ambient humidity: 20 to 80% relative humidity without condensation

W×D×H: Clarus® 480 GC without autosampler: 670×720×540 mm; Clarus® 480 GC with autosampler: 670×720×800 mm

Weight: Clarus® 480 GC without autosampler: 49 kg; Clarus® 480 GC with autosampler: 54 kg

Description	Pk	Cat. No.
Gas chromatograph, Clarus® 480 GC	1	**568-0332**

Hydrogen generators, Parker Domnick Hunter

The Parker Domnick Hunter hydrogen generators produce a continuous flow of pure hydrogen from deionised water.

These hydrogen generators provide a safe and hassle-free alternative to high pressure gas cylinders. Hydrogen is only generated on demand at low pressure and the volume of stored gas is minimal.

The generators are ideal for supplying fuel gas to all known combustion detectors used routinely in GC and can also be used to supply hydrogen for GC carrier gas applications and for ELCD reaction gas.

- Automatic hydrogen leak detection
- Patented seven-stage explosion protection system
- Continuous monitoring of "vital parameters"
- Easy to use controller, high visibility/audible alarms
- Large capacity water tank/optional auto water fill
- Optional remote control and monitoring

To ensure optimum performance and longevity of these hydrogen generators, preventative maintenance kits are recommended.

Contact VWR for your installation and service requirements.

Type	Flow rate (ml/min)	W×D×H (mm)	Pk	Cat. No.
Ultra high purity: >99,99995% H_2; 0,69 - 6,89 bar for GC and GC/MS carrier gas applications				
20H-MD	160	342×470×456	1	**564-0067**
40H-MD	250	342×470×456	1	**564-0068**
60H-MD	500	342×470×456	1	**564-0069**
110H-MD	1100	342×470×456	1	**564-0073**
High purity: >99,9995% H_2; 0,3 - 6,89 bar for GC combustion detector applications				
20H	160	342×437×456	1	**564-0070**
40H	250	342×437×456	1	**564-0071**
60H	500	342×437×456	1	**564-0072**

Description	Pk	Cat. No.
Maintenance kits		
Desiccant cartridge for H models	1	**564-0001**
24 month preventative maintenance kit, for H models	1	**564-0002**
6 month preventative maintenance kit, for H models	1	**564-0003**
24 month preventative maintenance kit, for H-MD models	1	**564-0004**
6 month preventative maintenance kit, for H-MD models	1	**564-0076**

Hydrogen generators, Precision Hydrogen series, Peak Scientific

The Precision Hydrogen series hydrogen generators are suitable for carrier gas and flame gas at standard detection limits. Hydrogen purity: 99,9995%.

- Proven PEM Technology to generate hydrogen safely and reliably
- Desiccant dryers to ensure high level of purity
- Automatic loading pump as standard
- Maintenance limited to replacing de-ioniser cartridge and silica gel
- Internal leak detection with automatic shutdown features

Delivery pressure: 0 - 6,9 bar

Type	Flow rate (ml/min)	W×D×H (mm)	Pk	Cat. No.
Precision Hydrogen, 100cc	100	380×540×406	1	**564-0169**
Precision Hydrogen, 200cc	200	380×540×406	1	**564-0170**
Precision Hydrogen, 300cc	300	380×540×406	1	**564-0171**
Precision Hydrogen, 450cc	450	380×540×406	1	**564-0172**

Diamond RSH/RTC syringes
SGE (Trajan)

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
CTC PAL RTC/Thermo Scientific RSH autosampler syringes with fixed needle, Diamond headspace							
23	1000	65	0,63	1MF-RTC/RSH-EGT-HS-6.5/0.63H	side hole	1	**548-1666**
23	2500	65	0,63	2.5MF-RTC/RSH-EGT-HS-6.5/0.63H	side hole	1	**548-1670**

Description	Gauge	Length (mm)	Ø ext. (mm)	Type of tip	Pk	Cat. No.
Spare needles for Diamond RSH/RTC syringes						
For 0,5 µl syringe	23	57	0,63	cone	1	**548-1681**
For 1,0 µl syringe	23	57	0,63	cone	1	**548-1682**
For 5,0 µl syringe	23	57	0,63	cone	1	**548-1751**
For 5,0 µl syringe	23	85	0,63	cone	1	**548-1752**
For 5,0 µl syringe	26	57	0,47	cone	1	**548-1753**
For 5,0 µl syringe	26	85	0,47	cone	1	**548-1754**
For 10,0 µl syringe	23	57	0,63	cone	2	**548-1755**
For 10,0 µl syringe	23	85	0,63	cone	1	**548-1756**
For 10,0 µl syringe	26	57	0,47	cone	2	**548-1757**
For 10,0 µl syringe	26	85	0,47	cone	1	**548-1758**

* gas-tight
** plunger-in-needle syringe

Syringes for CTC analytics systems
SGE (Trajan)

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
For CTC analytics headspace, CombiPAL and GC PAL							
23	1000	56	0,63	1MF-CTC-EGT-HS-5.6/0.63H *	side hole	1	**548-1663**
26	1000	56	0,47	1MF-CTC-EGT-HS-5.6/0.47H *	side hole	1	**548-1664**
23	2500	56	0,63	2.5MF-CTC-EGT-HS-5.6/0.63H *	side hole	1	**548-1668**
26	2500	56	0,47	2.5MF-CTC-EGT-HS-5.6/0.47H *	side hole	1	**548-1669**

* gas-tight

GC capillary column connectors, SilTite™ µ-unions
SGE (Trajan)

- Zero dead volume, ensuring optimised peak shapes
- Leak-free FingerTite technology
- Inert
- Stable for both extreme temperature and pressure cycling
- SilTite™ ferrules eliminate the need to re-tighten after installation

Delivery Information: Each pack is delivered with 2 unions, 5 double taper ferrules and the necessary too ls.

Description	Length (mm)	Pk	Cat. No.
For first column 0,1 – 0,25 mm and second column 0,1 – 0,25 mm	9	1	**568-0287**
For first column 0,1 – 0,25 mm and second column 0,32 mm	9	1	**568-0288**
For first column 0,1 – 0,25 mm and second column 0,53 mm	9	1	**568-0289**
For first column 0,32 mm and second column 0,32 mm	9	1	**568-0290**
For first column 0,32 mm and second column 0,53 mm	9	1	**568-0291**
For first column 0,53 mm and second column 0,53 mm	9	1	**568-0292**

Ferrules for 0,1– 0,25 mm ID columns have 0,4 mm holes. Ferrules for 0,32 mm ID columns have 0,5 mm holes. Ferrules for 0,53 mm ID columns have 0,8 mm holes.

Micro-fluidic platform, SilFlow™
SGE (Trajan)

SilFlow™ microchannel device (MCD) options for 3-port GC splitters, 4-port GC splitters and a Deans' switch MCD, perfect for multidimensional analyses. SilFlow™ can be incorporated into the system without impacting the chromatography.

- Chemically deactivated stainless steel channels avoiding active sites experienced with conventional connections
- Conventional graphite or Vespel® ferrules cannot be used with the SilFlow™ MCD as the dimensional stability is not adequate and there is a risk of contaminating the channels
- SilTite™ FingerTite metal ferrules result in a reliable zero dead volume connection, giving optimised peak shapes
- Can be operated at pressures greater than 25 000 psi
- SilFlow™ tracks oven temperature up to 20 °C/min. The design of SilFlow™ alleviates cold spots and sample condensation

Ordering information: SilFlow™ kits contain: SilFlow™ microchannel device (MCD), SilTite™ FingerTite tool, mounting bracket, appropriately sized ferrules, nuts and blanking ferrules for set up. 1,1 mm OD tubing is not supplied in the splitter kits and must be ordered separately if required.

Description	Pk	Cat. No.
SilFlow™ GC 3-port splitters		
GC kit (1,1), port A 1,1 mm OD, port B 0,25/0,32 mm ID, port C 0,25/0,32 mm ID	1	**548-1778**
GC kit (0,53), port A 0,53 mm ID, port B 0,25/0,32 mm ID, port C 0,25/0,32 mm ID	1	**548-1779**
GC kit (0,25/0,32), port A 0,25/0,32 mm ID, port B 0,25/0,32 mm ID, port C 0,25/0,32 mm ID	1	**548-1780**
SilFlow™ GC 4-port splitters		
GC kit (1,1), port A 1,1 mm OD, port B 0,25/0,32 mm ID, port C 0,25/0,32 mm ID, port D 0,25/0,32 mm ID	1	**548-1785**
GC kit (0,53), port A 0,53 mm ID, port B 0,25/0,32 mm ID, port C 0,25/0,32 mm ID, port D 0,25/0,32 mm ID	1	**548-1786**
GC kit (0,25/0,32), port A 0,25/0,32 mm ID, port B 0,25/0,32 mm ID, port C 0,25/0,32 mm ID, port D 0,25/0,32 mm ID	1	**548-1787**

Capillary columns, BP5MS
SGE (Trajan)

5% phenyl polysilphenylene-siloxane

Optimised silphenylene content for general purpose MS analyses. Perfect for 5% MS analysis. Non-polar, 5% equivalence. Low bleed, great inertness.

Max. temperature: -40 to +330/350 °C

Suitable replacement for: DB-5ms, Rtx-5ms, HP-5MS, Rxt-Sil 5MS, AT-5ms, VF-5ms

Length (m)	Ø int. (mm)	Film (µm)	Pk	Cat. No.
30	0,25	0,25	1	**568-0327**

Capillary columns, BP1
SGE (Trajan)

100% dimethyl polysiloxane

An industry standard non-polar phase suitable for all routine analyses.

Max. temperature: 360 °C

Suitable replacement for: CP-Sil 5CB, DB- Petro, DB-1, HP-1, HP-1MS, Petrocol DH, Rtx-1, SPB-1, SPB-1Sulfur, Ultra-1, VB-1, ZB-1

BP1-PONA

100% dimethyl polysiloxane

An non-polar phase for PONA analysis.

Max. temperature: 340 °C

Suitable replacement for: Petrocol DH, DB-Petrol 100, HP-Pona, AT-Petro, Elite-Pona, ZB-1, 007-1-100-0.5F, RTx-1Pona, CP Sil PONA

Length (m)	Ø int. (mm)	Film (µm)	Pk	Cat. No.
30	0,25	0,25	1	**558-0249**

Length (m)	Ø int. (mm)	Film (µm)	Pk	Cat. No.
BP1-PONA				
50	0,15	0,5	1	**568-0241**
100	0,25	0,5	1	**568-0237**

Capillary columns, BPX5
SGE (Trajan)

5% phenyl polysilphenylene-siloxane

Suitable for trace analysis of pesticides, drugs, hydrocarbons and phenols. The BPX5 phase has been designed for robustness and is suitable for over 80% of all routine analyses performed by chromatographers.

Max. temperature: 370 °C

Suitable replacement for: CP-Sil 8CB, DB-5, DB-5.625 XTI-5, DB-5MS, HP-5, HP-5MS, HP5-TA, MDN-5S, Rtx-5ms, SPB-5, Ultra-2, VB-5, ZB-5, VF-5MS

Length (m)	Ø int. (mm)	Film (µm)	Pk	Cat. No.
30	0,25	0,25	1	**558-0248**

Capillary columns, CYDEX-B
SGE (Trajan)

Permethylated beta cyclodextrin (chiral)

Ideal for separation of enantiomeric compounds found in natural products.

Max. temperature: 30 °C to 220/240 °C

Suitable replacement for: Cyclodex-B, Rt-BDEXm.

Length (m)	Ø int. (mm)	Film (µm)	Pk	Cat. No.
25	0,22	0,25	1	**568-0464**
50	0,22	0,25	1	**568-0465**

Capillary columns, SolGel-WAX™ and BP20 (Wax)
SGE (Trajan)

SolGel-WAX™

Polyethylene glycol (PEG) in a Sol-Gel matrix

Max. temperature: 30 °C to 260/280 °C

Suitable replacement for: DB-Wax, Rtx-Wax, Stabilwax, HP20M, HP-Wax, HP-INNOWax, Supelcowax-10, AT-Wax, Nukol, CP Wax 52CB, VB-WAX, ZB-WAX.

BP20 (Wax)

Polyethylene glycol

Max. temperature: 0,1 - 1,0 µm film thickness 20 °C to 260/280 °C; >1,0 µm film thickness 20 °C to 240/260 °C

Suitable replacement for: DB-Wax, HP-20M, Supelcowax 10, CB-Wax, Stabilwax, Carbowax, HP-Innowax, Rtx-WAX, PE-WAX, RH-WAX, ZB-WAX, TRWAX.

Length (m)	Ø int. (mm)	Film (µm)	Pk	Cat. No.
SolGel-WAX™				
30	0,25	0,25	1	**558-0254**
BP20 (Wax)				
25	0,32	0,5	1	**558-0329**

VWR BDH PROLABO CHEMICALS

SELECTED FOR YOU

Solvents and reagents for pesticide analysis by gas chromatography, PESTINORM®

- Solvents filtered at 0,2 µm and bottled under nitrogen

For full details of the specification and hazards of the materials, please go to the VWR website at www.vwr.com or see the VWR chemicals catalogue.

Description	Pk	Cat. No.
Acetone PESTINORM® for pesticide residue analysis	1 l	**83656.290**
Acetone PESTINORM® for pesticide residue analysis	2,5 l	**83656.320**
Acetonitrile PESTINORM® for pesticide residue analysis	1 l	**83657.290**
Acetonitrile PESTINORM® for pesticide residue analysis	2,5 l	**83657.320**
Cyclohexane PESTINORM® for pesticide residue analysis	1 l	**83658.290**
Cyclohexane PESTINORM® for pesticide residue analysis	2,5 l	**83658.320**
Diethyl ether PESTINORM® for pesticide residue analysis	2,5 l	**83659.320**
Ethyl acetate PESTINORM® for pesticide residue analysis	1 l	**83660.290**
Ethyl acetate PESTINORM® for pesticide residue analysis	2,5 l	**83660.320**
n-Hexane PESTINORM® for pesticide residue analysis	1 l	**83661.290**
n-Hexane PESTINORM® for pesticide residue analysis	2,5 l	**83661.320**
Methanol PESTINORM® for pesticide residue analysis	1 l	**83662.290**
Methanol PESTINORM® for pesticide residue analysis	2,5 l	**83662.320**
Petroleum spirit 40 - 60°C PESTINORM® for pesticide residue analysis	2,5 l	**83663.320**
Toluene PESTINORM® for pesticide residue analysis	2,5 l	**83664.320**
Dichloromethane PESTINORM® for pesticide residue analysis	1 l	**83665.290**
Dichloromethane PESTINORM® for pesticide residue analysis	2,5 l	**83665.320**
Florisil® PR 60-100 mesh for pesticide residue analysis	100 g	**24279.185**
Sodium sulphate PESTINORM® for pesticide residue analysis	1 kg	**28116.293**

VWR BDH PROLABO CHEMICALS

Pesticide GC/MS and GC capillary solvents, PESTINORM®

The BDH Prolabo PESTINORM® capillary grade solvents are guaranteed to have extremely low organic and halogenated derivatives in order to avoid contamination.

- Evaporation residue less than 5 ppm
- Filtered at 0,2 µm and bottled under nitrogen
- Impurities causing interfering peaks on gas chromatograms are not greater than: 5 ng/1itre of Lindane by electron capture detection; 10 ng/ml of Octanol by flame ionisation detection

For full details of the specification and hazards of the materials, please go to the VWR website at www.vwr.com or see the VWR chemicals catalogue.

Description	Pk	Cat. No.
Dichloromethane PESTINORM®, stabilised with 50 ppm of 2-methyl-2-butene	2,5 l	**83961.320**
Ethyl acetate PESTINORM® for capillary GC analysis	2,5 l	**83963.320**
Methanol PESTINORM® for capillary GC analysis	2,5 l	**83966.320**
Methanol PESTINORM® for purge and trap GC analysis	2,5 l	**83967.320**
n-Hexane PESTINORM® for capillary GC analysis	2,5 l	**83962.320**
n-Pentane PESTINORM® for capillary GC analysis	2,5 l	**83964.320**
Petroleum spirit 40 - 60 °C PESTINORM® for capillary GC analysis	2,5 l	**83965.320**

Solvents for gas chromatography, SupraSolv® and UniSolv®

SupraSolv® ECD and FID is specially developed for gas chromatography in combination with ECD (electron capture detector) and FID (flame ionisation detector), to deliver the largest specified retention time range, a clear baseline and a minimal signal-to-noise ratio leading to reliable and reproducible analysis results. SupraSolv® MS is dedicated for use in gas chromatography coupled with mass spectrometric detection.

UniSolv® solvents are designed for all three primary gas chromatography detection methods (GC-ECD, GC-FID, and GC-MS). This makes it possible to deploy a uniform solvent quality for differing applications. UniSolv® provides the broadest retention time window in which the permissible concentration of interference signals is the lowest. This even makes it possible to reliably detect low-boiling substances.

Description	Pk	Cat. No.
Acetone for gas chromatography SupraSolv®	1 l	**1.00012.1000**
Acetone for gas chromatography SupraSolv®	2,5 l	**1.00012.2500**
Acetone for gas chromatography SupraSolv®	4 l	**1.00012.4000**
Acetone SupraSolv® for GC-MS	1 l	**1.00658.1000**
Acetone SupraSolv® for GC-MS	2,5 l	**1.00658.2500**
Ethyl acetate SupraSolv® for GC-MS	1 l	**1.00789.1000**
Ethyl acetate SupraSolv® for GC-MS	2,5 l	**1.00789.2500**
n-Hexane SupraSolv® for GC-MS	1 l	**1.00795.1000**
n-Hexane SupraSolv® for GC-MS	2,5 l	**1.00795.2500**
Petroleum spirit boiling range 40 - 60 °C for gas chromatography SupraSolv®	1 l	**1.01772.1000**
Petroleum spirit boiling range 40 - 60 °C for gas chromatography SupraSolv®	2,5 l	**1.01772.2500**
Petroleum spirit boiling range 40 - 60 °C for gas chromatography SupraSolv®	4 l	**1.01772.4000**
tert-Butyl methyl ether for gas chromatography SupraSolv®	1 l	**1.01995.1000**
tert-Butyl methyl ether for gas chromatography SupraSolv®	2,5 l	**1.01995.2500**
n-Hexane for organic trace analysis UniSolv®	1 l	**1.04369.1000**
n-Hexane for organic trace analysis UniSolv®	2,5 l	**1.04369.2500**
n-Hexane for gas chromatography SupraSolv®	1 l	**1.04371.1000**
n-Hexane for gas chromatography SupraSolv®	2,5 l	**1.04371.2500**
n-Hexane for gas chromatography SupraSolv®	4 l	**1.04371.4000**
Dichloromethane for gas chromatography SupraSolv®	1 l	**1.06054.1000**
Dichloromethane for gas chromatography SupraSolv®	2,5 l	**1.06054.2500**
Dichloromethane for gas chromatography SupraSolv®	4 l	**1.06054.4000**
n-Pentane for organic trace analysis UniSolv®	1 l	**1.07288.1000**
n-Pentane for organic trace analysis UniSolv®	2,5 l	**1.07288.2500**
Toluene for gas chromatography SupraSolv®	1 l	**1.08389.1000**
Toluene for gas chromatography SupraSolv®	2,5 l	**1.08389.2500**
Toluene for gas chromatography SupraSolv®	4 l	**1.08389.4000**
Petroleum spirit boiling range 40 - 60 °C for organic trace analysis UniSolv®	1 l	**1.16740.1000**
Petroleum spirit boiling range 40 - 60 °C for organic trace analysis UniSolv®	2,5 l	**1.16740.2500**

VWR COLLECTION

5 year warranty

SELECTED FOR YOU

Bino and trinocular microscopes, VisiScope®, 500 series

These microscopes have been designed to deliver excellent performance in routine use. Two different optical systems are available: InfiniFix models, which use a true infinity corrected optical path, implemented with standard 160 mm objectives and IOS (Infinity Optical System i.e. Infinity Corrected Objectives).

- Optical system and objectives: S-Plan and Plan 160 mm objectives on InfiniFix models and Plan Infinity corrected objectives on all IOS models
- Modern design, accessible and ergonomic controls for hours of use without eye fatigue
- P-LED illuminator, which allows light-intensive applications, such as phase contrast or darkfield, without the need of complex active cooling whilst keeping the electrical consumption at lowest levels
- Two swing out condensers available for better performances: N.A. 0,10/1,20 with high magnifications; N.A. 0,22/0,90 with low magnifications (pathology)
- Double layer stage for two specimen slides (175×145 mm, X/Y range: 76×51 mm)

Model	BL524-P	BL524-PI	BL524-PH	TL524-P	TL524-PI	TL524-PH
Type	Binocular			Trinocular		
Contrasting technique	Brightfield		Brightfield and phase contrast	Brightfield		Brightfield and phase contrast
Head	30° inclined, 360° rotating	35° inclined, 360° rotating	30° inclined, 360° rotating	35° inclined, 360° rotating		30° inclined, 360° rotating
Eyepieces	WF 10×/22					
Nosepiece	Quintuple, reversed					
Objectives	Plan achromatic 4×, 10×, 40×, 100× (oil immersion)	IOS plan-achromatic 4x, 10x, 40x, 100x (immersion oil)	Plan achromatic Ph 10×, 20×, 40×, 100× (oil immersion)	Plan achromatic 4×, 10×, 40×, 100× (oil immersion)	IOS plan-achromatic 4x, 10x, 40x, 100x (immersion oil)	Plan achromatic Ph 10×, 20×, 40×, 100× (oil immersion)
Focusing system	Coaxial coarse and fine knobs					
Stage	Two-layer mechanical sliding stage, 175×145 mm					
Condenser	Swing out N.A. 1,20	Swing out N.A. 0,90	Abbe N.A. 1,25 with disc for phase contrast	Swing out N.A. 1,20	Swing out N.A. 0,90	Abbe N.A. 1,25 with centering system and disc condenser for phase contrast
Illumination	P-LED					LED

Description	Pk	Cat. No.
Binocular microscope, InfiniFix, BL524-P	1	**630-1569**
Binocular microscope, IOS, BL524-PI	1	**630-1571**
Binocular microscope, InfiniFix, BL524-PH	1	**630-1573**
Trinocular microscope, InfiniFix, TL524-P	1	**630-1570**
Trinocular microscope, IOS, TL524-PI	1	**630-1572**
Trinocular microscope, InfiniFix, TL524-PH	1	**630-1574**

Description	Contrasting technique	Magnification	Pk	Cat. No.
Eyepieces				
Eyepiece EWF 10×/22			1	**630-1695**
Eyepiece WF 15×/16			1	**630-1696**
Micrometer eyepiece WF 10×/22			1	**630-1697**
Eyecups (one pair)			1	**630-1756**
Objectives for VisiScope® 500				
Plan achromatic	Brightfield	4×/0,10	1	**630-1704**
Plan achromatic	Brightfield	10×/0,25	1	**630-1705**
Plan achromatic	Brightfield	20×/0,25	1	**630-1706**
Plan achromatic	Brightfield	40×/0,65	1	**630-1707**
Plan achromatic	Brightfield	60×/0,80	1	**630-1709**
Plan achromatic	Brightfield	100×/1,25	1	**630-1721**
IOS plan achromatic	Brightfield	4×/0,10	1	**630-1722**
IOS plan achromatic	Brightfield	10×/0,25	1	**630-1723**
IOS plan achromatic	Brightfield	20×/0,40	1	**630-1727**
IOS plan achromatic	Brightfield	40×/0,65	1	**630-1728**
IOS plan achromatic	Brightfield	60×/0,80	1	**630-1729**
IOS plan achromatic	Brightfield	100×/1,25	1	**630-1730**
Plan achromatic	Phase contrast	10×/0,25	1	**630-1731**
Plan achromatic	Phase contrast	20×/0,40	1	**630-1732**
Plan achromatic	Phase contrast	40×/0,65	1	**630-1733**
Plan achromatic	Phase contrast	100×/1,25	1	**630-1734**
IOS plan achromatic	Phase contrast	10×/0,25	1	**630-1735**
IOS plan achromatic	Phase contrast	20×/0,40	1	**630-1736**
IOS plan achromatic	Phase contrast	40×/0,65	1	**630-1737**
IOS plan achromatic	Phase contrast	100×/1,25	1	**630-1738**

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Description	Contrasting technique	Magnification	Pk	Cat. No.
Filters				
Blue filter, Ø: 32 mm			1	**630-1690**
Yellow filter, Ø: 32 mm			1	**630-1692**
Yellow filter, Ø: 45 mm			1	**630-1754**
Blue filter, Ø: 45 mm			1	**630-1752**
Green filter, Ø: 45 mm			1	**630-1753**
Frosted glass filter, Ø: 45 mm			1	**630-1755**
Polarisation filter			1	**630-1739**
Stage				
Rotating table for polarising filters set			1	**630-1740**
Adapters				
Phototube adapter for digital camera			1	**630-1747**
Phototube adapter for full frame sensor SLR camera			1	**630-1646**
Phototube adapter for SLR camera for VisiScope® 500			1	**630-1746**
CCD camera adapter for 1/3" sensor			1	**630-1748**
CCD camera adapter for 1/2" sensor			1	**630-1749**
Halogen bulbs				
Halogen bulb			1	**630-1751**
Protection				
Wooden case with a lock, 27×34×46 mm			1	**630-1810**
Accessories				
Darkfield condenser			1	**630-1741**
Complete phase contrast set with plan achromatic objectives 10×, 20×, 40×, 100× (immersion oil)			1	**630-1742**
Complete phase contrast set with plan achromatic IOS objectives 10×, 20×, 40×, 100× (immersion oil)			1	**630-1743**
Phase contrast set and single plan achromatic objective 40×			1	**630-1744**
Set phase contrast and single IOS plan achromatic objective 40×			1	**630-1745**

Trinocular microscopes, VisiScope®, 800 series

TL824-BF

TL824-PH

These laboratory microscopes are specifically designed for research applications.

- Dye-cast frame
- High stability and ergonomics
- For transmitted light observation
- Interpupillary adjustment: 55 - 75 mm
- Plan achromatic IOS (Infinity Optical System) objectives
- High intensity LED illumination

Ordering information: A full range of accessories is available for the 800 series. Please contact your local VWR office for details.

Model	TL824-BF	TL824-PH
Type	Trinocular	
Contrasting technique	Brightfield	Phase contrast
Head	30° inclined, 360° rotating	
Eyepieces	WF 10×/22	
Nosepiece	Quintuple	
Objectives	IOS plan achromatic 4x, 10x, 40x, 60x and 100x	IOS plan achromatic 10×Ph, 20×Ph, 40×Ph and 100×Ph
Focusing system	Coaxial coarse and fine knobs	
Stage	Mechanical belt drive 175×145, X/Y movement: 76×52 mm	
Illumination	LED	

Description	Pk	Cat. No.
Trinocular microscope, TL824-BF	1	**630-1940**
Trinocular microscope, TL824-PH	1	**630-1941**

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Description	Contrasting technique	Magnification	Pk	Cat. No.
Eyepieces				
Eyepiece WF 10×/22			2	**630-1967**
Micrometer eyepiece WF 10×/22			1	**630-1968**
Eyepiece WF 15×/16			1	**630-1969**
Eyecups (one pair)			1	**630-1756**
Objectives for Visiscope® 800				
IOS plan achromatic	Brightfield	4×	1	**630-1970**
IOS plan achromatic	Brightfield	10×	1	**630-1971**
IOS plan achromatic	Brightfield	20×	1	**630-1972**
IOS plan achromatic	Brightfield	40×	1	**630-1973**
IOS plan achromatic	Brightfield	60×	1	**630-1974**
IOS plan achromatic	Brightfield	100×	1	**630-1975**
IOS plan achromatic	Phase contrast	10×	1	**630-1976**
IOS plan achromatic	Phase contrast	20×	1	**630-1977**
IOS plan achromatic	Phase contrast	40×	1	**630-1978**
IOS plan achromatic	Phase contrast	100×	1	**630-1979**
Adapters				
Phototube adapter for digital camera			1	**630-1747**
CCD camera adapter for 1/3" sensor			1	**630-1748**
CCD camera adapter for 1/2" sensor			1	**630-1749**
Phototube adapter for APS-C sensor camera			1	**630-1645**
Accessories				
Micrometric slide, 76×26 mm, range 1 mm, division 0,01 mm			1	**630-1650**
Centering telescope for phase contrast			1	**630-1981**
Polarising filter set			1	**630-1982**
Lambda filter for polarising set			1	**630-1983**
Heating stage			1	**630-1980**

Bino and trinocular microscopes, BA 210 and BA 310 series
Motic

Trinocular version

Digital version

These microscopes can be used in environmental, food, healthcare (dentists, veterinaries), research and educational (universities, colleges) applications and can be equipped with phase contrast, darkfield and polarising accessories. The BA 310 features Köhler illumination with field diaphragm and a larger base. The digital models are supplied with a built-in 3,0 megapixel camera with data transfer of 480 MB/s USB 2.0, a resolution of 2048×1536, white balance manually adjustable. Recommended operating system is Windows® XP, Vista or 7, or Mac: OSX, USB 2.0.

- Multi layer coated lenses for improved contrast even with weak staining
- Phase contrast available and darkfield is possible with a separate slider (210 series) or a turret condenser (310 series)
- Stage resistant to abrasion and chemicals, X/Y movement

Delivery information: Supplied with a blue filter, an allen key, immersion oil and a vinyl dust cover.

Model	BA 210		BA 210 LED		BA 210 Digital	BA 310		BA 310 LED	
Type	Binocular	Trinocular	Binocular	Trinocular	Binocular		Trinocular	Binocular	Trinocular
Contrasting technique	Brightfield								
Head	Siedentopf, 30° inclined, 360° rotating	Siedentopf, 30° inclined, 360° rotating, 20:80 light split	Siedentopf, 30° inclined, 360° rotating	Siedentopf, 30° inclined, 360° rotating, 20:80 light split	Siedentopf, 30° inclined	Siedentopf, 30° inclined, 360° rotating	Siedentopf, 30° inclined, 360° rotating, 20:80 light split	Siedentopf, 30° inclined, 360° rotating	Siedentopf, 30° inclined, 360° rotating, 20:80 light split
Eyepieces	WF 10×/20 with diopter adjustment and rubber eyecup								
Nosepiece	Quadruple					Quintuple			
Objectives	Infinity, plan achromatic 4×, 10×, 40× (spring) 100× (spring, oil immersion)								
Focusing system	Coaxial coarse and fine knobs								
Stage	140×135 mm surface, 76×50 mm movement					175×140 mm, 76×50 mm movement			
Condenser	Abbe 1,25 N.A.								

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Illumination	Halogen 6 V/30 W	LED	Halogen 6 V/30 W	Halogen 6 V/30 W, Köhler	LED, Köhler
Camera	-		3,0 MP	-	

Description	Pk	Cat. No.
BA 210		
BA 210, binocular	1	**630-3044**
BA 210, trinocular	1	**630-3045**
BA 210 LED, binocular	1	**630-1141**
BA 210 LED, trinocular	1	**630-1142**
BA 210 Digital, binocular	1	**630-1143**
BA 310		
BA 310, binocular	1	**630-3046**
BA 310, trinocular	1	**630-3047**
BA 310 LED, binocular	1	**630-1144**
BA 310 LED, trinocular	1	**630-1145**

Description	Contrasting technique	Magnification	Pk	Cat. No.
Phase contrast objectives				
EC-H PL	Phase contrast	10×/0,25	1	**630-1389**
EC-H PL	Phase contrast	20×/0,4	1	**630-1390**
EC-H PL, spring	Phase contrast	40×/0,65	1	**630-1391**
EC-H PL, spring	Phase contrast	100×/1,25	1	**630-1388**
Eyepieces				
Eyepiece WF 15×/16			1	**630-1456**
Bulbs				
Quartz halogen lamp			1	**630-1255**
LED unit			1	**630-1944**
Camera adapters				
C-mount adapter 0,65× for 2/3" chip sensors			1	**630-1945**
C-mount adapter, 0,5× for 1/2" and 1/3" chip sensors			1	**630-1503**
C-mount adapter 0,35×, 1/3" chip sensor			1	**630-1946**
Accessories for BA 210 and BA 310				
Centring telescope for phase contrast			1	**630-1183**
Analyser only			1	**630-1174**
Mirror set for BA 210			1	**630-1274**
Phase contrast five-position BF, DF, PH1, PH2, PH3 turret condenser, for BA 310 only			1	**630-1458**

Bino and trinocular microscopes, BA 210 and BA 310 Elite
Motic

The BA 210 Elite allows for high performance in the educational environments in life sciences and medical applications. The BA 310 Elite is designed for routine work in the demanding applications of universities, clinics and any other life science or medical application requiring quality optical performance. This model's full Köhler configuration provides maximum illumination quality.

Delivery information: Supplied with a blue filter, 5 ml of immersion oil, a power cord, cord hanger, dust cover, allen key, and a spare fuse.

Model	BA 210-E		BA 310-E	
Type	Binocular	Trinocular	Binocular	Trinocular
Contrasting technique	Brightfield			
Head	30° inclined, 360° rotating			
Eyepieces	WF 10×/20 with diopter adjustment ±5			
Nosepiece	Quadruple, reversed		Quintuple, reversed	
Objectives	Plan achromatic 4×, 10×, 40×, 100×			
Focusing system	Coaxial coarse and fine knobs			
Stage	Mechanical with tension adjustment and sample holder, 150×150 mm, movement 80×30 mm		Mechanical with tension adjustment and sample holder, 180×170 mm, movement 80×55 mm	
Condenser	Abbe N.A. 0,90/1,25 with iris diaphragm and slider slot			

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Illumination	Halogen 6 V/30 W interchangeable With LED module

Description	Pk	Cat. No.
Binocular microscope, BA 210-E	1	630-1827
Trinocular microscope, BA 210-E	1	630-1824
Binocular microscope, BA 310-E	1	630-1825
Trinocular microscope, BA 310-E	1	630-1826

Description	Magnification	Pk	Cat. No.
Non cover glass objectives for BA 210-E and BA 310-E			
CCIS plan achromatique objective EC. WD: 4,45 mm	10×/0,25	1	630-2133
CCIS plan achromatique objective EC. WD: 1 mm	20×/0,45	1	630-2134
CCIS plan achromatique objective EC. WD: 0,55 mm, spring	40×/0,65	1	630-2135
CCIS plan achromatique objective EC. WD: 0,24 mm, spring, immersion oil	100×/1,25	1	630-2136
Camera adapters			
C-mount adapter 0,65× for 2/3" chip sensors		1	630-1945
C-mount adapter, 0,5× for 1/2" and 1/3" chip sensors		1	630-1503
Protection cases			
Aluminium box for BA 210-E microscopes		1	630-2509
Aluminium box for BA 310-E microscopes		1	630-2508
Aluminium box for BA 310-E microscopes with Epi-LED		1	630-2510
Accessories for BA210-E and BA310-E			
LED module 6V/3W 4500 K ±300 K		1	630-2138
LED module 6V/3W 6000 K ±300 K		1	630-2140
Epi-LED fluorescence attachment with standard FITC filter cube and 470 nm LED module		1	630-1828
EPI-LED fluorescence attachment with standard Auramine O filter cube and 455 nm LED module for the detection of malaria/tuberculosis (used with non cover glass objectives)		1	630-1829
EPI-LED fluorescence attachment with standard MB filter cube and 470 nm LED module		1	630-1830
Battery power supply for Epi-LED fluorescence attachments 9000mAH×6 batteries		1	630-2137

VWR COLLECTION

5 year warranty

SELECTED FOR YOU

Trinocular inverted microscopes, VisiScope®, IT404, IT404-E and IT405-PH

These microscopes are equipped with a series of objectives for most standard applications of cell culture *in vivo*. The focusing and mechanical specimen stage controls are designed to allow fatigue-free operation with the wrists resting on the work surface. The stage is fitted with a special glass insert to allow the operator to see the objectives for easy identification of the magnification selected.

- Every control is easy to reach
- Photo port and mechanical stage fitted as standard
- Ergonomic tilting eyepiece tube with side photo port (IT404-E only)
- Adjustable working distance from 72 mm to 150 mm (removable condenser)
- Innovative design, interchangeable inserts for specimen slides, Petri dishes and flasks

Ordering information: A cleaning and maintenance set, including lens tissue, cleaning solution and brush is available on request (630-2081). Supplied with a dust cover.

Note: Phase contrast objectives can also be used for brightfield techniques.

Model	IT404	IT404-E	IT405-PH
Head	30° inclined	*	30° inclined
Objectives	4×, 40×, Ph 10×, 20×		Ph 10×, 20×, 40×
Focusing system	Coaxial coarse and fine knobs		
Stage	250×230 mm, movement of 119×70 mm		
Condenser	Removable N.A. 0,30		
Illumination	LED		

Description	Pk	Cat. No.
Trinocular microscope, IT404	1	630-1575
Trinocular microscope with ergonomic head, IT404-E	1	630-2079
Trinocular microscope, IT405-PH	1	630-2080

Description	Contrasting technique	Magnification	Pk	Cat. No.
Eyepieces				
Eyepiece EWF 10×/22			1	630-1759
Micrometer eyepiece			1	630-1760
Objectives				
Plan-achromatic IOS WD: 18 mm	Brightfield	4×/0,10	1	630-1761
Plan-achromatic IOS WD: 10 mm	Brightfield and phase contrast	10×/0,25	1	630-1762
Plan-achromatic IOS WD: 5,1 mm	Brightfield and phase contrast	20×/0,40	1	630-1763
Plan-achromatic IOS WD: 2,6 mm	Brightfield	40×/0,60	1	630-1764
Plan-achromatic IOS WD: 2,6 mm	Brightfield and phase contrast	40×/0,60	1	630-1765
Adapters				
CMOS C-Mount camera adapter			1	630-1768
Phototube adapter for SLR full-frame cameras			1	630-1767

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Description	Contrasting technique	Magnification	Pk	Cat. No.
Accessories for VisiScope®, IT404/405				
Ergonomic trinocular head*			1	**630-1757**
Attachment for ergonomic trinocular head			1	**630-1758**
Phase ring 40×			1	**630-1766**
Dust cover			1	**630-1769**

* Tilting 0 to 30° eyepiece tube.

Bino and trinocular inverted microscopes, AE 2000

Motic

The AE 2000 microscopes are designed for professional observation and inspection e.g. routine live cell applications, in both educational and high grade professional applications. The objectives Ph 10×, Ph 20× and optional Ph 40× use the same phase ring - no need to change the slider position.

- Siedentopf type head: 45° inclined, 360° swiveling
- Automatic turn off after 15 minutes of non use
- Versatile illumination: Halogen 6 V/30 W or LED
- Interpupillary distance from 48 to 75 mm
- Working distance of 72 mm or 184 mm when removing the condenser

Objectives compliant with RoHs, lead-free.

Delivery information: Phase contrast is available as an option. LED modules to be purchased separately.

Model	AE 2000	
Type	Binocular	Trinocular
Contrasting technique	Brightfield and phase contrast	
Head	45° inclined, 360° rotating	
Eyepieces	WF 10×/20 with diopter	
Nosepiece	Quadruple	
Objectives	Plan achromatic 4×, 40×, Ph 10×, Ph 20×	
Stage	200×239 mm, glass and metal stage inserts	
Condenser	0,30 N.A.	
Illumination	Halogen 6 V/30 W interchangeable. LED module available	

Description	Pk	Cat. No.
AE 2000, binocular	1	**630-1316**
AE 2000, trinocular	1	**630-1317**

Description	Contrasting technique	Magnification	Pk	Cat. No.
Eyepieces				
Eyepiece WF 15×/16			1	**630-1456**
CCIS objectives				
Plan achromatic. WD: 12,6 mm	Brightfield	4×/0,1	1	**630-1371**
Plan achromatic. WD: 16,8 mm	Brightfield	10×/0,25	1	**630-1369**
Plan achromatic. WD: 4,7 mm	Brightfield	20×/0,3	1	**630-1367**
Plan achromatic. WD: 3,0 mm	Brightfield	40×/0,5	1	**630-1368**
Plan achromatic. WD: 12,6 mm	Phase contrast	4×/0,1	1	**630-1370**
Plan achromatic. WD: 4,1 mm	Phase contrast	10×/0,25	1	**630-1364**
Plan achromatic. WD: 4,7 mm	Phase contrast	20×/0,3	1	**630-1366**
Plan achromatic. WD: 3,0 mm	Phase contrast	40×/0,5	1	**630-1501**
Bulbs				
LED module, 4500 K ±300 K			1	**630-1320**
LED module, 6000 K ±300 K			1	**630-1319**
Filters				
Ground glass filter, 45 mm			1	**630-1383**
Neutral density filter, 45 mm			1	**630-1386**
Stages				
Auxiliary stages (2)			1	**630-1376**
Attachable mechanical stage with well plate holder (128×86 mm)			1	**630-1500**
Glass stage insert			1	**630-1377**
Metal stage insert			1	**630-1387**
Holder for 35 mm Petri dishes			1	**630-1373**
Holder for 54 mm Petri dishes			1	**630-1374**
Holder for 65 mm Petri dishes			1	**630-1372**
Camera adapters				
C-mount adapter 0,65× for 2/3" chip sensors			1	**630-1945**
C-mount adapter, 0,5× for 1/2" and 1/3" chip sensors			1	**630-1503**
C-mount adapter, 1,0×			1	**630-1502**

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Description	Contrasting technique	Magnification	Pk	Cat. No.
Accessories for AE 2000				
Phase ring Ph0			1	**630-1380**
Phase ring Ph1			1	**630-1381**
Phase slider, three positions			1	**630-1385**
Condenser 0,30 N.A. WD: 72 mm			1	**630-1379**
Condenser 0,40 N.A. WD: 53 mm			1	**630-1378**

Bino and trinocular inverted microscopes, AE-31E

Motic

The AE-31E inverted microscopes have been designed with an extended focus on practical aspects. They work with LWD plan achromatic objectives.

- Automatic on/off setting via infrared sensor
- Light memory function that recalls the last intensity when changing objective position
- Phase objectives (included) as standard 10×, 20×, 40× work all three with the same Ph ring Ph1
- Halogen light is interchangeable with an LED module (to be purchased separately, only for the 30 W versions)
- Adjustable interpupillar distance from 48 to 75 mm
- 100 W halogen version available for maximum brightness

Model	AE-31E 30W		AE-31E 100W	
Type	Binocular	Trinocular	Binocular	Trinocular
Head	Siedentopf, 45° inclined			
Eyepieces	WF 10×/22 with diopter adjustment and rubber eyecup			
Nosepiece	Quintuple, sideward			
Objectives	4×, Ph 10×, Ph LWD 20×, Ph LWD 40×			
Focusing system	Coaxial coarse and fine knobs			
Stage	Hard coated with metal and glass stage inserts			
Condenser	ELWD N.A. 0,30 (WD: 72 mm) with diaphragm			
Illumination	Köhler quartz halogen 6V /30 W		Köhler quartz halogen 6V /100 W	

Description	Pk	Cat. No.
Binocular microscope, AE-31E 30W	1	**630-2518**
Trinocular microscope, AE-31E 30W	1	**630-2519**
Binocular microscope, AE-31E 100W	1	**630-2520**
Trinocular microscope, AE-31E 100W	1	**630-2521**

Description	Contrasting technique	Magnification	Pk	Cat. No.
CCIS objectives				
Plan achromatic. WD: 16,8 mm	Brightfield	10×/0,25	1	**630-1369**
Plan achromatic. WD: 4,7 mm	Brightfield	20×/0,3	1	**630-1367**
Plan achromatic. WD: 3,0 mm	Brightfield	40×/0,5	1	**630-1368**
Plan achromatic. WD: 12,6 mm	Phase contrast	4×/0,1	1	**630-1370**
Bulbs				
Quartz halogen lamp			1	**630-1255**
LED module, 4500 K ±300 K			1	**630-1320**
LED module, 6000 K ±300 K			1	**630-1319**
Stages				
Attachable mechanical stage with well plate holder (128×86 mm)			1	**630-1500**
Holder for 35 mm Petri dishes			1	**630-1373**
Holder for 54 mm Petri dishes			1	**630-1374**
Holder for 65 mm Petri dishes			1	**630-1372**
Camera adapters				
C-mount adapter 0,65× for 2/3" chip sensors			1	**630-1945**
C-mount adapter, 0,5× for 1/2" and 1/3" chip sensors			1	**630-1503**

Upgrade options such as fluorescence are available on request. Please contact your local VWR sales office.

Bino and trinocular inverted microscopes, Primo Vert

Zeiss

Primo Vert is designed for routine and cutting-edge research laboratories, which require compact and reliable microscopes for checking cells quickly and efficiently. Main applications include sterility checks, cell checks before protein, DNA or RNA preparation, post-donation screenings in pharmacology, cell types, cell lines in oncology, growing of cells to produce artificial tissues or organs, and documentation.

- Easy to use: Automatic On/Off function, universal phase contrast
- Long-term mechanical and optical stability
- Attractive industrial design

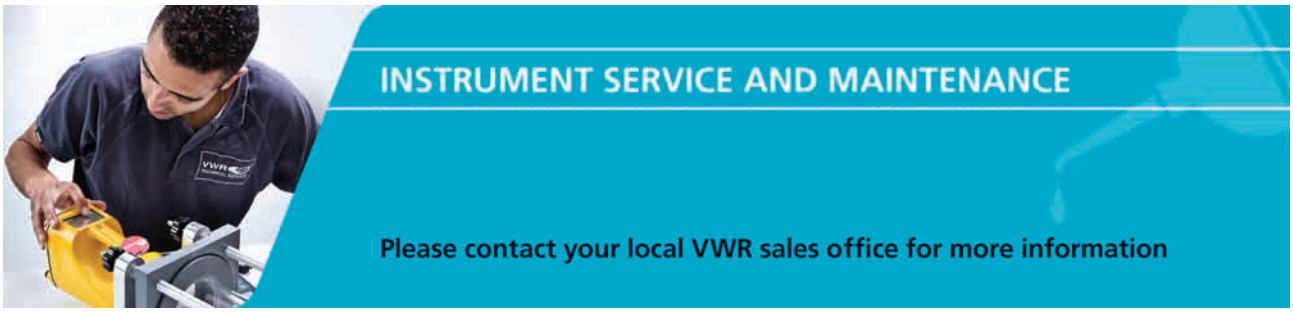
In addition, the Primo Vert Monitor is available on request.

- Multiple user observation in training situations
- Adjustable monitor tilt (45° - 80°) for ergonomic and comfortable work
- Easy inspection of living cells without having to look through eyepieces
- Integrated digital camera, SD memory card slot, USB port for a convenient image storage by the push-to-save
- Remote control for the acquisition of images, remotely or through glass plates of flow boxes

Model	Kit 1	Kit 2	Kit 3	Kit 4	Kit 5	Kit 6	Kit 7	Kit 8	Kit 11
Type	Binocular	Trinocular	Binocular			Trinocular		Binocular with ergotube	Trinocular
Contrasting technique	Brightfield and phase contrast			Phase contrast		Brightfield and phase contrast			Brightfield, optionally phase contrast
Head	Siedentopf, 45° inclined			45° inclined				-	
Eyepieces	WF 10×/20							-	Screen
Nosepiece	Quadruple								Quadruple
Objectives	4×, Ph1 10×	Ph0 4×, Ph1 10×, LWD 20×, 40×	4×, Ph1 10×, LWD 20×, 40×	-		4×, Ph1 10×	4×, Ph 10×, Ph LWD 20×, Ph LWD 40×		Plan achromatic Ph 10×, 20×, 40×
Focusing system	Separated micro and macro drive			Coaxial coarse and fine knobs				-	
Stage	200×239 mm			200×239 mm with metal insert					
Condenser	0,30	0,40	0,30	-		0,30	0,40	0,30	0,3. WD of 72 mm
Illumination	Halogen 6V /30 W or LED			Halogen 6V /30 W				-	LED

Description	Pk	Cat. No.
Models without monitor		
Kit 1, binocular	1	**630-1224**
Kit 2, trinocular	1	**630-1226**
Kit 3, binocular	1	**630-1225**
Kit 4, binocular	1	**630-2145**
Kit 5, binocular	1	**630-2146**
Kit 6, trinocular	1	**630-2150**
Kit 7, trinocular	1	**630-2151**
Kit 8, binocular with ergotube	1	**630-2289**
Models with monitor and integrated digital camera - 5,0 MP		
Kit 11, trinocular	1	**630-1269**

Description	Pk	Cat. No.
Accessories for Primo Vert		
Object guide, 108×72 mm	1	**630-1504**
Universal mounting frame	1	**630-1401**



Digital cameras, VisiCam®

These cameras are colour CMOS units with USB 2.0 interface and a large image sensor for a large field of view. These features allow capture of high quality images and videos.

The VisiCam® analyser software provides most standard functions for image analysis in microscopy such as marking, counting, measuring, storage, auto/manual white balance and objectives calibration.

- Capture format: .JPG, .PNG, .TIF, .TGA, .PCX, .JP2, .JPC, .PGX, .RAS, .PNM
- Compatible with Windows® XP, Vista and 7

Delivery information: Supplied with a calibration slide, VisiCam® analysis software and drivers. For other applications, please contact your local VWR sales office.

Model	VisiCam® 1.3	VisiCam® 3,0	VisiCam® 5,0	VisiCam® 10
Max resolution	1,3 MP	3,0 MP	5,0 MP	10 MP
Sensor	⅓" colour CMOS	½" colour CMOS		

Description	Pk	Cat. No.
VisiCam® 1.3, 1,3 MP	1	**630-1030**
VisiCam® 3.0, 3,0 MP	1	**630-1031**
VisiCam® 5.0, 5,0 MP	1	**630-1032**
VisiCam® 10, 10 MP	1	**630-1484**

Description	Pk	Cat. No.
Accessories for VisiCam®		
Calibration slide	1	**630-1123**
CCTV lens, 16 mm	1	**630-1124**
CS-C mount adapter	1	**630-1122**
C-mount eyepiece adapter 0,5× and 30 mm ring	1	**630-1121**
C-mount adapter for Zeiss microscopes	1	**630-1490**
C-mount adapter for Olympus microscopes	1	**630-1489**
C-mount adapter for Leica microscopes	1	**630-1497**
C-mount adapter for Nikon microscopes	1	**630-1498**

Tablet camera, VisiCam®

This tablet camera can capture, store, analyse and transmit every image. It can be used in chemistry, geology, electronic industry, research universities and production quality control. This stand-alone system can save space on your bench with a modern capture system.

- CMOS sensor camera
- Resolution of 5 megapixels (2592×1936)

Tablet

- Android operating system
- 25 cm LED display, 1024×768 pixels; multi point capacitive touch screen
- Memory: 8 GB, expandable through SD card
- Outputs: HDMI, mini USB - no need for computer
- Networking: WiFi and Bluetooth
- C-mount connection for mounting on the photo port of virtually any trinocular microscope

Delivery information: Supplied with image analysis software.

Description	Pk	Cat. No.
Digital tablet camera	1	**630-1858**

Description	Pk	Cat. No.
Cable		
HDMI cable (2 metres)	1	**630-1888**

Digital cameras, Moticam series

Motic

Moticam 5

Moticam 1

Moticam 3

CMOS technology

The **Moticam 1 and 1SP** cameras are suitable for schools. They can be used with interactive white boards for integrated teaching. The live resolution along with the colour balance make these cameras a great tool for a first introduction to digital microscopy. **Moticam 2 and 3** are fast cameras providing high resolution live imaging up to 3,0 megapixels. They are designed for use in colleges and universities, as well as in clinics and veterinary centres. The **Moticam 5 and 10** offer high resolution live imaging and can be converted to professional format (300 dpi) for image capture. The viewing options allow the user to display a faster frame rate at full screen while still being able to capture an image at maximum resolution.

- C-mount connection for mounting on the photo port of any trinocular microscope
- C-mount (which is microscope specific) must be purchased separately
- Camera kit includes Ø 30 and 38 mm adapters to fit into the eyepiece tube if no photo port is available

Delivery information: Supplied with Images Plus 2.0 Software (PC/Mac), eyepiece adapters (Ø 30 and 38 mm), calibration slide, USB cable, macro lens (which can be focused) and a macrotube for macro-specimens.

Model	Live resolution	Optical calculation	Focusable lens
Moticam 1	800×600 pixels	1/4″	8 mm
Moticam 1SP	1,3 megapixels	1/3″	12 mm
Moticam 2	2,0 megapixels	1/3″	12 mm
Moticam 3	3,0 megapixels	1/2″	16 mm
Moticam 5	5,0 megapixels	1/2,5″	12 mm
Moticam 10	10 megapixels	1/2,5″	12 mm

Description	Pk	Cat. No.
Moticam 1, 800×600 pixels	1	**630-1517**
Moticam 1SP, 1,3 megapixels	1	**630-1520**
Moticam 2, 2,0 megapixels	1	**630-1518**
Moticam 3, 3,0 megapixels	1	**630-1519**
Moticam 5, 5,0 megapixels	1	**630-1515**
Moticam 10, 10,0 megapixels	1	**630-1513**

Description	Pk	Cat. No.
Gooseneck stand		
Stand for Moticam® cameras	1	**630-0162**

Digital cameras, Moticam 580 and 580 INT

Motic

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The Moticam 580 and 580 INT are next generation HD digital cameras. They have the ability to display 1080p resolution images either on an HD monitor via an HDMI cable (Moticam 580) or via an integrated LCD monitor (Moticam 580 INT). They are suitable for educational, clinical, industrial and research use.

The Moticam INT 580 has been designed for easy integration with Motic BA microscopes. The microscope's images can be shared on the screen in real time. 5 MP still or 1080p video images can be captured onto an SD card.

The Moticam 580 is an independent, multi output digital camera that can be connected to any microscope equipped with a trinocular eyepiece (microscope specific C-mount must be purchased separately) or, by using the supplied eyepiece adapters, it can be fitted to almost any binocular microscope.

- Outputs: HDMI, USB, RCA video
- CMOS / two sensors 1, 5"
- Total number of pixels 2592×1944 (capture)
- Active resolution (HDMI) 1080i (HD)
- Active resolution (USB) 800×600 pixels
- Capture format SD 5,0 MPx (2592×1944) map
- Video capture 1080p (full HD)
- Remote and Images Plus 2.0 software for PC and MAC, Direct Show and Twain Driver

The HD signal multiplies by 1080 the amount of detail in the digital image - up to five times compared to standard definition (SD) or analogue video.

Delivery information: Supplied with software, eyepiece adapters (Ø 30 and 38 mm), calibration slide, USB cable, RCA cable, HDMI cable, remote control, focusable macro lens and macro tube (for macro specimens). SD card and microscope specific C-Mount are not included and will need to be purchased separately.

Description	Pk	Cat. No.
Moticam 580, 5,0 MP on SD-card	1	**630-1516**
Moticam 580 INT, 5,0 MP, 800×600 via USB	1	**630-1848**

Description	Pk	Cat. No.
Gooseneck stand		
Stand for Moticam® cameras	1	**630-0162**

Digital camera, AxioCam ERc5s Rev 2

Zeiss

This high resolution compact digital camera for microscopy can work in a stand-alone mode, using an optional kit including a HDMI DVI adapter, a USB connector, a 4 Gb SD card, a USB SD card reader and a remote control or be controlled via a PC with the included Zeiss Zen Blue software.

- Global or spot white balance
- A 15" screen (630-1361) can be added
- S-video output to connect to any video device
- HDMI connection to monitor or digital projector with high contrast details and outstanding colours
- USB output available to connect a PC or the power supply of a stand-alone kit

Delivery information: Supplied with software. Please contact your local VWR office for full details on options and accessories.

Description	Pk	Cat. No.
Digital camera, ERc5s Rev 2, 5 MP	1	**630-2522**

Digital microscopes, Dino-Lite® Edge

AM4115TL

AM4115ZTL with polariser

The Dino-Lite® Edge series maximises details observed from specimens for clear and sharp images. The wide magnification range (10x to 140x) is achieved with working distances greater than 29 mm (without front cap), which can be helpful when clearance is required between the microscope and the viewing object.

- PC/MAC compatibility: Digitise the microscopy experience with easy recording and sharing of observations
- Use professional measurement tools with calibration for assured accuracy and conveniently capture and modify photos with the bundled software
- MicroTouch shutter button: Take photos quickly and conveniently
- Small, round, touch-sensitive button that responds to the lightest touch to avoid blurry photos caused by excessive movement of the microscope
- Configuration to control video recording, trigger barcode scanning, or switch on/off the LED lights
- Adaptable cap design: Detachable and interchangeable front cap for different applications (diffuser cap, side light cap, close cap, and more)

Description	Pk	Cat. No.
Dino-Lite® Edge AM4115TL (long working distance with wider range of magnification)	1	**630-2514**
Dino-Lite® Edge AM4115ZTL (long working distance with polariser)	1	**630-2515**

Description	Pk	Cat. No.
Wi-fi streamer, Dino-Lite®		
Wi-fi streamer, Dino-Lite®	1	**630-2516**
High-precision stand		
Universal stand incl. a stable tabletop platform that features precise fine-focus adjustment and a quick release function, plastic holster and metal base, 150x220x230 mm, 1050 g	1	**630-2517**

VWR COLLECTION

SELECTED FOR YOU

Microscope slides

Clear white glass

These slides with cut or ground edges are available plain or frosted.

W×D×H: 76×26×1 mm

Description	Pk	Cat. No.
Cut edges		
Plain	50	**631-1550**
Frosted	50	**631-1551**
Ground edges		
Plain	50	**631-1552**
Frosted	50	**631-1553**

VWR COLLECTION

SELECTED FOR YOU

Microscope slides, Colorfrost®

These microscope slides come with a light opaque coating in different colours. Each colour codes different specimens at a glance according to urgency, processing or staining technique, etc.

- Resistant to commonly used solvents
- Resistant to scratching or sticking when stacked together
- Label areas on the top of the slide for quick and easy identification of the "right" side

W×D×H: 76×26×1 mm

Description	Colour	Pk	Cat. No.
Ground 90°	Blue	50	**631-0910**
Ground 90°	Pink	50	**631-0911**
Ground 90°	Yellow	50	**631-0912**
Ground 90°	Green	50	**631-0913**

Microscope slides, Superfrost®

Extra-white soda-lime glass

These slides with ground edges, washed and polished, offer a high quality result. Tolerance dimensions meets the relevant ISO standard.

- Cellophane wrapped
- High level of safety
- Twinfrost slides with embossed surface for easier writing on and reading

W×D: 76×26 mm

Description	Thickness (mm)	Pk	Cat. No.
Slides with 90° ground edges, BS 7011	0,85 - 1,0	50	**631-0908**
Slides with 90° ground edges, BS 7011	1,0 - 1,15	50	**631-0905**
Slides with 90° ground edges, ISO 8037/1	0,85 - 1,0	50	**631-0113**
Slides with 90° ground edges, ISO 8037/1	1,0 - 1,15	50	**631-0114**
Slides with 90° ground edges, BS 7011, twinfrosted 20 mm	0,85 - 1,0	50	**631-0907**
Slides with 90° ground edges, BS 7011, twinfrosted 20 mm	1,0 - 1,15	50	**631-0906**
Slides with 90° ground edges, ISO 8027/1, twinfrosted 20 mm	0,85 - 1,0	50	**631-0116**
Slides with 90° ground edges, ISO 8037/1, twinfrosted 20 mm	1,0 - 1,15	50	**631-0117**
Slides with 90° ground edges, SuperFrost white ISO 8037/1	0,95 - 1,05	50	**631-0909**

Microscope slides

Clear white glass

- Frosted ends in six different colours
- Available with either cut or ground edges
- Writing surface is resistant to all common dyes and solvents

W×D×H: 76×26×1 mm

Colour	Pk	Cat. No.
Cut edges		
White	50	**631-1554**
Blue	50	**631-1555**
Rose	50	**631-1556**
Yellow	50	**631-1557**
Green	50	**631-1558**
Orange	50	**631-1559**
Ground edges 45°		
White	50	**631-1560**
Rose	50	**631-1561**
Blue	50	**631-1562**
Yellow	50	**631-1563**
Green	50	**631-1564**
Orange	50	**631-1565**

Forceps for cover glasses
RSG Solingen

Stainless steel

- For easy, secure handling of cover glasses
- Can also be used for other laboratory items, such as filter discs
- Easy to clean

Type	Length (mm)	Pk	Cat. No.
Straight, standard quality	115	1	**232-2181**
Bent, standard quality	115	1	**232-2182**

Microscopy scissors
RSG Solingen

Stainless steel

- Corrosion resistant
- Autoclavable
- Very sharp tips

Type	Length (mm)	Pk	Cat. No.
Straight, sharp/sharp	90	1	**233-1551**
Curved, sharp/sharp	90	1	**233-1552**
Straight, sharp/sharp	100	1	**233-1453**
Curved, sharp/sharp	100	1	**233-1454**

IVD

Staining solutions and kits for microscopy

The Gurr® range provides the first truly international standard for microscopical dyes and stains. Gurr® specifications have been devised by combining practical biological testing with absolute chemical criteria.

Description	Pk	Cat. No.
Elastin stain (Miller) (form. R.A. Lamb)	500 ml	**351154S**
Eosin yellowish for microscopical staining Gurr®	25 g	**341972Q**
Eosin yellowish for microscopical staining Gurr®	100 g	**341973R**
Eosin yellowish for microscopical staining Gurr®	1 kg	**341975T**
Feulgen stain (Schiff) (form. R.A. Lamb)	500 ml	**351204L**
Fuchsin (basic) for microscopical staining Gurr®	100 g	**340325K**
Giemsa`s stain improved R66 solution Gurr®	500 ml	**350864X**
Giemsa`s stain improved R66 solution Gurr®	1 l	**350865P**
Giemsa`s stain improved R66 solution Gurr®	25 l	**35086HE**
Giemsa`s stain solution	500 ml	**352603R**
Haemalum (Mayer`s) Gurr® for microscopical staining	500 ml	**350604T**
Haematoxylin (monohydrate) for microscopical staining Gurr®	25 g	**340374T**
Haematoxylin Harris (mercury-free)	1 l	**351945S**
Hema Gurr® rapid staining set for haematology	1	**351042L**
Leishman`s staining solution Gurr® for microscopical staining	500 ml	**350224L**
Lugol`s iodine solution	250 ml	**351903Y**
May-Grunwald`s eosin methylene blue solution	1 l	**352065W**
May-Grunwald`s stain (form. R.A.Lamb)	1 l	**351355C**
May-Grunwald`s stain solution	1 l	**352622M**
May-Grunwald`s stain solution	500 ml	**352625P**
Methylene blue for microbiological staining Gurr® and reagent for molybdate	25 g	**340484B**
Neutral red for microscopical staining Gurr®	25 g	**340564A**
Neutral red for microscopical staining Gurr®	100 g	**340565B**
Nuclear fast red for microscopical staining Gurr®	25 g	**342094W**
Papanicolaou`s stain OG 6 Gurr®	1 l	**350405X**
Papanicolaou EA 50 Gurr® (new formulation)	1 l	**351695T**
Wright`s stain for microscopical staining Gurr®	25 g	**340804U**

Staining solutions and kits

Dye solutions and staining kits for microscopy.

Description	Pk	Cat. No.
Alcian blue solution for microscopy	500 ml	**1.01647.0500**
Congo red staining kit for detection of amyloids	1	**1.01641.0001**
DNA staining kit according to Feulgen	1 Set	**1.07907.0001**
Elastica van Gieson staining kit	4	**1.15974.0002**
Elastin colour solution acc. to Weigert	500 ml	**1.00591.0500**
Eosin Y 0,5% alcoholic solution for microscopy	500 ml	**1.02439.0500**
Eosin Y 0,5% alcoholic solution for microscopy	2,5 l	**1.02439.2500**
Eosin Y 0,5% aqueous solution for microscopy	1 l	**1.09844.1000**
Eosin Y 0,5% aqueous solution for microscopy	2,5 l	**1.09844.2500**
Eosin Y solution 1%	1 l	**1.17081.1000**
Hemacolor® rapid staining set, 3x100 ml	1 SET	**1.11674.0001**
Hemacolor® rapid staining set, 3x500 ml	1 SET	**1.11661.0001**
Hematoxylin solution modified acc. to Gill II	500 ml	**1.05175.0500**
Hematoxylin solution modified acc. to Gill II	2,5 l	**1.05175.2500**
Hematoxylin solution modified acc. to Gill III	500 ml	**1.05174.0500**

Continued on next page

Continued from previous page

Description	Pk	Cat. No.
Hematoxylin solution modified acc. to Gill III	1 l	1.05174.1000
Hematoxylin solution modified acc. to Gill III	2,5 l	1.05174.2500
ISOSLIDE® Alcian blue	24 Tests	1.00425.0001
ISOSLIDE® iron control slides	24 Tests	1.00380.0001
ISOSLIDE® PAS	24 Tests	1.00408.0001
ISOSLIDE® reticulin control slides for the silver staining of reticular fibres	24 Tests	1.00361.0001
Masson Goldner trichrome staining kit	1 KIT	1.00485.0001
Mayer's hemalum solution	500 ml	1.09249.0500
Mayer's hemalum solution	1 l	1.09249.1000
Mayer's hemalum solution	20 l	1.09249.1022
Mayer's hemalum solution	2,5 l	1.09249.2500
Methenamine silver plating kit method acc. to Gomorri	1	1.00820.0001
Nuclear fast red - aluminium sulphate solution 0,1% for microscopy	500 ml	1.00121.0500
Oil red colour solution	250 ml	1.02419.0250
PAS staining kit	1	1.01646.0001
Picrofuchsin solution acc. to van Gieson for microscopy	500 ml	1.00199.0500
Reticulin silver plating kit acc. to Gordon & Sweets	8	1.00251.0001
Schiff's reagent	500 ml	1.09033.0500
Schiff's reagent	2,5 l	1.09033.2500
Silver plating kit acc. to von Kossa	1 SET	1.00362.0001
Tb-color staining kit for the microscopic investigation of mycobacteria (hot staining)	1	1.00497.0001
Weigert's iron hematoxylin kit	2	1.15973.0002

VWR BDH PROLABO CHEMICALS

Staining reagents

Description	Pk	Cat. No.
Cryo-Jet Lamb`s freezing aerosol (form. R. A. Lamb)	275 ml	361852T
D.F.B. (decalcifying solution - H K Kristensons)	5 l	352432C
Formaldehyde 4%, pH 3.5 - 4.5 Gurr®	5 l	361367L
Formaldehyde 4%, pH 3.5 - 4.5 Gurr®	25 l	361368M
Formalin neutral sodium salt buffered pH 7.0 Gurr®	25 l	351638K
Glycerin albumen Gurr®	100 ml	361002Y
Glycerin albumen Gurr®	500 ml	361004K
Methanol, special quality	2,5 l	360486N
Polyester wax for microscopy (Steedman, Nature 1957,179,1345)	500 g	360704E

MERCK MILLIPORE

IVD

Embedding and mounting media

The defined hardness and uniformity of the material to be cut are vital requirements in creating consistent quality in cutting. These requirements can be met using a range of suitable substances, such as paraffins, resins, gelatine and celloidin.

Description	Pk	Cat. No.
DPX (new) non-aqueous mounting media	500 ml	1.00579.0500
Entellan®, rapid for permanent specimens, 60-100 mPas	500 ml	1.07960.0500
Glycerol for fluorescence microscopy	250 ml	1.04095.0250

MERCK MILLIPORE

Mounting Medium, Entellan® new

Entellan® new is a new mounting medium for cover slippers and is specially suited for commercial automated mounting instruments that operate with cover slippers. Its viscosity ranges between 250 and 600 mPas, 1.00869 has a small viscosity range. This narrow viscosity range improves and accelerates the application, as neither the dropping rate nor the volume need to be reset after the first run with a new bottle of Entellan® new.

- Easy application
- Small viscosity range, 500-600 mPas (1.00869)
- Glass bottle

Description	Pk	Cat. No.
Entellan® new for automatic mounting instruments	500 ml	1.00869.0500
Entellan® new rapid for permanent specimens	100 ml	1.07961.0100
Entellan® new rapid for permanent specimens	500 ml	1.07961.0500
Entellan® new rapid for permanent specimens	1 l	1.07961.1000

IVD

Water-free mounting medium, Neo-Mount®

Water-free mounting media, such as Neo-Mount®, should be used for permanent mounting and long term storage of samples. Slides processed in pathological laboratories need to be stored up to 10 years, whereby the staining results need to be stable and fading-out is not acceptable. Neo-Mount®, anhydrous mounting medium for microscopy is an extremely colour-stable mounting medium for microscopy, which is produced with solvents based on mixtures of aliphatic hydrocarbons. It contains an aromatic-free substitute for xylene, thus, Neo-Mount® needs to be combined with Neo-Clear® exclusively. Xylene must be avoided in the mounting step, as it will cause the slides to become cloudy and streaked. In addition, by placing the dehydrated slides on filter paper for approx. 1 minute prior mounting, any excess of Neo-Clear® could be circumvented, as air bubbles might arise under the coverslip. The same precondition should also be met when mounting specimens using cover-slip machines; in this area, NEO-CLEAR® can be most efficiently eliminated by incubation of the slides for one minute in an empty slide rack.

- Less hazardous formulation than aromatic solvent-based media
- Developed and produced along regulatory requirements (DIN ISO standards)
- Suitable for all conventional stainings
- Can be used manually an/or in automated systems
- Dropper bottle
- Refractive index (20°C) 1.417 - 1.465; viscosity (20°C) 250 - 350 mPa s; fluorescence < 250 ppb

Description	Pk	Cat. No.
Neo-Mount® anhydrous mounting medium	100 ml	**1.09016.0100**
Neo-Mount® anhydrous mounting medium	500 ml	**1.09016.0500**

Solvent, xylene substitute, Neo-Clear®

Neo-Clear® is a non hazardous alternative to xylene. It is virtually odourless, compatible with most high purity solvents and is characterised by lower evaporation rates than xylene, making it a lower health risk.

Description	Pk	Cat. No.
Neo-Clear®	5 l	**1.09843.5000**
Neo-Clear®	25 l	**1.09843.9025**

IVD

Paraffins, Histosec®

These paraffins with polymer additives are available with or without DMSO. The standardised quality achieved by careful choice of raw materials guarantees a full penetration of the tissue and significantly longer batch times in the histoprocessor. The high elasticity of the embedded tissue provides excellent single and multiple sections.

Description	Capacity	Pk	Cat. No.
Histosec® with DMSO	4 x 2,5 kg	10 kg	**1.11609.2504**
Histosec® with DMSO	25 kg	25 kg	**1.11609.9025**
Histosec® without DMSO	4 x 2,5 kg	10 kg	**1.15161.2504**
Histosec® without DMSO	25 kg	25 kg	**1.15161.9025**

Auxilliaries for microscopy

Description	Pk	Cat. No.
Formaldehyde 37% for histology	1 l	**1.03999.1000**
Formaldehyde 37% for histology	2,5 l	**1.03999.2500**
Formaldehyde 37% for histology	25 l	**1.03999.9025**
Formaldehyde 4% (= 10% Formaline solution), buffered (pH 6.9) for histology	5 l	**1.00496.5000**
Formaldehyde 4% (= 10% Formaline solution), buffered (pH 6.9) for histology	10 l	**1.00496.9010**
Formaldehyde 4% (= 10% Formaline solution), buffered (pH 6.9) for histology	10 l	**1.00496.9011**
Glycerine for fluorescence microscopy	250 ml	**1.04095.0250**
Immersion oil (contains dibenzyl phthalate)	100 ml	**1.04699.0100**
Immersion oil (contains dibenzyl phthalate)	500 ml	**1.04699.0500**
Immersion oil (contains dibutyl phthalate and chloroparaffin)	100 ml	**1.15577.0100**
Paraffin, solidification point 56-58°C	4	**1.07164.2504**

Automatic transmittance colorimeters, Lovibond® PFX*i* 195 series

Tintometer

A series of spectrophotometric colorimeters for colour grading of optically clear samples. Each version of the PFX*i* 195 includes a selection of standard colour scales that is used in a specific industry sector. Additional scales can be added, at the time of order or remotely, as optional upgrades to provide the flexibility to meet individual requirements. Results can also be displayed in terms of spectral data and CIE values.

For product types that are incompatible with the standard colour scales the PFX*i* 195 software allows the users to build up a customised scale from a series of reference samples and then to obtain the closest match to the stored reference.

The RCMSi (Remote Calibration and Maintenance Service via internet) feature allows a calibrated measurement to be taken using an ISO 17025 certified liquid standard. The spectral response is transmitted to The Tintometer Ltd's secure calibration server. On completion of this procedure, a traceable calibration certificate is e-mailed to the user. A set of standards is included with each meter to allow one RCMSi check at no cost. Subsequent RCMSi checks would be chargeable.

- RCMSi provides confidence of calibration and reduces on site servicing and maintenance
- Consistent and reliable colour data - removes operator subjectivity in colour grading
- Allows calculation and description of off-hue status
- Easily customised to user specification
- Accommodates a range of sample cells and tubes including standard flow-though cells

Ordering information: Details of the most popular PFX*i* 195 versions are shown below. Versions that include FAC Colour, Klett Colour (blue filter KS-42), Hess-Ives Colour Units, Yellowness Index, US Naval Stores, Rosin, Chinese Pharmacopoeia are also available.

Delivery information: Each PFX*i* 195 is supplied complete with Windows® compatible software, Lovibond® optical glass cells for the included colour scales, a spare lamp, instructions and RCMSi starter kit.

Model	PFX*i* 195
Light source	5 V, 10 W tungsten halogen lamp
Illuminants	CIE Illuminant A, B, C,D65
Optical system	9 interference filters
Range (nm)	420 - 710
Spectral bandwidth (nm)	20
Reproducibility	Chromaticity(x y) ±0,0004
Measurement time	Less than 20 seconds
Path length (mm)	0,1 - 50
Display	LCD, 240×128, backlit graphic display (white on blue)
Keyboard	23 key tactile membrane keypad
Data Capacity	100 000 +
Calibration	Baseline: single key press, fully automated
Interfaces	USB, LAN, RS232C ports
Power requirements	90 - 240 V
W×D×H (mm)	435×195×170
Weight (kg)	6,8

Description	For	Pk	Cat. No.
PFXi195/1 Pt-Co/Hazen/APHA; Gardner; Iodine; CIE Values; Spectral data	Liquid chemicals & industrial oils	1	**633-0213**
PFXi195/2 Saybolt; ASTM Colour; Pt-Co/Hazen/APHA; CIE Values; Spectral data	Petroleum oils & fuels	1	**633-0214**
PFXi195/3 FAC; Gardner; CIE values; Spectral data	Dark oils and Fats	1	**633-0215**
PFXi195/4 EBC (CIE &430 nm); ASBC (CIE &430 nm); Series 52 (Brown); CIE Values; Spectral data	Beers, malts & caramels	1	**633-0216**
PFXi195/5 European/US Pharmacopoeia; Pt-Co/Hazen/ APHA; CIE Values; Spectral data	Pharmaceutical solutions	1	**633-0217**
PFXi195/6 Klett Colour (blue filter KS-42); Pt-Co/Hazen/APHA; Hess-Ives Colour Units; CIE values; spectral data	Industrial oils and surfactants	1	**633-0218**
PFXi195/7 ICUMSA Colour (420, 560, 710 nm); Honey Colour (Pfund Equivalents); Series 52 (Brown); CIE values; spectral data	Sugar solutions, syrups & honey	1	**633-0219**
PFXi195/8 ADMI (spectral & tristimulus filter methods); Pt-Co/Hazen/APHA; CIE values; spectral data	Waters & wastewaters	1	**633-0220**
PFXi195/9 CIE values (standard selection); L*C*h colour space; Hunter L a b colour space; spectral data	Transparent samples	1	**633-0221**

VWR COLLECTION

SELECTED FOR YOU

ASTM colour solutions

Ready to use solutions that are prepared gravimetrically on a weight/weight basis.

- Use either as calibration and/or quality control standards
- Designed specifically for use in ASTM analytical methods and produced in accordance with ASTM D1500, D6045, D1209
- Consistency of product - independent, traceable, certified
- Presented in high quality, tamper-evident bottles

Description	Pk	Cat. No.
ASTM colour standards		
ASTM Colour Standard Sample A3	100 ml	**84796.180**
ASTM Colour Standard Sample A3	500 ml	**84796.260**
ASTM Colour Standard Sample A5	100 ml	**84797.180**
ASTM Colour Standard Sample A5	500 ml	**84797.260**
ASTM Colour Standard Sample A7	100 ml	**84798.180**
ASTM Colour Standard Sample A7	500 ml	**84798.260**
Gardner colour standards		
Gardner Colour Standard 2	500 ml	**84815.260**
Gardner Colour Standard 4	500 ml	**84816.260**
Gardner Colour Standard 6	500 ml	**84817.260**
Gardner Colour Standard 8	500 ml	**84818.260**
Gardner Colour Standard 10	500 ml	**84819.260**
Gardner Colour Standard 12	500 ml	**84820.260**
Gardner Colour Standard 14	500 ml	**84821.260**
Gardner Colour Standard 16	500 ml	**84822.260**
Hazen colour standards		
Hazen Colour Standard 0 Hazen	1.000 ml	**84806.290**
Hazen Colour Standard 10 Hazen	1.000 ml	**84807.290**
Hazen Colour Standard 25 Hazen	1.000 ml	**84808.290**
Hazen Colour Standard 40 Hazen	1.000 ml	**84809.290**
Hazen Colour Standard 50 Hazen	1.000 ml	**84810.290**
Hazen Colour Standard 80 Hazen	1.000 ml	**84811.290**
Hazen Colour Standard 100 Hazen	1.000 ml	**84812.290**
Hazen Colour Standard 250 Hazen	1.000 ml	**84813.290**
Hazen Colour Standard 500 Hazen	1.000 ml	**84814.290**
Saybolt colour standards		
Saybolt Colour Standard +30	100 ml	**84799.180**
Saybolt Colour Standard +30	500 ml	**84799.260**
Saybolt Colour Standard +25	100 ml	**84800.180**
Saybolt Colour Standard +25	500 ml	**84800.260**
Saybolt Colour Standard +19	100 ml	**84801.180**
Saybolt Colour Standard +19	500 ml	**84801.260**
Saybolt Colour Standard +15	100 ml	**84802.180**
Saybolt Colour Standard +15	500 ml	**84802.260**
Saybolt Colour Standard +12	100 ml	**84803.180**
Saybolt Colour Standard +12	500 ml	**84803.260**
Saybolt Colour Standard 0	100 ml	**84804.180**
Saybolt Colour Standard 0	500 ml	**84804.260**
Saybolt Colour Standard -15	100 ml	**84805.180**
Saybolt Colour Standard -15	500 ml	**84805.260**
Bandwidth Standard – Blank		
Bandwidth Standard - Blank - Ratio of 268.7 nm peak to 266.8 nm trough	100 ml	**84795.180**

Standard colour solutions, Reag. Ph. Eur.

Description	Pk	Cat. No.
Standard Solution BY (brownish yellow) Reag. Ph. Eur.	125 ml	**85748.180**
Standard Solution Y (yellow) Reag. Ph. Eur.	125 ml	**85749.180**
Standard Solution GY (greenish yellow) Reag. Ph. Eur.	125 ml	**85750.180**
Standard Solution R (red) Reag. Ph. Eur.	125 ml	**85751.180**
Standard Solution R (red) Reag. Ph. Eur.	500 ml	**85751.260**
Standard Solution B (brown) Reag. Ph. Eur.	125 ml	**87169.180**

Primary colour solutions, Reag. Ph. Eur.

Description	Pk	Cat. No.
Primary colour solutions		
Primary opalescence suspension Reag. Ph. Eur.	100 ml	**85679.180**
Primary solution yellow Reag. Ph. Eur.	100 ml	**85744.180**
Primary solution yellow Reag. Ph. Eur.	500 ml	**85744.260**
Primary solution red Reag. Ph. Eur.	100 ml	**85745.180**
Primary solution blue Reag. Ph. Eur.	100 ml	**85746.180**
Primary solution blue Reag. Ph. Eur.	500 ml	**85746.260**
Dilution matrix		
Hydrochloric acid 1% Reag. Ph. Eur.	1 l	**87684.290**

Ready to use colour comparison solutions according to the Ph Eur, Certipur®

Analysis of the colour of a liquid in the range brown – yellow – red is described in European pharmacopoeia. However, the preparation of the solutions required is complex and time-consuming. Certipur® reference solutions save time and money: colour standards – BY, Y, GY and R – are available as a ready to use kit. To perform the analysis, the sample is simply placed in the empty cuvette contained in the kit and placed alongside the colour comparison solutions in the rack provided.

Description	Pk	Cat. No.
Colour Reference Solution BY for testing the colour intensity acc. to Ph. Eur. BY1-BY7 CertiPUR®	1	**1.00266.0001**
Colour Reference Solution GY for testing the colour intensity acc. to Ph. Eur. GY1-GY7 CertiPUR®	1	**1.00268.0001**
Colour Reference Solution R for testing the colour intensity acc. to Ph. Eur. R1-R7 CertiPUR®	1	**1.00269.0001**
Colour Reference Solution Y for testing the colour intensity acc. to Ph. Eur. Y1-Y7 CertiPUR®	1	**1.00267.0001**

Description	For unit	Pk	Cat. No.
Round cells			
Empty cells, 16 mm with screw caps	Pharo, Nova 30/60, Multy, Picco, Move 100	25	**1.14724.0001**

LIFE SCIENCE APPLICATIONS

Cell culture 190

Molecular Biology - Nucleic acid purification / PCR / qPCR 191

Electrophoresis - Proteomics - Western blotting 205

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- Transfection
- RNAi
- Electroporation
- Tissue culture plasticware
- Instruments & equipment
- And more...

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VWR COLLECTION

SELECTED FOR YOU

Genomic DNA isolation from plants, E.Z.N.A.® HP Plant DNA Kit

VWR - Omega bio-tek

The E.Z.N.A.® HP Plant DNA Kit is designed for efficient recovery of genomic DNA up to 60 kb in size from fresh and dried plant tissue samples rich in lipids, polyphenols, polysaccharides, or those with lower DNA contents. Up to 100 mg of wet sample or 30 mg dry sample can be processed in less than 60 minutes. This procedure relies on the well-established properties of the cationic detergent, cetyltrimethyl ammonium bromide (CTAB), in conjunction with the selective DNA binding of HiBind® matrix. Samples are homogenised and lysed in a high salt buffer containing CTAB and extracted with chloroform to remove polysaccharides and other components that interfere with many DNA isolation and downstream applications. After adjusting the binding conditions, DNA is further purified using HiBind® DNA spin columns. Proteins and other contaminants are removed to yield high quality genomic DNA suitable for downstream applications such as endonuclease digestion, thermal cycle amplification and hybridisation techniques.

- DNA isolation in 60 minutes following lysis
- Reproducible DNA purification from variety of sample sources
- Purified DNA suitable for any application
- Efficient purification of DNA from even specialised samples

Description	Average yield	Binding capacity	Sample size	Pk	Cat. No.
E.Z.N.A.® HP Plant DNA kit	10 - 50 µg DNA	Up to 60 kb fragments	100 mg of wet or 30 mg dry tissue	50 Tests	**D2485-01**
E.Z.N.A.® HP Plant DNA kit	10 - 50 µg DNA	Up to 60 kb fragments	100 mg of wet or 30 mg dry tissue	200 Tests	**D2485-02**

VWR COLLECTION

SELECTED FOR YOU

Genomic DNA isolation from plants, E.Z.N.A.® Plant DNA Kit

VWR - Omega bio-tek

The E.Z.N.A.® Plant DNA Kit is designed for the rapid and reliable isolation of high quality total cellular DNA from a wide variety of plant species. Up to 100 mg of wet samples or 30 mg dry samples can be processed in less than 60 minutes. This kit uses a proprietary method to eliminate polysaccharides, phenolic compounds, and enzyme inhibitors from plant sample. Purified DNA is suitable for PCR, restriction enzyme digestion, and hybridisation techniques. There are no organic extractions, thus reducing plastic waste and hands-on time.

- DNA isolation under 60 minutes
- Optimised buffer system ensures the reproducible results
- No organic extractions
- Purified DNA suitable for most downstream applications

Description	Average yield	Binding capacity	Sample size	Pk	Cat. No.
E.Z.N.A.® Plant DNA kit	8 - 50 µg	100 µg	200 mg wet or 50 mg dry tissue	50 T	**D3485-01**
E.Z.N.A.® Plant DNA kit	8 - 50 µg	100 µg	200 mg wet or 50 mg dry tissue	200 T	**D3485-02**

VWR COLLECTION

SELECTED FOR YOU

Genomic DNA isolation from plants, E.Z.N.A.® SP Plant DNA Kit

VWR - Omega bio-tek

The E.Z.N.A.® SP Plant DNA Kit is specially designed for the rapid and reliable isolation of high quality total cellular DNA from a variety of plant species. Up to 100 mg of fresh samples or 30 mg of dry samples can be processed in less than 40 minutes. Purified DNA is suitable for most downstream applications including PCR, restriction digestions and hybridisation techniques.

- Rapid purification of ready to use DNA isolation in less 40 minutes
- Standardised method for reliable results from variety of samples
- No organic extractions
- Purified DNA suitable for most applications

Description	Average yield	Binding capacity	Sample size	Pk	Cat. No.
E.Z.N.A.® SP Plant DNA kit	30 - 60 µg	100 µg	100 mg of wet or 30 mg dry tissue	50 Tests	**D5511-01**
E.Z.N.A.® SP Plant DNA kit	30 - 60 µg	100 µg	100 mg of wet or 30 mg dry tissue	200 Tests	**D5511-02**

VWR COLLECTION

SELECTED FOR YOU

Genomic DNA isolation from tissue, E.Z.N.A.® Tissue DNA Kit

VWR - Omega bio-tek

The E.Z.N.A.® Tissue DNA Kit offers a simple, rapid, and cost effective method for the isolation of DNA from a wide variety of sample sources including fresh or frozen animal cells and tissues. After cell lysis, the DNA purification process can be completed in less than 30 minutes. Up to 30 mg of tissue at a time can be readily processed at a time using the simple E.Z.N.A.® Tissue DNA protocol. Single or multiple samples can be simultaneously processed with this spin-column based kit. There is no need for phenol/chloroform extractions, or time-consuming steps such as precipitation with isopropanol or ethanol. DNA purified using the E.Z.N.A.® Tissue DNA Kit is ready for most downstream applications such as PCR, Southern blot and restriction enzyme digestion.

- Isolation of DNA from either fresh or frozen samples
- Process 30 mg of tissue in under 20 minutes (after lysis)
- Purified DNA suitable for most downstream applications
- Optimised buffers guarantee pure DNA every time
- No organic extractions

Description	Average yield	Binding capacity	Sample size	Pk	Cat. No.
E.Z.N.A.® Tissue DNA kit (V-Spin)	10 - 40 µg DNA	100 µg	30 mg	50 Tests	**D3396-01**
E.Z.N.A.® Tissue DNA kit (V-Spin)	10 - 40 µg DNA	100 µg	30 mg	200 Tests	**D3396-02**

VWR COLLECTION

SELECTED FOR YOU

Genomic DNA isolation from tissue, E.Z.N.A.® MicroElute® Genomic DNA kit

VWR - Omega bio-tek

E.Z.N.A.® MicroElute® Genomic DNA kit provides a rapid and easy method for the isolation of genomic DNA from small sample volumes and sizes for consistent PCR and analytical test results. Using the reversible binding properties of a silica-based material, the speed of mini-column spin technology, and specifically formulated buffers, the system allows the purification of genomic DNA up to 60 kb. Samples are first lysed under denaturing conditions and then applied to the HiBind MicroElute® Column to bind DNA, while cellular debris, haemoglobin, and other proteins are effectively washed away. High quality DNA can be eluted with 10 to 15 µl sterile deionised water or Elution Buffer from the MicroElute® column.

- Purify genomic DNA from small sample volumes and small amount of cells
- High quality genomic DNA purification from variety of samples
- No phenol/chloroform extractions
- Purified DNA suitable for most downstream applications

Description	Average yield	Binding capacity	Sample size	Pk	Cat. No.
E.Z.N.A.® MicroElute® Genomic DNA kit	10 - 40 µg DNA	30 µg	Up to 30 mg	50 Tests	**D3096-01**
E.Z.N.A.® MicroElute® Genomic DNA kit	10 - 40 µg DNA	30 µg	Up to 30 mg	200 Tests	**D3096-02**

VWR COLLECTION

SELECTED FOR YOU

Genomic DNA isolation from tissue, E.Z.N.A.® HP Tissue Kit

VWR - Omega bio-tek

The E.Z.N.A.® HP Tissue Maxi Kit is designed for the efficient recovery of genomic DNA from tissues rich in fat, polysaccharides, and fibre (brain, adipose, muscle, liver). In addition these kits can also be used to isolate DNA from molluscs, insects, arthropods, and other invertebrate tissues rich in mucopolysaccharides. The E.Z.N.A.® HP Tissue DNA Maxi Kit is designed to isolate genomic DNA from up to 2 g of tissue; the E.Z.N.A.® HP Tissue DNA Midi Kit is designed to isolate genomic DNA from up to 500 mg of sample. Samples are homogenised and lysed in a high salt buffer containing CTAB, and then digested with Proteinase K. After the addition of chloroform, the homogenate is separated into aqueous and organic phases by centrifugation. The upper aqueous phase is mixed with BL Buffer to provide appropriate binding conditions. The sample is then loaded onto a HiBind DNA Maxi spin column, where the genomic DNA binds to the membrane and salt and other contaminants are efficiently washed away. High quality genomic DNA is then eluted with Elution Buffer or water. Purified DNA is suitable for most downstream applications such as endonuclease digestion, PCR, and hybridisation techniques.

- DNA isolation in 60 minutes following lysis
- Reproducible DNA purification from variety of sample sources
- Purified DNA suitable for any application
- Efficient purification of DNA from even specialised samples

Description	Average yield	Binding capacity	Sample size	Pk	Cat. No.
E.Z.N.A.® HP Tissue DNA Midi kit	400 - 600 µg	400 µg	≥500 mg	25 Tests	**D5197-02**

VWR COLLECTION

SELECTED FOR YOU

Genomic DNA isolation from tissue, E.Z.N.A.® SQ Tissue DNA Kit

VWR - Omega bio-tek

The E.Z.N.A.® SQ Tissue DNA Kit provides a reliable method for the isolation of high molecular weight genomic DNA from various types of fresh or frozen tissue samples. This solution-based system can process single or multiple samples simultaneously in less than 90 minutes. Samples are lysed with WTL Buffer/ Protease and cellular proteins are removed by precipitation. High molecular genomic DNA remains in solution and is purified by isopropanol precipitation. DNA purified using the E.Z.N.A.® SQ Tissue DNA Kit is free of contaminants and enzyme inhibitors making it suitable for downstream applications such as PCR, Southern blotting and restriction enzyme digestion.

- Isolation of high molecular weight genomic DNA
- No phenol/chloroform extractions
- Flexible in amount of starting material
- Process single or multiple samples in less than 90 minutes
- Large yields of pure DNA

Description	Average yield	Binding capacity	Sample size	Pk	Cat. No.
E.Z.N.A.® SQ Tissue DNA kit (1 g)	Up to 450 µg	alcohol precipitation	1 g	1 KIT	**D6032-01**

VWR COLLECTION

SELECTED FOR YOU

E.Z.N.A.® Total RNA Kit I

VWR - Omega bio-tek

The E.Z.N.A.® Total RNA Kit I provides a simple and rapid method for the isolation of up to 100 µg of total RNA from cultured eukaryotic cells and soft tissues. This kit enables simultaneous multiple samples processing in less than 20 minutes. Normally up to 1×10^7 eukaryotic cells or 30 mg tissue can be used in a single experiment. Purified RNA can be used in many downstream applications, such as RT-PCR, Northern blotting, nuclease protection assay, and *in vitro* translation.

Description	Average yield	Binding capacity	Binding property	Elution volume	Sample size	Pk	Cat. No.
E.Z.N.A.® Total RNA kit I	20 - 70 µg	100 µg	mini spin columns	40 - 70 µl	1×10^7 eukaryotic cells or 10 - 30 mg tissue	50 Tests	**R6834-01**
E.Z.N.A.® Total RNA kit I	20 - 70 µg	100 µg	mini spin columns	40 - 70 µl	1×10^7 eukaryotic cells or 10 - 30 mg tissue	200 Tests	**R6834-02**

PALL Life Sciences

Centrifugal devices, Nanosep®

Simple concentrating and desalting of 50 to 500 µl samples.

- Rapid processing of samples
- Typical recoveries are greater than 90%, available with low protein binding Omega™ membrane

Housing: Low binding PP.

Ultrasonically welded seals prevent bypass or seal failure.

Fits standard centrifuge rotors that accept 1,5 ml tubes.

MWCO (kD)	Colour code	Pk	Cat. No.
3	Grey	24	**516-8480**
3	Grey	100	**516-8481**
10	Blue	24	**516-8490**
10	Blue	100	**516-8491**
30	Red	24	**516-8501**
30	Red	100	**516-8502**

PALL Life Sciences

Filter plates, 96-well, for ultrafiltration, AcroPrep™ Advance

The AcroPrep™ Advance filter plate portfolio includes a variety of membrane types and pore sizes to provide the best possible performance for a wide range of sample preparation and high throughput screening applications. AcroPrep™ Advance filter plates are ideal for concentration, purification and desalting of proteins and peptides; bead and chromatography resin-based applications; gross fractionation and lysate clarification; and general filtration.

AcroPrep™ Advance 96-well filter plates for ultrafiltration

Applications include size exclusion, PCR clean-up, nucleic acid purification, and protein separation.

- High biomolecule recovery - Omega® membrane typically results in ≥90% recovery of target biomolecules
- Well geometry results in faster, more uniform filtration rates across the plate with reduced hold-up volume for maximum sample recovery
- Low non specific binding - intrinsic plate and membrane properties prevent target molecules from binding to the plate

Dimensions	
Length:	128 mm
Width:	86 mm
Height (with lid):	18 mm (350 µl only)
Height (without lid):	14 mm (350 µl); 33 mm (1 ml)
Well bottom area:	0,25 cm^2
Recommended operating vacuum:	≥254 mm Hg
Recommended centrifugal force:	1500 ×g
Typical vacuum filtration performance:	10K Omega: processing time 20 mins; hold up volume 5 µl 30K Omega: processing time 8 mins; hold up volume 6 µl 100K Omega: processing time 4 mins; hold up volume 7 µl
Typical centrifugal filtration performance:	3K Omega: processing time 45 mins; hold up volume 2 µl 10K Omega: processing time 8 mins; hold up volume 2 µl 30K Omega: processing time 8 mins; hold up volume 2 µl 100K Omega: processing time 5 mins; hold up volume 2 µl
Materials of construction:	Filter media: Omega® (modified polyethersulfone) membrane Plate housing: PP Lid: PS

Description	Well volume (µl)	Recommended working volume (µl)	Pk	Cat. No.
AcroPrep™ Advance, 350 µl, Omega™ 3K MWCO	350	≤300	10	**518-0027**
AcroPrep™ Advance, 350 µl, Omega™ 10K MWCO	350	≤300	10	**518-0032**
AcroPrep™ Advance, 350 µl, Omega™ 30K MWCO	350	≤300	10	**518-0028**
AcroPrep™ Advance, 1 ml, Omega™ 3K MWCO	1000	≤900	5	**738-0123**
AcroPrep™ Advance, 1 ml, Omega™ 10K MWCO	1000	≤900	5	**738-0124**
AcroPrep™ Advance, 1 ml, Omega™ 30K MWCO	1000	≤900	5	**738-0125**

VWR COLLECTION

SELECTED FOR YOU

Taq DNA Polymerase

VWR® *Taq* DNA Polymerase is an ultra-pure, thermostable, recombinant DNA polymerase, which provides robust PCR performance in a wide range of PCR applications, without time-consuming optimisation. The enzyme is isolated from *Thermus aquaticus* and has a molecular weight of approximately 94 kDa. VWR® *Taq* DNA Polymerase has both a 5′ - 3′ DNA polymerase and a double strand 5′ - 3′ exonuclease activity. It leaves an A overhang, which makes the enzyme ideal for TA cloning. VWR® Red *Taq* DNA Polymerase is a blend of *Taq* DNA polymerase combined with an inert red dye. The dye enables quick visual recognition of reactions to which enzyme has been added, as well as confirmation of complete mixing. A glycerol-free *Taq* DNA Polymerase is also available for automation and freeze drying.

- Most suitable choice for routine applications where high fidelity is not required
- High performance, thermostable DNA polymerase
- Optimal for TA cloning

Taq DNA polymerase concentration: 5 Units/µl

10X Key Buffer: Tris-HCL pH 8,5, $(NH_4)_2SO_2$, 15 mM $MgCl_2$, 1% Tween-20®

10X Extra Buffer: 100 mM Tris-HCL pH 8,3, 500 mM KCl, 15 mM $MgCl_2$, 1% Triton X-100

10X Mg-Free Key Buffer: Tris-HCL pH 8,5, $(NH_4)_2SO_2$, 1% Tween-20®

10X Mg-Free Extra Buffer: Tris-HCL pH 8,3, KCl, 1% Triton X-100

Delivery information: VWR® *Taq* DNA Polymerase is usually supplied with either or both Key Buffer and Extra Buffer. Key Buffer (NH_4+) gives a superior amplification signal (high yield) and minimises the need for optimisation of the Mg^{2+} concentration or the annealing temperature in most primer-template systems. Extra Buffer is a traditional potassium (K+) buffer. Extra Buffer promotes high specificity but careful optimisation of primer annealing temperatures and Mg^{2+} concentrations may be required.

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Description	Pk	Cat. No.
Taq DNA Polymerase, 10X Key Buffer (15 mM $MgCl_2$), 10X Extra Buffer (15 mM $MgCl_2$), 25 mM $MgCl_2$	250 EU	**733-1300**
Taq DNA Polymerase, 10X Key Buffer (15 mM $MgCl_2$), 10X Extra Buffer (15 mM $MgCl_2$), 25 mM $MgCl_2$	500 EU	**733-1301**
Taq DNA Polymerase, 10X Key Buffer (15 mM $MgCl_2$), 10X Extra Buffer (15 mM $MgCl_2$), 25 mM $MgCl_2$	10.000 EU	**733-1303**
Red *Taq* DNA Polymerase, 10X Key Buffer (15 mM $MgCl_2$), 10X Extra Buffer (15 mM $MgCl_2$), 25 mM $MgCl_2$	2.500 EU	**733-1323**

EU = Units

VWR COLLECTION

SELECTED FOR YOU

Taq DNA Polymerase Master Mix

VWR® *Taq* DNA Polymerase Master Mix is a ready to use 1,1X or 2X reaction mix. Simply add primers, template and water to carry out primer extensions and other molecular biology applications.

VWR® Red *Taq* DNA Polymerase Master Mix, which also contains an inert red dye, can be directly loaded onto an agarose gel without addition of electrophoresis loading buffers.

Description	Pk	Cat. No.
Taq DNA Polymerase 1,1X Master Mix, 1,5 mM $MgCl_2$	2.500 Tests	**733-1314**
Taq DNA Polymerase 1,1X Master Mix, 1,5 mM $MgCl_2$	500 Tests	**733-2540**
Taq DNA Polymerase 1,1X Master Mix, 2,0 mM $MgCl_2$	2.500 Tests	**733-1315**
Taq DNA Polymerase 1,1X Master Mix, 2,0 mM $MgCl_2$	500 Tests	**733-2541**
Taq DNA Polymerase 2X Master Mix, 1,5 mM $MgCl_2$	2.500 Tests	**733-1316**
Taq DNA Polymerase 2X Master Mix, 1,5 mM $MgCl_2$	500 Tests	**733-2542**
Taq DNA Polymerase 2X Master Mix, 2,0 mM $MgCl_2$	2.500 Tests	**733-1317**
Taq DNA Polymerase 2X Master Mix, 2,0 mM $MgCl_2$	500 Tests	**733-2543**
Red *Taq* DNA Polymerase 1,1X Master Mix, 1,5 mM $MgCl_2$	2.500 Tests	**733-1318**
Red *Taq* DNA Polymerase 1,1X Master Mix, 1,5 mM $MgCl_2$	500 Tests	**733-2544**
Red *Taq* DNA Polymerase 1,1X Master Mix, 2,0 mM $MgCl_2$	2.500 Tests	**733-1319**
Red *Taq* DNA Polymerase 1,1X Master Mix, 2,0 mM $MgCl_2$	500 Tests	**733-2545**
Red *Taq* DNA Polymerase 2X Master Mix, 1,5 mM $MgCl_2$	2.500 Tests	**733-1320**
Red *Taq* DNA Polymerase 2X Master Mix, 1,5 mM $MgCl_2$	5.000 Tests	**733-2130**
Red *Taq* DNA Polymerase 2X Master Mix, 1,5 mM $MgCl_2$	10.000 Tests	**733-2131**
Red *Taq* DNA Polymerase 2X Master Mix, 1,5 mM $MgCl_2$	20.000 Tests	**733-2132**
Red *Taq* DNA Polymerase 2X Master Mix, 1,5 mM $MgCl_2$	500 Tests	**733-2546**
Red *Taq* DNA Polymerase 2X Master Mix, 2,0 mM $MgCl_2$	2.500 Tests	**733-1321**
Red *Taq* DNA Polymerase 2X Master Mix, 2,0 mM $MgCl_2$	500 Tests	**733-2547**

Tests = Reactions

VWR COLLECTION

SELECTED FOR YOU

TEMPase Hot Start DNA Polymerase

VWR® TEMPase Hot Start DNA Polymerases are highly stable polymerases, featuring higher specificity, superior sensitivity and greater yields compared to standard DNA polymerases. These features make them well suited for detection of low abundance targets. Other uses include screening, amplification of GC-rich sequences, multiplex PCR, direct PCR and qPCR. A glycerol-free TEMPase Hot Start DNA Polymerase is also available for automation and freeze drying.

The GC-Rich Template kit is specifically designed for difficult GC-rich sequences. Combined with TEMPase, GC buffers I and II promote excellent amplification. The kit is designed for initial testing before using one of the GC-TEMPase 2X Master Mixes.

Delivery information: VWR® TEMPase DNA polymerases generally include two different buffers, Key Buffer and Combination Buffer, which are each suited for different PCR requirements. Key Buffer (NH_4+) gives a superior amplification signal (high yield) and minimises the need for optimisation of the Mg^{2+} concentration or the annealing temperature in most primer-template systems. Combination Buffer is a mixture of K+ and NH_4+. It combines high specificity with good product yield and high tolerance to optimisation of primer annealing temperatures and Mg^{2+} concentrations due to its balanced ammonium-potassium formulation. Each buffer contains 15 mM $MgCl_2$ (1,5 mM in final volume). Additional $MgCl_2$ for easy optimisation is included in a separate vial.

Description	Pk	Cat. No.
TEMPase Hot Start DNA Polymerase, 5 U/µl	500 EU	**733-1331**
TEMPase Hot Start DNA Polymerase, 5 U/µl	2.500 EU	**733-1333**
TEMPase Hot Start DNA Polymerase, 5 U/µl	10.000 EU	**733-1838**

TEMPase Hot Start 2X Master Mix

TEMPase Hot Start DNA Polymerase Master Mix and Blue TEMPase Master Mix are good alternatives to TEMPase Hot Start DNA Polymerase. The master mixes offer easy reaction assembly at room temperature, reduced set-up time and fewer handling steps, which lead to increased reproducibility. As a consequence TEMPase Hot Start DNA Polymerase Master Mix is highly suited for standard tests.

The blue loading dye in Blue TEMPase Hot Start DNA Polymerase Master Mix facilitates direct gel loading and eliminates the need for separate loading dye - no need for time-consuming sample preparation before electrophoresis.

Delivery information: TEMPase Hot Start DNA Polymerase Master Mix and Blue TEMPase Master Mix are available in two variations, either based on Key Buffer (Master Mix K) or Combination Buffer (Master Mix C) to suit different PCR requirements.

Description	Pk	Cat. No.
TEMPase Hot Start 2X Master Mix, with Master Mix C, 1,5 mM $MgCl_2$	500 Tests	**733-2548**
TEMPase Hot Start 2X Master Mix, with Master Mix C, 1,5 mM $MgCl_2$	2.500 Tests	**733-1840**
TEMPase Hot Start 2X Master Mix, with Master Mix K, 1,5 mM $MgCl_2$	500 Tests	**733-2581**
TEMPase Hot Start 2X Master Mix, with Master Mix K, 1,5 mM $MgCl_2$	2.500 Tests	**733-2582**
Blue TEMPase Hot Start 2X Master Mix, with Blue Master Mix C, 1,5 mM $MgCl_2$	500 Tests	**733-2290**
Blue TEMPase Hot Start 2X Master Mix, with Blue Master Mix C, 1,5 mM $MgCl_2$	2.500 Tests	**733-1841**
Blue TEMPase Hot Start 2X Master Mix, with Blue Master Mix K, 1,5 mM $MgCl_2$	500 Tests	**733-2584**
Blue TEMPase Hot Start 2X Master Mix, with Blue Master Mix K, 1,5 mM $MgCl_2$	2.500 Tests	**733-2585**

dNTP

Ready to use molecular biology grade dNTP mixes and dNTP sets.

The dNTP mix is designed to save hands-on time for researchers and reduce the possibility of contamination by reducing pipetting. The dNTP solutions are also available in sets of four individual dNTPs, each 100 mM. Both are convenient for use in DNA polymerisation reactions, DNA labelling and sequencing processes.

- Available as pre-mixed 10 mM or 25 mM solutions, or as sets of individual 100 mM dNTP solutions
- Both pre-mixed and sets have been functionally tested in PCR
- Purity >99% by HPLC
- Supplied in solution at pH 7,3 - 7,5

Description	Pk	Cat. No.
dNTP mix, 10 mM of each dA, dC, dG, and dT, 2×500 µl	1.000 µl	**733-1363**
dNTP set, separate vials of dA, dC, dG, dT, each 100 mM, 4×250 µl	1 SET	**733-1364**
dNTP mix, 25 mM of each dA, dC, dG, and dT, 2×1 ml	2.000 µl	**733-1854**
dNTP set, separate vials of dA, dC, dG, dT, each 100 mM, 16×250 µl	1 SET	**733-1855**

PCR tubes and strips, 0,2 ml

PP

Designed to fit most popular brands of thermal cycler.

- Free from RNase, DNase and human DNA
- Autoclavable
- Available with domed or flat caps

Colour: Natural

Description	Pk	Cat. No.
Strips of 8 PCR tubes, without caps	125	**732-1517**
Strips of 8 PCR caps, domed	125	**732-1518**
Strips of 8 PCR caps, flat	125	**732-1519**
Strips of 8 PCR tubes, with detached domed cap strips	250	**732-1521**
Strips of 8 PCR tubes, with detached flat cap strips	250	**732-1520**

PCR tubes, 0,1 ml, with flat cap, ABgene®
Thermo Scientific

PP, clear or white

Ultra-thin walled PCR tubes.

Description	Colour	Capacity (ml)	Packed	Pk	Cat. No.
Flat cap tubes, ultra-thin walled	Clear	0,1	960 tubes	960	**731-0405**
Flat cap tubes, ultra-thin walled	White	0,1	960 tubes	960	**731-0406**

VWR COLLECTION

SELECTED FOR YOU

PCR plates, 96-well

732-2387

732-2390

732-2388

PP

These PCR plates are compatible with most thermal cyclers, including the Applied Biosystems 9600 and 9700, and the MJ Research PTC-100, and are ideal for high throughput screening thermal cycler applications.

- Smooth, thin, uniform well walls ensure accurate thermal transfer
- Plates are thin, flexible and easy to cut
- Lot tested and certified DNase-, RNase- and human genomic DNA-free
- Printed alphanumeric labelling and cut corner simplifies plate orientation and sample identification

Working capacity: 200 µl

Colour	Pk	Cat. No.
96-well PCR plates, flat		
Clear	100	**732-2387**
96-well PCR plates, low profile		
Clear	100	**732-2386**
96-well PCR plates, skirted (for reduced plate distortion)		
Yellow	100	**211-0304**
96-well PCR plates, half-skirted (for easier insertion and extraction from instrumentation)		
Clear	100	**732-2390**
96-well PCR plates, low profile, half-skirted		
Clear	100	**732-2388**
96-well PCR plates, low profile, raised half-skirt		
Clear	100	**732-2389**

Description	Pk	Cat. No.
Accessories		
Strips of 8 PCR caps, domed	125	**732-1518**
Strips of 8 PCR caps, flat	125	**732-1519**

Thermal cyclers, Techne® Prime

The Prime range of full-sized thermal cyclers delivers both high performance and high throughput to provide maximum flexibility when processing a large number of samples in parallel.

The PrimeG is a gradient enabled thermal cycler with all the features of the Prime unit. The wide linear gradient with a range of 30 °C allows annealing temperatures to be optimised in one experiment. The gradient calculator function displays the temperature for each of the eight columns, ensuring easy replication of thermal conditions.

Prime Combi-Block cyclers provide exceptional flexibility with the ability to accommodate 33×0,2 ml and 33×0,5 ml tubes, in 6 rows and 11 columns. Prime Combi-Block cyclers are available with or without a temperature gradient, which is upgradable later.

- Colour touch screen for fast program set-up
- Fast ramp rate of up to 3,4 °C/sec
- USB port enables the transfer of programs between instruments and temperature logs to your PC
- Gradient cycling is available directly using the PrimeG instrument or by upgrading the Prime unit

Note: Exchange of thermal cycler blocks must be carried out by a trained service engineer. Please contact your local VWR office for details about replacement blocks available.

Model	Prime	PrimeG
Block accuracy (°C)	<±0,25*	
Block homogeneity (°C)	<±0,3*	
Gradient span (max/min) (°C)	Can be upgraded to PrimeG specification	29 / 1 (PrimeG) 25 / 1 (PrimeG Combi-Block) 19 / 1 (PrimeG 384)
Gradient temperature range (°C)		30 - 80
Interfaces	5,7" VGA touch screen	
Lid temperature range (°C)	Selectable 100 to 115 or off	
Power (W)	450	
Programs	≤1000	
Ramp rate (°C/sec)	<3,4	
Temperature range (°C)	+4...100	
Weight (kg)	9,4	
W×D×H (mm)	240×420×240	

Description	Pk	Cat. No.
Prime thermal cycler, 96×0,2 ml	1	**732-1601**
PrimeG gradient thermal cycler, 96×0,2 ml	1	**732-1595**

Description	Pk	Cat. No.
Prime gradient upgrade	1	**732-1593**

* Recorded at 55 °C

Thermal cyclers, Techne® ³Prime

The ³Prime personal cycler offers easy programming and instrument flexibililty, whilst maintaining the rapid ramp rates and small footprint that make it ideal for research and teaching laboratories. Using a colour touch screen and ready to go templates the user is intuitively guided to create even complicated programs, with a methodology that is standardised across the whole Techne® thermal cycler range.

The ³PrimeX mid-sized cyclers deliver all the features of the ³Prime instrument but with an expanded sample capacity, accommodating 48×0,2 ml microtubes or 30×0,5 ml tube. Gradient cycling can be achieved directly using the ³PrimeG instrument or by upgrading the ³PrimeX unit.

The ³PrimeG is a small gradient thermal cycler that builds on all the features of the ³PrimeX instrument. The 48-well block format offers eight columns for annealing temperature optimisation and six rows for optimising reagents such as $MgCl_2$ and primer concentrations. Annealing temperatures can be optimised over 14 °C between temperatures 30 °C to 80 °C. The gradient calculator function displays the temperature for each of the eight columns, ensuring easy replication of thermal conditions.

- Colour touch screen for fast program set-up
- Fast ramp rate of up to 3,0 °C/sec
- Temperature range +4 °C to +100 °C
- Gradient cycling is available directly using the ³PrimeG instrument or by upgrading the ³PrimeX unit
- Protocols and temperature logs transferred between instruments and PC via USB

Note: Exchange of thermal cycler blocks must be carried out by a trained service engineer. Please contact your local VWR office for details about replacement blocks available.

Model	³PrimeX	³PrimeG
Block accuracy (°C)	<±0,25*	
Block homogeneity (°C)	<±0,3*	
Gradient span (max/min) (°C)	Can be upgraded to ³PrimeG specification	14 / 1
Gradient temperature range (°C)		30 - 80
Interfaces	3,5" VGA touch screen	
Lid temperature range (°C)	Selectable 100 to 115 or off	
Power (W)	155	
Programs	≤1000	
Ramp rate (°C/sec)	<3,0	
Temperature range (°C)	4...100	
Weight (kg)	6,0	
W×D×H (mm)	210×350×180	

Description	Pk	Cat. No.
³PrimeX thermal cycler, 48×0,2 ml	1	**732-1606**
³PrimeG gradient thermal cycler, 48×0,2 ml	1	**732-1608**

* Recorded at 55 °C

AccuStart™ Taq DNA Polymerase HiFi

Quanta Biosciences

This enzyme mixture and optimised high fidelity PCR buffer improves the fidelity of DNA synthesis approximately 6-fold higher than *Taq* DNA polymerase alone and enables amplification of DNA fragments up to 20 kb long. AccuStart™ Taq DNA Polymerase HiFi is a robust alternative PCR enzyme for both routine PCR applications as well as amplification of problematic templates.

Description	Pk	Cat. No.
AccuStart™ Taq DNA Polymerase HiFi, 1000 reactions	1.000 EU	**733-2201**
AccuStart™ Taq DNA Polymerase HiFi, 5000 reactions	5.000 EU	**733-2202**

cDNA synthesis kits, qScript™
Quanta Biosciences

qScript™ cDNA Synthesis kits contain qScript™ Reverse Transcriptase, a mixture of a MMLV reverse transcriptase derivative and ribonuclease inhibitor protein, optimised for sensitive and reliable cDNA synthesis over a broad dynamic range of input RNA. cDNA synthesis reagents are provided in a variety of supermix and kit formats to suit specific applications.

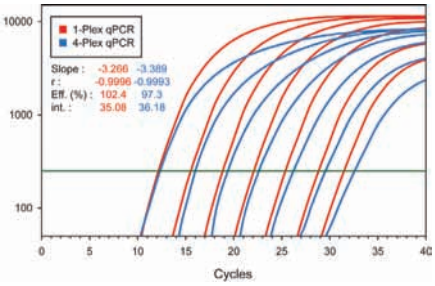
qScript™ cDNA SuperMix

qScript™ cDNA SuperMix is an easy to use solution for 2-step RT-PCR. This one-tube supermix contains all components for cDNA synthesis including buffer, dNTPs, $MgCl_2$, primers, RNase inhibitor, qScript™ Reverse Transcriptase and stabilisers. Only RNA needs to be added. Complete cDNA synthesis is achieved in 40 minutes. Consistency and reproducibility are achieved over a broad dynamic range regardless of RNA input. In addition, qScript™ cDNA SuperMix offers excellent sensitivity and accurate representation of low abundance genes. The supermix format eliminates multiple component additions providing exceptional reproducibility and precision. qScript™ cDNA SuperMix is available in both single tube or 96-well format.

- Supermix format ideal for high throughput applications
- Unbiased representation gives confidence that RNA is represented accurately in the resulting cDNA
- Broad dynamic range ensures data from precious samples is more reliably attained
- Choice of priming methods to suit individual needs

Description	Pk	Cat. No.
qScript™ cDNA SuperMix, 100 reactions	100 Assays	**733-1177**
qScript™ cDNA SuperMix, 500 reactions	500 Assays	**733-1178**

PerfeCTa® MultiPlex qPCR ToughMix®
Quanta Biosciences



High efficiency, high sensitivity multiplex qPCR results with PerfeCta MultiPlex qPCR ToughMix

PerfeCTa® MultiPlex qPCR ToughMix® is a 5X concentrated, ready to use reaction cocktail for Real-Time quantitative PCR (qPCR) that overcomes many known inhibitors of PCR often present in crude samples extracted from environmental specimens, plant tissues, or animal tissues. It contains all components, except primers, probes and templates. The 5X concentrated ToughMix® allows addition of higher amounts of template and improved detection sensitivity with low concentration samples. PerfeCta® MultiPlex qPCR ToughMix® has been optimised to deliver maximum PCR efficiency, sensitivity, and specificity in reduced reaction volumes with fast cycle or conventional PCR cycling protocols.

- Tough tested - overcomes common inhibitors, including polysaccharides, heme/haemoglobin, humic acid, melanin
- Flexible - use fast or standard qPCR cycling conditions
- Broad dynamic range - reliable data from your precious samples every time

Description	Pk	Cat. No.
PerfeCTa® MultiPlex qPCR ToughMix®	250 Assays	**733-2324**
PerfeCTa® MultiPlex qPCR ToughMix®	1.000 Assays	**733-2322**
PerfeCTa® MultiPlex qPCR ToughMix®	5.000 Assays	**733-2323**
PerfeCTa® MultiPlex qPCR ToughMix®, with ROX	250 Assays	**733-2327**
PerfeCTa® MultiPlex qPCR ToughMix®, with ROX	1.000 Assays	**733-2325**
PerfeCTa® MultiPlex qPCR ToughMix®, with ROX	5.000 Assays	**733-2326**
PerfeCTa® MultiPlex qPCR ToughMix®, with low ROX	250 Assays	**733-2330**
PerfeCTa® MultiPlex qPCR ToughMix®, with low ROX	1.000 Assays	**733-2328**
PerfeCTa® MultiPlex qPCR ToughMix®, with low ROX	5.000 Assays	**733-2329**

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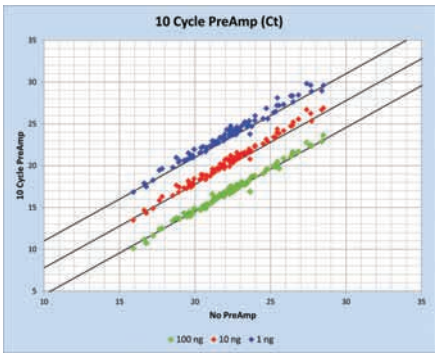
PerfeCTa® PreAmp 5X SuperMix
Quanta Biosciences



PerfeCTa® PreAmp SuperMix is a 5X concentrated, ready to use reaction cocktail for unbiased, selected enrichment of target sequences from limited amounts of starting material for downstream gene expression profiling or targeted resequencing. It contains all components, except primers and templates. The 5X concentrated SuperMix allows addition of higher template volumes when working with low concentration samples, and/or reduced reaction volumes. Inclusion of an inert light blue tracer dye helps visualise small reaction volumes and ensure accurate pipetting.

PerfeCta® PreAmp SuperMix delivers unbiased pre-amplification of up to 100 target sequences from as little as 100 pg of total RNA. It is compatible with both TaqMan® 5'-nuclease probes as well as ds-DNA binding dye (i.e. SYBR® Green I) qPCR detection chemistries.

A key component of PerfeCTa® PreAmp SuperMix is an ultra-pure, highly processive thermostable DNA polymerase that is combined with high avidity monoclonal antibodies. This proprietary polymerase mix is resistant to PCR inhibitors and provides an extremely stringent automatic hot start allowing reaction assembly, and temporary storage, at room temperature prior to pre-amplification.

Delivery information: Each kit contains 5X reaction buffer containing optimised concentrations of $MgCl_2$, dNTPs (dATP, dCTP, dGTP, dTTP), hot start DNA polymerase, AccuVue™ blue tracer dye, and stabilisers.

Description	Pk	Cat. No.
PerfeCTa® PreAmp 5X SuperMix, 40×50 µl reactions	40 Assays	**733-2265**

PerfeCTa® qPCR ToughMix®
Quanta Biosciences

PerfeCTa® qPCR ToughMix® is a 2X concentrated ready to use reaction cocktail for PCR amplification of DNA templates that overcomes many known inhibitors of PCR often present in crude samples extracted from environmental specimens, plant tissues, or animal tissues. It is a versatile and robust Real-Time qPCR reagent that provides maximum sensitivity and PCR efficiency with a variety of fluorogenic probe chemistries, including TaqMan® hydrolysis probes. PerfeCTa® qPCR ToughMix® contains all required reaction components, except primers, probe(s) and DNA template. The light blue colour of the AccuVue™ tracer dye simplifies reaction assembly in white, or clear plates and helps to minimise pipetting or mixing errors. It does not interfere with qPCR performance or affect the stability of the product.

A key component of PerfeCTa® qPCR ToughMix® is an ultra-pure, highly processive thermostable DNA polymerase that is combined with high avidity monoclonal antibodies. This proprietary polymerase mix is highly resistant to PCR inhibitors and provides an extremely stringent automatic hot start allowing reaction assembly, and temporary storage, at room temperature prior to PCR amplification. PerfeCTa® qPCR ToughMix® delivers exceptional performance with either fast or conventional PCR cycling protocols.

Delivery information: Kits are available with or without ROX reference dye. All kits include 2X reaction buffer containing optimised concentrations of $MgCl_2$, dNTPs (dATP, dCTP, dGTP, dTTP), hot start DNA polymerase, AccuVue™ blue qPCR dye, and stabilisers. UNG versions include uracil DNA glycosylase.

Description	Pk	Cat. No.
PerfeCTa® qPCR ToughMix® without ROX		
PerfeCTa® qPCR ToughMix®, 250×20 µl reactions (2×1,25 ml)	250 Assays	**733-2092**
PerfeCTa® qPCR ToughMix®, 1250×20 µl reactions (10×1,25 ml)	1.250 Assays	**733-2090**
PerfeCTa® qPCR ToughMix®, 5000×20 µl reactions (1×50 ml)	5.000 Assays	**733-2091**
PerfeCTa® qPCR ToughMix® with ROX		
PerfeCTa® qPCR ToughMix®, ROX, 250×20 µl reactions (2×1,25 ml)	250 Assays	**733-2095**
PerfeCTa® qPCR ToughMix®, ROX, 1250×20 µl reactions (10×1,25 ml)	1.250 Assays	**733-2093**
PerfeCTa® qPCR ToughMix®, ROX, 5000×20 µl reactions (1×50 ml)	5.000 Assays	**733-2094**
PerfeCTa® qPCR ToughMix® with low ROX		
PerfeCTa® qPCR ToughMix®, low ROX, 250×20 µl reactions (2×1,25 ml)	250 Assays	**733-2098**
PerfeCTa® qPCR ToughMix®, low ROX, 1250×20 µl reactions (10×1,25 ml)	1.250 Assays	**733-2096**
PerfeCTa® qPCR ToughMix®, low ROX, 5000×20 µl reactions (1×50 ml)	5.000 Assays	**733-2097**

qScript™ XLT One-Step RT-qPCR ToughMix®
Quanta Biosciences

qScript™ XLT One-Step RT-qPCR ToughMix® is a ready to use, highly sensitive master mix for reverse transcription quantitative PCR (RT-qPCR) of RNA templates.

qScript™ XLT One-Step RT-qPCR ToughMix® is a versatile and robust RT-qPCR reagent that provides maximum sensitivity and PCR efficiency with a variety of fluorogenic probe chemistries, including TaqMan® hydrolysis probes.

- Overcomes common inhibitors including polysaccharides, heme/haemoglobin, humic acid, melanin
- Suitable for fast or standard qPCR cycling conditions
- Broad dynamic range ensures reliable data from precious samples
- Multiplexing enabled - supports detection of up to four targets

Description	Pk	Cat. No.
One-Step RT-qPCR ToughMix®		
qScript™ XLT One-Step RT-qPCR ToughMix®, without passive reference dye, 100×20 µl reactions	100 Tests	**733-2161**
qScript™ XLT One-Step RT-qPCR ToughMix®, without passive reference dye, 500×20 µl reactions	500 Tests	**733-2230**
One-Step RT-qPCR ToughMix®, ROX		
qScript™ XLT One-Step RT-qPCR ToughMix®, with ROX, 100×20 µl reactions	100 Assays	**733-2162**
qScript™ XLT One-Step RT-qPCR ToughMix®, with ROX, 500×20 µl reactions	500 Assays	**733-2232**
One-Step RT-qPCR ToughMix®, low ROX		
qScript™ XLT One-Step RT-qPCR ToughMix®, with low ROX, 100×20 µl reactions	100 Assays	**733-2163**
qScript™ XLT One-Step RT-qPCR ToughMix®, with low ROX, 500×20 µl reactions	500 Assays	**733-2234**

PerfeCTa® DNase I

Quanta Biosciences

PerfeCTa® DNase I is a high purity, recombinant bovine DNase I preparation that is free of any contaminating RNases or proteases. It provides a simple and rapid solution to eliminate residual genomic DNA from total RNA preparations for expression profiling by reverse transcription quantitative PCR amplification (RT-qPCR) as well as other molecular biology applications.

Description	Pk	Cat. No.
PerfeCTa® DNase I	1.000 µl	**733-2331**

qPCR mixes, PerfeCTa® SYBR® Green SuperMixes

Quanta Biosciences

PerfeCTa® SYBR® Green SuperMixes enable efficient, sensitive and precise quantitative PCR with proprietary buffers and SYBR® Green stabilisers that maximise fluorescent signal, PCR efficiency, and reduce primer dimers. These SuperMixes have been optimised for all Real-Time PCR instrument platforms, including those requiring normalisation with ROX reference dye or fluorescein. UNG versions include uracil DNA glycosylase.

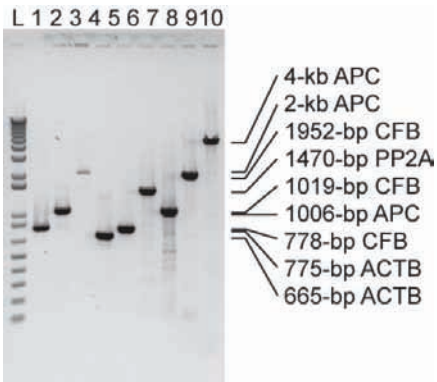
PerfeCTa® SYBR® Green SuperMixes are 2X concentrated, ready to use reaction cocktails containing all components for qPCR, except primers and template. A key component of these SuperMixes is AccuStart™ *Taq* DNA polymerase, which enables specific and efficient primer extension with the convenience of room temperature reaction assembly. AccuStart™ *Taq* DNA polymerase contains monoclonal antibodies that bind to the polymerase and keep it inactive prior to the initial PCR denaturation step. Upon heat activation the antibodies denature irreversibly, releasing fully active and unmodified *Taq* DNA polymerase.

- Broad dynamic range ensures data from precious samples is more reliably attained
- Superior antibody-mediated hot start results in higher specificity leading to more accurate quantification
- Fast Cycling using existing primer sets means no re-optimisation and increased productivity

Description	Pk	Cat. No.
PerfeCTa™ SYBR® Green SuperMixes with ROX reference dye		
SuperMix, 100 reactions	100 Assays	**733-1249**
SuperMix, 500 reactions	500 Assays	**733-1250**
SuperMix, 2000 reactions	2.000 Assays	**733-1251**
PerfeCTa™ SYBR® Green SuperMixes with low ROX reference dye		
SuperMix, 100 reactions	100 Assays	**733-1253**
SuperMix, 500 reactions	500 Assays	**733-1254**
SuperMix, 2000 reactions	2.000 Assays	**733-1255**
PerfeCTa™ SYBR® Green SuperMixes with Fluorescein reference dye		
SuperMix, 100 reactions	100 Assays	**733-1195**
SuperMix, 500 reactions	500 Assays	**733-1196**
SuperMix, 2000 reactions	2.000 Assays	**733-1197**
PerfeCTa™ SYBR® Green SuperMixes without passive reference dye		
SuperMix, 100 reactions	100 Assays	**733-1199**
SuperMix, 2000 reactions	2.000 Assays	**733-1247**

qScript™ XLT One-Step RT-PCR kit

Quanta Biosciences



1-Step RT-PCR of varying length fragments from HeLa cell total RNA

The qScript™ XLT One-Step RT-PCR kit is a convenient and highly sensitive system for amplification of RNA templates up to 2 kb. cDNA synthesis and PCR amplification are carried out in the same tube without opening between procedures. This system has been optimised to deliver maximum RT-PCR efficiency, sensitivity, and specificity.

- Tough tested to overcome inhibitors
- Option GelTrack™ Loading Dye included
- Superior reproducibility
- Convenient single tube reaction assembly at room temperature

Delivery information: Each kit comprises:
1×200 µl qScript™ XLT One-Step Reverse Transcriptase (25X concentrated mixture of qScript™ XLT reverse transcriptase and recombinant ribonuclease inhibitor protein)
2×1,25 ml One-Step ToughMix® (2X concentrated reaction buffer containing dNTP's, magnesium chloride, hot start DNA polymerase, and stabilisers)
1×0,4 ml GelTrack™ Loading Dye (50X contrated mixture of RT-PCR compatible, blue and yellow electrophoresis tracking dyes)
2×1,5 ml Nuclease-free water

Description	Pk	Cat. No.
qScript™ XLT One-Step RT-PCR kit	200 Assays	**733-2263**

VWR COLLECTION

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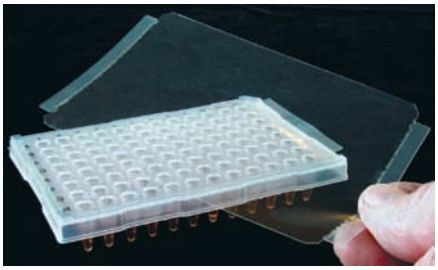
Ultra-clear heat resistant films for qPCR



Polyester

Transparent polyester films with strong, non absorbing, non fluorescing medical grade adhesive for superior performance in qPCR applications. Supplied non sterile.

- Recommended for temperatures from –40 to +120 °C
- Ultra-high optical clarity
- Certified DNase-, RNase- and nuclease-free

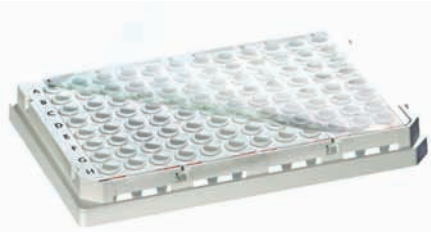
Each film L×D: 142,9×79,4 mm.

Length with end-tabs removed: 121,9 mm.

Description	Pk	Cat. No.
Optically clear 50 µm thick films	100	**391-1258**
Optically clear 50 µm thick films for raised rim plates	100	**391-1295**

Optical adhesive PCR/qPCR film for Piko® 24-well and 96-well UTW plates

Thermo Scientific



Clear Piko® PCR/qPCR film seal allows high transmission of fluorescence across the range of commonly-used fluorophores. When used with a Piko® thermal cycler or PikoReal® Real-Time PCR system, sample volumes as low as 5 µl can be used with minimal evaporative loss.

- Optical clarity with minimal auto-fluorescence for Real-Time PCR applications
- Tight sealing for sample volumes as low as 5 µl
- Adhesive backing allows easy application without costly sealing devices
- Cryo-compatible adhesive is effective to –80°C

Description	Pk	Cat. No.
Optical adhesive film for PCR/qPCR	400	**731-0404**

PCR plates with ultra-thin wall (UTW), for Piko® and PikoReal®

Thermo Scientific

Piko® PCR plates utilise ultra-thin wall (UTW) technology to dramatically reduce the thickness of the well walls and are specifically designed for use in the Piko® thermal cycler and the PikoReal® Real Time PCR system. Piko® PCR Plates have the footprint of a microscope slide. Four Piko® 24-well (96-well) plates can be snapped into the plate frame to create a standard 96-well (384-well) plate.

- Ultra-thin wall (UTW) for fast PCR/qPCR applications
- Low profile
- Compatible with standard multichannel pipettes and liquid-handling platforms
- Well spacing and footprint conform to industry dimensions

Description	Pk	Cat. No.
Piko® UTW PCR plate, 24-well, clear	200	**731-0350**
Piko® UTW PCR plate, 24-well, white	200	**731-0362**
Piko® UTW PCR plate, 96-well, clear	200	**731-0351**
Piko® UTW PCR plate, 96-well, white	200	**731-0365**

Description	Pk	Cat. No.
Accessories		
Frame for 24-well Piko® PCR plate strips, white	50	**731-0390**
Frame for 96-well Piko® PCR plate strips, white	50	**731-0391**
Optically clear 8-strip flat caps for Piko® ultra-thin walled PCR plates	120	**731-0392**

Real-Time PCR system, PikoReal®

Thermo Scientific

The PikoReal® Real-Time PCR system is light, quiet and has a small footprint, making it ideal for personal use. The PikoReal® system is available as a 96-well or 24-well instrument that fits PCR plates one quarter the size of a standard plate, while maintaining industry standards for well volume and well spacing. Due to its small size, low energy consumption and durable design, the PikoReal® system is also suitable for field applications.

- Superior thermal performance - block design combined with precise temperature control ensures that quantification results are reliable and reproducible
- Five optical channels facilitate multiplexing
- Stand-alone or PC control - the latter allows remote monitoring of any qPCR experiment

Thermal block	
Block formats	24-well, 96-well (not interchangeable)
Sample volume (µl)	10 - 50 (PikoReal® 24); 5 - 20 (PikoReal® 96)
Consumables	24-well Piko® PCR plates (¼ of a standard ANSI 96-well plate), low profile strip tubes and PCR tubes; 96-well Piko® PCR plates (¼ of a standard ANSI 384-well plate)
Max. heating rate (°C/sec)	>5
Max. cooling rate (°C/sec)	4,5
Temperature range (°C)	4...99,9
Temperature accuracy (°C)	±0,2
Temperature uniformity (°C)	±0,3 at 95 °C; ±0,15 at 60 °C; ±0,2 at 72 °C
Heated lid	
Temperature range (°C)	30...110
Control	Automatic temperature and pressure setting
Optics	
Excitation	5 LEDs
Excitation range (nm)	475 - 640
Detection	CCD
Detection range (nm)	520 - 740
Detection channels	5
Multiplex	Up to 4 targets
Dynamic range	10 logs
Sensitivity	1 copy
Scan time for 4 multiplexing channels (sec)	<10
Software	
Analysis modes	Absolute quantification, relative quantification, melt curve analysis, high resolution melt (HRM), allelic discrimination
System	
Operating systems	Windows XP, Windows 7
Communication	Ethernet (up to 10 instruments from a single PC) or USB
Power (W)	Max. 200
W×D×H (mm)	300×230×310
Weight (kg)	10

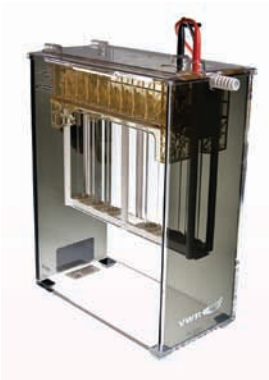
Description	Pk	Cat. No.
PikoReal® 24 Real-Time PCR system	1	**731-0343**
PikoReal® 96 Real-Time PCR system	1	**731-0344**

Description	Pk	Cat. No.
Accessories		
Piko® plate illuminator	1	**731-0358**

VWR COLLECTION

SELECTED FOR YOU

Dual-cooled vertical electrophoresis systems, kuroGEL Verti 1816K and 1824K



The kuroGEL Verti dual-cooled units are available in standard (18×16 cm) or tall (18×24 cm) formats.

- Produce straight lanes and sharp, well defined bands
- Run up to four gels (maximum 112 samples) at one time under identical conditions
- Run gels at uniform temperature from 1 to 45 °C
- Accommodates denaturing and native polyacrylamide gels and 2-D electrophoresis
- A wide array of accessories allow gel configurations to be tailored to meet individual needs

Delivery information: Complete system includes lower and upper buffer chambers; safety lid with high voltage leads; heat exchanger; glass plates 18×16 cm for Verti 1816K or 18×24 cm for Verti 1824K (6 pcs); clamp assemblies, 16 cm (4 pcs) for Verti 1816K or 8 cm (4 pcs) and 16 cm (4 pcs) for Verti 1824K; cams (6 pcs); slotted gaskets for upper buffer chamber (2 pcs); dual gel casting stand with levelling base; bubble level; laminated gaskets for caster (2 pcs); buffer dam; alignment template; plate separation tool; gel seal; combs, 15 well, 1,5 mm thick (2 pcs); spacers, 1,5 mm thick, 2 cm wide (4 pcs).

Model	1816K	1824K
Glass plate size (W×H) (mm)	180×160 / 180×80	180×240 / 180×160 / 180×80
Humidity (% RH)	≤80	
Max power requirement	1000 V, 500 mA, 50 W	
Max. temperature (°C)	45	
Spacers (mm)	0,75, 1,0, 1,5	
Unit W×H×D (mm)	320×290×140	320×370×140

Description	Pk	Cat. No.
kuroGEL Verti 1816K dual-cooled units (glass plate sizes 18×16 cm or 18×8 cm)		
Dual-cooled vertical gel unit, kuroGEL 1816K	1	**700-0189**
kuroGEL Verti 1824K dual-cooled units (maximum glass plate size 18×24 cm)		
Dual-cooled vertical gel unit, kuroGEL 1824K	1	**700-0177**

VWR COLLECTION

SELECTED FOR YOU

Dual-gel vertical electrophoresis systems, kuroGEL Verti 1010

The kuroGEL Verti vertical dual-gel units offer the flexibility of running dual gels either cooled or uncooled and with or without a casting base.

The kuroGEL Verti 1010 mini gel units are ideal for standard PAGE applications requiring self-cast gels. Soft silicone gaskets in the precision engineered casting base act in tandem with the gel running module to provide simple, leak-free casting and assembly.

- Novel clamping arrangement allows most commercially available 8×10 cm or 10×10 cm precast polyacrylamide gels in a wide range of cassette thicknesses to be run
- Two screws make clamping simple without using separate clamps
- Self-sealing snap-on connectors prevent the spills which commonly occur when disconnecting the cooling liquid

Delivery information: Complete system supplied with 2 plain glass plates; 2 notched glass plates; 1 dummy plate; 2×1,0 mm spacer sets; 2×1,0 mm combs, 12-sample wells.

Model	kuroGEL Verti 1010	kuroGEL Verti 1010Y	kuroGEL Verti 1010K	kuroGEL Verti 1010YK
Buffer volume, gel tank (ml)	1200		1600	
Buffer volume, inner chamber (ml)	90			
Gel size W×H (mm)	80×85			
Power output shrouded, connectors (Ø mm)	4			
Recommended running voltage (V)	50 - 100		100 - 150	
Sample capacity	2×20			
Unit W×H×D (mm)	200×140×150		280×180×150	

Description	Pk	Cat. No.
kuroGEL Verti 1010, uncooled, for two 10×10 cm gels	1	**700-0166**
kuroGEL Verti 1010Y, uncooled, for two 10×10 cm gels, with casting base	1	**700-0167**
kuroGEL Verti 1010K, cooled, for two 10×10 cm gels	1	**700-0168**
kuroGEL Verti 1010YK, cooled, for two 10×10 cm gels, with casting base	1	**700-0169**

Description	Pk	Cat. No.
Combs for dual-gel vertical electrophoresis units, kuroGEL 1010		
Comb, 0,75 mm, 10-sample	1	**700-7036**
Comb, 0,75 mm, 12-sample	1	**700-7037**
Comb, 1,0 mm, 10-sample	1	**700-7038**
Comb, 1,0 mm, 12-sample	1	**700-7039**

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Description	Pk	Cat. No.
Combs for dual-gel vertical electrophoresis units, kuroGEL 1010		
Comb, 1,0 mm, 16-sample	1	**730-1329**
Comb, 1,5 mm, 10-sample	1	**700-7040**
Comb, 1,5 mm, 12-sample	1	**700-7041**
Comb, 1,5 mm, 16-sample	1	**730-1328**
Comb, 2,0 mm, 10-sample	1	**700-7042**
Comb, 2,0 mm, 12-sample	1	**700-7043**
Accessories		
Casting base for kuroGEL Verti 1010	1	**700-0170**
Silicone seals for 2-gel cam casting system, pack of 2	2	**700-7050**
Dummy plate	1	**700-7055**
Spacer set, 0.75 mm	2	**700-7059**
Spacer set, 1.0 mm	2	**700-7060**
Spacer set, 1.5 mm	2	**700-7061**
Spacer set, 2.0 mm	2	**700-7062**
Plain glass plates, pack of 2	2	**700-7058**
Plain glass plates with bonded 0.75 mm spacers, pack of 2	2	**700-7286**
Plain glass plates with bonded 1.0 mm spacers, pack of 2	2	**700-7287**
Plain glass plates with bonded 1.5 mm spacers, pack of 2	2	**700-7288**
Plain glass plates with bonded 2.0 mm spacers, pack of 2	2	**700-7289**

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Dual-gel vertical electrophoresis systems, kuroGEL Verti 2020

The kuroGEL Verti vertical dual-gel units offer the flexibility of running dual gels either cooled or un-cooled and with or without a casting base.

The kuroGEL Verti 2020 twin-plate units offer all the benefits of the kuroGEL Verti 1010, but with a much larger gel size and with increased sample throughput. A cooling coil in the kuroGEL Verti 2020K gel tanks allows faster separations to be performed at high voltage without compromising resolution.

- Large format gels for increased sample throughput and longer separation
- High resolution maintained with excellent cooling capabilities
- Self-sealing connectors prevent spills which commonly occur when disconnecting the cooling liquid

Delivery information: Complete system supplied with 2 plain glass plates; 2 notched glass plates; 1 dummy plate; 2×1,0 mm spacer sets; 2×1,0 mm combs, 24-sample wells.

Model	kuroGEL Verti 2020	kuroGEL Verti 2020Y	kuroGEL Verti 2020K	kuroGEL Verti 2020YK
Buffer volume, gel tank (ml)	4200			
Buffer volume, inner chamber (ml)	700			
Gel size W×H (mm)	165×175			
Power output shrouded, connectors (Ø mm)	4			
Recommended running voltage (V)	175 - 225		200 - 300	
Sample capacity	2×48			
Unit W×H×D (mm)	285×275×150		380×275×150	

Description	Pk	Cat. No.
kuroGEL Verti 2020, uncooled, for two 20×20 cm gels	1	**700-0171**
kuroGEL Verti 2020Y, uncooled, for two 20×20 cm gels, with casting base	1	**700-0172**
kuroGEL Verti 2020K, cooled, for two 20×20 cm gels	1	**700-0173**
kuroGEL Verti 2020YK, cooled, for two 20×20 cm gels, with casting base	1	**700-0174**

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- Sample storage
- Sample handling
- Safety

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Vertical electrophoresis systems, shiroGEL vertical 20

The shiroGEL vertical 20 offers application flexibility and is distinguised by its ease of gel casting and set-up, requiring only four screws to secure up to four 20×20 cm gels. This vertical screw clamp technology distributes pressure evenly along the height of gel rather than in the centre to eliminate plate bowing and gel compression, while maintaining a leakproof seal during casting. A built-in inner buffer chamber within the PAGE insert allows set up to be completed without inclusion of an upper buffer chamber. These systems are ideal for 1D and 2D SDS-PAGE, native, preparative, gradient and high resolution nucleic acid electrophoresis.

- Large format vertical gel system
- Electroblotting and gel electrophoresis possible in same universal gel tank
- Quick assembly system for ease of use
- Complete system allows casting of gels and running of gels at same time increasing efficiency
- Dual purpose PAGE insert eliminates time-consuming transfer of glass plates between separate casting and gel running components
- Glass plates with bonded spacers assure clean well formation, correct alignment for leak-free casting and eliminates need for manually aligning spacers
- Casting stand design ensures leak-free casting even if glass plates are misaligned

Delivery information: Each shiroGEL vertical 20 system includes glass plates, 2×24 sample (1 mm thick) combs, cooling coil and casting base. The shiroGEL vertical 20 dual casting system also includes an external casting stand (without electrodes). Electroblotting insert available separately.

Gel size W×H (mm)	200×200

Description	Pk	Cat. No.
shiroGEL vertical 20 system	1	**700-0353**
shiroGEL vertical 20 dual casting system	1	**700-0354**

VWR COLLECTION

SELECTED FOR YOU

Modular mini vertical PAGE systems, shiroGEL

The shiroGEL mini vertical PAGE system is modular, allowing PAGE and electroblotting to be carried out in the same tank, simply by changing the inserts. The system features inserts for each application and a common buffer tank in which to run them. Each insert has its own electrode assembly, which connects to the lid of the buffer tank. For safety, the power leads connect directly to the lid. When the lid is removed, power is disconnected from the system. The inserts also have a small pad that fits into position in the lid. This ensures that the lid is always properly placed and aids in its removal. The buffer tank is moulded to prevent separation and leaking. A variety of spacers, combs and other accessories are available to customise the system. All spacers and combs are colour coded or clearly labelled to indicate thickness.

- Runs up to four gels simultaneously
- Gels can be cast and run using the PAGE module
- Sturdy, moulded buffer chamber with lid that fits only one way

Delivery information: Complete system includes buffer tank; PAGE module; casting base; two 10×10 cm notched glass plates; two 10×10 cm glass plates with bonded spacers; and two 12-tooth, 1 mm thick combs.

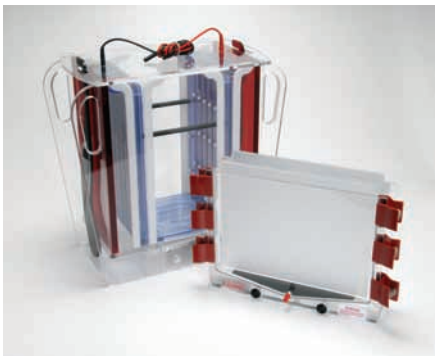
Buffer volume, gel tank (ml)	250
Gel size W×H (mm)	100×100
Sample capacity	20 samples per gel, 2 gels per run
Unit W×H×D (mm)	190×130×150*

Description	Pk	Cat. No.
Mini PAGE complete system, shiroGEL	1	**700-0292**

*buffer tank

Large format vertical gel electrophoresis system, SE900

Hoefer



The SE900 is designed as a dedicated unit for 2-D electrophoretic separation. It can accommodate up to six 28 cm SDS-PAGE gels, making it ideal for high throughput applications.

- No upper buffer chamber means no gasket issues and no risk of buffer loss
- External cooling and internal buffer circulation ensures an even, constant, and uniform temperature for reproducible results
- Glass plate sandwiches are hinged cassettes, which allows for rapid and easy assembly before use
- Built-in draining port avoids lifting of a heavy buffer-filled tank
- Assembly of the tank is easy – no clamps needed
- Innovative design enables re-use of tank buffer, decreasing buffer consumption and reducing cost

Delivery information: Complete system includes separation tank, tubing kit, safety lid with high voltage leads, multiple gel caster, internal PAGE rack, and 6× hinged glass cassettes. Basic system is supplied without the multiple gel caster or hinged glass cassettes.

Model	SE900B	SE900-1.0
Gel size W×H (mm)	250×200	
Glass plate size (W×H) (mm)	280×210	
Humidity (% RH)	< 80%	
Max power requirement	600 V, 1000 mA, 150 W	
Max. temperature (°C)	45	
Unit W×H×D (mm)	430×430×200	
Weight (kg)	13,6	

Model	Description	Pk	Cat. No.
SE900B	Large format vertical electrophoresis system, basic	1	**732-2187**
SE900-1.0	Large format vertical electrophoresis system, complete, with 1,0 mm combs and spacers	1	**732-2186**

Standard dual cooled vertical electrophoresis unit, SE600

Hoefer

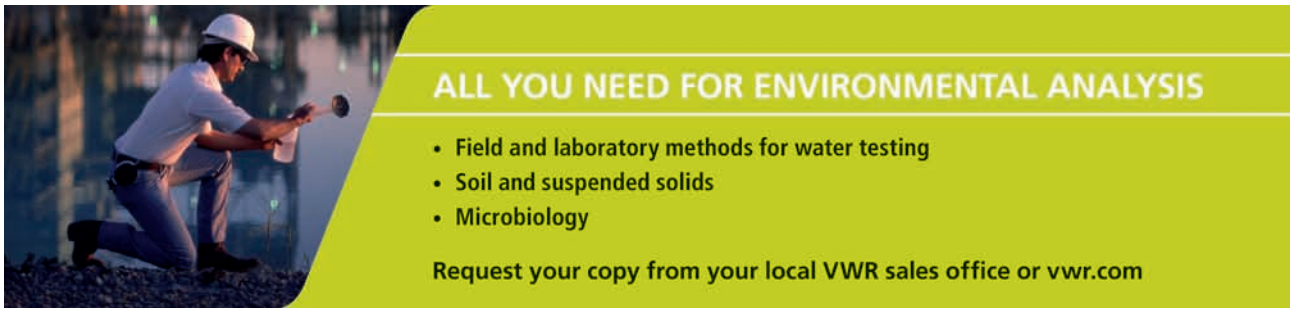
The SE600 is ideal for all standard electrophoresis separations.

- Maximum glass plate size 18×16 cm
- Produce straight lanes and sharp, well defined bands
- Run up to four gels (maximum 112 samples) at one time under identical conditions
- Run gels at uniform temperature from 1 to 45 °C
- Accommodates denaturing and native polyacrylamide gels and 2-D electrophoresis
- A wide array of accessories allows gel configurations to be tailored to individual needs

Delivery information: Complete system includes lower buffer chamber, upper buffer chamber, safety lid with high voltage leads, heat exchanger, 6× glass plates (18×16 cm), 4× clamp assemblies (16 cm), 6× cams, 2× slotted gaskets for upper buffer chamber, dual gel casting stand with levelling base, bubble level, 2× laminated gaskets for caster, buffer dam, alignment template, plate separation tool, gel seal, 2× combs (15-well, 1,5 mm thick), and 4× spacers (2 cm wide, 1,5 mm thick). The basic unit is supplied without combs and 16 cm long spacers, both of which can be ordered separately.

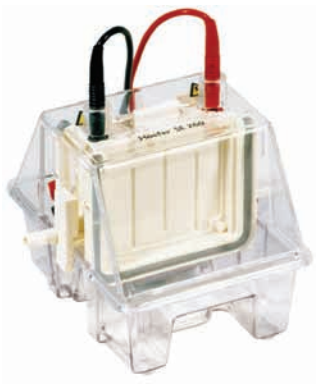
Model	SE600B
Glass plate size (W×H) (mm)	180×160 / 180×80
Humidity (% RH)	<80%
Max power requirement	1000 V, 500 mA, 50 W
Max. temperature (°C)	45
Unit W×H×D (mm)	320×290×140

Model	Description	Pk	Cat. No.
SE600B	Standard dual cooled vertical electrophoresis unit, basic	1	**732-1918**



Mini vertical electrophoresis unit, SE260 Mighty Small II Deluxe

Hoefer



The SE260 Mighty Small II Deluxe mini vertical electrophoresis unit combines the advantages of small format and efficient cooling for rapid screening of proteins and nucleic acids.

- Maximum glass plate size 10×10,5 cm
- Flexible design, additionally able to accommodate 10×8 cm format with optional accessories
- Supports a wide variety of precast gels
- Efficient active cooling ensures sharp bands
- Run up to two gels (maximum 30 samples) at one time under identical conditions
- Quick and easy to assemble

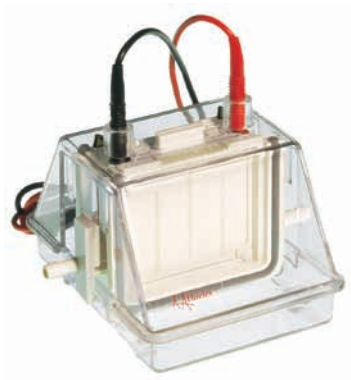
Delivery information: Complete unit includes lower buffer chamber, upper buffer chamber/cooling core, safety lid with high voltage leads, casting cradle with sealing gaskets, 2× casting clamp accessories, 4× cams, 10× rectangular glass plates (10×10,5 cm), 5× notched alumina plates (10×10,5 cm), spring clamps, 2× combs (10-well, 0,75 mm thickness), and 4× spacers, 0,75 mm. Basic unit includes same as above, without the combs, spacers, plates, and caster, which can all be ordered separately.

Model	SE260-10A-1.5	SE260B
Glass plate size (W×H) (mm)	100×105 / 100×80	
Humidity (% RH)	< 80%	
Max power requirement	500 V, 500 mA, 12 W	
Max. temperature (°C)	45	
Unit W×H×D (mm)	165×180×160	

Model	Description	Pk	Cat. No.
SE260-10A-1.5	Mighty Small II Deluxe mini vertical electrophoresis system, complete, with 1,5 mm combs and spacers	1	**732-1764**
SE260B	Mighty Small II Deluxe mini vertical electrophoresis unit, basic, without combs, spacers, plates or caster	1	**732-1765**

Mini vertical electrophoresis unit, SE250 Mighty Small II

Hoefer



The SE250 Mightly Small II mini vertical electrophoresis unit is designed for quick screening and rapid separation.

- Maximum glass plate size 10×8 cm
- Efficient active cooling ensures sharp bands
- Quick and easy to assemble
- Requires minimal buffer
- Easily upgradable to the SE260 (with optional accessories) resulting in the additional capability of accommodating both 10×8 and 10×10,5 cm gels, enabling a wider variety of precast gel options

Delivery information: Complete system includes lower buffer chamber, upper buffer chamber/cooling core, safety lid with high voltage leads, casting cradle with sealing gasket set, 2× casting clamp assemblies, 4× cams, 10× rectangular glass plates (10×8 cm), 2× alumina plates, notched (10×8 cm), 4× spring clamps, 2× combs (10-well, 0,75 mm thickness), 4× T-spacers (0,75 mm thickness), 2× well locating decals, and gel seal. Basic unit includes same as above without the combs, spacers and caster, which can be ordered separately.

Model	SE250B
Glass plate size (W×H) (mm)	100×80
Humidity (% RH)	<80%
Max power requirement	500 V, 500 mA, 12 W
Max. temperature (°C)	45
Unit W×H×D (mm)	165×160×160

Model	Description	Pk	Cat. No.
SE250B	Mighty Small II mini vertical electrophoresis unit, basic	1	**732-1751**

Amersham ECL™ gel system
GE Healthcare

Horizontal mini gel electrophoresis system for high quality protein electrophoresis. Designed to make protein PAGE as simple as agarose gel DNA electrophoresis.

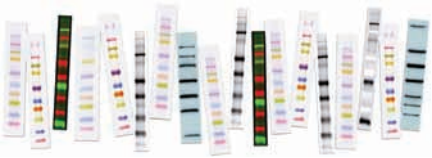
- High lot-to-lot consistency of gels ensures reproducible, high-quality results
- Easier sample application and reduced buffer consumption than conventional vertical systems, plus no risk of leakage
- Economic - same ready-to-run gels used for native and denaturing conditions, together with long shelf life, minimise risk of scrapping
- Robust gels for convenient handling in downstream detection steps
- Everything required to access and cut the gel is included in the Amersham ECL™ Gel cassette

Delivery information: Complete system includes gel box, precast gels, and premixed running buffer for polyacrylamide gel electrophoresis (PAGE). Each component must be ordered separately.

Description	Pk	Cat. No.
Amersham ECL™ Gel Box	1	**28-9906-08**

Description	Pk	Cat. No.
Accessories		
Amersham ECL™ gel running buffer (10X), 2×125 ml	2	**28-9902-52**
Precast gels for Amersham ECL™ gel system		
Amersham ECL™ Gel 12%, 2 wells	10	**28-9901-61**
Amersham ECL™ Gel 8-16%, 2 wells	10	**28-9901-63**
Amersham ECL™ Gel 10%, 10 wells	10	**28-9898-04**
Amersham ECL™ Gel 12%, 10 wells	10	**28-9898-05**
Amersham ECL™ Gel 4-12%, 10 wells	10	**28-9898-06**
Amersham ECL™ Gel 8-16%, 10 wells	10	**28-9898-07**
Amersham ECL™ Gel 4-20%, 10 wells	2	**28-9901-53**
Amersham ECL™ Gel 4-20%, 15 wells	10	**28-9901-59**

Molecular weight markers, Rainbow™
GE Healthcare



Rainbow™ molecular weight markers enable faster and simpler identification of proteins on SDS-polyacrylamide gels. The ready-to-load markers provide sharper, more intense bands on gels and blots, and have improved band spacing for more accurate molecular weight determination. The bright, distinctive colours of the markers allow easier confirmation of transfer to blotting membranes and orientation.

Rainbow™ molecular weight markers comprise a mixture of individually coloured proteins that are combined to produce bands of equal colour intensity. Depending on the product, the approximate protein concentration is 1 to 2 mg/ml. Each 250 µl pack size is sufficient for use with 50 minigels (10×8 cm) or 25 large gels (20×20 cm).

- Full-Range Rainbow™ markers (MW 12 000 to 225 000) use 10 separate proteins with 6 different colours; High-Range Rainbow™ markers (MW 12 000 to 225 000) use 8 separate proteins with 6 different colours; Low-Range Rainbow™ markers (MW 3500 to 38 000) use 7 separate proteins with 5 different colours
- Monitor progress of protein electrophoresis and assess transfer efficiency and molecular weight of blotted proteins without staining
- High intensisty, pre-stained, multi-coloured bands allow distinction of closely related proteins
- For use on SDS-PAGE

Storage: Store at –15 °C to –30 °C.

Description	Pk	Cat. No.
Low-Range Rainbow™ molecular weight markers	250 µl	**RPN755E**
High-Range Rainbow™ molecular weight markers	250 µl	**RPN756E**
Full-Range Rainbow™ molecular weight markers	250 µl	**RPN800E**

Power supply, PS300B
Hoefer

The versatile PS300B power supply is designed for most electrophoresis techniques.

- Constant voltage or constant current mode with automatic crossover
- 10 - 300 V, 4 - 500 mA, 90 W
- 4 sets of 4 mm output jacks
- Continuous runs or 999 minute timer
- Automatic recovery after power failure
- Open circuit detection
- Short circuit protection

Model	PS300B
Current (mA)	4 - 500
Input voltage (V)	100-240 VAC, 50/60 Hz
Operating constant modes	Current, voltage
Output voltage range/increments (V)	10 - 300/1
Outputs	4 in parallel, 4 mm sockets
Relative humidity (%)	0 - 80
Timer	0 - 999 minutes
Voltage (V)	10 - 300
Weight (kg)	2,4
W×D×H (mm)	125×280×335

Description	Pk	Cat. No.
Power supply, 300 V, universal VAC	1	**732-1695**

Blotting membranes, Amersham™ Hybond™ 0.2 PVDF
GE Healthcare

Amersham™ Hybond™ 0.2 PVDF is a 0,2 µm pore size hydrophobic membrane with high physical strength. This results in significant handling advantages over unsupported nitrocellulose and makes the membrane highly suitable for stripping and reprobing. The small pore size of the membrane minimises 'blow-through' and increases protein binding over a wide range of molecular weights. Ideal for use with standard colorimetric and chemiluminescent detection methods for proteins of < Mr 20 000.

- Available in popular precut sizes
- High protein retention, even after harsh washing steps
- Protein binding capacity over 200 µg/cm² for easy signal detection
- Maximum capture of proteins during transfers minimises sample loss
- 0,2 µm pore size for higher surface area, resulting in better binding of low molecular weight proteins

For convenience, Western blotting sandwiches (10 sandwiches/package) are also available. Each sandwich consists of precut Amersham™ Hybond™ 0.2 PVDF membranes preassembled with 2×3MM Chr filter papers.

Description	Dimensions (mm)	Pk	Cat. No.
Roll	260 mm × 4 m	1	**10600021.**

Blotting membranes, Amersham™ Hybond™ LFP 0.2 PVDF
GE Healthcare

Amersham™ Hybond™ LFP 0.2 PVDF is a low-fluorescent, hydrophobic membrane, with 0,2 µm pore size, for protein transfer. Amersham™ Hybond™ LFP is optimised for fluorescent detection in Western blotting applications.

- Very low background fluorescence resulting in high sensitivity
- Provides low auto-fluorescence across a wide range of excitation/emission wavelengths
- Available in popular precut sizes
- Protein binding capacity >200 µg/cm²
- Compatible with a variety of blocking agents, transfer buffers, and total protein blot stains

For convenience, Western blotting sandwiches (10 sandwiches/package) are also available. Each sandwich consists of precut Amersham™ Hybond™ LFP 0.2 PVDF membranes preassembled with 2×3MM Chr filter papers.

Description	Dimensions (mm)	Pk	Cat. No.
Roll	254 mm × 4 m	1	**10600022.**
Sheets	200×200	10	**10600060.**

Blotting membranes, nitrocellulose, Amersham™ Protran®
GE Healthcare

Amersham™ Protran® membranes are manufactured from 100% pure nitrocellulose to ensure the highest binding capacity possible. They are compatible with a variety of detection methods, including isotopic, chemiluminescent, colorimetric and fluorescent. No methanol pre-wetting step is required, making this the membrane of choice for proteins which prefer aqueous environments. Prior to transfer the membrane is simply wetted with water, and then placed in the transfer buffer. No other pretreatment steps are necessary.

Available in a choice of pore sizes: Protran® 0.1 NC (pore size 0,1 µm), Protran® 0.2 NC (pore size 0,2 µm), or Protran® 0.45 NC (pore size 0,45 µm). The versatile Protran® 0.1 NC membrane (binding capacity 231 to 248 µg IgG/cm^2) provides excellent binding affinity for small proteins and peptides, as well as nucleic acids; Protran® 0.2 NC (binding capacity 150 to 176 µg IgG/cm^2) binds small proteins (< Mr 20 000); and Protran® 0.45 NC (binding capacity 162 to 180 µg IgG/cm^2) is suitable for proteins of a wide range of molecular weights.

- Proprietary nitrocellulose formula gives a long shelf life of bound proteins
- High binding capacity
- Low background and excellent signal-to-noise ratios
- Compatible with a variety of labelling and detection systems
- Available in popular precut sizes

For convenience, Western blotting sandwiches (10 sandwiches/package) are also available. Each sandwich consists of precut Amersham™ Protran® NC membranes preassembled with 2×3MM Chr filter papers.

Description	Dimensions (mm)	Pk	Cat. No.
Amersham™ Protran® 0.2 NC			
Roll	300 mm × 4 m	1	**10600001.**
Amersham™ Protran® 0.45 NC			
Roll	300 mm × 4 m	1	**10600002.**

Blotting membranes, nitrocellulose, Amersham™ Protran® Premium
GE Healthcare

Amersham™ Protran® Premium nitrocellulose blotting membranes provide excellent sensitivity, resolution and low background in fluorescence Western blotting detection applications.

Available with a choice of pore size: Protran® Premium 0.2 NC (with pore size 0,2 µm, binding capacity 173 to 203 µg IgG/cm^2), or Protran® Premium 0.45 NC (with pore size 0,45 µm, binding capacity 162 to 180 µg IgG/cm^2).

- Available in popular precut sizes
- High binding capacity
- Protran® Premium 0.2 NC offers low auto-fluorescence across a wide range of excitation/emission wavelengths, making the membrane suitable for fluorescence-based immunodetection and multiplexing

For convenience, Western blotting sandwiches (10 sandwiches/package) are also available. Each sandwich consists of precut Amersham™ Protran® Premium NC membranes preassembled with 2×3MM Chr filter papers.

Description	Dimensions (mm)	Pk	Cat. No.
Amersham™ Protran® Premium 0.45 NC			
Roll	300 mm × 4 m	1	**10600003.**

Blotting membranes, nitrocellulose, Amersham™ Protran® Supported
GE Healthcare

Amersham™ Protran® Supported is a robust protein blotting membrane, with 0,2 µm pore size, made of reinforced nitrocellulose for multiple reprobings.

Available with a choice of pore size: Protran® Supported 0.2 NC (pore size 0,2 µm, binding capacity 120 to 150 µg IgG/cm^2) or Protran® Supported 0.45 NC (pore size 0,45 µm, binding capacity 60 to 80 µg IgG/cm^2).

- Optimal for applications when stripping and reprobing is required
- Recommended for detection of small proteins and peptides (< Mr 20 000)
- Versatile, robust, and excellent signal-to-noise ratios
- High binding capacity
- 0,45 µm membrane suitable for proteins of a wide range of molecular weights

For convenience, Western blotting sandwiches (10 sandwiches/package) are also available. Each sandwich consists of precut Amersham™ Protran® Supported NC membranes preassembled with 2×3MM Chr filter papers.

Description	Dimensions (mm)	Pk	Cat. No.
Amersham™ Protran® Supported 0.45 NC			
Roll	200 mm × 4 m	1	**10600018.**
Roll	300 mm × 4 m	1	**10600016.**

VWR COLLECTION

SELECTED FOR YOU

Semi-dry blotter, kuroGEL

The kuroGEL semi-dry blotter provides great flexibility in a laboratory since it can be used for all types of blotting: Western, Southern, and Northern. Blotting is fast and easy, and can typically be completed in 15 to 30 minutes. Set up procedures are easy and economical with little buffer needed. The screw down lid adjusts to varying gel thicknesses and sizes, while the platinum coated electrodes provide uniform pressure ensuring even transfers.

- Suitable for Western, Southern, and Northern blots
- Rapid transfer times
- Uniform heat dispersion
- Variable gel thickness
- Minimal buffer volume

Delivery information: Each unit includes base with plate electrode, lid with plate electrode, electrical leads, and 2 unit screws.

Model	kuroGEL semi-dry blotter
Buffer volume (ml)	20
Capacity	4 blots: 80×85 mm 2 blots: 160×85 mm 1 blot: 150×175 mm
Unit W×D×H (mm)	325×250×55

Description	Pk	Cat. No.
Semi-dry blotter, kuroGEL	1	**700-0416**

Semi-dry transfer units, TE70X and TE77X
Hoefer

The TE70X and TE77X Semi-Dry Transfer Units use minimal buffer to transfer proteins from polyacrylamide gels in less than an hour. The units support as many as two layers of gels being transferred simultaneously.

- Included safety circuit breaker limits voltage and current from the users power supply, preventing electrical damage to the transfer unit
- Requires minimal current so does not generate the excessive heat that can dry out the transfer stack and halt transfer or damage transfer units
- Durable iridium oxide and stainless steel electrodes allow for contamination-free, consistent transfer
- Vented electrodes prevent build-up of bubbles which may impair transfer
- Minimal buffer requirements reduce reagent cost and preparation time

Delivery information: Both units include moulded base with platinum coated titanium anode and high voltage leads, hinged lid with stainless steel cathode, and 50× porous cellophane sheets (20×35,5 cm). In addition, TE70X includes 25× blotting paper sheets (14×16 cm) and 2× Mylar® masks (16,5×18,5 cm). TE77X includes 25× blotting paper sheets (21×26 cm) and 2× Mylar® masks (23×27,5 cm).

Model	TE70X	TE77X
Capacity	Up to 4 mini gels (14×16 cm) using stacked format	Up to 12 mini gels (21×26 cm)
Unit W×D×H (mm)	380×90×460	

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Model	Description	Pk	Cat. No.
TE70X	Semi-dry transfer unit, 140×160 mm	1	**732-2143**
TE77X	Large semi-dry transfer unit, 210×260 mm	1	**732-2148**

Semi-dry transfer units, TE70XP and TE77XP

Hoefer

The TE70XP and TE77XP Semi-Dry Transfer Units include an intelligent built-in power supply, which automatically monitors the transfer status, stopping the transfer before the stack overheats.

- Intelligent built-in power supply prevents the stack from overheating by monitoring the transfer status
- Requires minimal current so does not generate the excessive heat that can dry out the transfer stack and halt transfer or damage transfer units
- Durable iridium oxide and stainless steel electrodes allow for contamination-free, consistent transfer
- Vented electrodes prevent build-up of bubbles which may impair transfer
- Minimal buffer requirements reduce reagent cost and preparation time

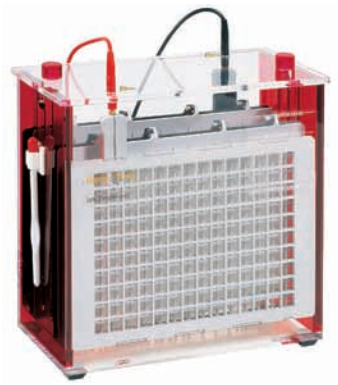
Delivery information: Both systems include moulded base with platinum coated titanium anode and internal power supply, hinged lid with stainless steel cathode, and 50× porous cellophane sheets (20×35,5 cm). In addition, TE70XP includes 25× blotting paper sheets (14×16 cm) and 2× Mylar® masks (16,5×18,5 cm). TE77XP includes 25× blotting paper sheets (21×26 cm) and 2× Mylar® masks (23×27,5 cm).

Model	TE70XP	TE77XP
Capacity	Up to 4 mini gels using stacked format	Up to 12 mini gels
Unit W×D×H (mm)	380×90×460	

Model	Description	Pk	Cat. No.
TE70XP	Semi-dry transfer unit with built-in power supply, 140×160 mm	1	**732-2189**
TE77XP	Large semi-dry transfer unit with built-in power supply, 210×260 mm	1	**732-1667**

Standard transfer tank, TE42

Hoefer



The TE42 standard transfer tank quickly and evenly transfers proteins and nucleic acids from polyacrylamide or agarose gels onto nylon, nitrocellulose, or PVDF membranes. The four slot design of the TE42 enables either cooled or non cooled protein or nucleic acid transfers. The optional heat exchange module is easily incorporated into the TE42 enabling transfer of up to 2 gels simultaneously. When used without the optional heat exchange module, up to four gels can be transferred at one time.

- Uniform and strong electric field supports efficient and even transfers
- Colour coded, easy to assemble cassettes ensure proper orientation during transfer
- Superior tank design allows the cassettes to apply equal pressure across the stack preventing gel distortion
- Optional heat exchanger provides excellent buffer temperature control when used with an external cooling water bath

Delivery information: Each system includes lower chamber, safety lid with high voltage leads, 2× electrode panels, 2× cassettes, 2× foam sponges (6 mm thick), 4× foam sponges (3 mm thick), cassette hook, and 25× blotting paper sheets (14,5×21,5 cm).

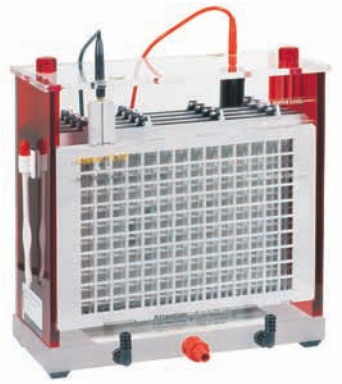
Model	TE42
Capacity	Up to four 150×210 mm gels (without cooling), up to two 150×210 mm gels (with cooling)
Gel size W×L (mm)	150×210
Unit W×D×H (mm)	80×305×130

Model	Description	Pk	Cat. No.
TE42	Standard transfer tank, 150×210 mm	1	**732-2132**

Description	Pk	Cat. No.
Accessories and spare parts		
Electrode panel, black	1	**732-2133**
Electrode panel, grey	1	**732-2134**
Cassette with sponges	1	**732-2135**
Foam sponges, 3 mm, pack of 4	4	**732-2138**
Foam sponges, 6 mm, pack of 4	4	**732-2137**
Sponges, Dacron, 6 mm	2	**732-2136**
Blotting paper, 145×215 mm, 50 sheets	50	**732-2139**
Heat exchange module	1	**732-2140**
Safety lid with high voltage leads	1	**732-2141**
Lower chamber	1	**732-2142**

Standard transfer tank with cooling chamber, TE62

Hoefer



The TE62 standard transfer tank with cooling chamber quickly and evenly transfers proteins and nucleic acids from polyacrylamide or agarose gels onto nylon, nitrocellulose, or PVDF membranes. The TE62 is designed to accept up to four cassettes simultaneously with cooling. Each cassette holds a 15×21 cm gel, or as many as four 7×10 cm mini gels.

- Uniform and strong electric field supports efficient and even transfers
- Colour coded, easy to assemble cassettes ensure proper orientation during transfer
- Superior tank design allows the cassettes to apply equal pressure across the stack preventing gel distortion
- Built-in ceramic heat exchanger provides excellent buffer temperature control when used with an external cooling water bath

Delivery information: Each system includes lower chamber with heat exchanger, safety lid with high voltage leads, 2× electrode panels, 4× cassettes, 4× foam sponges (6 mm thick), 8× foam sponges (3 mm thick), cassette hook, and 25× blotting paper sheets (14,5×21,5 cm).

Model	TE62
Capacity	Up to four 150×210 mm gels, or sixteen 70×100 mm gels
Gel size W×L (mm)	150×210 / 70×100
Unit W×D×H (mm)	280×320×165

Model	Description	Pk	Cat. No.
TE62	Standard transfer tank with cooling chamber	1	**732-2192**

Description	Pk	Cat. No.
Accessories and spare parts		
Electrode panel, black	1	**732-2133**
Electrode panel, grey	1	**732-2134**
Cassette with sponges	1	**732-2135**
Foam sponges, 3 mm, pack of 4	4	**732-2138**
Foam sponges, 6 mm, pack of 4	4	**732-2137**
Blotting paper, 145×215 mm, 50 sheets	50	**732-2139**
Safety lid with high voltage leads	1	**732-2141**

Tall standard dual cooled vertical electrophoresis unit, SE660

Hoefer

Taller format accommodates 24 cm long gels for increased resolution.

- Maximum glass plate size 18×24 cm
- Produce straight lanes and sharp, well defined bands
- Run up to four gels (maximum 112 samples) at one time under identical conditions
- Run gels at uniform temperature from 1 to 45 °C
- Accommodates denaturing and native polyacrylamide gels and 2-D electrophoresis
- A wide array of accessories allows gel configurations to be tailored to individual needs

Delivery information: Complete system includes lower buffer chamber, upper buffer chamber, safety lid with high voltage leads, heat exchanger, 6× glass plates (18×24 cm), 4× clamp assemblies (16 cm), 6× cams, 2× slotted gaskets for upper buffer chamber, dual gel casting stand with levelling base, bubble level, 2× laminated gaskets for caster, buffer dam, alignment template, plate separation tool, gel seal, 2× combs (15-well, 1,5 mm thick), and 4× spacers (2 cm wide, 1,5 mm thick). The basic unit is supplied without combs and 24 cm long spacers, both of which can be ordered separately.

Model	SE660B	SE660-15-1.5
Glass plate size (W×H) (mm)	180×240 / 180×160 / 180×80	
Humidity (% RH)	<80%	
Max power requirement	1000 V, 500 mA, 50 W	
Max. temperature (°C)	45	
Unit W×H×D (mm)	320×370×140	

Model	Description	Pk	Cat. No.
SE660B	Tall standard dual cooled vertical electrophoresis unit, basic	1	**732-2174**
SE660-15-1.5	Tall standard dual cooled vertical electrophoresis unit, complete, with 1,5 mm combs and spacers	1	**732-2175**

HRP-linked secondary antibodies, Amersham™ ECL™

GE Healthcare

Horseradish peroxidase conjugated antibodies supplied in phosphate buffered saline (sodium phosphate 0,1 M, NaCl 0,1 M) pH 7,5, containing 1% (w/v) bovine serum albumin and an antimicrobial agent.

- Highly species specific
- Optimised for use with the range of ECL detection reagents
- Recommended dilutions to minimise background

Continued on next page

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Description	Pk	Cat. No.
ECL mouse IgG, HRP-linked whole Ab (from sheep)	1 ml	**NA931-1ML**
ECL rabbit IgG, HRP-linked whole Ab (from donkey)	1 ml	**NA934-1ML**

Western blotting detection reagent, Amersham™ ECL™ Prime

GE Healthcare

Amersham™ ECL™ Prime is a highly sensitive Western blotting detection reagent characterised by stable signal emission, allowing for the possibility of repeated exposures and making it easier to process several blots in the same experimental run. Amersham™ ECL™ Prime delivers a detection system that is sensitive, stable, precisely quantitative across a wide dynamic range of protein levels, and conservative in its consumption of expensive antibody reagents. The high performance of Amersham™ ECL™ Prime is due to the presence of an enhancer in the reagent, increasing enzyme turnover, and thereby significantly increasing both signal intensity and duration. The light signal is further intensified by the addition of a catalyst.

- High signal intensity and sensitivity allows the use of highly diluted primary and secondary antibodies with no reduction in sensitivity
- Stable signal allows multiple exposures and makes the reagent suitable for large experimental series, allowing convenient handling time between the end of the experiment and detection
- Compatible with Rainbow™ molecular weight markers and Amersham™ ECL™ DualVue™ Western blotting markers
- Optimised for use with Amersham™ Hybond™ P (PVDF) membranes and compatible with Amersham™ Hybond™-ECL™ (nitrocellulose) membranes

Delivery information: Includes Solution A (luminol solution, 50 ml) and Solution B (peroxide solution, 50 ml), sufficient for 1000 cm^2 membrane.

Description	Pk	Cat. No.
Amersham™ ECL™ Prime Western blotting detection reagent, for 1000 cm^2 membrane	1 KIT	**RPN2232**

Western blotting detection reagent, Amersham™ ECL Select™

GE Healthcare

Amersham™ ECL Select™ is a high sensitivity reagent for chemiluminescent Western blotting detection. High signal intensity makes Amersham™ ECL Select™ suitable for the most demanding Western blotting applications, allowing for detection of minute protein quantities. Its long lasting signals allow for multiple exposures and a convenient time window between experiment and analysis. Signals can be detected with CCD camera or X-ray film.

- Produces a very high signal intensity
- Linear dynamic range allowing for quantitation of medium to very low abundant proteins
- Works with a wide range of antibody dilutions, reducing the need for lengthy optimisation

Description	Pk	Cat. No.
Amersham™ ECL Select™ Western blotting detection reagent for 1000 cm^2 membrane	1 KIT	**RPN2235**

Western blotting detection reagents, Amersham™ ECL™

GE Healthcare

Amersham™ ECL™ Western blotting detection reagents are at least 10-fold more sensitive than colorimetric assays and produce excellent and reliable results. These reagents use enhanced luminol-based detection, which is suitable for all routine Western blotting. ECL™ Western blotting detection reagents in combination with Hybond™ ECL™ membranes form a complete solution for Western blot applications.

- High sensitivity, ~10 pg in model system
- Proven performance, frequently cited in publications
- Detectable on Hyperfilm™ ECL™ or with CCD imager

Description	Pk	Cat. No.
Kit containing 125 ml each of ECL™ detection reagents 1 and 2, for 2000 cm^2 membrane	1	**RPN2209**
Kit containing 250 ml each of ECL™ detection reagents 1 and 2, for 4000 cm^2 membrane	1	**RPN2106**

Film, Amersham Hyperfilm™ ECL™
GE Healthcare

The emulsion of this double coated film provides improved clarity, giving superior contrast and band visibility in the detection of chemiluminescent signals. Hyperfilm™ ECL™ can be processed in automatic processors or manually using most common film developers and fixers.

- Superior contrast and improved band visibility
- High quality images - the risk of visible artifacts (e.g. plastic wrap marks) is reduced due to improved anti-static coating
- Easier reading of images without compromising on sensitivity due to the clear, colourless base
- Suitable for use with all blue and green light chemiluminescent systems and validated for use with Amersham ECL™ and CDP-Star™

Packaging: Packs contain 50 or 100 sheets, supplied in silver plastic coated bags with black lining.

Dimensions (mm)	Pk	Cat. No.
127×178	50	**28-9068-35**
180×240	50	**28-9068-36**
203×254	50	**28-9068-38**

Film, Amersham Hyperfilm™ MP
GE Healthcare

Amersham Hyperfilm™ MP is a high performance, multipurpose film with an improved emulsion to provide enhanced performance and clearer background. Amersham Hyperfilm™ MP can be processed in automatic processors or manually using most common X-ray film developers and fixers.

- Superior contrast and improved band visibility
- Publication-quality images - the risk of visible artifacts (e.g. plastic wrap marks) is reduced due to the improved anti-static coating
- Easier reading of images without compromising on sensitivity due to the clear, colourless base
- Improved detection of lower concentration targets through longer exposure times without increasing the background
- Increased flexibility - suitable for detection of ^{3}H, ^{14}C, ^{3}P, ^{33}P, ^{35}S, ^{125}I in direct or indirect autoradiography

Packaging: Supplied in packs of 50 or 100 sheets. Also available in a sealed light-tight envelope for maximum protection and ease of use.

Dimensions (mm)	Pk	Cat. No.
180×240	100	**28-9068-44**
203×254	100	**28-9068-46**

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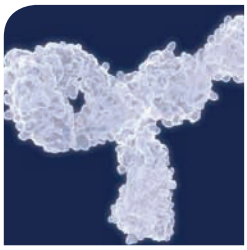
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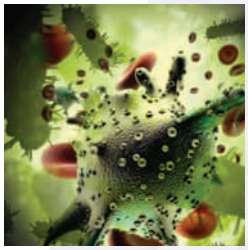
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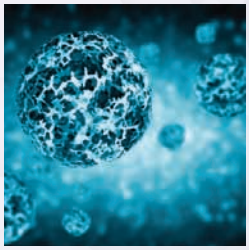
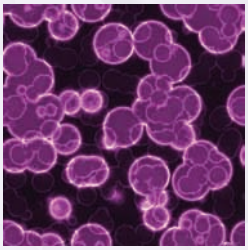

Monoclonal

Mouse Monoclonal


Polyclonal

Life Science | Genomics | Proteomics | Cell Biology

MICROBIOLOGY

Equipment 220

Consumables 228

Dehydrated culture media 235

Ready to use culture media 240

Bunsen burner, FIREBOY plus
Integra Biosciences

Mobile Bunsen burner with touch-free sensor ignition. If equipped with the adapter for gas cartridges and rechargeable battery (451-0016) it can be regarded as portable equipment suitable for safe use in the field or the laboratory. Alternatively, it can be connected to mains power and gas supply.

• Triple safety system: Flame monitoring, over-temperature and burning time limitation

Operates in three modes:

- Foot switch: Flame stays on as long as the foot switch is pressed

- Continuous: Manually switch On/Off

- Sensor: The sensor registers your hand movement and ignites the flame automatically

Adjustable burning time

DVGW-approved

Delivery information: Includes 2 nozzles for propane/butane and natural gas, power supply adapter and tubing adapter Ø 10 mm.

Description	For	Pk	Cat. No.
FIREBOY plus	Propane/butane and natural gas	1	**451-0135**

Burners
Usbeck

DIN version

• With air regulation and pilot flame inside

Ordering information: Supplied without safety base, this needs to be ordered separately.

Description	For	Type	Pk	Cat. No.
Bunsen type				
With needle valve	Natural gas	Bunsen	1	**451-1335**
With needle valve	Propane	Bunsen	1	**451-1325**
With stopcock	Natural gas	Bunsen	1	**451-1330**
With stopcock	Propane	Bunsen	1	**451-1320**

Description	Pk	Cat. No.
Safety base for burners		
Safety base for burners, provides extra stability and protects work surfaces	1	**451-1342**

Microincinerators, e-Loop

Electrical sterilisation systems which are suitable for sterilising loops, needles and instruments. Ideal for use in laboratories where using gases or naked flames is not permitted. The e-Loop has a wear resistant quartz glass tube which is protected by a perforated stainless steel outer design. Choice of two units with different tube diameters, the larger is ideal for sterilising small insturments such as forceps and scissors. The heating system provides uniform heat. The opening eliminates the potential aerosol of pathogenic microorganisms.

• Loops and needles sterilised in 5 - 7 seconds
• Integral spray protector prevents hazardous gases, flames and infectious splatter harming user
• Sterilisation tube has self-locking angular adjustment, there are 7 different positions
• Tray for 3 instruments
• Residual heat warning to prevent burns

Ordering information: Optional accessories include a holder specifically for BioTool inoculation loop holders, a stainless steel tray which is positioned on the left hand side of the steriliser and stainless steel inoculation loop holders for loops with wire Ø 0,6 to 1 mm.

Power supply	120 W	
Temperature range (°C)	900 - 950	
Weight (kg)	1,1	1,6
W×D×H (mm)	175×139×129	175×160×173
Ø×L (mm)	15×118 mm	21×161 mm

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Description	Pk	Cat. No.
e-Loop with 15 mm tube diameter	1	**710-1471**
e-Loop Plant with 21 mm tube diameter	1	**710-1472**

Description	Pk	Cat. No.
Accessories		
Holding device for BioTool loop holders	1	**710-1473**
Stainless steel tray for positioning on left hand side	1	**710-1575**
e-Loop ring-holder for instruments, stainless steel, ideal for scalpel/forceps/scissors	1	**710-1571**
Timer and holder for e-Loop, stainless steel, lateral mounting	1	**710-1572**
Spare ceramic annealing tube for e-Loop standard, all voltages	1	**710-1574**
Quartz glass heating element for e-Loop 230V	1	**710-1573**

Microcinerator, GlowZone Etna

Infrared sterilisation system which is suitable for sterilising loops, needles and micro instruments. Ideal for use in laboratories where using gases or naked flames is not permitted. The specifically focused infrared light generates an IR HotSpot. The unit with its quartz glass tube, is instantly ready for use and does not require any warm up time. Thermocontrol facilitates minimum heat dissipation and ensures efficient use of power, meaning low energy consumption when unit is not in use.

- Loops and needles sterilised in 5 - 10 seconds
- Touchless IR sensor starts the sterilisation process automatically
- Adjustable sterilisation and cool down timers for two users
- Audible signal and display when complete
- Unit and tube are simple to clean

Ordering information: Optional accessories include a lateral loop holder.

Temperature range (°C)	750 - 1000
Weight (kg)	1,8
W×D×H (mm)	110×180×170
Ø×L (mm)	16×112

Description	Pk	Cat. No.
GlowZone Etna	1	**710-1475**

Description	Pk	Cat. No.
Accessories		
Lateral loop holder for GlowZone, for 3 loops	1	**710-1570**
Quartz glass annealing tube	1	**710-1474**

DosiPump DP 500 and DosiPump DP 1000, peristaltic pumps

DP 500

DP 1000

The DosiPump is an intelligent, peristaltic pump which allows precise and reproducible dosing. Capable of single volume dosing and multiple dosing in both directions. The easy to use DosiPump provides versatility to undertake any application requiring fast, reproducible and precise dispensing of liquids.

The DosiPump comes with a pump head which eliminates pulsation effects that are prevalent with many conventional peristaltic pumps. The result is a precise and repeatable liquid dose for volumes up to 10 litres with a ± 0,1 ml tolerance.

Available in the basic 500 model, or the 1000 model, with touch screen and advanced features. Additional slave units are also available to increase productivity levels.

DosiPump DP 500

- Simple to use: fill sample, save, repeat
- Easy open 3-rollers pump head
- The user chooses the pump direction and speed and the tubing size
- Dosing: with every click on the buttom (or optional with foot pedal)
- DP500 Pump repeats the set volume (time/speed)
- No calibration needed
- The pump stops the flow only when the set time is elapsed, independently of increasing counter pressure of the filtration

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The DP500 can be connected and monitored by a balance (EK3000 balance of AND). It is also ideal for applications like filtration of cell culture media by membrane or hollow fibre-filters.

DosiPump DP 1000

Controlled pump for precise dosing and liquid handling, it offers the state of the art technology suitable for various applications for liquid dispensing and agar filling. The unique 10-roller dual pump head eliminates the pulsations otherwise conventional on peristaltic pumps. The dosing pump offers high flow rates.

- Easy to use software operates with a touch screen
- The Anti-Drop drip suppression function (precisely selectable retraction) prevents dripping between two dispensing operations and reduces the risk of contamination
- Dual head pump for smoother liquid / agar filling
- Easy volume and speed calibration
- Backlight graphics display for easy reading
- The sturdy housing is resistant to chemicals and easy to clean
- Extremely fast tubing change
- Low pulsation
- Save 8 calibrated tubes and 16 programs
- Available in Fast version: DP 1000 FAST offers high flow rates of up 2 400 ml/min

Description	Flow rate (ml/min)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
DP 500					
DosiPump DP 500, complete with pumphead, slave/ master function for the connection of up to 8 simultaniously working pumps, CH-plug	10–500	115×280×210	3,9	1	**710-1552**
DosiPump DP 500, complete with pumphead, slave/ master function for the connection of up to 8 simultaniously working pumps, EU-plug	10–500	115×280×210	3,9	1	**710-1553**
DosiPump DP 500, complete with pumphead, slave/ master function for the connection of up to 8 simultaniously working pumps, UK-plug	10–500	115×280×210	3,9	1	**710-1554**
DP 1000					
DosiPump DP1000 intelligent controlled peristaltic pump, with splash water protected housing (IP 64) made of stainless steel, touch screen and graphical software, programmable, standard and multidosing up to 12 different volumes, 1000 automatic repeats, free setting of each dosing step (speed, direction, volume, for example), CH-plug	40–1000	300×275×205	7,1	1	**710-1557**
DosiPump DP1000 intelligent controlled peristaltic pump, with splash water protected housing (IP 64) made of stainless steel, touch screen and graphical software, programmable, standard and multidosing up to 12 different volumes, 1000 automatic repeats, free setting of each dosing step (speed, direction, volume, for example), EU-plug	40–1000	300×275×205	7,1	1	**710-1558**
DosiPump DP1000 intelligent controlled peristaltic pump, with splash water protected housing (IP 64) made of stainless steel, touch screen and graphical software, programmable, standard and multidosing up to 12 different volumes, 1000 automatic repeats, free setting of each dosing step (speed, direction, volume, for example), UK-plug	40–1000	300×275×205	7,1	1	**710-1559**
DP 1000 FAST					
DosiPump DP1000 FAST intelligent controlled peristaltic pump, with splash water protected housing (IP 64) made of stainless steel, touch screen and graphical software, programmable, standard and multidosing up to 12 different volumes, 1000 automatic repeats, free setting of each dosing step (speed, direction, volume, for example), CH-plug	40–2400	300×275×205	7,1	1	**710-1560**
DosiPump DP1000 FAST intelligent controlled peristaltic pump, with splash water protected housing (IP 64) made of stainless steel, touch screen and graphical software, programmable, standard and multidosing up to 12 different volumes, 1000 automatic repeats, free setting of each dosing step (speed, direction, volume, for example), EU-plug	40–2400	300×275×205	7,1	1	**710-1561**
DosiPump DP1000 FAST intelligent controlled peristaltic pump, with splash water protected housing (IP 64) made of stainless steel, touch screen and graphical software, programmable, standard and multidosing up to 12 different volumes, 1000 automatic repeats, free setting of each dosing step (speed, direction, volume, for example), UK-plug	40–2400	300×275×205	7,1	1	**710-1562**

Description	Pk	Cat. No.
Accessories		
Single tubing set for DP500: internal Ø: 2 mm / outer Ø: 6 mm ; length: 1,8 m	1	**710-1545**
Single tubing set for DP500: internal Ø: 3 mm / outer Ø: 7 mm ; length: 1,8 m	1	**710-1546**
Single tubing set for DP500: internal Ø: 4 mm / outer Ø: 8 mm ; length: 1,8 m	1	**710-1547**
Single tubing set for DP500: internal Ø: 5 mm / outer Ø: 9 mm ; length: 1,8 m	1	**710-1548**

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Description	Pk	Cat. No.
Accessories		
Single tubing set for DP500: internal Ø: 6 mm / outer Ø: 10 mm ; length: 1,8 m	1	**710-1549**
Double tubing set for DP1000: internal Ø: 3 mm / outer Ø: 7 mm ; length: 1,6 m	1	**710-1537**
Double tubing set for DP1000: internal Ø: 4 mm / outer Ø: 8 mm ; length: 1,6 m	1	**710-1538**
Double tubing set for DP1000: internal Ø: 5 mm / outer Ø: 9 mm ; length: 1,6 m	1	**710-1539**
Double tubing set for DP1000: internal Ø: 6 mm / outer Ø: 10 mm ; length: 1,6 m	1	**710-1540**
Double tubing set for DP1000: internal Ø: 8 mm / outer Ø: 12 mm ; length: 1,6 m	1	**710-1541**
Glass gauge canula, borosilicate, 6×135 mm, short and thick tip	1	**710-1542**
Glass gauge canula, borosilicate, 6×150 mm, long and thin tip	1	**710-1543**
Glass gauge canula, borosilicate, 8×150 mm, long and thick tip	1	**710-1544**
Foot switch with connecting cable, for DP1000 and PS series	1	**710-1535**
Foot switch with connecting cable, for DP500, blue	1	**710-1536**
Wire connection, DP500i to DP500i	1	**710-1550**
Wire Connection, DP500i to filling units (PS20/PS900)	1	**710-1551**
Stage bar, stainless steel	1	**710-1555**
DosiPump recorder software	1	**710-1556**

Vacuum filtration unit, GV 050
Whatman (GE Healthcare)

Borosilicate glass with silicone cover

For analyses of residues, contamination tests and particulate analyses.

- With clamp
- Reproducible results and increased longevity

Capacity	250 ml
Filters	Ø 47/50 mm
Filtration area (cm²)	12,5
Max. temperature (°C)	200
Pre-filter	Ø 40 mm

Type	Description	Pk	Cat. No.
GV 050/0	Glass frit filter, aluminium clamp, connection for rubber stopper	1	**514-0114**
GV 050/1	Sieve filter, aluminium clamp, connection for rubber stopper	1	**514-0115**
GV 050/2	Glass frit filter, aluminium clamp, hose coupling connection, Erlenmeyer flask 1000 ml (NS45)	1	**514-0116**

Vacuum filtration devices, GV 025
Whatman (GE Healthcare)

Borosilicate glass with silicone cap

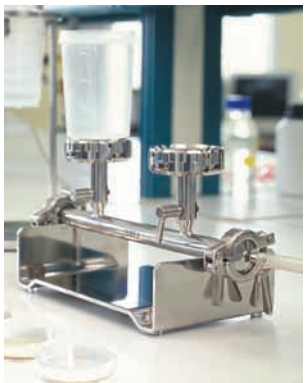
Applications: foodstuffs, beverages, pharmaceuticals and cosmetics, water and wastewater, residue analytics and particulate analysis, contamination tests, mirobiological, biochemical and hydrobiological detection, radiochemical tests, particle analysis in sensitive areas of electronics, aviation and space travel.

- Chemically resistant to most aqueous and organic solutions
- Resistant to acids and caustic solutions
- Autoclavable and can be sterilised in dry heat to 180 °C
- Can be used up to 200 °C

Capacity	60 ml
Filters	Ø 24/25 mm
Filtration area (cm²)	3,1
Max. temperature (°C)	200
Pre-filter	Ø 20 mm

Type	Description	Pk	Cat. No.
GV 025 series, 60 ml capacity			
GV 025/2	Vacuum filtration device, glass frit filter, hose coupling connection, erlenmeyer flask 250 ml (NS 29)	1	**514-0112**

Microbiological filtration system, MBS I
Whatman (GE Healthcare)



Designed for laboratories that handle high numbers of samples for microbiological quality control. It consists of a membrane dispenser, a funnel dispenser and a 2-place filter AS220 manifold.

The filtration manifold can be used with 47 mm or 50 mm filtration membranes.

Delivery information: Each starter pack contains: 1 × AS220 2-place vacuum filtration manifold for MBS I; 1 × Membrane-Butler, manual version; 20 × MBS I plastic funnel of PP, autoclavable, 350 ml; 400 × ME25/21 STL membranes white, black grid, mixed esters, 0.45 µm, sterile, for Membrane-Butler, 47 mm; 1 × MBS I funnel dispenser; 1 × PZ 001 tweezers, stainless steel; 20 × autoclaving bags for MBS I plastic funnels; 10 × vacuguard 50 mm disc for pump protection.

Description	Pk	Cat. No.
MBS I starter pack	1	**516-0413**

Description	Pk	Cat. No.
Accessories		
AS220 2-place vacuum filtration manifold for MBS I	1	**511-0145**
Autoclaving bags for MBS I plastic funnels	20	**511-0143**
Dispenser for 100 ml and 350 ml funnels for MBS I	1	**511-0144**
Plastic funnel, PP, 100 ml, autoclavable	20	**511-0139**
Plastic funnel, PP, 350 ml, autoclavable	20	**511-0142**
PZ 001 tweezers, stainless steel	1	**515-0177**

Vacuum filtration apparatus accessories
Whatman (GE Healthcare)

Vacuum and pressure pump

For use in the fields of microbiological quality control, analyses, medicine and production technology. The pump is used for pumping gases, taking samples (even liquids in a vacuum) and evacuating vessels.

- AC model
- Contamination-free pumping of air, gases and vapours
- Extremely quiet and smooth running
- Equipped with thermo switch and standard fuse
- Oil-free membrane pump
- Delivery m^3/h: 3,6 l/min, vacuum: <100 mbar absolute, pressure: 4 bar, weight: 11 kg

Witt's bottle

For filtrate collection in an inserted container. Borosilicate glass bottle, 100×160 mm, with replaceable round lid and side-mounted tubing nozzle for vacuum tubing 8 mm (inside diameter).

Description	Pk	Cat. No.
VP 003 electrical vacuum and pressure pump	1	**514-0683**
SV 006 vacuum tubing	1 m	**514-0684**
SF 100 suction flask, 1000 ml, with tubing nozzle	1	**514-0121**

Description	Pk	Cat. No.
Accessories		
PZ 001 tweezers, stainless steel	1	**515-0177**

E-VAC Aspiration System

These compact waste systems are ideal for use with critical or dangerous liquids or supernatants, pathogens, or any class III or IV biohazard laboratories.

Once target vacuum is reached, pump automatically switches off. Pump automatically switches on when vacuum pressure is applied, allowing it to maintain a constant vacuum pressure - perfect for gentle aspiration of small plates and dishes, as well as rapid emptying of larger containers.

- Quiet, oil-free membrane pump (range from –250 to 650 mm Hg)
- Easy to clean stainless steel housing is UV resistant for use with laminar flows
- The E-Vac bottles can be autoclaved for 20 minutes at 121 °C to prevent laboratory contamination
- Base units are illuminated by LED to allow visual inspection of waste levels in the bottle
- Dual hydrophobic filters prevent liquids from reaching the pump housing and contaminating the system

E-Vac is available with a 4 litre PP bottle and lid with either barbed or with quick-release connectors for safe and convenient tubing connections and level detection sensor that automatically shuts the pump off when the bottle is full.

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Description	Pk	Cat. No.
E-Vac with 4 l PP bottle, lid with barbed tube fitting, EU-plug	1	181-0404
E-Vac with 4 l PP bottle, lid with barbed tube fitting, UK-plug	1	181-0405
E-Vac with 4 l PP bottle, lid with barbed tube fitting, CH-plug	1	181-0403
E-Vac with 4 l PP bottle, lid with quick release connectors, tubes, level detection cable, EU-plug	1	181-0407
E-Vac with 4 l PP bottle, lid with quick release connectors, tubes, level detection cable, UK-plug	1	181-0408
E-Vac with 4 l PP bottle, lid with quick release connectors, tubes, level detection cable, CH-plug	1	181-0406

Description	Pk	Cat. No.
Accessories		
Hand-E-vac hand controller set complete consisting of: Hand-E-vac controller for pipettes, stand, adapter for single disposable tip, 8-channel disposable tip and 8-channel stainless steel needles	1	181-0412
Hand-E-vac hand operator w/single channel adapter	1	181-0413
Bottle 4 l PP, incl. lid with quick release coupling	1	181-0409
Bottle 4 l PP, incl. lid with barbed tube fittings	1	181-0410
PP bottle 4 l, with white cover	1	181-0397
Lid for PP 4 l bottle, with quick release couplings and level detection sensor	1	181-0398
Lid for PP 4 l bottle, with barbed tube fittings	1	181-0399
Hydrophobic membrane filter, non sterile, Ø 60 mm	5	181-0396
M-Vac stainless steel stand	1	181-0411

Anaerobic gas system, PetriSphere

The BioTool Anaerobic Gas System is suitable for the culturing of anaerobic, microaerophillic and capnophilic bacteria in common anaerobic jars. You can develop atmospheric conditions inside the jar in less than one minute and choose the level of oxygen depletion. Gas extraction can be controlled to reduce risk of cell lysis. The PetriSphere system consists of a microprocessor-based controller, a diaphragm vacuum pump and a gas reservoir connection which enables the air to be replaced with Nitrogen or Carbon Dioxide gas. By simply pressing the start button the process starts and runs fully automatic.

- No additional chemicals are needed to create an anaerobic atmosphere
- Special click-connectors provide convenient, safe and time saving operation
- Anaerobic atmosphere in less then 3 minutes

Description	Pk	Cat. No.
Anaerobic gas system, PetriSphere with 1 jar	1	710-1567
Anaerobic gas system, PetriSpere without jar	1	710-1568

Description	Pk	Cat. No.
Accessories		
Spare rack for 11 Petri dishes	1	710-1569

TubeFiller

TubeFiller was designed to reduce repetitive manual filling of any format laboratory racked tubes. Based on its dedicated function to fill "any tubes in any rack" the design includes a very stable filling arm with 2 side rails for best position recovery, precise XY position axes, an easy manual height adjustment, and an integrated pump to cover the standard microbiology filling range. No need for an additional pump for standard applications. Under the tubes there is only stainless steel. Easy to clean, no rims or gaps and therefore microbiology friendly and optimal for food, cosmetic or pharma laboratory environments. Suitable for any rack from small 96-well format, typical microbiology racks holding high glass tubes, up to customised beaker/bottle holders or any other regular racked laboratory containers can become filled. The software allows simplest set-up of XY oriented tube racks. The racks are stored in a library. Any new rack set-up of the filling platform can be programmed via the rack drag & drop menu. The integrated laser tracking allows definition of exact rack position by checking the first and the last tube in the rack. The variable rack frame allows the exact repositioning of rack's. For repetitive routine applications customer design frames guarantee exact rack positions and process optimised high throughput filling applications. Filling Speed DosiPump DP1000: 2400 ml/min

- Free positioning of any rack
- Intuitive software
- Integrated pump
- True walk away tube/bottle filling
- 2100 cm^2 free usable surface
- High tubes/bottles up to 25 cm

Delivery information: With integrated peristaltic pump, windows-compatible software on CD-ROM (WIN 7 or higher), tubing 3×7 mm, filling needle 4 mm.

Model	TubeFiller
Weight (kg)	45
W×D×H (mm)	660×800×650

Description	Pk	Cat. No.
TubeFiller TF3000 complete, EU-Plug	1	710-1564
TubeFiller TF3000 complete, UK-Plug	1	710-1565
TubeFiller TF3000 complete, CH-Plug	1	710-1563

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Description	Pk	Cat. No.
Accessories		
Variable positioning grid, aluminum, 3+3 XY bars	1	**710-1566**

Colony counter, Star-Count STC 1000

The Star-Count STC 1000 colony counter is designed for rapid and accurate counting of bacterial colonies using the latest technologies. Adapters for 50, 60, 80 and 90 mm dishes are available (90 mm adapter included, others are optional). LED lighting and contrast can be adjusted. There is a choice between single mode (count on one Petri dish) and multiple mode (count up to 20 dishes and the average continuously calculated and displayed). The instrument has a pressure-sensitive dish holder so it can be used with any kind of marker pen or probe. An optional external counting marker can also be connected. With the communication package, the count values can be stored with date and time. Additionally there is the possibility to add sample IDs or barcodes (reader is an option) to the count value.

- Multifunction graphic display shows the number of colonies (up to 999), average, time and date
- Values can be saved on a memory card (optional)
- Audible and visible confirmation of each count
- LED backlight and sidelight illumination
- RS232 for connection to a printer/USB for a connection to a computer

Model	STC 1000
Dish size (mm)	50, 60, 80, 90
Max scale diameter (mm)	120
Standard magnifier	100 mm (2x)
W×D×H (mm)	260×330×110

Description	Pk	Cat. No.
Colony counter STC 1000, supplied with magnifying glass, standard marker, Wolffhügel grid, adapter for 90 mm Petri dishes, cable with universal plug	1	**710-0710**

Description	Pk	Cat. No.
Accessories		
Adapter for Petri dishes Ø 50 mm	1	**710-0722**
Adapter for Petri dishes Ø 80 mm	1	**710-0724**
Adapter for Petri dishes Ø 90 mm	1	**710-0721**
Adapter set for Petri dishes Ø 50/60/80/90 mm	1	**710-0725**
External marker with waterproof pen and cable	1	**710-0717**
Fuse	1	**710-0720**
Magnifier glass 2x	1	**710-0713**
Plate, glass	1	**710-0719**
Printer	1	**710-0711**
Printer cable	1	**710-0712**
Waterproof pen	1	**710-0716**
Wolffhügel grid	1	**710-0718**

Colony counter, aCOLyte 3

aCOLyte 3 can be used for total viable counts in many environmental, food monitoring, pharmaceutical, clinical, and molecular biology applications. The aCOLyte 3 is available in one configuration and features new simple-to-use software that greatly improves efficiency, reliability and productivity over previous models. The software uses a powerful new algorithm for colony counting on pour and spiral plates, which until now were only found on the advanced ProtoCOL 3 models. Plates are automatically counted with results directly transferred to Excel or OpenOffice. The new style aCOLyte 3, recognisable by its black and silver colour, accepts plates up to 90 mm diameter. Lighting is provided by LEDs mounted above and below the sample area for both transmitted and epi-illumination. A detachable screen can be used to eliminate strong ambient light if required. aCOLyte 3 can be used with any conforming laptop or desktop PC and connects simply by using a USB port.

- Automated and quick - typically plates can be counted accurately in under 1 second
- Image display with zoom function
- Improved counting algorithm
- Optional screens to blockout ambient light
- Direct export to Excel and data is saved to a SQL database
- Audit trail

Model	aCOLyte 3
Dish size (mm)	90 and Petrifilm
Illumination	Long-life upper and lower LED arrays with darkfield and brightfield
Power supply	110/240 V
Weight (kg)	3,2
W×D×H (mm)	250×270×250

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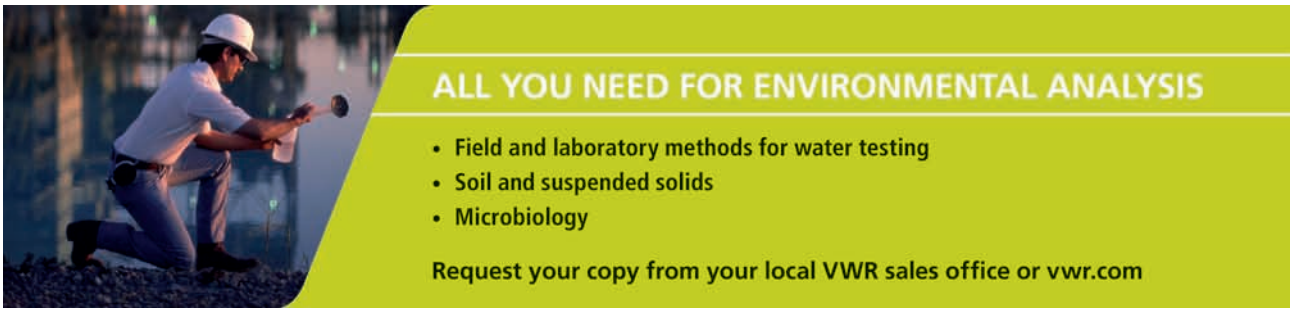
Description	Pk	Cat. No.
aCOLyte 3 colony counter	1	710-0992

Description	Pk	Cat. No.
Accessories		
Graphic mouse pad	1	710-0502
Petrifilm holder	1	710-0509
Plate holder	1	710-0510
Validation kit	1	710-1576
Bar code reader	1	710-0506



Inoculating loops and needles

PS, sterile

Calibrated disposable inoculating loops made from flexible or rigid plastic to cater to different applications and preferences of microbiologists.

- Colour coded for easy product identification
- Conveniently packaged in anti-roll tubes with push on resealable cap
- Fast, easy and secure access to the loops, without the need for a separate holder
- Loops have an ultra-smooth surface for easy streaking and length of 210 mm

Delivery information: Calibration certificate supplied with every pack.

Description	Capacity (µl)	Colour	Packed	Pk	Cat. No.
Loops, rigid	1	Dark Green	50	1.000	**612-2494**
Loops, rigid	10	Dark Blue	50	1.000	**612-2496**
Loops, flexible	1	Light Green	50	1.000	**612-2497**
Loops, flexible	10	Light Blue	50	1.000	**612-2498**
Needles, Ø 1,45 mm	-	Purple	50	1.000	**612-2495**

Inoculating loops and needles

PS, sterile

The resealable pouch allows loops to be easily accessed any number of times, then reclosed to maintain product integrity. The loops and needles are positioned upside down in the pouch in order to reduce any risk of contamination. Optional pack holder facilitates easy access using one hand, leaving the other hand free to hold a culture plate or tube.

- Colour coded for easy product identification
- Hexagonal loop shaft improves grip, assisting orientation and making diluting and streaking easier
- Gamma sterilised

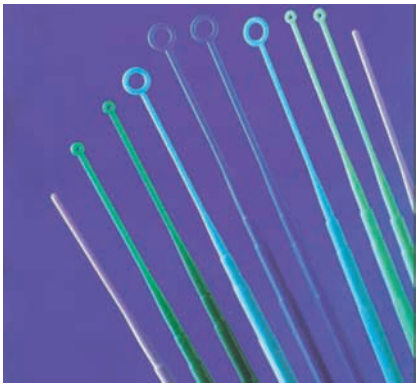
Packaging: 40 loops/pouch (25 pouches per pack)

Delivery information: Supplied with a calibration certificate in each box.

Description	Capacity (µl)	Colour	Packed	Pk	Cat. No.
Loops, rigid	1	Dark Green	40	1.000	**612-9360**
Loops, rigid	10	Dark Blue	40	1.000	**612-9359**
Loops, flexible	1	Light Green	40	1.000	**612-9361**
Loops, flexible	10	Light Blue	40	1.000	**612-9362**

Description	Colour	Pk	Cat. No.
Accessories			
Holder for loops in resealable packs	Transparent	1	**612-9365**

Inoculating loops



PS, sterile

These loops ensure consistent wetting and complete liquid transfer. Available rigid or flexible, the loops have smooth edges to avoid gouging the surface of the media.

- Gamma sterilised
- Colour coded
- Hexagonal shaft for easy handling

Delivery information: Supplied with a calibration certificate in each box.

Description	Capacity (µl)	Colour	Packed	Pk	Cat. No.
Loops, rigid	1	Dark Green	bags of 10	500	**612-9351**
Loops, rigid	1	Dark Green	bags of 20	1.000	**612-9352**
Loops, rigid	10	Dark Blue	bags of 10	500	**612-9353**
Loops, rigid	10	Dark Blue	bags of 20	1.000	**612-9354**
Loops, flexible	1	Light Green	bags of 10	500	**612-9355**
Loops, flexible	1	Light Green	bags of 20	1.000	**612-9356**
Loops, flexible	10	Light Blue	bags of 10	500	**612-9357**
Loops, flexible	10	Light Blue	bags of 20	1.000	**612-9358**

Spreaders, L-shaped

PS, sterile

The foot of the spreader has a completely smooth, rounded surface, free of rough edges and imperfections. It enables even spreading of liquid samples across the surface of agar plates without gouging or cutting the medium.

- Surface treated to enhance adhesion of droplets
- Non toxic
- Gamma irradiated

Dimensions: 135×35 mm

Description	Colour	Packed	Pk	Cat. No.
Spreaders, L-shaped	Blue	individually packed	500	**612-1560**
Spreaders, L-shaped	Blue	5/bag	1.000	**612-1561**

Spreaders, T-shaped

PS, sterile

Designed for spreading and dispersing liquids across the surface of agar culture plates. Used for performing bacterial (for example, CFU) plate counts on water, milk and other liquid samples.

- Smooth rounded surfaces to prevent cutting or gouging of agar
- T-shaped to ensure even pressure is applied while spreading

Description	Colour	Packed	Pk	Cat. No.
T-shaped spreader	Blue	1/peel pouch	500	**612-2651**
T-shaped spreader	Blue	5/peel pouch	1.000	**612-2652**
T-shaped spreader	Blue	10/peel pouch	1.000	**612-2653**

Erlenmeyer flasks with baffles and membrane screw caps
DURAN Group

DURAN®, borosilicate glass

Four baffles create turbulent flow, increasing the surface of the liquid and allowing greater gas exchange when compared to flat bottomed Erlenmeyer flasks.

- Automated manufacturing produces flasks with reproducible geometry and leads to comparable results
- Complete with membrane screw cap (GL 45)
- Cap and flask autoclavable and reuseable

With printed retrace code (batch identification); batch certificate available at www.duran-group.com

Capacity (ml)	Height (mm)	Ø ext. (mm)	Thread	Pk	Cat. No.
250	145	81	GL 45	1	**214-0234**
500	180	105	GL 45	1	**214-0235**

PALL Life Sciences

Membrane filter dispenser, Sentino™

Filter dispensers are ideal for high throughput microbiology testing laboratories looking for more ergonomic, faster ways to handle individual membranes. The Sentino™ filter dispenser is designed to aseptically dispense one disc of membrane at the touch of a button. The Sentino™ filter dispenser can be used for:

- Drinking and wastewater analysis
- Environmental and recreational water monitoring
- Personal care product manufacturing
- Beverage monitoring
- Pharmaceutical and industrial water system monitoring
- Pharmaceutical raw materials, intermediates and final product

Delivery information: Supplied with power transformer, EU-plug, UK-plug and user guide CD.

Description	Pk	Cat. No.
Membrane filter dispenser, Sentino™, EU/UK-plug	1	**514-0632**

Type	Pore size (µm)	Pk	Cat. No.
Dispenser pack refills for membrane filter dispenser, Sentino™			
Supor®	0,2	1.000	**514-0629**
GN-6 Metricel®	0,45	1.000	**514-0628**
Metricel® Black	0,45	1.000	**514-0630**
Metricel® Black	0,8	1.000	**514-0631**

PALL Life Sciences

Membrane filter funnels, magnetic

Polyphenylsulfone, autoclavable

For membrane filtration techniques for water testing

- Leakproof magnetic seal allows one handed operation
- Compatible with anti-foaming agents and many other solvents

Effective filtration area: 150 and 300 ml: 9,6 cm^2; 500 ml: 13,1 cm^2

Overall Ø×H: 150 ml: 76×178 mm; 300 ml: 76×229 mm; 500 ml: 89×196 mm

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
500	47	1	**516-7590**
300*	47	1	**516-7593**
300	47	1	**516-7594**
150	47	1	**516-7597**

* with lid

Membrane filters, ME Select
Whatman (GE Healthcare)

Mixed cellulose ester, hydrophilic

- Specifically for aqueous solutions
- For use up to 125 °C
- Sterile, individually packed
- All membrane filters have a high contrast grid (3,1 mm)
- Type STL in dispenser boxes with 100 numbered membrane filters for easy removal and safe handling with the Membrane-Butler

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
ME25/Select 21 ST white, black grid	0,45	47	100	**514-0598**
ME25/Select 21 STL white, black grid	0,45	47	400	**514-0619**
ME25/Select 21 ST white, black grid	0,45	50	100	**514-0599**
ME25/Select 21 STL white, black grid	0,45	50	400	**514-0618**

Membrane filters, MicroPlus and ME
Whatman (GE Healthcare)

Membranes for microbiological control

Developed for microbiological quality control of foods and beverages, pharmaceuticals and cosmetics.

- Sterile, individually packed
- All membrane filters have a high contrast grid (3,1 mm)
- Type STL in dispenser boxes with 100 numbered membrane filters for easy removal and safe handling with the Membrane-Butler

MicroPlus membranes

Cellulose nitrate

- High mechanical strength
- High flow rate

ME membranes

Mixed cellulose ester, hydrophilic

- Specifically for aqueous solutions
- For use up to 125 °C

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
MicroPlus membranes				
MicroPlus-21 STL white, black grid	0,45	47	400	**514-1142**
MicroPlus-21 STL white, black grid	0,45	50	400	**514-1143**
MicroPlus-31 STL black, white grid	0,45	47	400	**514-1144**
MicroPlus-31 STL black, white grid	0,45	50	400	**514-1145**
MicroPlus-41 STL green, black grid	0,45	47	400	**514-1146**
MicroPlus-41 STL green, black grid	0,45	50	400	**514-1147**
ME membranes				
ME24 white, black grid	0,2	47	400	**511-0138**
ME24 white, black grid	0,2	50	400	**514-1156**
ME25/21 STL white, black grid	0,45	47	400	**514-1148**
ME25/21 STL white, black grid	0,45	50	400	**514-2164**
ME25/31 STL black, white grid	0,45	47	400	**514-1149**
ME25/31 STL black, white grid	0,45	50	400	**514-1150**
ME25/41 STL green, black grid	0,45	47	400	**514-1151**
ME25/41 STL green, black grid	0,45	50	400	**514-1152**

PALL Life Sciences

Microcheck® II beverage monitors

Membrane: GN Metricel® (mixed cellulose esters), Metricel® Black (modified polyethersulfone), sterile

Easy to use disposable filter funnel with versatility to meet all microbial analysis needs.

Applications include finished product testing of beverages for microbial contamination prior to release, monitoring process conditions for bioburden levels, evaluation of raw materials such as syrups, flavourings, water, and other liquid additives for microbial content.

- Squeeze to separate funnel from base
- Can convert to a Petri dish for culturing
- Ready to use directly on a filter manifold without adapters
- Gamma irradiated

External graduation marks according to standard methods for the analysis of water and wastewater.

Capacity (ml)	Membrane	Pore size (µm)	Pk	Cat. No.
100	GN-6 Metricel®, white, with grid	0,45	50	**516-0201**
100	GN-4 Metricel®, white, with grid	0,8	50	**516-0202**
100	Metricel® Black, with grid	0,45	50	**516-0203**
100	Metricel® Black, with grid	0,8	50	**516-0204**

PALL Life Sciences

Petri dishes, sterile

PS dish, cellulose pad

Ideal for microbiological analysis when performing the membrane filter technique. Petri dishes with absorbent pads can be used with broth media, or users can pour agar into dishes without absorbent pads. Accepts 47 mm membrane filter.

- Gamma irradiated so no Ethylene Oxide residuals to impede microbial growth
- Easy to use, opens easily with one hand, yet closes to a tight seal
- Uses less space on the laboratory bench or in the incubator with easy stacking base

Version	Ø (mm)	Height (mm)	Pk	Cat. No.
Without absorbent pads, bulk pack	50	9	500	**516-8021**
Without absorbent pads	50	9	100	**516-8029**
With absorbent pads	50	9	100	**516-8032**

Membrane filters
Whatman (GE Healthcare)

Material type	Applications
PTFE, hydrophobic with PP support, autoclavable	Ideal as venting filter for all applications, for aggressive organic solvents and cryo-solutions, for separating free water from organic solutions. Outstanding suitability as gas/liquid barrier, filtration of air and (heat) gases. Chemically inert. Sterilisable with all methods except gamma sterilisation.

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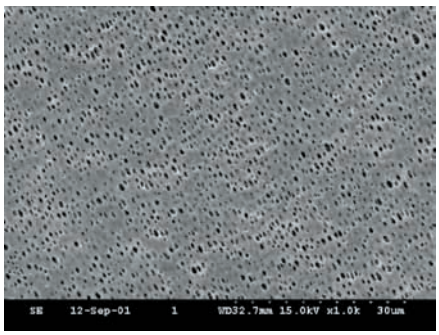
Pore size	Thickness	Water flow rate	Airflow rate	Max. temperature (°C)	Weight
PTFE, hydrophobic with PP support, autoclavable					
0,2 µm	240 µm	24 s/100 ml/12,5 cm² (0,9 bar)	70 s/100 ml (3 mbar)	100	-
0,45 µm	220 µm	12 s/100 ml/12,5 cm² (0,9 bar)	60 s/100 ml (3 mbar)		

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
PTFE, hydrophobic with PP support, autoclavable				
TE 35	0,2	47	50	**514-3143**
TE 35	0,2	50	50	**514-3144**
TE 36	0,45	47	50	**514-3133**
TE 36	0,45	50	50	**514-3134**

Membrane filters
Whatman (GE Healthcare)



Polyamide

Universal filters for clarification and sterile filtration. These filters are mechanically very strong and exhibit excellent wet and dry strength. They are hydrophilic making them suitable for aqueous and organic solutions.

Pore size	0,2 µm	0,45 µm
Thickness	110 µm	
Water flow rate	0,2 ml/min/cm² (0,9 bar)	0,45 ml/min/cm² (0,9 bar)
Airflow rate	10 ml/min/cm² (3 mbar)	20 ml/min/cm² (3 mbar)
Max. temperature (°C)	135	

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
NL 16	0,2	47	100	**514-2562**
NL 16	0,2	50	100	**514-2563**
NL 17	0,45	47	100	**514-2552**
NL 17	0,45	50	100	**514-2553**

Membrane filters
Whatman (GE Healthcare)

Regenerated cellulose, hydrophilic, without wetting agents

For sterile and particle filtration of aqueous and organic solutions.

- Spontaneously wetting, very good wet strength
- Sterilisable by all methods

Suitable for use as sterile filter to ASTM-D 3862-80

Type	RC 55	RC 58
Pore size	0,45 µm	0,2 µm
Thickness	75 µm	
Water flow rate	26 s/100 ml/12,5 cm² (0,9 bar)	14 s/100 ml/12,5 cm² (0,9 bar)

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
RC 55	0,45	47	100	**514-2452**
RC 55	0,45	50	100	**514-0487**
RC 58	0,2	47	100	**514-2462**
RC 58	0,2	50	100	**514-2463**

Petri dishes

Soda-lime glass

- Bottom and lid are flat inside and out

Ø (mm)	Height (mm)	Pk	Cat. No.
60	15	1	**391-2710**
70	15	1	**391-0476**
80	15	1	**391-2720**
100	15	1	**391-2730**
100	20	1	**391-2740**
120	20	1	**391-2750**
150	25	1	**391-2760**
180	30	1	**391-2770**
200	30	1	**391-0477**

Media supplements for dehydrated culture media

Supplements are available in vials, each one sufficient to supplement 500 ml of medium unless otherwise stated.

• Freeze-dried

Description	Pk	Cat. No.
Bacillus cereus supplement	10 Vial	84732.0001
BCYE α-growth supplement	4 Vial	84726.0001
BCYE α-growth supplement w/o cysteine	4 Vial	84727.0001
Bolton broth selective supplement	10 Vial	84744.0001
CCD selective supplement	10 Vial	84742.0001
CFC selective supplement	10 Vial	84746.0001
Chloramphenicol	10 Vial	84729.0001
CN selective supplement	10 Vial	84745.0001
d-Cycloserine supplement	10 Vial	84734.0001
Egg yolk emulsion	50 ml	84733.0001
Fraser half selective supplement	10 Vial	84721.0001
Fraser selective supplement	10 Vial	84720.0001
Glycerol for Pseudomonas agar base	100 ml	84730.0001
GVPC supplement	4 Vial	84725.0001
Iodine iodide solution	50 ml	84723.0001
Karmali selective supplement	10 Vial	84743.0001
Novobiocin MKTT supplement	10 Vial	84722.0001
Oxford supplement	10 Vial	84728.0001
Palcam supplement	10 Vial	84724.0001
PP selective supplement	10 Vial	84747.0001
TTC 1% solution	30 ml	84731.0001

Media supplements for dehydrated culture media

The isolation of microorganisms often requires the use of selective media. The use of freeze-dried supplements ensures an optimal and standardised media preparation and optimised performance. For 500 ml medium.

- Freeze-dried
- No aerosols of toxic agents released upon opening
- Standard volumes make preparation easier
- User friendly screw caps
- Can be stored at room temperature

Description	Pk	Cat. No.
Ampicillin selective supplement	10	928010NL
Campylobacter Bolton	10	928250NL
Campylobacter growth supplement	10	928030NL
Campylobacter Preston selective supplement	10	928050OL
Chloramphenicol 25 selective supplement	10	928260NL
Coliform CV selective supplement	10	928390NL
Cycloheximide selective supplement	10	928370NL
D-Cycloserine selective supplement	10	928330NL
Egg yolk sterile emulsion	100 ml	351430ZF
Egg yolk tellurite sterile emulsion	100 ml	351430XF
Egg yolk tellurite sterile emulsion	50 ml	361430XF
Ferric ammonium citrate supplement (250 mg)	10	928300NL
Ferric ammonium citrate supplement (312 mg)	10	928340NL
GPS growth promotion supplement	5	968290NL
Legionella BCYE growth supplement	5	968130NL
Legionella GVPC selective supplement	10	928140NL
Listeria enrichment supplement	10	335032ZF
Listeria FDA FIL/IDF selective supplement	10	928380NL
Listeria Fraser/UVM II sel supplement	10	928110OL
Listeria half Fraser selective supplement	10	928280NL
Listeria Oxford selective supplement	10	928170OL
Listeria Palcam selective supplement	10	928200NL
Listeria selective supplement	10	928460NL
Listeria UVM I selective supplement	10	928150NL

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Description	Pk	Cat. No.
M-CP selective supplement	10	**928320NL**
MUG fluorescent supplement	10	**928360NL**
Nalidixate selective supplement	10	**928090NL**
Novobiocin selective supplement	10	**928180NL**
Oxytetracycline selective supplement	10	**928190NL**
Polymixin selective supplement	10	**928020NL**
Polysorbate 80 (Tween 80)	100 ml	**303570ZK**
Rosolic acid solution 0,1% supplement	100 ml	**355070ZF**
RPF supplement	10	**602730ZL**
Sodium bisulphite selective supplement	10	**928350NL**
VCNT selective supplement	10	**928230NL**
Yersinia selective supplement	10	**928240OL**

Dehydrated culture media and diluents

Dehydrated media are used for a wide variety of applications. To minimise the risks associated with powdered culture media, the majority of Merck's dehydrated culture media is produced in granular form. Merck uses ingredients of non animal origin to minimise the potential risk of transmissible spongiform encephalitis (TSE). When there is no alternative, only ingredients which are recommended by EDQM, and belonging to TSE category B or C are used. This ensures that the product is of the highest quality and in compliance with the standards for food control, microbiological testing on finished products and starting materials, and quality control in the pharmaceuticals and cosmetics industries. Custom-made media can be prepared to meet individual customer specifications. The formulation is kept confidential via a Non Disclosure Agreement. Please enquire for further details.

- Substantially less dust is generated during handling, reducing the risks of sensitisation and the intake of toxic substances
- Simple to use as the granules have good wetting properties, which speeds up the suspension and dissolution process and avoids the formation of hard to dissolve clumps
- Homogeneous distribution of ingredients in the pack is guaranteed even after prolonged storage, so there are no adverse segregation effects
- Economical, because there is no need to purchase and handle additional expensive supplements, whenever possible the base medium contains the selective components
- Safe, because the animal derived media are produced from BSE low risk (Cat III and IV) ingredients

Description	Standard	Pk	Cat. No.
Baird Parker agar (base)	ISO (1977), FIL/IDF (1990), DIN Norm 10178	500 g	**1.05406.0500**
Baird Parker agar (base)	ISO (1977), FIL/IDF (1990), DIN Norm 10178	5 kg	**1.05406.5000**
Bismuth sulphite agar acc. to Wilson-Blair	AOAC, APHA, USP	500 g	**1.05418.0500**
BPLS agar mod. brillant green-phenol red-lactose-sucrose-agar, mod.	ISO	500 g	**1.10747.0500**
Brain heart broth	ISO, AOAC, APHA	500 g	**1.10493.0500**
Caseinpeptone-lecithin-polysorbate-broth (base)	-	500 g	**1.11723.0500**
Cereus selective agar acc. to Mossel (base) MYP agar	AOAC, ISO, APHA	500 g	**1.05267.0500**
Cetrimide agar	Ph. Eur 5.6	500 g	**1.05284.0500**
Chromocult® coliform agar	-	500 g	**1.10426.0500**
Chromocult TBX (Tryptone bile agar)	DIN EN ISO 9308-1	500 g	**1.16122.0500**
Dnase test agar	APHA	500 g	**1.10449.0500**
Egg yolk tellurite emulsion 20%, sterile (10x50 ml)	-	10	**1.03785.0001**
Egg yolk tellurite emulsion 20%, sterile (10x50 ml)	-	50 ml	**1.03785.0050**
EMB agar (eosin methylene blue lactose sucrose agar)	-	500 g	**1.01347.0500**
Fluid thioglycollate medium G	-	500 g	**1.16761.0500**
Fluid thioglycollate medium G	-	5 kg	**1.16761.5000**
Fluid thioglycollate medium with resazurin	AOAC, BAM, COMPF, EP, USP	500 g	**1.08191.0500**
Fluid thioglycollate medium with resazurin	AOAC, BAM, COMPF, EP, USP	5 kg	**1.08191.5000**
Fluorocult® LMX broth acc. to Manafi and Ossmer	-	500 g	**1.10620.0500**
Fluorocult® VRB agar	-	500 g	**1.04030.0500**
GSP agar Pseudomonas-Aeromonas selective agar acc. to Kielwein (base)	-	500 g	**1.10230.0500**
King agar B (base) (Dansk Standard)	DIN, USP, BAM	500 g	**1.10991.0500**
Lactose broth	APHA, USP XXVI (2003), EP II	500 g	**1.07661.0500**
Letheen agar base mod.	USP	500 g	**1.10404.0500**
Letheen broth base mod.	USP	500 g	**1.10405.0500**
Levine EMB agar	APHA	500 g	**1.01342.0500**
MacConkey agar	Ph. Eur 5.6	500 g	**1.05465.0500**
MacConkey agar	Ph. Eur 5.6	5 kg	**1.05465.5000**
Malt extract agar	-	500 g	**1.05398.0500**
Malt extract agar	-	5 kg	**1.05398.5000**
Malt extract broth	-	500 g	**1.05397.0500**
Mannitol salt phenol red agar	USP	500 g	**1.05404.0500**
Membrane filter rinse fluid	USP	500 g	**1.05286.0500**
NaCl-peptone broth	Ph. Eur 5.6	500 g	**1.10582.0500**
NaCl-peptone broth	Ph. Eur 5.6	5 kg	**1.10582.5000**
Nutrient agar	APHA	500 g	**1.05450.0500**

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Description	Standard	Pk	Cat. No.
Nutrient broth	-	500 g	**1.05443.0500**
OF basal medium (base) acc. to Hugh and Leifson	-	500 g	**1.10282.0500**
Plate count agar (APHA)	ISO, AOAC, APHA	500 g	**1.05463.0500**
Plate count agar (APHA)	ISO, AOAC, APHA	5 kg	**1.05463.5000**
Potato dextrose agar	AOAC, USP, APHA	500 g	**1.10130.0500**
Pseudomonas agar F base (USP)	USP	500 g	**1.10989.0500**
Pseudomonas agar P (Base)	-	500 g	**1.10988.0500**
R2A agar	-	5 kg	**1.00416.5000**
R2-A agar	APHA, EP	500 g	**1.00416.0500**
Ringer tablets (100x500 ml)	-	100	**1.15525.0001**
Saboraud 4% dextrose agar	Ph. Eur 5.6	500 g	**1.05438.0500**
Sabouraud 2% dextrose agar	-	500 g	**1.07315.0500**
Sabouraud 2% dextrose broth	-	500 g	**1.08339.0500**
Sabouraud 4% dextrose agar	-	5 kg	**1.05438.5000**
Sabouraud 4% maltose agar	-	500 g	**1.05439.0500**
Selenite cystine enrichment broth	ISO, AOAC, APHA, DIN	500 g	**1.07709.0500**
Thioglycollate broth	USP	500 g	**1.08190.0500**
Thioglycollate broth	USP	5 kg	**1.08190.5000**
Triple sugar iron agar	-	500 g	**1.03915.0500**
Tryptic soy agar (CASO)	AOAC, BAM, COMPF, EP	500 g	**1.05458.0500**
Tryptic soy agar (CASO)	ISO, SMD, SMNW, USP	5 kg	**1.05458.5000**
Tryptic soy agar (CASO)	AOAC, BAM, COMPF, EP	1	**1.05458.9999**
Tryptic soy broth, non animal (CASO)	-	5 kg	**1.00525.5000**
Tryptic soy broth (CASO)	ISO	5 kg	**1.05459.5000**
Tryptic soy broth (CASO)	ISO	10 kg	**1.05459.9010**
TSA with polysorbate 80		5 kg	**1.07324.5000**
TSA with polysorbate 80 and lecithin	-	500 g	**1.07324.0500**
TSB	ISO	500 g	**1.05459.0500**
TSB	ISO	25 kg	**1.05459.9025**
TSB	ISO	25 kg	**1.05459.9026**
TSB	ISO	1	**1.05459.9999**
TSB, irradiated	-	5 kg	**1.00800.5000**
TSB, non animal origin, irradiated	-	5 kg	**1.00550.5000**
TSB, vegetable, irridiated		500 g	**1.00550.0500**
VRB agar (violet red bile agar)	ISO, IDF, APHA	500 g	**1.01406.0500**
VRB agar (violet red bile agar)	ISO, IDF, APHA	5 kg	**1.01406.5000**
VRBD agar	Ph. Eur 5.6	500 g	**1.10275.0500**
VRBD agar acc. Mossel	-	5 kg	**1.10275.5000**
Wort agar	-	500 g	**1.05448.0500**
Wort agar	-	5 kg	**1.05448.5000**
XLD agar	ISO 6579	500 g	**1.05287.0500**

Media supplements for dehydrated culture media

The isolation of microorganisms often requires the use of selective media. The use of freeze-dried supplements ensures an optimal and standardised medium preparation and thus optimised performance of the selective medium.

- No aerosols released upon opening, therefore minimising inhalation of toxic agents
- User friendly screw caps which guarantee easy and safe opening
- Standard volumes make preparation easier

Description	Pk	Cat. No.
E. coli/Coliform selective supplement	10 Vial	**1.00898.0010**
Bacillus cereus selective supplement	10 Vial	**1.09875.0010**
Bolton broth selective supplement	10 Vial	**1.00079.0010**
CAYE broth supplement	10 Vial	**1.00051.0010**
CCDA selective supplement	10 Vial	**1.00071.0010**
Clostridium perfringens selective supplement	10 Vial	**1.00888.0010**
CT supplement	10 Vial	**1.09202.0010**
Fraser Listeria ammonium iron(III) supplement	10 Vial	**1.00092.0010**
Fraser Listeria supplement	10 Vial	**1.00093.0010**
Listeria selective enrichment supplement	10 Vial	**1.11781.0010**
MSRV selective supplement	10 Vial	**1.09874.0010**
MUP selective supplement	10 Vial	**1.00045.0010**
OGY selective supplement	10 Vial	**1.09877.0010**
Oxford Listeria selective supplement	10 Vial	**1.07006.0010**
Palcam Listeria selective supplement	10 Vial	**1.12122.0010**
Pseudomonas CFC selective supplement	10 Vial	**1.07627.0010**
Pseudomonas CN selective supplement	10 Vial	**1.07624.0010**
UVM II supplement	1 Vial	**1.04039.0001**
XLT4 agar supplement, 100 ml	1	**1.08981.0100**
Yersinia selective supplement (C.I.N.)	16 Vial	**1.16466.0001**

Dehydrated culture media

A range of culture media in compliance with ISO standards and the International Harmonised Pharmacopoeia. All our media are, as you would expect, produced using high quality raw materials and are subject to strict quality controls, in a production environment following Good Manufacturing Practice guidelines. Raw materials are selected in compliance with the required standards. Dehydrated culture media should be stored at 10-30 °C unless otherwise stated, in their closed containers in a dry environment. Standard pack size is 500 g.

- Compliant with international standards, such as ISO and Pharmacopoeia
- Media growth promotion testing performed in compliance with Pharmacopoeias and ISO 111331-2 standard
- Available in standard formulations and animal-free
- Custom products available

Description	Standard	Pk	Cat. No.
Brain heart infusion broth	-	500 g	**84626.0500**
Brilliant green agar	-	500 g	**84631.0500**
Brilliant green agar modified (Brilliant green phenol red lactose agar)	-	500 g	**84634.0500**
Buffered peptone water	ISO 6579, 11290-2, 6887-1	500 g	**84600.0500**
Buffered sodium chloride peptone broth	Ph. Eur., USP, JP	500 g	**84605.0500**
Casein peptone lecithin polysorbate broth		500 g	**84901.0500**
EC broth	ISO 7251, 9308-2	500 g	**84627.0500**
Enterobacteriaceae enrichment broth Mossel	-	500 g	**84678.0500**
Fluid thioglycollate medium	-	500 g	**84681.0500**
Legionella CYE agar base	ISO 11731	500 g	**84629.0500**
Letheen broth modified	ISO 21149, 22717 and 22718 Standards	500 g	**84673.0500**
MacConkey agar	Ph. Eur., USP, JP	500 g	**84614.0500**
MacConkey broth	-	500 g	**84680.0500**
Malt extract agar no. 2	-	500 g	**84665.0500**
Mannitol salt phenol-red agar	Ph. Eur., USP, JP	500 g	**84622.0500**
Maximum recovery diluent	ISO 6887	500 g	**84617.0500**
Nutrient agar n°1	-	500 g	**84654.0500**
Plate count agar-PCA (Standard methods agar)	ISO 4833	500 g	**84608.0500**
Pseudomonas agar base	ISO 13720, ISO 16266, ISO 11059	500 g	**84650.0500**

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Description	Standard	Pk	Cat. No.
Pseudomonas selective (Cetrimide) agar	Ph. Eur., USP, JP	500 g	**84638.0500**
Rose bengal chloramphenicol agar	-	500 g	**84669.0500**
Sabouraud-2% dextrose broth	-	500 g	**84685.0500**
Sabouraud dextrose agar	ISO 13681	500 g	**84663.0500**
SDA with chloramphenicol	-	500 g	**84902.0500**
Triple sugar iron agar	ISO 6579	500 g	**84698.0500**
Tryptic soy agar (Casein soya bean digest agar)	Ph. Eur., USP, JP	500 g	**84602.0500**
Tryptic soy agar + lecithin+Tween 80	-	500 g	**84642.0500**
Tryptic soy broth		500 g	**84675.0500**
Tryptic soy broth irridiated	-	500 g	**84677.0500**
Tryptic soy broth non animal origin	-	500 g	**84679.0500**
Tryptic soy broth non animal origin irradiated	-	500 g	**84674.0500**
Tryptic soy broth non animal origin irradiated	-	5 kg	**84674.5000**
Tryptone bile x-glucuronide agar (TBX)	ISO 16649	500 g	**84637.0500**
TSB, non animal, triple wrapped	-	500 g	**84855.0500**
Violet red bile glucose (VRBG) agar	ISO 21528	500 g	**84603.0500**
Violet red bile lactose (VRB) agar	ISO 4832	500 g	**84612.0500**
Yeast extract	-	500 g	**84676.0500**

VWR COLLECTION

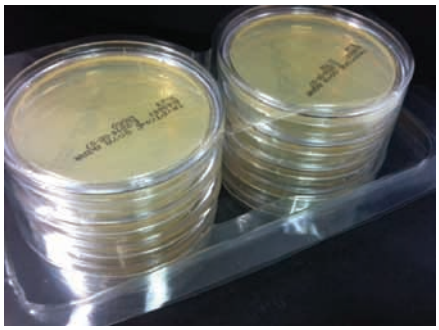
SELECTED FOR YOU

Culture media, MediaBag system W

The W bags are folded bags without connectors.

Description	Pk	Cat. No.
MediaBag filter unit and connector	1	**8001.00200**
MediaBag W for TSB, sterile, 6 kg	1	**7812.06000**
MediaBag W for TSB, sterile, 11 kg	1	**7812.11100**

Petri dishes, 90 mm, for primary detection of microorganisms



For various microbiological applications. The special packaging of the 55 mm plates has several advantages: good protection of the plates during transport and storage, can be reused to transport the plates after use and is recyclable (PET). The plates can be stored from 2 up to 25 °C.

- Packed under cleanroom conditions to avoid contamination
- Manufactured with formulations that follow specifications of the various Pharmacopoeias and ISO regulations
- Special packaging for 55 mm plates

Packaging: The cellophane bag packaging have a special boxes of 30 plates.

Description	Standard	Pk	Cat. No.
Rose bengal agar	-	20	**100070ZA**
BPLS agar acc. to Kristensen (brilliant green, phenol red, lactose, sucrose)	acc. potable water, Spanish legislation	20	**100121ZA**
Mannitol salt agar	Harm Ph	20	**100560ZA**
MacConkey agar	Harm Ph	20	**100641ZA**
Sabouraud 4% dextrose chloramphenicol agar	Harm Ph	20	**100884CF**
Sabouraud 2% chloramphenicol actidione agar	Harm Ph	20	**100884DA**
Sabouraud 4% glucose agar	EP, USP	20	**100884ZA**
TBX agar	-	20	**101004ZA**
TSA	Harm Ph	20	**101114ZA**
VRB agar	EP	20	**101183ZA**
VRBD agar	Harm Ph	20	**101203ZA**
XLD agar	Harm EP, USP, JP	20	**101241ZF**
Letheen modified agar	-	20	**102754OA**
XLD agar	ISO 6579	20	**103542ZF**
Letheen modified agar double wrapped	FDA	20	**112750ZI**
Cetrimide agar (CN)	ISO 12780:2002	30	**170793NA**
Malt extract + chloramphenicol agar	-	20	**100542CA**

Petri dishes, 90 mm, for primary detection of microorganisms

The product range includes a full line of pre-poured 90 mm Petri dishes for a wide range of different applications, such as enumeration, isolation, detection and cultivation of bacteria as well as yeast and moulds. In order to choose the best packaging for each kind of use, both small packs of 20 plates and bulk packs of 100 plates are available for each kind of plate.

- Ready to use media in 90 mm Petri dishes
- Item number and the expiry date are imprinted on every plate for safe and easy product identification and shelf life monitoring

Packaging: 2 or 10 sets of 10 shrink-wrapped plates

Description	Standard	Pk	Cat. No.
Mannitol salt agar	-	20	**HEIP1460230020**
Sabouraud dextrose agar (SDA)	EP	20	**1460280020.**
Sabouraud dextrose agar (SDA)	EP	120	**1460280120.**
Cetrimide agar	EP	20	**710-1578**
MacConkey agar	EP	20	**1460660020.**
Cetrimide agar		20	**1460780020.**
Sabouraud glucose (2%) agar	-	20	**1461070020.**
Sabouraud glucose (2%) agar	-	100	**1461070100.**
Malt extract agar	-	100	**1461510100.**

VWR BDH PROLABO CHEMICALS

Bottles and tubes with culture media, enrichments and diluents

Ready to use culture media for microbiological test requirements in the food industry, water, environmental control and in the pharmaceutical industry. The range is manufactured from high quality raw materials. All the culture media are manufactured using selected dehydrated bases, and comply with various standards. All media are produced using the latest technology and are subject to strict quality controls carried out by qualified microbiologists.

- Storage at room temperature for selected media
- Supplied in glass bottles with different screw caps
- Certificate of Analysis, which guarantees product conformity

Description	Standard	Pk	Cat. No.
TSB Tryptic soy broth	EP, USP, ISO 9308-1	10	**AX021135**
TSB Tryptic soy broth w. pharmacop. neutralisers	-	10	**AX021230**
Letheen Tween® $FeCl_3$ broth	-	12	**AX021324**
TSB Tryptic soy broth 2x	EP, USP, ISO 9308-1	6	**AX021330**
TSB Tryptic soy broth	EP, USP, ISO 9308-1	10	**AX029178**
DEV nutrient agar	-	10	**300692ZA**
TSB with TLHC	-	10	**301121TA**
TSB Tryptic soy broth	Harm Ph, ISO9308-1	10	**301121ZA**
TSB, tryptic soya broth	EP, ISO 9301-1, FDA, USP	10	**301121ZQ**
TSB +0.07% lecithin+0.5% tween 100 ml	-	10	**301122SA**
Beerens dilution	-	10	**302240ZA**
TSB Tryptic soy broth	EP, ISO 9301-1, FDA, USP	10	**311121ZA**
TSB with 0,1% Tween	-	10	**311122OA**
Beerens dilution	-	10	**312240ZT**
Letheen broth modified	FDA	10	**312760ZA**
Polyvalent univ. neutraliser	-	10	**332760TA**
TSB, tryptic soy broth	EP, ISO 9301-1, FDA, USP	10	**371121ZA**
TSA Tryptic soy agar	Harm Ph	10	**401114ZA**
Letheen agar	-	10	**401570ZA**
TSB Tryptic soy broth	EP, ISO 9301-1, FDA, USP	10	**451121ZA**
TSB +0.07% lecithin+0.5% Tween	-	10	**561122SA**
TSB Tryptic soy broth	-	10	**561121ZA**
Eugon LT 100	-	20	**613420SA**

VWR COLLECTION

Media for use in media fill test

Validation of aseptic processing should include a simulation test using a nutrient medium, known as the media fill test or media simulation test. The selection of the nutrient medium should be made based on the quantity of the product produced and the selectivity, clarity, concentration and suitability for sterilisation of the nutrient medium. The process simulation test should imitate as closely as possible the routine aseptic manufacturing process and include all the critical subsequent manufacturing steps. Normally process simulation tests should be repeated twice a year per shift and process. The number of containers used for media fills should be sufficient to enable a valid evaluation. For small batches, the number of containers for media fills should at least equal the size of the product batch.

- Ready to use media saves time
- Decreases the risks associated with media preparation
- Guarantees filtration through a 0.2 µm membrane
- Sterility and fertility according to international requirements and guidelines for validation of media fill
- The medium is irradiated, BSE-free and mycoplasma-free certified, complying with the recommendations of USP XXVI (2003) and EP (1999)

Delivery information: Batch size is 500 litres, each batch is tracked by the following documentation: Certificates of origin, filterability studies, comparative fertility studies, sterility and conformity certificates. Each bag or bottle is double wrapped.

Description	Pk	Cat. No.
Media for Media Fill Test, bag with connectors	10 l	**AX0110087**
Media for Media Fill Test, bottle	1 l	**AX0110086**

Culture media, ready to use, Compact Dry

Ready to use dehydrated film media in rigid plastic with lid for cultivating and counting microorganisms in food, for monitoring product quality and potential contamination. The plates can be used to test raw material as well as finished products. The microorganisms are identified by the colours, developed by chromogenic substrates and redox indicators.

- Ready to use - place 1 ml sample onto the plate and incubate
- Easy to read - colonies are pigmented with different colours
- Easy to store at room temperature - long shelf life
- Space saving and stackable

Dry TC, EC, CF,YM, XSA, SL, LS are AOAC approved
Dry TC, EC, CF, ETB, XSA, SL, LS are MicroVal approved
Dry TC, EC, CF, ETB, XSA, SL, LS are NordVal approved
European validation and certification alternative methods acc. to EN ISO 16140

Description	Pk	Cat. No.
Compact Dry AQ medium (for heterotrophic bacteria in water)	40	**710-2045**
Compact Dry CF (Coliform)	40	**710-2007**
Compact Dry CF (Coliform)	240	**710-2008**
Compact Dry CF (Coliform)	920	**710-2039**
Compact Dry EC (*E. coli*, Coliform)	40	**710-2004**
Compact Dry EC (*E. coli*, Coliform)	240	**710-2005**
Compact Dry EC (*E. coli*, Coliform)	920	**710-2038**
Compact Dry ETB (Enterobacteriaceae)	40	**710-2029**
Compact Dry ETB (Enterobacteriaceae)	240	**710-2030**
Compact Dry ETB (Enterobacteriaceae)	920	**710-2043**
Compact Dry ETC (Enterococci)	40	**710-2032**
Compact Dry ETC (Enterococci)	240	**710-2033**
Compact Dry ETC (Enterococci)	920	**710-2044**
Compact Dry LS (Listeria)	40	**710-2016**
Compact Dry SL (Salmonella)	240	**710-2024**
Compact Dry SL (Salmonella)	40	**710-2023**
Compact Dry TC (total counts), AOAC, NORDVAL and MICROVAL approved	40	**710-2001**
Compact Dry TC (total counts), AOAC, NORDVAL and MICROVAL approved	240	**710-2002**
Compact Dry TC (total counts), AOAC, NORDVAL and MICROVAL approved	920	**710-2037**
Compact Dry TTC for tea products	240	**710-2036**
Compact Dry VP (V.parahaemolyticus)	40	**710-2019**
Compact Dry VP (V.parahaemolyticus)	240	**710-2020**
Compact Dry VP (V.parahaemolyticus)	920	**710-2042**
Compact Dry XBC	40	**710-0753**
Compact Dry XBC	240	**710-0754**
Compact Dry XBC	920	**710-0755**
Compact Dry XSA (S.aureus)	40	**710-0707**
Compact Dry XSA (S.aureus)	240	**710-0708**
Compact Dry XSA (S.aureus)	920	**710-0709**
Compact Dry YM (yeast & mould), AOAC, NORDVAL and MICROVAL approved	40	**710-2010**
Compact Dry YM (yeast & mould), AOAC, NORDVAL and MICROVAL approved	240	**710-2011**
Compact Dry YM (yeast & mould), AOAC, NORDVAL and MICROVAL approved	920	**710-2040**

Swabs for Compact Dry

Sterile swab in a tube. After sampling, the swab is returned to the tube and the sample is extracted into 1 ml of supplied buffer solution which can then be dispensed on to a Compact dry or a Petri dish.

- Compact Dry swabs for sampling in difficult areas and checking dry areas
- Can be stored at room temperature for up to two years

Description	Pk	Cat. No.
Swabs for Compact Dry	25	**710-1479**
Swabs for Listeria Compact Dry	25	**710-2028**
Swabs for surface control with Compact Dry	240	**710-2025**
Swabs for surface control with Compact Dry	40	**710-2026**

Dilution rack for Compact Dry

Sterile cups for easy 10-fold dilution of samples. Filled with 9 ml phosphate buffered sodium chloride solution.

- Cups can be separated into singles
- Easy to open
- Storage at room temperature
- Long shelf life

Description	Pk	Cat. No.
Rack MT-11, 9 ml dilution cup	128	**710-0605**
Rack MT-11 MRD (Maximum Recovery Dilution), 9 ml dilution cup	128	**710-2046**

Description	Pk	Cat. No.
Accessories		
Opener for dilution cups	1	**710-2014**

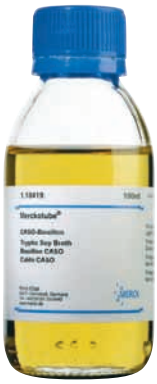
Bags with media for detection and enrichment of microorganisms

Microbiology media in bags are ideally suited for high sample volumes.

- Space saving packaging
- No risk associated with broken glass bottles
- Media can be easily and conveniently dispensed using a gravimetric diluter or peristaltic pump

Description	Standard	Pk	Cat. No.
MLBT	-	9 l	**802760ZA**
Polyvalent univ. neutraliser	-	2	**852760TA**
Tryptone soya broth (TSB)	-	3	**801121ZB**
Polyvalent univ. neutraliser	-	5	**872760TA**
Tryptone soya broth (TSB)	-	2	**851121ZB**
Tryptone soya broth (TSB)	EP, USP, ISO 9308	2	**AX031110**

Media in bottles and tubes, Merckotube®



1.18419.0010

1.18428.0025

The Merckotube® product range includes a full line of ready to use culture media in bottles and tubes for a broad range of applications, e.g. selective/non selective enrichment, isolation, cultivation and enumeration of bacteria as well as yeasts and moulds. The Merckotube® product line is produced with great care to ensure that the products are of high quality. Storage temperature for most of the products is in the range 15 - 25 °C.

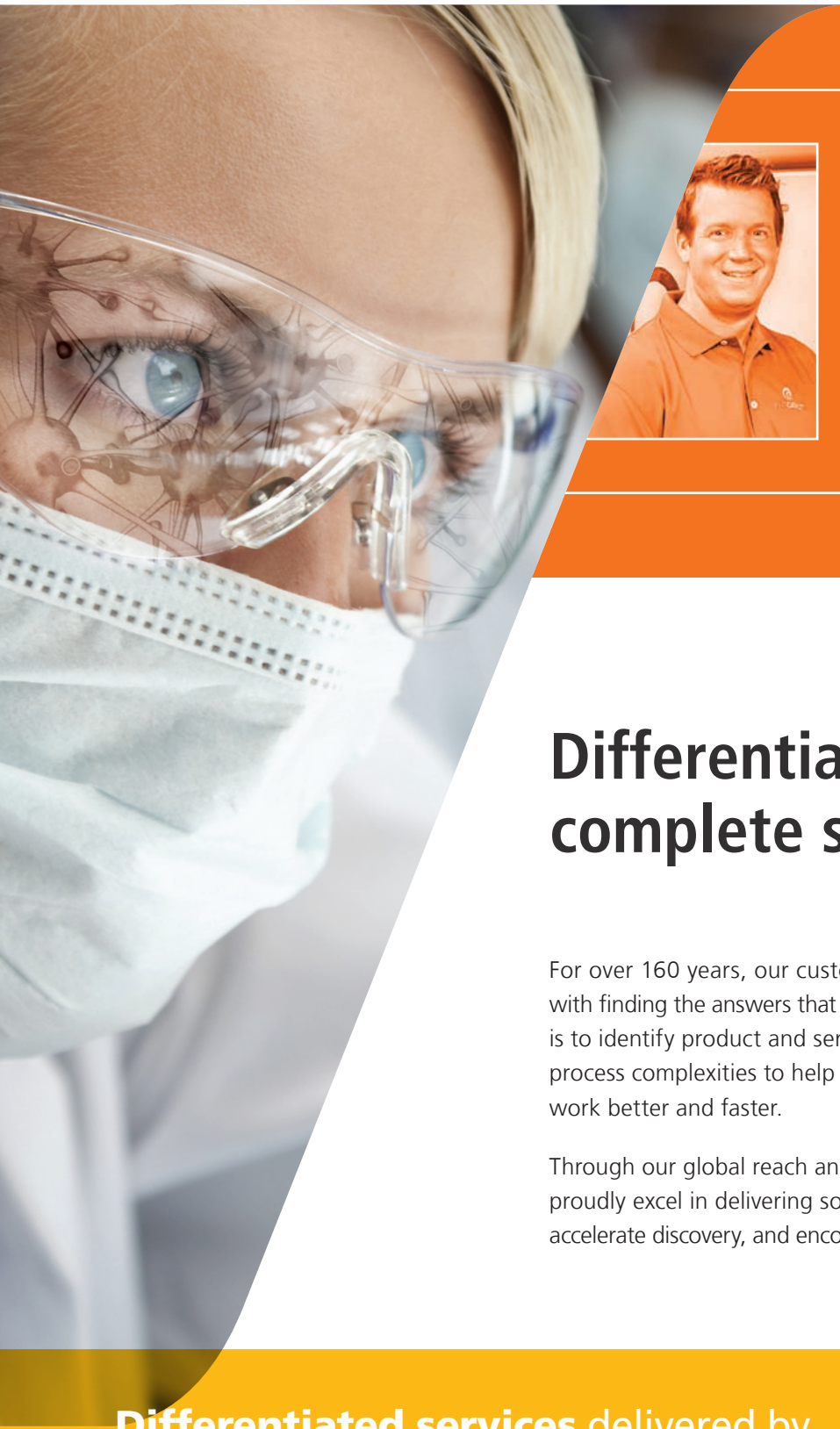
- Tamper-proof screw caps
- High quality of media
- Variety of bottles and tubes

Certificates e.g. CoA in line with ISO 11133 part 1 and 2, BSE certificate, etc. will be provided.

Packaging: 10 glass bottles per pack, 25 glass tubes per pack.

Description	Volume (ml)	Pk	Cat. No.
Bottles			
Lactose broth	100	10	**1.18421.0010**
MacCONKEY broth	100	10	**1.18422.0010**
MOSSEL broth	100	10	**1.18423.0010**
MOSSEL broth	10	25	**1.18428.0025**
Orange serum agar	200	10	**1.18432.0010**
Peptone water (buffered)	225	10	**1.18436.0010**
Plate count agar	200	10	**1.18433.0010**
RVS broth	10	25	**1.18449.0025**
Tryptic soy agar	200	10	**1.18420.0010**
Tryptic soy broth	100	10	**1.18419.0010**
Tryptic soy broth	9	25	**1.18427.0025**
Tubes			
VRB agar	200	10	**1.18439.0010**
VRBD agar	200	10	**1.18440.0010**
YGC agar	200	10	**1.18443.0010**

VWR®
We Enable Science



Differentiated services complete solutions

For over 160 years, our customers have been challenged with finding the answers that help improve lives. Our mission is to identify product and service solutions, while eliminating process complexities to help labs and production facilities to work better and faster.

Through our global reach and knowledgeable teams, we proudly excel in delivering solutions that improve productivity, accelerate discovery, and encourage innovation.

Differentiated services delivered by
a team of people focussed on your success.
Together, We Enable Science

LABORATORY ESSENTIALS

Heating / cooling - Thermostates 246

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VWR COLLECTION

Heating circulators

Stainless steel circulating baths with choice of Advanced Programmable or Advanced Digital temperature controller. Both are easy to navigate with large, intuitive displays and multiple communication options including USB-A & B, RS232/485, Ethernet and external temperature probe. The reservoir drain can be accessed by removing the front panel. All models feature user adjustable high temperature safety cut-off points as well as over-temperature protection. The DuraTop™ surface is cool to the touch even when operating at high temperatures.

Advanced Digital models feature an intuitive 9,5 cm display with touch pad control, single point calibration, menus and prompts in 4 languages: French, German, Spanish and English..

- Working temperatures from ambient +10 to 200 °C with stability of ±0,01 °C
- Variable speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™ rotating controllers, LidDock™ lid stowing system and DuraTop™ chemically resistant deck
- Event scheduling (time and date), real time clock and temperature trends for up to 10 days with Advanced Programmable models
- Selectable home screens and on-screen help
- Automatic and/or user-adjustable performance optimisation

Comply with DIN 12876-1, Safety Class III
Maximum pump capacities:
16,7 l/min, 250 mbar; suction: 12,2 l/min

Delivery information: Supplied with a reservoir cover, bypass tubing, male inlet and outlet adapters for 47, 63 and 95 mm tubing, ¼" to M16 adapters are also included. For probes and accessories, please visit www.vwr.com.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Models with Advanced Digital temperature controller								
AD07H200	RT* +10…200	±0,01	2,2	7	142×157×127	221×499×409	1	**462-0215**

(* RT = Ambient)

Baths and circulators, stainless steel
Julabo

Bath circulators mounted on a stainless steel bridge with stainless steel bath tank for internal and external temperature applications. The units are mainly intended for operation in the bath tank. Temperature application to external closed systems is possible via the pump nozzles. Typical applications: Circulation to measuring cells, cuvette holders, temperature testing of food/luxury articles and material testing.

EH models

Same features as ED above, and in addition:

- Temperature range of 20 to 150 °C
- High temperature cut-off/low liquid level protection (float)
- Timer function

Classification (according to DIN 12876-1: 3): EH

Maximum pump capacities:
EH: 15 l/min, 350 mbar

Ordering information: All units with an RS232 interface can use the EasyTemp software for control via a PC; the software can be downloaded free of charge from the Julabo website.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
EH-33	RT*...150	±0,03	2	33	670×300×150	910×330×380	1	**461-0434**

* RT = Ambient

Water baths and circulators, plastic, Optima™ range
Grant

T100-P12

TX150-P12

The Grant Optima™ range consists of either general purpose or advanced performance thermostats combined with double walled plastic baths. Baths are easy to clean and available in three sizes - 5, 12 and 18 litres. They offer a cost effective solution for applications requiring accurate temperature control. Can be used up to 99 °C.

General purpose thermostats: T100 and TC120

Digital microprocessor controlled T100 and TC120 thermostats feature an easy to use rotary dial and two function keys for quick temperature setting and menu navigation. Units feature a bright, easy to view 4-digit display, three programmable temperature presets, low liquid protection, fixed over-temperature cut-out, visual alarm, countdown timer and user calibration facility for optimal accuracy.

- T100 temperature range: Ambient +5 to 100 °C. Settable range 0 to 100 °C (operation below ambient requires cooling accessory)
- TC120 temperature range: Ambient +5 to 120 °C. Settable range –20 to 120 °C (operation below ambient requires cooling accessory)
- Stirred circulation within the tank ensures excellent temperature stability and uniformity
- Stability ±0,05 °C at 70 °C
- TC120 has an audible and visual alarm and adjustable over-temperature cut-out

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Advanced thermostats: TX150 and TXF200

TX150 and TXF200 thermostats feature a full colour QVGA TFT screen displaying actual and set temperature and clear status icons. The QVGA TFT screen in combination with the easy to use dial and function keys allows rapid navigation through the intuitive menu system. Both units have an RS232 and USB interface and can be programmed via remote PC or laptop using Grant's versatile Labwise™ software (optional). Additional features include countdown timer, adjustable over-temperature cut-out, visual, audible and programmable high and low temperature alarms. The TX150 has the capacity to store 1 program with 30 segments. The TXF200 can also be programmed via the user interface and can store up to 10 programs containing 100 segments. The programming interface includes set target temperature with a choice of time to target temperature or temperature ramp speed and an additional programmable relay for on/off control of ancillary equipment or refrigeration units.

- TX150 temperature range: Ambient +5 to 150 °C. Settable range –50 to 150 °C (operation below ambient requires cooling accessory)
- TXF200 temperature range: Ambient +5 to 200 °C. Settable range –50 to 200 °C (operation below ambient requires cooling accessory)
- Stability ±0,01 °C at 70 °C
- External PT1000 temperature probe socket
- Offset adjustment for isothermal performance
- 5-point user calibration of internal and external probes (two fixed points and three user defined)

Maximum pump capacities:
TC120 16 l/min, 210 mbar
TX150 18 l/min, 310 mbar
TXF200 22 l/min, 530 mbar variable speed

Delivery information: Stirred baths are supplied with thermostat, bath and mounting bridge plate but without lid. Lids are recommended when working above 60 °C and should be ordered separately. For details of the full range of models and accessories please see the VWR website.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
General purpose models								
TC120-P5	RT* +15...99	±0,05	1,3	5	120×150×140	390×200×380	1	**461-0654**
TC120-P5	RT* +15...99	±0,05	1,3	5	120×150×140	390×200×380	1	**461-0653**
Advanced models								
TXF200-P5	RT* +15...99	±0,01	1,9	5	120×150×140	390×200×380	1	**461-0669**

Description	For	Pk	Cat. No.
Accessories			
Flat stainless steel lid, without hinges	P5 bath	1	**462-8130**

* RT = Ambient

Baths/circulation thermostats with stainless steel baths, ECO
Lauda

E 4 S with Silver controller

E 20 S with Silver controller

Baths/circulation thermostats with plain text menu navigation which are ideal for user friendly operation.

- Variopump with six adjustable stages
- Flow rate switch for control of flow rate between internal and external circulation
- Simultaneous display of set and actual temperature
- Over-temperature setting via menu
- USB interface as standard

Silver controller

The heating thermostats with Silver control head are suitable for a temperature range of up to 150 °C. All heating thermostats are equipped with a cooling coil as standard.

- Heating power 1,3 kW, working temperature range up to 150 °C
- LCD display, resolution of 0,01 °C
- Controller with one program and 20 segments

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Maximum pump capacity:

All models: 22 l/min, 0,55 bar

Delivery information: Supplied with stainless steel bath and cooling coil. The E 4 S model includes a bath cover and pump connections with 13 mm diameter plastic nipples. A wide range of optional modules and accessories such as bath covers are available, please enquire for details.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Silver controllers								
E 4 S	20...150	0,01	1,3	3 - 3,5	135×105×150	168×272×376	1	**461-0507**
E 20 S	20...150	0,01	1,3	13 - 19	300×365×150	331×537×376	1	**461-0513**

Cooling thermostats, ECO
Lauda

RE 415 S

Cooling thermostats with menu navigation in plain text for user friendly operation. Various interface modules are available as accessories. All models are available as air- or water-cooled variants.

- Variopump with six adjustable stages
- Flow rate switch for control of flow rate between internal and external circulation
- Simultaneous display of set and actual temperature
- Over-temperature setting via menu
- USB interface as standard

Silver controller

The cooling thermostats with Silver control head are suitable for use in the temperature range from –50 up to +150 °C. They are equipped with a bath cover and a pump circulation set for external applications as standard.

- Heating power 1,3 kW, working temperature range up to 150 °C
- LCD display, resolution of indication 0,01 °C
- Programmer with one program and 20 segments

Gold controller

The cooling thermostats with Gold control head are suitable for use in the temperature range from –50 up to +200 °C.

- Heating power 2,6 kW, working temperature range up to 200 °C
- Colour TFT display, resolution of indication 0,01 °C
- Programmer with five programs and 150 segments
- Graphical display of temperature profiles
- Ramp function and clock timer

Maximum pump capacity:

All models: 22 l/min, 0,55 bar

Delivery information: Units supplied with bath cover and closing plugs. S models have pump connections with 13 mm plastic nipples, G models have a stainless steel pump circulation set with a M16×1 thread. Water cooled models are available, please contact your local VWR sales office for details.

Type	Temp. range (°C)	Temp. stability (°C)	Cooling capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
Silver controllers								
RE 415 S	–15...+150	±0,02	0,18; 0,12; (0,03)*	3,3 - 4	135×105×160	180×350×546	1	**461-0525**
Gold controllers								
RE 620 G	–20...+200	±0,02	0,2; 0,15; 0,03*	4,6 - 5,7	150×130×160	200×430×581	1	**461-0530**

Note: Cooling capacity at +20; 0; and –20 °C (–15 °C for models RE 415 S and RE 415 G).

Ovens with natural convection, DRY-Line®

Drying ovens with natural convection used for thermal processes, heated storage and for convection drying applications with temperatures up to 220 °C. Exhaust duct at the back of the unit with manually adjustable slide.

- Microprocessor controller
- Integrated timer can be set for continuous mode or timer operation: 0 to 999 min or 0 to 99,9 h
- Over-temperature protection with visual alarm (Class 3,1 safety device)
- Temperature setting in increments of 1 °C

Delivery information: Supplied with two chrome plated shelves.

Model	DL 53	DL 115
Temperature range (°C)	Ambient +5...220	
Capacity (l)	53	115
Convection type	Natural convection	
Shelves supplied (max.)	2 (4)	
Max. load per shelf (kg)	10	15
Internal W×D×H (mm)	401×330×401	600×400×480
External W×D×H (mm)	620×600×680	820×710×760
Nominal power consumption (W)	800	1000
Weight (kg)	41	62
Temperature fluctuation (time) (°C)	at 150 °C: ±0,4	at 150 °C: ±0,3
Temperature variation (spatial) (°C)	at 150 °C: ±3,3	at 150 °C: ±3,0

Description	Pk	Cat. No.
DRY-Line® 53	1	**466-3510**
DRY-Line® 115	1	**466-3513**

Description	For	Pk	Cat. No.
Shelves			
Chrome plated shelf	DL 53/VL 53/IL 53	1	**466-3522**
Chrome plated shelf	DL 115/VL 115/IL 115	1	**466-3523**

Ovens with forced convection, VENTI-Line®

Drying ovens with forced air circulation, which are ideal for routine drying and heating applications when short drying times are required. Ovens feature adjustable ventilation by means of manually adjustable ventilation slide and 50 mm Ø exhaust duct at the rear of the unit.

- Microprocessor controller
- Integrated timer can be set for continuous mode or timer operation: 0 to 999 min or 0 to 99,9 h
- Over-temperature protection with visual alarm (Class 3,1 safety device)
- Temperature setting in increments of 1 °C

Delivery information: Supplied with two chrome plated shelves.

Model	VL 53	VL 115
Temperature range (°C)	Ambient +12...220	Ambient +5...220
Temperature variation at 150 °C (°C)	±0,4	±0,3
Capacity (l)	53	115
Convection type	Forced convection	
Shelves supplied (max.)	2 (4)	
Max. load per shelf (kg)	10	15
Internal W×D×H (mm)	401×330×401	600×400×480
External W×D×H (mm)	620×640×680	820×710×760
Nominal power consumption (W)	800	1000
Weight (kg)	40	59
Temperature fluctuation (time) (°C)	at 150 °C: ±0,4	at 150 °C: ±0,3
Temperature variation (spatial) (°C)	at 150 °C: ±2,7	at 150 °C: ±2,5

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Description	Pk	Cat. No.
VENTI-Line® 53	1	466-3516
VENTI-Line® 115	1	466-3519

Description	For	Pk	Cat. No.
Shelves			
Chrome plated shelf	DL 53/VL 53/IL 53	1	466-3522
Chrome plated shelf	DL 115/VL 115/IL 115	1	466-3523

Incubators, INCU-Line®, IL 53 and IL 115

Incubators with natural air circulation for all standard incubation applications. Units have stainless steel chamber with glass inner doors.

- Microprocessor control with large digital temperature display
- Temperature setting in increments of 0,1 °C
- Built-in timer from 0 - 999 min, or 0 - 99,9 h or continuous mode
- Exhaust duct on the back of the unit with manually adjustable slide
- Independent adjustable temperature safety device Class 3.1 with a visual alarm, according to DIN 12880

Delivery information: Supplied with two chrome plated shelves.

Model	IL 53	IL 115
Temperature range (°C)	Ambient +5...70	
Temperature fluctuation (time) (°C)	±0,2 at 37 °C	
Temperature variation (spatial) (°C)	±0,6 at 37 °C	±0,7 at 37 °C
Capacity (l)	53	115
Convection type	Natural convection	
Shelves supplied (max.)	2 (4)	
Internal W×D×H (mm)	401×330×401	600×400×480
External W×D×H (mm)	620×622×680	820×732×760
Nominal power consumption (W)	200	250
Weight (kg)	45	68

Type	Pk	Cat. No.
IL 53 incubator	1	390-0350
IL 115 incubator	1	390-0353

Description	For	Pk	Cat. No.
Shelves			
Chrome plated shelf	DL 53/VL 53/IL 53	1	466-3522
Chrome plated shelf	DL 115/VL 115/IL 115	1	466-3523

Cooled incubators, INCU-Line®

IR 68R

IL 150R

IR 250R Premium

These cooled incubators with forced air convection feature a stainless steel inner chamber and a powder coated sheet exterior for standard models or a stainless steel linen finish exterior for the Premium models. The IL 68R has an external glass door, the IL 150R/250R and IL 150R/250R Premium models have a solid outer door and glass inner door. All models have an internal LED light, 30 mm access port, real time clock, timer, internal electrical socket, RS232C interface, USB port and test results memory function to recall temperature data or events. All models have the following safety features:

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- Adjustable over- and under-temperature safety thermostat Class 3.3 protects the samples and the incubator
- Power failure control system, audible clock alarm
- Door lock and open door alarm

Standard controller models feature:

- Microprocessor controller with LCD graphic display, stores up to 3× six-segment programs
- Temperature range +3 to 70 °C

In addition, the Premium models (IL 150R / IL 250R) also have:

- Full colour LCD touch screen, displays the values in tabular or graphic form
- Access control via login, 20 user program memory, 7 days programming
- USB port to save data on flash drives
- Ethernet connection and remote control via Internet
- Fan speed control (50 to 100%)
- Adjustable heating and cooling system

Delivery information: Supplied with coated wire shelves, test certificate (data measured at 37 °C) and Basic Control Software. Premium models (390-0730, 390-0732) are supplied with stainless steel wire shelves, Ethernet cable, test certificate (data measured at 37 °C) and Premium Control Software.

Model	IL 68R	IL 150R	IL 250R	IL 250R Premium
Temperature range (°C)	+3...70			
Temperature fluctuation (time) (°C)	±0,1 at 37 °C	±0,2 at 37 °C	±0,3 at 37 °C	
Temperature variation (spatial) (°C)	±0,3 at 37 °C	±0,8 at 37 °C	±1,0 at 37 °C	
Capacity (l)	68	143	245	
Convection type	Forced convection			
Shelves supplied (max.)	2 (2)	3 (4)	4 (6)	
Internal W×D×H (mm)	470×300×430	520×400×660	520×400×1060	
External W×D×H (mm)	570×670×600	620×640×860	620×640×1260	620×640×1320
Weight (kg)	38	63	84	
Nominal power consumption (W)	160	170	330	

Type	Pk	Cat. No.
Standard cooled incubators		
IL 68R cooled incubator	1	**390-0728**
IL 150R cooled incubator	1	**390-0729**
IL 250R cooled incubator	1	**390-0731**
Premium cooled incubators		
IL 250R Premium cooled incubator	1	**390-0732**

Description	For	Pk	Cat. No.
Accessories			
Wire coated shelf	INCU-Line 68R standard	1	**390-0733**
Wire coated shelf	INCU-Line 150R/250R standard	1	**390-0734**
Stainless steel shelf	INCU-Line 150R/250R Premium	1	**390-0735**

VWR COLLECTION

2 year warranty

SELECTED FOR YOU

Water baths, VWB series

Water baths with double walled, stainless steel (inner) and coated steel sheet (outer) housing. Temperature is evenly distributed by a flat radiator. Electronic PID controller with digital temperature setting gives high temperature stability. A digital timer can be set so that the water bath will maintain the required temperature after the timer alarm has sounded. The baths have a drain cock and are protected against 'running dry' as the heater automatically switches off if the liquid is low. Note: Baths are classified Safety Class 1, allowing unattended operation when used with non flammable liquids.

- Temperature range ambient +5 to 100 °C
- Digital temperature indicator with three user-defined fixed temperatures
- In standby mode display shows residual heat, display also shows when power and heating is on
- Temperature stability: ±0,2 K
- Digital temperature display and setting 0,1 °C

Delivery information: Supplied with transparent polycarbonate hinged lid and removable shelf as standard.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (W)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Baths									
VWB 2	RT* +5...100	±0,2	0,5	1 - 2	300×150×100	351×225×310	5,2	1	**462-0240**
VWB 6	RT* +5...100	±0,2	0,5	2 - 6	300×150×150	351×225×310	5,4	1	**462-0241**
VWB 12	RT* +5...100	±0,2	1,0	4 - 12	300×325×150	381×375×310	7,5	1	**462-0242**
VWB 18	RT* +5...100	±0,2	1,6	6 - 18	505×300×150	556×375×310	9,7	1	**462-0243**
VWB 26	RT* +5...100	±0,2	1,6	8 - 26	505×300×200	556×375×360	14,1	1	**462-0244**

Description	For	For tube Ø (mm)	W×D×H (mm)	Pk	Cat. No.
Tube racks for VWB 2 bath, maximum 1 rack per bath					
Test tube rack, holds 56 tubes		10	220×65×135	1	**462-0245**
Test tube rack, holds 48 tubes		12	220×65×135	1	**462-0246**
Test tube rack, holds 33 tubes		14	220×65×135	1	**462-0247**
Test tube rack, holds 18 tubes		18	220×65×135	1	**462-0248**
Test tube rack, holds 12 tubes		25	220×65×135	1	**462-0249**
Test tube rack, holds 6 tubes		35	220×65×135	1	**462-0250**
Test tube rack, holds 3 tubes		50	220×65×135	1	**462-0251**
Tube racks suitable for: VWB 6, VWB 12, VWB 18, VWB 26, maximum 1, 4, 7, 7 racks per bath respectively					
Test tube rack holds 56 tubes		10	220×65×155	1	**462-0252**
Test tube rack holds 48 tubes		12	220×65×155	1	**462-0253**
Test tube rack holds 33 tubes		14	220×65×155	1	**462-0254**
Test tube rack holds 18 tubes		18	220×65×155	1	**462-0255**
Test tube rack holds 12 tubes		25	220×65×155	1	**462-0256**
Test tube rack holds 6 tubes		35	220×65×155	1	**462-0257**
Test tube rack holds 3 tubes		50	220×65×155	1	**462-0258**
Accessories					
Flat cover with 1 set of water bath rings	VWB 2, VWB 6			1	**462-0259**
Flat cover with 3 sets of water bath rings	VWB 12			1	**462-0260**
Flat cover with 4 sets of water bath rings	VWB 18, VWB 26			1	**462-0261**
Level controller	All VWB baths			1	**462-0262**

* RT = Ambient

Water baths, unstirred, JB Nova series

Grant

Digital unstirred water bath range with choice of models from 5 to 26 litres. All units have stainless steel tanks and durable painted steel cases, offer fast heat-up times, good temperature control, front panel lock, easy to use controls and a bright, clear display. All baths have heater mat technology ensuring optimum working space, without a heating element in the tank they are easier to clean. The 12 litre and larger models feature a convenient drain tap on the front of the bath. The range is ideal for use in education as well as industrial applications such as product and materials testing.

- Temperature stability ±0,5 °C, temperature range ambient +5 to 95 °C
- Set and Forget™ technology. Modern technology for fast heat up and excellent temperature accuracy
- Baths have clear audible and visual alarms and advanced dry start and dry run protection, avoiding damage if accidentally switched on without water or bath runs dry. Simply fill and restart
- User-defined single point calibration allowing optimum accuracy at a frequently used temperature
- LED display with 0,5 °C resolution
- Front panel lock-out to ensure the current settings are not accidentally altered

Delivery information: Supplied with a transparent polycarbonate lid and perforated base tray which allows any container to be placed directly in the bath. UK & EU plug included.

Type	Temp. range (°C)	Temp. stability (°C)	Heating capacity (kW)	Capacity (l)	Bath W×D×H (mm)	W×D×H (mm)	Pk	Cat. No.
JBN5	RT* +5...95	±0,5	0,35	5	145×290×115	215×335×200	1	**462-8557**
JBN12	RT* +5...95	±0,5	0,8	12	315×290×115	380×260×225	1	**462-8558**
JBN18	RT* +5...95	±0,5	1,4	18	495×290×115	590×335×275	1	**462-8559**
JBN26	RT* +5...95	±0,5	1,4	26	495×290×165	590×335×275	1	**462-1022**

*RT = Ambient

Compact muffle furnaces, LE series
Nabertherm

455-0196

With an excellent price/performance ratio, these compact, lightweight muffle furnaces are ideal for many laboratory applications. Units feature double walled, rust-free, textured stainless steel exteriors which ensure low external temperatures and high stability. The heating elements are encased in quartz glass tubes making them reliable for a variety of applications. The furnaces have Tmax 1100 °C, working temperature of 1050 °C. Models have an exhaust air outlet in the rear wall of the furnace and a silent solid state power control relay.

- Heating on two sides by means of heating elements in quartz glass tubes
- Maintenance friendly replacement of heating elements and insulation
- Multilayered insulation with fibre plates in the furnace chamber
- Controller is mounted under the door for the LE 1/11, LE 2/11 and LE 4/11
- Fold down door can also be used as a work platform

LE 1, LE 2 and LE 4 models supplied with digital R 6 controller with one storable holding temperature. All units are supplied with plugs and these models require a 230 V single phase power supply.

Type	Max. temp. (°C)	Power (W)	Capacity (l)	W×D×H int. (mm)	W×D×H ext. (mm)	Pk	Cat. No.
Models with R 6 controller							
LE 1/11	1100	Max. 1500	1	90×115×110	250×265×340	1	**455-0196**
LE 2/11	1100	Max. 1800	2	110×180×110	275×380×350	1	**455-0082**
LE 4/11	1100	Max. 1800	4	170×200×170	335×400×410	1	**455-6289**

Note: Maximum continuous operating temperature should be 50 °C below the max. temp. of the model shown above.

VWR COLLECTION

Crucibles

Porcelain, glazed inside and out, except base

- Withstand maximum temperature of 1000 °C

According to DIN 12904

Lids are available separately.

SELECTED FOR YOU

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Medium form	10	30×25	5	**459-0201**
Medium form	12	35×28	5	**459-0202**
Medium form	20	40×32	5	**459-0203**
Medium form	30	45×36	5	**459-0204**
Medium form	45	50×40	5	**459-0205**
Medium form	80	60×48	5	**459-0206**
Medium form	120	70×56	5	**459-0207**

VWR COLLECTION

Incinerating dishes

Round

Rectangular

Porcelain, glazed, produced according to DIN 12904

- Dishes can withstand temperatures up to 1000 °C
- Stable with large flat unglazed base
- Glazed porcelain has high resistance to acids and bases

Capacity (ml)	Ø ext.×H (mm)	W×D×H (mm)	Pk	Cat. No.
Round				
21	42×23	-	3	**459-0227**
35	50×27	-	3	**459-0228**
64	61×31	-	3	**459-0229**
Rectangular				
6	-	50×35×12	3	**459-0230**
13	-	62×40×12	3	**459-0231**
28	-	74×49×14	3	**459-0232**
40	-	95×65×14	3	**459-0233**

Commercial refrigerators with forced air cooling

Liebherr

Refrigerator, solid door

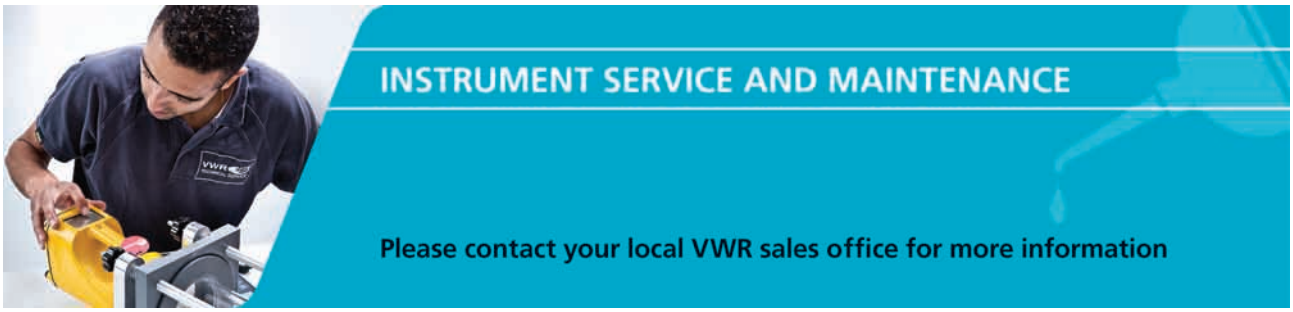
Temperature range: +1 to +15 °C and +2 to 12 °C

Commercial refrigerators with forced air cooling; the ventilation stops when door is opened.

- Automatic defrosting
- Lockable door
- LED interior lighting (glass models only)
- Interchangeable hinge

Model	FKv 5440	FKs 2600	FKs 3600
Capacity (l)	554	260	360
Temperature (°C)	+1...+15	+2...+12	
Air circulation	Ventilated	Non ventilated	
Display	Digital	-	
Defrost	Automatic		
Alarm	Audible and visual door and temperature alarm	-	
Shelves/drawers	4 mesh wire shelves/-		5 mesh wire shelves/-
Door(s)	Solid	Plain	
Door lock	Yes		
Material	Exterior: steel, epoxy coated, white Interior: ABS		
W×D×H int. (mm)	600×560 ×1452	513×441 ×1047	513×441 ×1418
W×D×H ext. (mm)	730×750 ×1640	600×600 ×1220	600×600 ×1590
Weight (kg)	77	42	55

Type	Pk	Cat. No.
Refrigerators, with solid door, FKv and FKUv		
Professional refrigerator, Premium, white, FKv 5440	1	**471-1030**
Refrigerators, with solid door, FKs		
Professional refrigerator, white, FKs 2600	1	**472-1051**
Professional refrigerator, white, FKs 3600	1	**472-2184**



Spark-free MediLine laboratory refrigerators with ATEX certificate, LKexv and LKUexv
Liebherr

Temperature range: +3 to +8 °C

These spark-free MediLine laboratory refrigerators feature forced air cooling with an electronic controller system ensuring high temperature consistency and uniform temperature distribution. They are designed especially for storing explosive and highly flammable substances.

The controller stores the minimum and maximum interior temperatures, the last three temperature alarms and power failures, together with the time, date and duration of the alarm. The digital display indicates the exact temperature and the operating status. There is a secondary safety thermostat to protect contents from freezing. The refrigerant used is a hydrocarbon. Water from defrosting is collected in a tray and must be manually emptied.

- Tested according to ATEX Directive
- Electronic control system with 0,1 °C temperature adjustment
- Pre-drilled access ports
- Lockable, self-closing, reversible doors
- Audible and visual alarms for door-open and temperature (user-adjustable)
- RS485 interface and volt-free contact for central monitoring

All Liebherr laboratory refrigerators with spark-free interior are tested according to the ATEX Directive. They have a Zone II nA interior for gases, taking into account the safety requirements of material category 3G. They are therefore suitable for storing explosive and highly flammable substances.

Model	LKUexv 1610 MediLine	LKVexv 3910 MediLine
Capacity (l)	141	360
Temperature (°C)	+3...+8	+3...+8
Air circulation	Ventilated	
Display	Digital	
Defrost	Automatic	
Alarm	Audible and visual (temperature and door)	
Shelves/drawers	3 adjustable glass shelves	5 adjustable glass shelves
Door(s)	Self-closing solid door, right hand reversible hinge	
Door lock	Yes	
Material	Exterior: white powder-coated Interior: moulded polystyrol	
W×D×H int. (mm)	440×435×670	440×435×1635
W×D×H ext. (mm)	600×615×820	600×615×1840
Weight (kg)	40	68

Type	Pk	Cat. No.
Spark-free under bench refrigerator, MediLine, LKUexv 1610	1	**471-0485**
Spark-free upright refrigerator, MediLine, LKexv 3910	1	**471-0484**

Spark-free MediLine refrigerators with ATEX certification
Liebherr

LKexv 1800 MediLine

LKexv 3600 MediLine

Temperature range: +2 to 10 °C or +1 to 15 °C

ATEX certified MediLine spark-free fridges with explosion protected interiors and cooling. Designed for the storage of flammable materials.

- Temperature regulator outside
- Lockable and reversible door
- Automatic defrost with drain compartment for water defrost (manual drain)

All Liebherr laboratory refrigerators with spark-free interior are tested according to the ATEX Directive. They have a Zone II nA interior for gases, taking into

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account the safety requirements of material category 3G. They are therefore suitable for storing explosive and highly flammable substances.

Model	FKExv 1800	FKExv 2600	FKExv 3600	FKExv 5000 MediLine
Capacity (l)	180	260	360	500
Temperature (°C)	+2...+10			
Defrost	Automatic			
Alarm	No			
Shelves/drawers	3 glass shelves/-	4 glass shelves/-	5 glass shelves/-	
Door(s)	1 solid, reversible			
Door lock	Yes			
Material	Exterior: steel, epoxy coated, white Interior: ABS			
W×D×H ext. (mm)	600×600×886	600×600×1216	600×600×1590	752×710×1516
Weight (kg)	38	49	59	78

Type	Pk	Cat. No.
Ventilated, ATEX approved refrigerator, FKExv 1800	1	**471-1075**
Ventilated, ATEX approved refrigerator, FKExv 2600	1	**471-1076**
Ventilated, ATEX approved refrigerator, FKExv 3600	1	**471-1077**
Ventilated, ATEX approved refrigerator, FKExv 5400	1	**471-1078**

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VWR2Go provides the essential features from our web-based shop system on mobile phones and tablets

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Temperature loggers
Ebro

These single-use data loggers are suitable for one-time temperature monitoring during transport of pharmaceutical products, food, medicine and other temperature-sensitive or perishable goods. The loggers provide high accuracy and have a convenient USB connection enabling automatic PDF generation of measured values. Connect the logger to any PC after transport and get the measured data in a standard PDF document without any additional software. The logger is programmable via the free online configuration tool.

- Configurable high and low limit with visual indication (red LED)
- Optionally programmable via FDA 21 CFR Part 11 compliant software: Winlog.basic
- Eliminates costly and time consuming IQ/OQ procedures through a standard reporting process

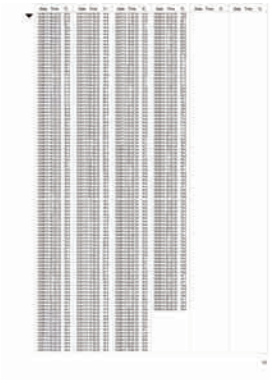
IP 65

DIN EN 12830 (S, T, C, D, 1), ATP

Delivery information: Supplied with a lithium button cell battery.

Range (°C)	Accuracy (°C)	Resolution (°C)	Memory	W×D×H (mm)	Pk	Cat. No.
–30…+70	±0,5 (–20…+40); ±0,8	0,1	6 000 values	28×80×12	10	**620-1974**
–85…+50	±2,0 (–85…–30); ±0,8 (–30…–20); ±0,5 (–20…+50)	0,1	6 000 values	28×80×12	10	**620-1985**

Single-use temperature loggers, TempMate



These PDF USB data loggers are suitable for cold chain temperature monitoring. They provide a user friendly operating experience, just press the button to start and place it into the shipment. It accurately monitors the temperature parameters throughout the application. Moreover, its compact size minimises the space occupied. An integrated USB connector enables data to be read immediately on arrival at destination. A report will contain detailed data, displayed in summary, data curve and data list forms.

- Waterproof and food safe wrapper
- Auto generating PDF format data report
- Manual or automatic stop after 90 days
- Intelligent LEDs for status monitoring
- No software or hardware required to connect the logger and read the recorded temperature data

W×D×H: 47×80×4 mm

Weight: 10 g

Compliant to EN 12830 and RoHS.

Delivery information: Includes calibration certificate.

Description	Range (°C)	Accuracy (°C)	Resolution (°C)	Memory	Pk	Cat. No.
Logger for 6 days (1 min. interval)	–30…+70	±0,5	0,1	12960 values	20	**620-2250**
Logger for 15 days (2 min. interval)	–30…+70	±0,5	0,1	12960 values	20	**620-2251**
Logger for 90 days (10 min. interval)	–30…+70	±0,5	0,1	12960 values	20	**620-2252**

Temperature loggers, EBI 300 and 310
Ebro

Temperature loggers

Probe, TPX 250

Wall mount

These temperature loggers with USB connection need no interface for programming or read-out. An automatic PDF report can be generated without any software. **EBI 300**: Related to HACCP/IFS issues or other perishable goods (EN 12830, ATP, VO(EG) 37/2005 compliant), transport of fresh, chilled and frozen products, monitoring of fridges and freezers. **EBI 310**: For pharmaceutical, medical or other perishable goods, transport of drugs, vaccines and blood products, temperature monitoring of dry ice (with TPX 250) and cryogenic (with TPX 220) shipments, validation of temperature during transport and storage.

- User friendly, waterproof
- LED display: Minimum and maximum values
- Two limit LED alarm - or five ranges for 620-1814

Conform with IP 65 - 620-1814 is CFR 21.

W×D×H: 80×34×14 mm

Weight: 35 g

Delivery information: Supplied with a two year life battery.

Description	Range (°C)	Accuracy (°C)	Resolution (°C)	Memory	Pk	Cat. No.
USB data logger with NTC probe, EBI 300	–30…+60	±0,5 (–20…+40); ±0,8	0,1	40 000 values	1	**620-1815**
USB data logger with PT1000 probe, EBI 310	–30…+75	±0,2	0,1	120 000 values	1	**620-1814**

Description	Pk	Cat. No.
Probes		
External NTC probe for EBI 300, Ø×L: 4×50 mm, TPC 300	1	**620-1860**
External PT1000 probe for EBI 310, Ø×L: 5×50 mm, TPX 220	1	**620-1861**
External PT1000 probe for EBI 310, TPX 250	1	**620-1863**
Accessories		
Wall mount	1	**620-1859**

Temperature and humidity loggers, EBI-20
Ebro

These temperature and humidity loggers record data automatically. The LCD displays the measured value, the battery level and the unit of measure. The waterproof loggers with NTC probe provide reliable recordings during transport and storage.

- Measurement frequency between one minute and 24 hours
- One button for "start" and minimum/maximum values
- Visual LED alarm

EN 12830. Software conforms to FDA 21 CFR Part 11.

W×D×H: 69×48×22 mm

Weight: 45 g

Delivery information: The loggers are supplied with a battery and a calibration certificate. It is advisable to initially order a Starting set with logger, Winlog.Basic software and interface. Further loggers can be ordered separately.

Description	Range (°C)	Accuracy (°C)	Resolution (°C)	Memory	Pk	Cat. No.
Temperature logger, EBI-20 T1	–30…+60	±0,5 (–20…+40)	0,1	40 000 values	1	**620-1748**
Temperature logger with ext. probe, EBI-20 TE1	–30…+60	±0,5 (–20…+40)	0,1	40 000 values	1	**620-1749**
Temperature and humidity logger, EBI-20 TH1	–30…+60 °C; 0 - 100 % RH	±0,5 (–20…+40)	0,1	40 000 values	1	**620-1750**

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Description	Pk	Cat. No.
Starting sets		
Starting set for temperature logger, EBI-20 T1	1	**620-1751**
Starting set for temperature logger with ext. probe, EBI-20 TE1	1	**620-1752**
Starting set for temperature and humidity logger, EBI-20 TH1	1	**620-1753**

Description	Pk	Cat. No.
Accessories		
ISO two-point calibration set	1	**620-2270**
Holder for EBI-20T/TH	1	**620-1425**

Wireless temperature and humidity monitoring system, EBI 25

Ebro

EBI 25-TH

The EBI 25 monitoring system consists of a data logger, an interface and evaluation and monitoring software. It can be used in the food industry and laboratories, medical, pharmaceutical and chemical fields, in storage rooms, fridges and climatic chambers.

- Alarm with signal via e-mail/SMS, automatic report generation
- Display unit location plan with data loggers
- Real time monitoring of measuring points
- Software works as stand-alone solution
- Intranet or internet solution

W×D×H: 95×48×27 mm

Weight: 65 g

Delivery information: The loggers are supplied with a 3,6 V replaceable battery, up to five years lifetime when measuring at 15 minutes and hourly wireless communication. Winlog.Wave software is available on request.

Description	Range (°C)	Accuracy (°C)	Resolution (°C)	Memory	Pk	Cat. No.
EBI 25-T	–30…+60	±0,5*; ±0,8**	0,1	576 values	1	**620-1562**
EBI 25-TE with ext. probe	–30…+60	±0,5*; ±0,8**	0,1	576 values	1	**620-1563**
EBI 25-TH with humidity sensor	–30…+60 °C; 0 - 100% RH	±0,5*; ±0,8** °C; ±3,0% RH	0,1 °C; 0,1% RH	288 values	1	**620-1564**

Description	Pk	Cat. No.
Starting sets		
EBI 25-T-set incl. three loggers, interface, software and three wall brackets	1	**620-1676**
EBI 25-TE-set incl. three loggers, interface, software and three wall brackets	1	**620-1677**

Description	Pk	Cat. No.
Accessories		
Software Winlog.Wave	1	**620-1561**
Interface incl. antenna, IF 400	1	**620-1565**
Antenna, AL116	1	**620-2271**
Plastic wall holder, AG 152	1	**620-1566**

* –20…+40 °C ** Remaining range

Laboratory logbooks, special purpose

Imitation leather cover with coating, for durability in laboratory environments. Acid-free archive safe paper (90 gsm). Used to record and log data relating to laboratory equipment, temperature, balance calibration, reagents, animal maintenance and sample receipts.

- All pages for logging documentation have specific column headings for easy data entry
- Pages sewn in sections, books have round binding so that they lay flat
- Waterproof and tough

All books made in accordance with GLP, GMP and GCP guidelines.

Description	Colour	Pk	Cat. No.
Logbook, laboratory equipment, 96 pages	Red	1	**818-0102**
Logbook, animal maintenance, 168 pages	Black	1	**818-0103**
Logbook, balance calibration, 168 pages	Green	1	**818-0104**
Logbook, reagents, 168 pages	Burgundy	1	**818-0105**
Logbook, sample receipt, 168 pages	Red	1	**818-0106**
Logbook, temperature, 168 pages	White	1	**818-0107**

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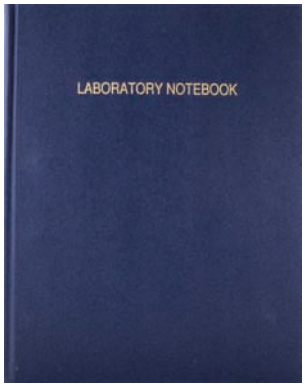
Laboratory notebooks



Imitation leather cover with coating, for durability in laboratory environments. Acid-free archive safe paper (90 gsm). Includes laboratory notebook guidelines page, table of contents and user data page. Available in different language formats: English only, English-French, English-German, English-Spanish and English-Italian.

- Pages are sewn in sections with round binding so that book lays flat
- Scientific 5 mm grid or ruled format with date and witness signature blocks
- Waterproof

Format: A4 (21×29,7 cm) or A5 (14,8×21 cm). A4 books available in three sizes: 72, 120 and 216 pages. A5 available with 96 pages.

Colour: Blue

All books made in accordance with GLP, GMP and GCP guidelines.

Description	Colour	Type	Version	Pk	Cat. No.
Lab book, A4, 72 pages	Blue	Grid	English only	1	**818-0068**
Lab book, A4, 120 pages	Blue	Grid	English only	1	**818-0069**
Lab book, A4, 216 pages	Blue	Grid	English only	1	**818-0070**
Lab book, A5, 96 pages	Blue	Grid	English only	1	**818-0071**
Lab book, A4, 72 pages	Blue	Ruled	English only	1	**818-0072**
Lab book, A4, 120 pages	Blue	Ruled	English only	1	**818-0073**
Lab book, A4, 216 pages	Blue	Ruled	English only	1	**818-0074**
Lab book, A5, 96 pages	Blue	Ruled	English only	1	**818-0075**
Lab book, A4, 72 pages	Blue	Grid	English-French	1	**818-0076**
Lab book, A4, 120 pages	Blue	Grid	English-French	1	**818-0077**
Lab book, A4, 216 pages	Blue	Grid	English-French	1	**818-0078**
Lab book, A5, 96 pages	Blue	Grid	English-French	1	**818-0079**
Lab book, A4, 72 pages	Blue	Ruled	English-French	1	**818-0080**
Lab book, A4, 120 pages	Blue	Ruled	English-French	1	**818-0081**
Lab book, A4, 216 pages	Blue	Ruled	English-French	1	**818-0082**
Lab book, A5, 96 pages	Blue	Ruled	English-French	1	**818-0083**
Lab book, A4, 72 pages	Blue	Grid	English-German	1	**818-0084**
Lab book, A4, 216 pages	Blue	Grid	English-German	1	**818-0086**
Lab book, A5, 96 pages	Blue	Grid	English-German	1	**818-0087**
Lab book, A4, 72 pages	Blue	Ruled	English-German	1	**818-0088**
Lab book, A4, 120 pages	Blue	Ruled	English-German	1	**818-0089**
Lab book, A4, 216 pages	Blue	Ruled	English-German	1	**818-0090**
Lab book, A5, 96 pages	Blue	Ruled	English-German	1	**818-0091**
Lab book, A4, 72 pages	Blue	Grid	English-Spanish	1	**818-0092**
Lab book, A4, 120 pages	Blue	Grid	English-Spanish	1	**818-0093**
Lab book, A4, 216 pages	Blue	Grid	English-Spanish	1	**818-0094**
Lab book, A5, 96 pages	Blue	Grid	English-Spanish	1	**818-0095**
Lab book, A4, 72 pages	Blue	Ruled	English-Spanish	1	**818-0096**
Lab book, A4, 120 pages	Blue	Ruled	English-Spanish	1	**818-0097**
Lab book, A4, 216 pages	Blue	Ruled	English-Spanish	1	**818-0098**
Lab book, A5, 96 pages	Blue	Ruled	English-Spanish	1	**818-0099**
Lab book (21,6×14,0 cm), 120 pages	Blue	Grid	English-Italian	1	**818-0112**
Lab book, A4, 216 pages	Blue	Grid	English-Italian	1	**818-0113**
Lab book, A4, 120 pages	Blue	Ruled	English-Italian	1	**818-0114**
Lab book (21,6×14,0 cm), 216 pages	Blue	Ruled	English-Italian	1	**818-0115**
Lab book, XL (22,5×34,5 cm), 144 pages	Blue	Grid	EN/FR/IT/SP/DE	1	**818-0116**
Lab book, XL (22,5×34,5 cm), 144 pages	Blue	Ruled	EN/FR/IT/SP/DE	1	**818-0117**

Water purification systems, Puranity PU

Produce up to 200 litres/day of Type I ultrapure water from pretreated feed water

There are areas in which particularly high demands are placed on the water quality: Chemical organic or inorganic trace analysis, for example, for TOC measurements and instrumental methods such as HPLC, ICP-MS and IC. The demands are even higher in the life sciences. Freedom from endotoxins and nucleases is a necessity when preparing, or working with, tissue and cell culture media, PCR, DNA, or monoclonal antibodies. The PU basic, UV and UV/UF versions have already convincingly demonstrated the benefits of the new system control and the high-precision, USP-complying conductivity measurement with temperature compensation that can be switched on or off.

- Compact system and smart design, easy to maintain
- Feed water monitoring
- Variable flow dispensing
- Deionisation cartridges are easy to change without depressurising the system
- Backlit display tilts for easy viewing
- Online TOC measurement with UV intensity monitoring
- RS232 interface with adjustable send interval for safe data transfer of all measured data, faults, date and time to a PC computer or log printer

Delivery information: All Puranity PU systems include a DI cartridge pack, 0,2 µm final filter, pressure reducer, feed water monitoring, UV lamp (for UV systems only) and ultrafilter (for UF systems only)

Model	Puranity PU 15	Puranity PU 15 UV	Puranity PU 15 UV/UF	Puranity PU 20	Puranity PU 20 UV	Puranity PU 20 UV/UF
Average daily needs	50 l			200 l		
Feed water	Pretreated tap water by RO, ion exchange or distillation					
Flow rate (l/min)	max. 1,5			max. 2		
Conductivity (µS/cm)	0,055					
Max. operating pressure (bar)	2 - 6			0,1 - 6		
TOC content	5 - 10 ppb 1 - 5 ppb with UV lamp					
Resistivity at +25 °C	18,2 MΩ.cm					
Bacteria	<1 (CFU/ml)					
Particles	<1 (0,22 µm/ml)					
Endotoxins	-		<0,001 EU/ml	-		<0,001 EU/ml
RNases			<0,003 ng/ml			<0,003 ng/ml
DNases			<0,4 pg/µl			<0,4 pg/µl
Power consumption (kW)	0,06					
W×D×H (mm)	305×300×545			370×330×615		

Description	Pk	Cat. No.
Water purification system, Puranity PU 15 Basic	1	**171-1100**
Water purification system, Puranity PU 15 UV with UV lamp	1	**171-1102**
Water purification system, Puranity PU 15 UV/UF with UV lamp and ultrafilter	1	**171-1101**
Water purification system, Puranity PU 20 Basic	1	**171-1172**
Water purification system, Puranity PU 20 UV (with UV lamp)	1	**171-1174**
Water purification system, Puranity PU 20 UV/UF (with UV lamp and ultrafilter)	1	**171-1173**

Description	Pk	Cat. No.
Cartridges		
Polisher cartridge for PU 15	1	**171-1104**
Polisher cartridge for PU 20	1	**171-1175**
Accessories		
Volume dispenser	1	**171-1179**
Ultrafilter for PU 20 UV/UF models	1	**171-1184**
Replacement UV lamp for PU 20 UV and UV/UF models	1	**171-1176**
Sterile filter 0,2 µm	1	**171-1105**
Ultrafilter for UV/UF models	1	**171-1106**
Replacement UV lamp for UV & UV/UF models	1	**171-1108**

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2 year warranty

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Water purification systems, Puranity TU

Puranity TU 3, 6 and 12 systems produce up to 100 litres/day of Type I ultrapure water from tap water, as well as Type II water available from the tank

For converting potable tap water to ultrapure water of ASTM Types I and II.

Water purification progresses through independent cartridges with Aquastop quick-connect for fast replacement.
- Module 1 - Combination of pretreatment and the reverse osmosis membrane
- Module 2 - Polishing cartridge contains high-quality ultrapure resin for consistent purity and long cartridge life

- Dispensing is easy and features variable speed to control flow
- The display can be tilted for optimal reading
- Placement options: Can be placed on a laboratory bench or mounted on the wall
- Deionisation cartridges are easy to change without depressurising the system
- Easy to maintain
- Large opening for easy and effective cleaning by hand
- Sterile venting filter/reservoir overflow protects against contamination by microorganisms

Delivery information: Puranity TU 3,6, and 12 systems include a RO/pretreatment cartridge, DI cartridge pack, 0,2 µm final filter, pressure reducer, feed water monitoring, UV bulb (for UV systems only) and ultrafilter (for UF systems only). The 3 and 6 litres/hr systems also include an internal 6 l tank with vent filter. The TU 12 requires an external tank. Please contact your local VWR sales office to discuss your requirements before making your selection as different areas of the country may require additional pretreatment option.

Model	Puranity TU 3	Puranity TU 3 UV	Puranity TU 3 UV/UF	Puranity TU 6	Puranity TU 6 UV	Puranity TU 6 UV/UF	Puranity TU 12	Puranity TU 12 UV	Puranity TU 12 UV/UF
Feed water	Potable (tap) water acc. to DIN 2000								
Flow rate (l/min)	max. 1,0*								
Conductivity (µS/cm)	0,055 (ASTM II: 0,067 – 0,1)*								
Max. operating pressure (bar)	1 - 6								
TOC content	5 - 10 ppb* 1 - 5 ppb with UV lamp*								
Resistivity at +25 °C	18,2 MΩ.cm								
Bacteria	<1 (CFU/ml)*								
Particles	<1 (0,2 µm/ml)*								
Endotoxins	-		<0,001 EU/ml	-		<0,001 EU/ml	-		<0,001 EU/ml
RNases			<0,003 ng/ml			<0,003 ng/ml			<0,003 ng/ml
DNases			<0,4 pg/µl			<0,4 pg/µl			<0,4 pg/µl
Power consumption (kW)	0,06								
W×D×H (mm)	330×370×615								
Weight (kg)	22								

Description	Pk	Cat. No.
Water purification system, Puranity TU 3 Basic	1	**171-1134**
Water purification system, Puranity TU 3 UV with UV lamp	1	**171-1135**
Water purification system, Puranity TU 3 UV/UF with UV lamp and ultrafilter	1	**171-1136**
Water purification system, Puranity TU 6 Basic	1	**171-1137**
Water purification system, Puranity TU 6 UV with UV lamp	1	**171-1138**
Water purification system, Puranity TU 6 UV/UF with UV lamp and ultrafilter	1	**171-1139**
Water purification system, Puranity TU 12 Basic	1	**171-1162**
Water purification system, Puranity TU 12 UV with UV lamp	1	**171-1163**
Water purification system, Puranity TU 12 UV/UF with UV lamp and ultrafilter	1	**171-1164**

Description	Pk	Cat. No.
Cartridges		
Polisher cartridge	1	**171-1141**
Pretreatment + RO cartridges for Puranity TU 3	1	**171-1142**
Pretreatment + RO cartridges for Puranity TU 6	1	**171-1143**
Pretreatment + RO cartridges for Puranity TU 12	1	**171-1165**
Accessories		
Sterile filter 0,2 µm	1	**171-1105**
Ultrafilter for UV/UF models	1	**171-1106**
Replacement UV lamp for UV & UV/UF models	1	**171-1108**

* Type I

Ultrapure water systems, arium® pro

Sartorius

The arium® pro Type I water purification systems are designed for sophisticated users to meet all their requirements for reagent grade water, needed both for critical applications and routine analyses. Different versions are available for reliable and optimal analytical results.

The systems are available in a selection of bench top, wall-mounted and under bench units to adapt optimally to users' specific workplace requirements.

The glass touch display of the arium® pro with its integrated keys and an intuitive interface, guides users by menu prompts for ease of operation in producing reagent grade water. The system's various functions, such as volume and time dispensing as well as continuously adjustable flow rate, give users the greatest possible flexibility in routine applications. PIN protected service functions, Ethernet port and a wide choice of data storage options are additional convenience features that users of the new arium® pro series are bound to appreciate.

- Compact design, flexibility of use and simplicity of maintenance
- Innovative glass operator interface with touch function
- Service and alarm functions supported by graphic displays
- Conductivity measurement for feed and product water
- Integrated monitoring of water consumption
- RNases: <0,004 ng/ml; DNases: <0,024 pg/µ

Exceeds the requirements of standards ASTM, NCCLS, ISO and USP.

The system is delivered without a cartridge which has to be ordered separately. Please select either an Analytical or Elemental kit, depending on your application.

Model	arium® pro DI	arium® pro UF	arium® pro UV	arium® pro VF
Flow rate (l/min)	Up to 2	Up to 1,7	Up to 2	Up to 1,7
TOC content	1 - 4 ppb at 100 ppb feed water			
Resistivity at +25 °C	18,2 MΩ.cm			
Particles	<1/ml (@ 0,2 µm)			
Endotoxins	n.a.	<0,001 EU/ml	n.a.	<0,001 EU/ml
Microorganisms	<1 CFU/1000 ml			
W×D×H (mm)	350×451×492			
Operating weight with full tank (kg)	~27			
Weight (kg)	~17			

Description	Pk	Cat. No.
arium® pro system		
arium® pro DI wall-mounted unit, with front bottom-mounted display/dispenser unit and integrated wall bracket for the system	1	**171-0648**
arium® pro DI-T, bench top system for standard applications with front top-mounted display/dispenser unit	1	**171-0394**
arium® Pro UF-B, wall-mounted unit, with ultra-filter, for cell culture applications with front bottom-mounted display/dispenser unit and integrated wall bracket for the system	1	**171-0382**
arium® pro UF-T bench top system, with ultra-filter, for cell culture applications with front top-mounted display/dispenser unit	1	**171-0384**
arium® pro UV-B, wall-mounted unit, with UV lamp, for chromatographic applications with front bottom-mounted display/dispenser unit and integrated wall bracket for the system	1	**171-0385**
arium® pro UV-T, bench top system, with UV lamp for chromatographic applications with front top-mounted display/dispenser unit	1	**171-0387**
arium® pro VF-B, wall-mounted unit, with ultra-filter and UV lamp, for standard, cell culture and chromatographic applications with front bottom-mounted display/dispenser unit and integrated wall bracket for the system	1	**171-0388**
arium® pro VF-T, bench top system, with ultra-filter and UV lamp, for standard, cell culture and chromatographic applications with front top-mounted display/dispenser unit	1	**171-0390**
arium® pro with TOC analyser		
arium® pro UV-TTOC with integrated online TOC analyser, with UV lamp, for chromatographic applications with front top-mounted display/dispenser unit	1	**171-0557**
arium® pro VF-TTOC with integrated online TOC analyser, with ultra-filter and UV lamp, for standard, cell culture and chromatographic applications with front top-mounted display/dispenser unit	1	**171-0560**

Description	Pk	Cat. No.
Accessories		
Installation for arium® pro UV	1	**171-0645**
Cartridges		
Analytical kit, arium® pro cartridge set for biological, chemical-analytical	1	**171-0644**

TOC values may vary depending on the quality of the feed water, the level of contamination in the feed water, and/or the type of cartridge in use.
The flow rate: Pressure of 2 bar, without final filter.

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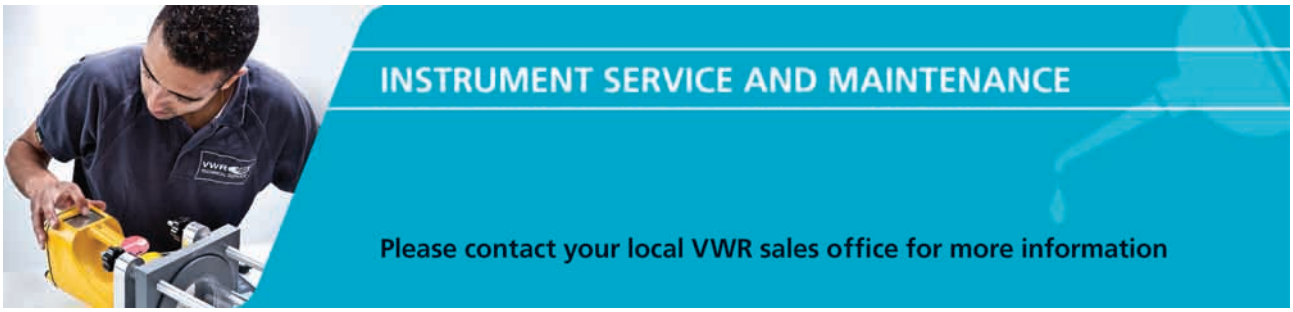
Ultrapure water systems, Synergy™

The Synergy™ ultrapure water systems are ideal for laboratories with access to purified water that need a point-of-use supply of high quality ultrapure water. The Synergy™ system is suitable for users needing 2 to 20 litres/day. The system produces Type I water from pretreated water at a flow from 1 to 1,2 l/min. The water produced is suitable for the preparation of buffers for liquid chromatography, biochemical experiments, isocratic or gradient solutions for HPLC analysis, culture media for bacteriological analysis or cell cultures and solutions for spectrophotometry, spectroscopy and other analytical techniques. The system monitor informs the user when cartridge exchange is required or when the UV lamp needs replacing (UV model only). A built-in timer allows the operator to deliver water for a fixed time period. The system automatically stops once the time period has elapsed. The time period can easily be set by the user between 1 and 60 minutes and remains stored in the memory until modified. The systems' compact design, along with the versatile remote dispenser, ensure easy installation anywhere in the laboratory, either on the bench or wall-mounted.

- Can be operated with or without remote dispenser
- Easy monitoring: The Synergy™ water system measures and displays water quality on its two line, alphanumeric display with a choice of six languages.
- Automatic recirculation allows the system to maintain water quality in-between periods of use
- Simple to operate and maintain: Unique purification packs simplify cartridge replacement
- Built-in dispense timer simplifies the dispensing operation and reduces operator attendance
- UV photo-oxidation for low organic contamination (UV model only)

Ordering information: SynergyPak™ should be added with a Millipak® or BioPak® final filter.

Model	Synergy™	Synergy™ UV	Synergy™ with integrated remote dispenser	Synergy™ UV with integrated remote dispenser	Synergy™ with integrated remote dispenser	Synergy™ UV with integrated remote dispenser
Feed water	Pretreated water (Elix® system, RO, distilled or DI water)					
Flow rate (l/min)	up to 1,5					
TOC content	<10 ppb	<5 ppb	<10 ppb			<5 ppb
Resistivity at +25 °C	18,2 MΩ.cm					
Bacteria	<0,1 cfu/ml*					
Particles	<1/ml					
Endotoxins	<0,001 EU/ml*					
RNases	<0,01 ng/ml*					
DNases	4 pg/µl*					
W×D×H (mm)	290×380×540					
Weight (kg)	6,7 (empty); 9,7 (operating weight)	7,2 (empty); 10,2 (operating weight)	System: 7,2 (empty); 10,2 (operating weight) Remote dispenser: 2,15			



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Description	Pk	Cat. No.
Water purification unit		
Synergy™ ultrapure water system (EU-plug, manual in English)	1	**171-0307**
Synergy™ ultrapure water system (EU-plug, manual in French)	1	**172-5159**
Synergy™ ultrapure water system (EU-plug, manual in German)	1	**171-0767**
Synergy™ ultrapure water system (EU-plug, manual in English and French)	1	**171-0088**
Synergy™ ultrapure water system (EU-plug, manual in Danish)	1	**171-0684**
Synergy™ ultrapure water system (EU-plug, manual in Italian)	1	**171-0308**
Synergy™ ultrapure water system (EU-plug, manual in Spanish)	1	**171-0309**
Synergy™ ultrapure water system (CH-plug, manual in German and French)	1	**171-0310**
Synergy™ ultrapure water system (UK-plug, manual in English)	1	**171-0711**
Synergy™ UV ultrapure water system (EU-plug, manual in English)	1	**171-0311**
Synergy™ UV ultrapure water system (EU-plug, manual in French)	1	**172-5160**
Synergy™ UV ultrapure water system (EU-plug, manual in German)	1	**171-0768**
Synergy™ UV ultrapure water system (EU-plug, manual in English and French)	1	**171-0763**
Synergy™ UV ultrapure water system (EU-plug, manual in Danish)	1	**171-0695**
Synergy™ UV ultrapure water system (EU-plug, manual in Italian)	1	**171-0312**
Synergy™ UV ultrapure water system (EU-plug, manual in Spanish)	1	**171-0313**
Synergy™ UV ultrapure water system (CH-plug, manual in German and French)	1	**171-0314**
Synergy™ UV ultrapure water system (UK-plug, manual in English)	1	**171-0712**
Water purification unit with integrated remote dispenser		
Synergy™ ultrapure water system (EU-plug, manual in English), with integrated remote dispenser	1	**171-0687**
Synergy™ ultrapure water system (EU-plug, manual in French), with integrated remote dispenser	1	**171-0688**
Synergy™ ultrapure water system (EU-plug, manual in German), with integrated remote dispenser	1	**171-0689**
Synergy™ ultrapure water system (EU-plug, manual in English and French), with integrated remote dispenser	1	**171-0685**
Synergy™ ultrapure water system (EU-plug, manual in Danish), with integrated remote dispenser	1	**171-0686**
Synergy™ ultrapure water system (EU-plug, manual in Italian), with integrated remote dispenser	1	**171-0691**
Synergy™ ultrapure water system (EU-plug, manual in Spanish), with integrated remote dispenser	1	**171-0692**
Synergy™ ultrapure water system (CH-plug, manual in German and French), with integrated remote dispenser	1	**171-0693**
Synergy™ ultrapure water system (UK-plug, manual in English), with integrated remote dispenser	1	**171-0694**
Synergy™ UV ultrapure water system (EU-plug, manual in English), with integrated remote dispenser	1	**171-0698**

Description	Pk	Cat. No.
Water purification unit with integrated remote dispenser		
Synergy™ UV ultrapure water system (EU-plug, manual in French), with integrated remote dispenser	1	**171-0699**
Synergy™ UV ultrapure water system (EU-plug, manual in English and French), with integrated remote dispenser	1	**171-0696**
Synergy™ UV ultrapure water system (EU-plug, manual in German), with integrated remote dispenser	1	**171-0770**
Synergy™ UV ultrapure water system (EU-plug, manual in Danish), with integrated remote dispenser	1	**171-0697**
Synergy™ UV ultrapure water system (EU-plug, manual in Italian), with integrated remote dispenser	1	**171-0771**
Synergy™ UV ultrapure water system (EU-plug, manual in Spanish), with integrated remote dispenser	1	**171-0772**
Synergy™ UV ultrapure water system (CH-plug, manual in German and French), with integrated remote dispenser	1	**171-0773**
Synergy™ UV ultrapure water system (UK-plug, manual in English), with integrated remote dispenser	1	**171-0774**

Description	Pk	Cat. No.
Accessories		
SynergyPak™ I (Elix®, RO, distilled feed)	1	**171-0760**
SynergyPak™ II (Milli-DI™ or clean feed)	1	**171-0756**
SynergyPak™ III (DI feed)	1	**171-0757**
Wall mounting bracket for ultrapure water systems, Synergy™	1	**172-5108**
BioPak® final filter for pyrogen and nuclease removal; ultrafiltration used to provide pyrogen-free and nuclease-free water for critical cell culture or molecular experiments	1	**172-5157**
Final filter 0,22 µm Millipak® Express	1	**172-5105**
Millipak® Express 40 filter unit, 0,22 µm membrane, non sterile, for particulate and bacteria removal	1	**172-0009**
UV lamp for Direct Q® 3 UV and Synergy™	1	**171-0553**
Pressure regulator	1	**172-5107**

** With BioPak® final

Single channel pipettes, mechanical, Ultra-High Performance (UHP)

Variable volume, fully autoclavable

The VWR Ultra-High Performance pipettes offer superior accuracy and precision, with proven ergonomic design which is both lightweight and durable.

- Very low plunger forces
- Universal tip capability
- Automatic locking volume adjustment wheel
- Levered tip ejection and colour coded for volume identification
- Easy in-house calibration and maintenance

Ordering information: Starter Kit also available, including 4 single channel pipettes (0,5 - 10, 2 - 20, 20 - 200, 100 - 1000 µl).

Capacity (µl)	Accuracy (%)	Imprecision (%)	Pk	Cat. No.
0,1 - 2	±12,0 - ±1,5	<6,0 - <0,7	1	**613-1488**
0,5 - 10	±4,0 - ±0,5	<2,8 - <0,4	1	**613-1489**
2 - 20	±3,0 - ±0,8	<1,5 - <0,3	1	**613-1490**
5 - 50	±3,0 - ±0,8	<2,0 - <0,4	1	**613-1628**
10 - 100	±1,6 - ±0,8	<1,5 - <0,3	1	**613-1491**
20 - 200	±1,2 - ±0,6	<0,8 - <0,2	1	**613-1492**
100 - 1000	±0,9 - ±0,6	<0,6 - <0,2	1	**613-1493**

Description	Pk	Cat. No.
Starter Kit		
Starter Kit (incl. 4 UHP pipettes (0,5 - 10, 2 - 20, 20 - 200, 100 - 1000), 4-position stand (613-1589) and 3 racks of tips)	1 KIT	**613-1609**

Description	Pk	Cat. No.
Accessories		
Linear stand for 6 UHP micropipettes	1	**613-1587**
Shelf clip for 1 UHP pipette	1	**613-1588**
Stand for 4 UHP pipettes	1	**613-1589**
Stand for 1 UHP pipette	1	**613-1590**

Multi channel pipettes, mechanical, Ultra-High Performance (UHP)

Variable volume, fully autoclavable

The VWR Ultra-High Performance pipettes offer superior accuracy and precision, with proven ergonomic design both lightweight and durable.

- Low plunger forces
- Universal tip capability
- Automatic locking volume adjustment wheel
- Levered tip ejection and colour coded for volume identification
- Easy in-house calibration and maintenance

Capacity (µl)	Accuracy (%)	Imprecision (%)	Pk	Cat. No.
8-Channel				
1 - 10	±8,0 - ±2,0	<6,0 - <1,2	1	**613-1494**
5 - 50	±4,0 - ±1,6	<2,5 - <0,6	1	**613-1495**
20 - 200	±3,0 - ±1,0	<1,5 - <0,6	1	**613-1496**
50 - 300	±1,6 - ±1,0	<1,5 - <0,6	1	**613-1497**

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Capacity (µl)	Accuracy (%)	Imprecision (%)	Pk	Cat. No.
12-Channel				
1 - 10	±8,0 - ±2,0	<6,0 - <1,2	1	**613-1498**
5 - 50	±4,0 - ±1,6	<2,5 - <0,6	1	**613-1499**
20 - 200	±3,0 - ±1,0	<1,5 - <0,6	1	**613-1500**
50 - 300	±1,6 - ±1,0	<1,5 - <0,6	1	**613-1506**

Description	Pk	Cat. No.
Accessories		
Linear stand for 6 UHP micropipettes	1	**613-1587**
Shelf clip for 1 UHP pipette	1	**613-1588**
Stand for 4 UHP pipettes	1	**613-1589**
Stand for 1 UHP pipette	1	**613-1590**

Pipette tips

All the tips are made of high quality 100% pure virgin medical grade PP. Made in the highest quality moulds, these tips can be used whenever the work demands a higher standard. Sterile products are tested for endotoxin (pyrogen) contamination and are certified to USP standards. Resins are pre-tested for metal contamination. Certificates are on file by lot number for all test results.

- A wider seal ensures that tips will seal easily and consistently without leaking
- Guaranteed free of detectable DNA, DNase/RNase, endotoxins and heavy metals
- Autoclavable

	Type	Capacity (µl)	Compatibility	Sterile	Packed	Pk	Cat. No.
Bulk							
	UltraFine™, extended	0,1 - 10	A	-	Bulk	1.000	**613-0259**
	UltraFine™, graduated	0,1 - 10	A	-	Bulk	1.000	**613-0364**
	Standard (yellow)	1 - 200	C	-	Bulk	1.000	**613-0246**
	Bevel Point™	1 - 200	C	-	Bulk	1.000	**613-0239**
	Bevel Point™, graduated	1 - 200	C	-	Bulk	1.000	**613-0298**
	Bevel Point™	100 - 1000	L	-	Bulk	1.000	**613-0340**
	Bevel Point™, graduated	100 - 1000	L	-	Bulk	1.000	**613-0343**
	UltraFine™, FlexTop™, extended	100 - 1250	I	-	Bulk	1.000	**613-0272**
	Wide orifice	100 - 1250	I	-	Bulk	1.000	**613-0749**
	Macro	1000 - 5000	O	-	Bulk	250	**613-0830**
	Macro, graduated (Gilson Pipetman)	1000 - 5000	O	-	Bulk	250	**613-0338**
	Macro, graduated (Sartorius/Eppendorf)	1000 - 5000	O	-	Bulk	250	**613-0339**
	Standard	5000 - 10000	Y	-	Bulk	250	**613-0831**
Racked							
	UltraFine™, graduated	0,1 - 10	A	-	12 racks, 96 each	1.152	**613-0334**
	Standard (yellow)	1 - 200	C	-	10 racks, 96 each	960	**613-0247**
	Bevel Point™	1 - 300	G	-	10 racks, 96 each	960	**613-0266**
	Bevel Point™	100 - 1000	L	-	6 racks, 96 each	576	**613-0341**
	UltraFine™, Rainin® LTS™ style	100 - 1000	S	-	6 racks, 96 each	576	**613-0582**
	UltraFine™, FlexTop™, extended	100 - 1250	I	-	6 racks, 96 each	576	**613-0273**
	Wide orifice	100 - 1250	I	-	6 racks, 96 each	576	**613-0750**
Racked, sterile							
	UltraFine™, graduated	0,1 - 10	A	+	12 racks, 96 each	1.152	**613-0335**
	Standard (yellow)	1 - 200	C	+	10 racks, 96 each	960	**613-0248**
	Bevel Point™	1 - 200	C	+	10 racks, 96 each	960	**613-0242**
	Bevel Point™, graduated	1 - 200	C	+	10 racks, 96 each	960	**613-0300**
	UltraFine™, graduated, Rainin® LTS™ style	1 - 200	R	+	10 racks, 96 each	960	**613-0580**
	Bevel Point™	100 - 1000	L	+	6 racks, 96 each	576	**613-0342**
	Bevel Point™, graduated	100 - 1000	L	+	6 racks, 96 each	576	**613-0345**
	UltraFine™, FlexTop™, extended	100 - 1250	I	+	6 racks, 96 each	576	**613-0274**
	Wide orifice	100 - 1250	I	+	6 racks, 96 each	576	**613-0751**

IVD

Pipette tips

Biotix

PP, transparent, low-binding

This new generation of tips form an excellent seal on both single and multi channel pipettes and guarantee total recovery of the sample whilst protecting the technician against the risks of repetitive strain injury. The tips are manufactured with proprietary technologies for increased pipetting accuracy and precision.

- FlexFit™ provides a flexible nature at the proximal end of the tip to reduce the insertion and ejection forces when using a pipette
- Blade™ technology eliminates hanging drops at the distal end of the tip
- X-Resin™ and Chem-Resin™ tips are available to meet specific applications
- Certified free of DNA, DNase, RNase, and endotoxins (pyrogens)

Tips made from our proprietary **X-Resin™** feature industry-leading low retention surface for maximum sample recovery. Robust sample recovery supports performance and data accuracy in today's most sensitive assays.

Chem-Resin™ provides a more neutral surface tension for working with polar solvents or highly electronegative reagents; the reduced hydrophobicity on the surface facilitates low volume draw and drip-free dispense of these classes of chemicals.

IVD labelled. Manufactured under stringent controls in an ISO 9001 certified facility. Every lot is tested for precision assuring maximum quality and compatibility. All raw materials are traceable.

Packaging: Box of 96 tips with Phantom hinge lid for easy rack opening. Item code, colour code and individual barcode on each rack. Each tray includes a label with a unique barcoded serial number, part number, and description for high traceability.

	Type	Capacity (µl)	Sterile	Packed	Pk	Cat. No.
	X-Resin™	10	+	10 racks, 96 each	960	**613-1376**
	Chem-Resin™	10	-	10 racks, 96 each	960	**613-2839**
	Chem-Resin™	10	+	10 racks, 96 each	960	**613-2831**
	Chem-Resin™, extended length	10	-	10 racks, 96 each	960	**613-2840**
	Chem-Resin™, extended length	10	+	10 racks, 96 each	960	**613-1782**
	Chem-Resin™	200	-	10 racks, 96 each	960	**613-2841**
	Chem-Resin™	200	+	10 racks, 96 each	960	**613-2832**
	Chem-Resin™	300	+	10 racks, 96 each	960	**613-2833**
	Chem-Resin™	1250	-	10 racks, 96 each	960	**613-2843**
	Chem-Resin™	1250	+	10 racks, 96 each	960	**613-2834**

VWR COLLECTION

SELECTED FOR YOU

Pipette tips, refill, Next Generation

Tips made from pure resins, packaging made from renewable materials

The Next Generation pipette tip refill system is a revolution in pipette tip refills. It goes far beyond other reload systems to bring a complete refilling solution to the laboratory. With a simple lift, place and snap, the user can refill VWR and other brands of pipette tip racks with 17 different styles of tips.

Far beyond simple recycle coding, the Next Generation is a complete system designed with a low carbon footprint that includes the first ever use of bioplastic (non petroleum) compostable resin in pipette tip refills. Next Generation's small footprint extends to the packaging, with a reclosable box that helps maximise storage space in crowded laboratories.

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- Easy to use refill system - new pipette tip racks, inserts and transfer cover prevent tip wobbling during refill and keeps tips clean
- 95% renewable materials - compostable tip base from organic non petroleum resin, carton made from 100% recycled fibres, printing is soy-based vegetable ink
- Certified DNA-/RNase-/DNase-free

Packaging: Compact, reclosable packaging with reduced overall weight.

Type	Capacity (µl)	Compatibility	Sterile	Packed	Pk	Cat. No.
UltraFine™	0,1 - 10	A	-	13 racks, 96 each	1.248	**613-1646**
Extended, micro	0,1 - 10	A	-	14 racks, 96 each	1.344	**613-0735**
Eppendorf® style, yellow	1 - 100	E	-	10 racks, 96 each	960	**613-0734**
Yellow	1 - 200	B	-	10 racks, 96 each	960	**613-0732**
Standard	1 - 200	C	-	10 racks, 96 each	960	**613-0740**
Graduated	1 - 200	C	-	10 racks, 96 each	960	**613-0742**
Ultrafine™	1 - 200	I	-	10 racks, 96 each	960	**613-0725**
Ultrafine™	1 - 300	G	-	6 racks, 96 each	576	**613-0723**
Ultrafine™	100 - 1250	I	-	5 racks, 96 each	480	**613-0738**

Description	Pk	Cat. No.
Accessories		
Boxes for 10 µl tips, empty	12	**613-0383**
Boxes for 1 - 250 µl tips, empty	10	**613-0307**
Boxes for 100 - 1250 µl tips, empty	6	**613-0306**

IVD

STERILE

Filter tips

Biotix

PP, sterile, transparent

This new generation of filter tips form an excellent seal on both single and multi channel pipettes. The tips are manufactured with proprietary technologies for increased pipetting accuracy and precision. The unique Biotix Delta Filter™ alerts the user to potential contamination by changing colour upon contact with liquids or aerosols.

- FlexFit™ provides a flexible nature at the proximal end of the tip, so reducing the loading and ejection forces when using a pipette
- Blade™ technology eliminates hanging drops at the distal end of the pipette tip
- Certified free of DNA, DNase, RNase, and endotoxins (pyrogens)
- X-Resin™ and Chem-Resin™ tips are available to meet specific applications

Tips made from **X-Resin™** feature an industry-leading, low retention surface for maximum sample recovery. Robust sample recovery supports performance and data accuracy in today's most sensitive assays.

IVD labelled. Manufactured under stringent controls in an ISO 9001 certified facility. Every lot is tested for precision assuring maximum quality and compatibility. All raw materials are traceable.

Packaging information: Box of 96 tips with Phantom hinge lid for easy rack opening. Each tray includes a label with a unique barcoded serial number, part number, and description for high traceability.

	Type	Capacity (µl)	Sterile	Packed	Pk	Cat. No.
	X-Resin™	10	+	10 racks, 96 each	960	**732-1429**
	X-Resin™, extended length	10	+	10 racks, 96 each	960	**732-1430**
	X-Resin™	20	+	10 racks, 96 each	960	**732-1432**
	X-Resin™	100	+	10 racks, 96 each	960	**732-1433**
	X-Resin™	300	+	10 racks, 96 each	960	**732-1434**
	X-Resin™	1250	+	10 racks, 96 each	960	**732-2383**

VWR COLLECTION

SELECTED FOR YOU

Filter tips

All tips are made of high quality 100% pure virgin medical grade PP. Made in the highest quality moulds, these tips can be used whenever the work demands a higher standard. Sterile products are tested for endotoxin (pyrogen) contamination and certified to USP results. Resins are pre-tested for metal contamination. Certificates are on file by lot number for all test results.

- A wider seal ensures that tips will seal easily and consistently without leaking, on old as well as new pipettes
- Guaranteed free of detectable DNA, DNase/RNase, endotoxins and heavy metals

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	Type	Capacity (µl)	Compatibility	Sterile	Packed	Pk	Cat. No.
Racked, sterile							
	UltraFine™, extended	0,1 - 10	AF1	+	10 racks, 96 each	960	**732-0543**
	UltraFine™, graduated	0,1 - 10	AF1	+	12 racks, 96 each	1.152	**732-0516**
	Bevel Point™	1 - 40	AF3	+	10 racks, 96 each	960	**732-0528**
	Standard	1 - 100	AF5	+	10 racks, 96 each	960	**732-1103**
	Bevel Point™, graduated	1 - 100	AF5	+	10 racks, 96 each	960	**732-1102**
	UltraFine™	1 - 200	AF7	+	10 racks, 96 each	960	**732-0541**
	UltraFine™, extended	1 - 300	AF8	+	6 racks , 96 each	576	**732-0611**
	UltraFine™, FlexTop™	100 - 1000	AF9	+	6 racks, 96 each	576	**732-1106**

Single channel pipettes, mechanical, Transferpettor™
Brand

Fixed or variable volume

Ideal for pipetting highly viscous media up to 140 000 mm^2/s, or with density up to 13,6 g/cm^3 (protein solutions, oils, fat, mercury, sulphuric acid), high vapour pressure media up to 500 mbar (alcohols, ethers, hydrocarbons), or media with a tendency to foam (tensioactive solutions).

- For pipetting media that present problems for air displacement pipettes
- Positive displacement ensures that results are reproducible regardless of pipetting speed and ambient conditions
- The movable piston is in direct contact with the liquid and removes the last drop from the walls of the capillaries or tips
- Residual moisture in the capillaries or tips is minimal and may be disregarded except in the case of infectious or radioactive media
- Certified compliant with a certificate of quality

Ordering information: Must be used with capillaries, tips, and pistons for Transferpettor™.

Capacity (µl)	Division (µl)	Accuracy (%)	Imprecision (%)	Colour code	For pipette tips (µl)	Pk	Cat. No.
Fixed volume							
1	-	±4,0	≤4,0	White	5	1	**613-3358**
2	-	±2,5	≤2,0	White	5	1	**613-3359**
5	-	±1,0	≤0,8	White	5	1	**613-3362**
10	-	±1,0	≤0,8	Orange	10	1	**613-3363**
20	-	±0,8	≤0,5	Black	20	1	**613-3364**
25	-	±0,8	≤0,4	2 × White	25	1	**613-3365**
50	-	±0,6	≤0,4	Green	50	1	**613-3366**
100	-	±0,6	≤0,4	Blue	200	1	**613-3367**
200	-	±0,5	≤0,2	Red	200	1	**613-3368**
Variable volume							
2,5 - 10	0,01	±1,0	≤0,8	Orange	10	1	**613-3354**
5 - 25	0,1	±0,8	≤0,5	2 × White	25	1	**613-3355**
10 - 50	0,1	±0,6	≤0,4	Green	50	1	**613-3356**
20 - 100	0,1	±0,6	≤0,4	Blue	200	1	**613-3357**
100 - 500	1	±0,5	≤0,2	Green	500	1	**613-3379**
200 - 1000	1	±0,5	≤0,2	Yellow	1000	1	**613-3380**
1000 - 5000	10	±0,5	≤0,2	Red	5000	1	**613-3381**
2000 - 10000	10	±0,5	≤0,2	Orange	10000	1	**613-3382**

Description	Capacity (µl)	Pk	Cat. No.
Caps, glass			
Glass capillaries	1/2/5	100	**613-3369**
Glass capillaries	10	100	**613-3370**
Glass capillaries	20	100	**613-3371**
Glass capillaries	25	100	**613-3372**
Glass capillaries	50	100	**613-3373**
Glass capillaries	100/200	50	**613-3374**

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Description	Capacity (µl)	Pk	Cat. No.
Caps, PP			
PP caps	100 - 500	10	**613-3383**
PP caps	200 - 1000	10	**613-3384**
PP caps	1000 - 5000	10	**613-3385**
PP caps	2000 - 10000	10	**613-3386**

VWR COLLECTION

3 year warranty

SELECTED FOR YOU

Repetitive pipette, mechanical

This pipette is designed for the dispensing of contaminated fluids and volatile liquids. The acceptance of dispenser tips with plunger helps to avoid contamination by ascending aerosols in the tip and guarantees long-term secure use.

- Flexible: Pipette allows 12 tip sizes, 10 volume adjustments and 120 program steps
- Volume adjustable from 1 to 5500 µl
- Most suitable for long dispensing series due to its low weight (85 g)
- Ergonomic design allows one handed operation of volume selection, loading and dispensing of liquids
- Volume adjustments and dosing volumes for different tips are clearly visible on the dispenser

Ordering information: Available as an individual pipette or as a starter kit. The kit contains one pipette and five tips of each size: 0,05/0,1/0,2/0,5/1,0/1,25/2,5/5,0/10/12,5/25/50 ml.

Description	Pk	Cat. No.
Individual pipette, mechanical	1	**613-2169**
Starter kit, including tips	1	**613-2174**

IVD

Repetitive pipette, HandyStep® S
Brand

Ergonomic and durable repetitive pipette allowing quick and easy serial pipetting and, in conjunction with Brand PD-Tips (ten different sizes from 0,1 µl to 50 ml), providing up to 49 repetitive dispensings from a single aspiration. Also compatible with Combitips®, Combitips® plus and other standard repetitive tips. The HandyStep® S works on the positive displacement principle, making it ideal for routine and research applications, as well as for difficult liquids (viscous, high density or high vapour pressure liquids).

- Easy tip mounting - tips are now simply inserted from below
- Eject key for contact-free, safe tip-ejection
- Superior ergonomic handling
- Conformity certified, with serial number
- 49 different volumes with ten PD-Tip sizes

Delivery information: Supplied with performance certificate, operating manual, shelf/rack mount, three PD-Tips (0,1, 1 and 10 ml).

Pipette tip	Volume (µl)	Accuracy (≤ ± %)		Imprecision (%)	
		1 = 2%	5 = 10% *	2%	10%
PD-Tip 0,1 ml	2-10	±4,0	±1,6	≤6,0	≤2,0
PD-Tip 0,5 ml	10-50	±2,5	±1,0	≤2,5	≤1,0
PD-Tip 1,0 ml	20-100	±2,5	±1,0	≤2,0	≤0,8
PD-Tip 1,25 ml	25-125	±2,5	±0,9	≤2,0	≤0,7
PD-Tip 2,5 ml	50-250	±1,5	±0,6	≤1,5	≤0,6
PD-Tip 5,0 ml	100-500	±1,8	±0,7	≤1,5	≤0,7
PD-Tip 10,0 ml	200-1000	±1,8	±0,7	≤2,0	≤0,8
PD-Tip 12,5 ml	250-1250	±1,8	±0,8	≤3,2	≤1,4
PD-Tip 25,0 ml	500-2500	±1,5	±0,6	≤3,0	≤1,0
PD-Tip 50,0 ml	1000-5000	±1,5	±0,5	≤5,0	≤1,2

Description	Pk	Cat. No.
HandyStep® S	1	**612-3858**

* Stroke setting = % of nominal volume

Repetitive pipette, Multipette® M4
Eppendorf

Manual dispenser, designed for maximum ease of use, precision and flexibility in terms of volume selection and replacement of the associated Combitip® Advanced tips. Combitip® Advanced tips work on the direct displacement principle, ensuring that the correct volume is dispensed every time, regardless of the density of the liquid or its flow properties. This principle also ensures safer conditions when working with radioactive, aggressive, toxic substances or liquids with higher vapour pressures.

- Simple volume adjustment from 1 µl to 10 ml
- Volume display with automatic recognition of the Combitip® Advanced tip
- Up to 100 dispensing cycles with one filling, integrated step counter
- Capable of dispensing 112 different volumes
- The Combitip® can be detached by applying slight pressure, avoiding any contact with and contamination of the tip

Tip	Volume (µl)	Accuracy (%)	Imprecision (%)
Combitip® Advanced 0,1 ml	1 - 20	±1,6 - ±1,0	≤3,0 - ≤2,0
Combitip® Advanced 0,2 ml	2 - 40	±1,3 - ±0,8	≤2,0 - ≤1,5
Combitip® Advanced 0,5 ml	5 - 100	±0,9 - ±0,8	≤1,5 - ≤0,6
Combitip® Advanced 1 ml	10 - 200	±0,9 - ±0,6	≤0,9 - ≤0,4
Combitip® Advanced 2,5 ml	25 - 500	±0,8 - ±0,5	≤0,8 - ≤0,3
Combitip® Advanced 5 ml	50 - 1000	±0,6 - ±0,5	≤0,6 - ≤0,25
Combitip® Advanced 10 ml	100 - 2000	±0,5 - ±0,5	≤0,6 - ≤0,25
Combitip® Advanced 25 ml	250 - 5000	±0,4 - ±0,3	≤0,6 - ≤0,25
Combitip® Advanced 50 ml	500 - 10 000	±0,3 - ±0,3	≤0,5 - ≤0,3

Description	Pk	Cat. No.
Multipette® M4, incl. holder (for wall attachment or carousel stand)	1	**613-2890**
Multipette® M4 starter kit, incl. Combitip® rack, Combitip advanced® mixed pack	1	**613-2927**

Dispenser tips, universal

- Compatible with: Ritter® ripette®, Eppendorf® Multipette® plus and Multipette® 4780, Brand® HandyStep® and HandyStep®electronic
- Nine different tip sizes from 0,1 to 50 ml
- Sterile tips guaranteed free from DNA, DNase, RNase, ATP and pyrogens

Capacity (ml)	Sterile	Packed	Pk	Cat. No.
0,1	-	Bulk	100	**613-1016**
0,1	+	Individual blister	100	**613-1025**
0,2	-	Bulk	100	**613-1017**
0,2	+	Individual blister	100	**613-1026**
0,5	-	Bulk	100	**613-1018**
0,5	+	Individual blister	100	**613-1027**
1,0	-	Bulk	100	**613-1019**
1,0	+	Individual blister	100	**613-1028**
2,5	-	Bulk	100	**613-1020**
2,5	+	Individual blister	100	**613-1029**
5,0	-	Bulk	100	**613-1021**
5,0	+	Individual blister	100	**613-1030**
10,0	-	Bulk	100	**613-1022**
10,0	+	Individual blister	100	**613-1031**
25,0	-	Bulk	25	**613-1023**
25,0	+	Individual blister	25	**613-1032**
50,0	-	Bulk	25	**613-1024**
50,0	+	Individual blister	25	**613-1033**

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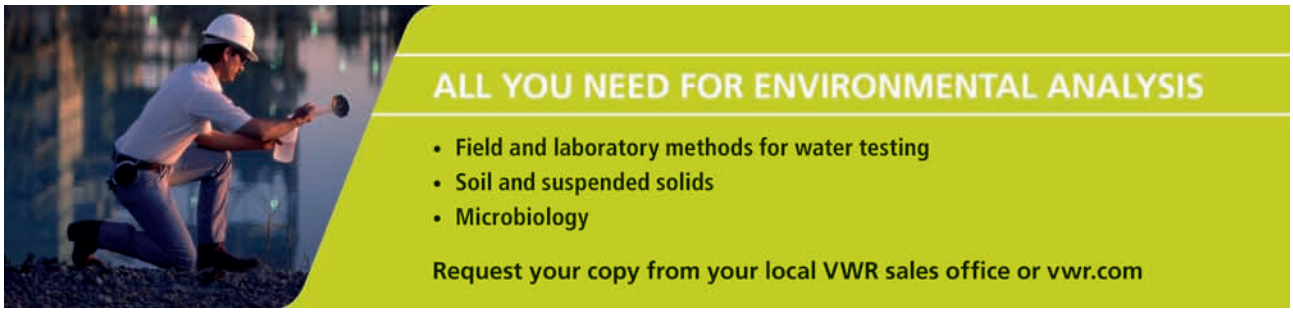
Description	Pk	Cat. No.
Accessories		
Adapters for 25 and 50 ml tips	3	**613-1034**

Dispenser tips, classic

- Compatible with: Ritter® ripette® and ripette® pro, Eppendorf® Multipette® 4780, Brand® HandyStep® and HandyStep®electronic, Minilab 100/101, EasyStep, Distriman®
- Eight different tip sizes from 0,05 to 50 ml
- Sterile tips guaranteed free of DNA, DNase, RNase, ATP and pyrogens

Capacity (ml)	Sterile	Packed	Pk	Cat. No.
0,05	-	Bulk	100	**613-1000**
0,05	+	Individual blister	100	**613-1008**
0,5	-	Bulk	100	**613-1001**
0,5	+	Individual blister	100	**613-1009**
1,25	-	Bulk	100	**613-1002**
1,25	+	Individual blister	100	**613-1010**
2,5	-	Bulk	100	**613-1003**
2,5	+	Individual blister	100	**613-1011**
5,0	-	Bulk	100	**613-1004**
5,0	+	Individual blister	100	**613-1012**
12,5	-	Bulk	100	**613-1005**
12,5	+	Individual blister	100	**613-1013**
25,0	-	Bulk	25	**613-1006**
25,0	+	Individual blister	25	**613-1014**
50,0	-	Bulk	25	**613-1007**
50,0	+	Individual blister	25	**613-1015**

Description	Pk	Cat. No.
Accessories		
Adapters for 25 and 50 ml tips	3	**613-1034**



Dispenser tips, Combitips® Advanced

Eppendorf

Combitips® Advanced

Rack for Combitips®

For use with Multipette®.

- Ergonomic design with unique funnel shape prevents damage to gloves and ensures comfortable handling
- Individually colour coded for quick identification
- Elongated tips (for 2,5, 5 and 10 ml) allow complete emptying of all common tubes preventing sample loss

Combitips® advanced and Combitips® advanced PCR Clean are supplied in a dispenser box (100 Combitips® in 4 bags, PCR Clean with zip-lock bag); 25/50 ml Combitips® come in 25 pcs. per box (each containing an adapter).

Combitips® Biopur® are individually packed in single blister and additional plastic bag for cleanroom use.

Capacity (ml)	Sterile	Packed	Pk	Cat. No.
Combitips® Advanced				
0,1	-	4 bags, 25 each	100	**613-2058**
0,2	-	4 bags, 25 each	100	**613-2059**
0,5	-	4 bags, 25 each	100	**613-2060**
1,0	-	4 bags, 25 each	100	**613-2061**
2,5	-	4 bags, 25 each	100	**613-2062**
5,0	-	4 bags, 25 each	100	**613-2063**
10	-	4 bags, 25 each	100	**613-2064**
25	-	4 bags, 25 each	100	**613-2065**
50	-	4 bags, 25 each	100	**613-2066**
Combitips® Advanced PCR Clean				
0,1	-	4 bags, 25 each	100	**613-2076**
0,2	-	4 bags, 25 each	100	**613-2077**
0,5	-	4 bags, 25 each	100	**613-2078**
1,0	-	4 bags, 25 each	100	**613-2079**
2,5	-	4 bags, 25 each	100	**613-2080**
5,0	-	4 bags, 25 each	100	**613-2081**
10	-	4 bags, 25 each	100	**613-2082**
25	-	4 bags, 25 each	100	**613-2083**
50	-	4 bags, 25 each	100	**613-2084**
Combitips® Advanced Biopur®				
0,1	+	Individual blister	100	**613-2067**
0,2	+	Individual blister	100	**613-2068**
0,5	+	Individual blister	100	**613-2069**
1,0	+	Individual blister	100	**613-2070**
2,5	+	Individual blister	100	**613-2071**
5,0	+	Individual blister	100	**613-2072**
10	+	Individual blister	100	**613-2073**
25	+	Individual blister	100	**613-2074**
50	+	Individual blister	100	**613-2075**

Description	Pk	Cat. No.
Accessories		
Adapter 25 ml for Combitips® Advanced	1	**613-2085**
Adapter 50 ml for Combitips® Advanced	1	**613-2086**
Adapter 25 ml for Combitips® Advanced Biopur®	7	**613-2087**
Adapter 50 ml for Combitips® Advanced Biopur®	7	**613-2088**
Rack for 8 Combitips® Advanced	1	**613-2089**

Multichannel peristaltic pump, REGLO ICC
Ismatec

Allowing individual control of up 3 pumping channels from pump keypad or PC, the Ismatec® REGLO ICC eliminates the clutter of multiple pumps on the bench top.

- Continuous pumping or precision dispensing
- Independent bi-directional flow control on each channel
- Easy to use tubing cassettes allow quick change overs
- Independent channel calibration minimises tube to tube differences resulting in the best calibration accuracy possible in a multichannel peristaltic pump
- Easy to use USB interface makes connections quickly

Please contact VWR for details of compatible tube types/sizes.

Description	Channels	Flow rate (ml/min)	Rollers	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Peristaltic pump, REGLO ICC	3	0,002 - 35	8	125×205×170	2,7	1	**224-0069**
Peristaltic pump, REGLO ICC	4	0,002 - 35	8	125×205×170	2,7	1	**224-0136**

Mini solvent pump for bottles
Bürkle

The Mini solvent pump is a high-quality hand pump for small containers such as bottles, canisters and tanks up to about 5 litres. For reliable filling and dosing of solvents and readily flammable liquids.

The hand pump works according to the excess pressure principle. An excess pressure is built up in the container with the pump ball, forcing the liquid outward. In this way only the hose, pumping tube and discharge come in contact with the liquid being filled. To ensure safety, a pressure relief valve protects the solvent pump against excessive pressure build-up, for example due to sunshine.

- All parts of the pump in contact with medium are manufactured from high-quality and inert materials PTFE and stainless steel (1.4301, 1.4404), which feature excellent chemical resistance
- The Mini solvent pump is therefore especially well suited for use with high-purity liquids and readily flammable media such as acetone, isopropanol, ethanol and methanol, etc
- The solvent pump allows for filling from a wide range of container sizes
- The flexible PTFE hose that conveys liquid out of the container can be shortened to any length, this ensures ideal residual draining, even from bottles and canisters with a vaulted bottom

Complementary information: the grounding cable included with delivery can easily be connected to the solvent pump with a bunch plug, thus diverting electrostatic charges so that flammable media can be filled safely.

Description	Material	Flow rate (l/min)	Immersion depth (mm)	Pk	Cat. No.
Mini solvent pump for 1–5 l containers, connecting thread GL 45, with PTFE hose (6×8 mm), including a 2 m cable	PTFE/stainless steel	1,8	400	1	**223-0104**

Description	Pk	Cat. No.
Accessories		
Thread adapter for Mini solvent pump, PTFE Internal thread: S40 External thread: GL45	1	**223-0101**
Thread adapter for Mini solvent pump, ETFE Internal thread: GL38 External thread: GL45	1	**223-0102**
Thread adapter for Mini solvent pump, ETFE Internal thread: GL32 External thread: GL45	1	**223-0103**

Drum pumps, for combustible liquids

Bürkle

Pump with rigid discharge tube

Pump with flexible hose and stopcock

Stainless steel V2A (1.4301) / AISI 304

With rigid discharge tube or flexible 1,2 m PTFE/stainless steel discharge hose with ball valve made of stainless steel. Both tube and hose can be unscrewed. Immersion tube diameter 32 mm. Ideal for decanting combustible and highly flammable liquids. The pump can conduct electricity and when used in conjunction with the anti-static kit (223-1391) fulfils the requirements for handling flammable liquids.

NOTE: The pumps are not suitable for use with acetone.

- PTFE seals ensure long-term maintenance-free usage
- Delivery rate depending on length of pump approximately 220 to 560 ml/stroke
- Stepless adjustment of pump immersion depth to ensure good residual extraction

Description	Material	Flow rate (ml/stroke)	Immersion depth (mm)	Total length (mm)	Pk	Cat. No.
Stainless steel barrel pump	Stainless steel	220	360	480	1	**223-1312**
Barrel pump with flexible hose and stopcock	Stainless steel	220	360	480	1	**223-1233**
Stainless steel barrel pump	Stainless steel	350	570	690	1	**223-1313**
Barrel pump with flexible hose and stopcock	Stainless steel	350	570	690	1	**223-1234**
Stainless steel barrel pump	Stainless steel	560	910	1030	1	**223-1314**
Barrel pump with flexible hose and stopcock	Stainless steel	560	910	1030	1	**223-1235**

Description	Pk	Cat. No.
Accessories		
Anti-static kit	1	**223-1391**
Discharge hose, 1,2 m, with stainless steel/PTFE stopcock for stainless steel barrel pump	1	**223-1250**
Discharge tube	1	**223-1237**
Threaded drum connection	1	**223-1361**
Threaded drum connection, gas-tight	1	**223-1249**

Container pump, Pump-it®
Bürkle

PP with FKM gasket

For emptying containers, carboys and small barrels up to 60 litres, quickly and cleanly. Pressure is built up with the manually operated piston and forces the liquid out of the container. Suitable for weak acids, alkalis and petrochemicals.

- Pump thread suitable for 64 mm diameter (BSI) thread
- A set of adapters for common container threads is available
- Exact dosing, no drips
- For liquids with viscosity up to 1500 cps at +20 °C
- Immersion depth 100 cm

NOTE: Not suitable for use with hydrochloric acid

Description	Material	Flow rate (l/min)	Pk	Cat. No.
Pump-it® container pump	PP	8	1	**223-1611**

Description	Pk	Cat. No.
Accessories		
Thread adapter PP, brown/blue, outer/inner: 64 mm (BSI)/ DIN 71	1	**223-1615**
Thread adapter, PP, yellow/blue, outer/inner: 64 mm (BSI)/ DIN 61	1	**223-1614**
Thread adapter, PP, black, outer/inner: 64 mm (BSI)/ DIN 60 for Mauser-Fasset	1	**300-0016**
Thread adapter, PP, black, outer/inner: 64 mm (BSI)/ DIN 51	1	**223-0045**
Thread adapter, PP, brown, outer/outer 2" coarse thread Leer/TriSure - 64mm (BSI)	1	**223-0044**
Thread adapter, PP, blue, outer/outer: 2" BSP / 64 mm (BSI)	1	**223-0081**
Thread adapter, PP, green, outer/outer: 2" coarse thread Mauser/ 64 mm (BSI)	1	**223-0080**
Adapter set, contains 1 each of: 223-0080, 223-0044, 223-0081, 300-0016, 223-0045	1	**223-1619**

VWR COLLECTION

IP 21 SELECTED FOR YOU 2 year warranty

Magnetic hotplate stirrers, VMS Advanced series

VMS-C7 Advanced

Compact stirrers with a ceramic glass plate, providing excellent chemical resistance. Units feature digital error code display, a "hot" top indicator to warn users that surface is hot, a fixed safety circuit that shuts off the heater if temperature rises above 550 °C and there are three operating modes to choose from (standard, safe, adjustment protection). Stirrers have a speed display scale and optional capability to connect a PT1000 temperature sensor directly; when using this functionality control accuracy in the medium is ±0,5 °C.

- Exact temperature setting via digital potentiometer
- Simultaneous digital display of target and actual temperatures via LCD display
- Display of actual temperature value in medium with 0,1 °C resolution when using PT1000 temperature sensor
- Integrated contact thermometer VT-5 (all VT-5 functions incorporated in hotplate stirrer)
- Stirrer can be controlled using two microcontrollers

IP protection class according to DIN EN 60529: IP 21

Delivery information: Supplied with PT1000 probe. A wide range of optional accessories are available.

Model	VMS-C7 Advanced
Heat output (W)	1000
Max. stirring capacity H_2O (l)	10
Plate dimensions (mm)	180×180
Plate material	Ceramic glass
Power input/output (W)	15/1,5
Speed range (min^{-1})	100 - 1500
Temperature range (°C)	50...500
Weight (kg)	5
W×D×H (mm)	215×330×105

Description	Pk	Cat. No.
VMS-C7 Advanced magnetic hotplate stirrer, EU-plug	1	**442-0664**
VMS-C7 Advanced magnetic hotplate stirrer, UK-plug	1	**442-0665**
VMS-C7 Advanced magnetic hotplate stirrer, CH-plug	1	**442-0666**

Magnetic hotplate stirrers, AREX Digital and AREX Digital PRO
VELP Scientifica

Magnetic stirrers with ceramic coated aluminium alloy top plate that provides even heat distribution and excellent chemical resistance together with easy cleaning and scratch protection. The units are suitable for continuous operation, offer precise temperature control and stability of the plate and feature an elevated front panel with run-off groove, which protects against spills and leaks. The control panel is separated from the hotplate ensuring increased safety and durability. Easy to operate, temperature and speed are controlled via two knobs. Hot warning light will show whenever the plate temperature is above 50 °C.

- Maximum safety temperature limit can be set between 50 and 370 °C
- Digital display shows set stirring speed and set and actual temperature
- Models maintain constant speed even when the sample viscosity changes

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- Both units supports AluBlocks™ or hemispheric bowls up to 1 litre, enabling different heating and stirring experiments to be carried out, with the hotplate stirrer becoming a personalised workstation

IP Protection Class according to DIN EN 60529: IP 42

Delivery information: AREX Digital is supplied with external PT100 probe (in ready to use solution) for direct control of liquid temperature up to 250 °C with accuracy of ±1,0 °C. AREX Digital PRO is supplied with VTF digital thermoregulator (in ready to use solution) with timer for unattended operation, for thermoregulation up to 300 °C with accuracy of ±0,5 °C.

Model	AREX Digital	AREX Digital PRO
Max. stirring capacity H_2O (l)	20	
Plate dimensions (mm)	Ø 155	
Plate material	Ceramic coated aluminium	
Power consumption (W)	630	
Speed range (min^{-1}) - aluminium	<1500	
Temperature range (°C)	Ambient ...370	
Weight (kg)	2,6	2,7
W×D×H (mm)	165×280×115	

Description	Pk	Cat. No.
AREX Digital with PT100 probe	1	**442-0998**
AREX Digital PRO with VTF digital thermoregulator	1	**442-0999**

Description	For	Pk	Cat. No.
AluBlocks™ for ARE, AREX, T.ARE, ARED and AM4 Stirrers			
Base	for different AluBlocks™	1	**442-1077**
Orange AluBlock™, 4 positions	tubes with Øxh: 28×43 mm	1	**442-1078**
Green AluBlock™, 4 positions	tubes with Øxh: 28×30 mm	1	**442-1079**
Black AluBlock™, 4 positions	tubes with Øxh: 28×24 mm	1	**442-1080**
Red AluBlock™, 4 positions	tubes with Øxh: 21,6×31,7 mm	1	**442-1081**
Blue AluBlock™, 6 positions	tubes with Øxh: 17,8×26 mm	1	**442-1082**
Gold AluBlock™, 11 positions	tubes with Øxh: 15,2×20 mm	1	**442-1083**
Round bowl for heating 100 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0144**
Round bowl for heating 250 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0123**
Round bowl for heating 500 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0122**
Round bowl for heating 1000 ml flasks	RC, RC2, ARE, AREX, AREC, T.ARE, ARED and AM4	1	**453-0124**

Magnetic hotplate stirrer, RCT basic IKAMAG® safety control

IKA

Magnetic hotplate stirrer with polished aluminium alloy plate, suitable for unsupervised operation. Unit has been updated and now features a stronger motor for a higher range of speeds, integrated temperature control for faster heating of the medium and improved magnetic adhesion. The hotplate stirrer has a digital error code display and "hot" top warning safety feature. Units incorporate excellent safety features with improved heating control and are ideal for use with optional contact thermometers, e.g. ETS-D5 for precise temperature control.

- Adjustable safety circuit for heating plate temperature (50 to 360 °C)
- Digital LED display shows exact temperature and speed setting, even when switched off
- Safety temperature limit setting can be digitally displayed
- Can be used at 5 to 40 °C (80% relative humidity), in an incubator or cold room

IP protection class according to DIN EN 60529: IP 42

Delivery information: Supplied with PT1000 temperature sensor and protective cover. A wide range of accessories are available, please order these separately.

Control accuracy with ETS-D5	±0,5 K
Control accuracy with PT1000 sensor	±1 K
Heat output (W)	600
Max. stirring capacity H_2O (l)	20
Plate dimensions (mm)	Ø 135
Plate material	Aluminium alloy
Power input/output (W)	16/9
Speed range (min^{-1})	50 - 1500
Temperature range (°C)	Ambient...310
Weight (kg)	2,5
W×D×H (mm)	160×270×85

Description	Pk	Cat. No.
RCT basic IKAMAG® safety control magnetic hotplate stirrer, EU-plug	1	**442-0603**
RCT basic IKAMAG® safety control magnetic hotplate stirrer, UK-plug	1	**442-2374**
RCT basic IKAMAG® safety control magnetic hotplate stirrer, CH-plug	1	**442-0681**

VWR COLLECTION

SELECTED FOR YOU

Magnetic stirring bars, cylindrical

PTFE covered, strong Alnico V magnetic core. Rounded, smooth surface.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
6	3	10	442-0259
8	3	10	442-4520
10	6	10	442-0295
12	4,5	10	442-4521
15	4,5	10	442-4522
20	6	10	442-4523
25	6	10	442-4524
30	6	5	442-4525
35	6	5	442-4530
40	8	5	442-4527
50	8	5	442-4528
60	10	5	442-4529
70	10	5	442-0260
80	10	5	442-0261

VWR COLLECTION

SELECTED FOR YOU

Magnetic stirring bars, plain, economy

PTFE covered, strong Alnico V magnetic core. Smooth surface with rounded edges which enhance agitation effect even at low speeds. Inexpensive, high performance.

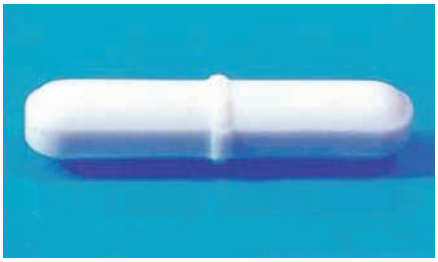
- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
12	3	10	442-0482
25	8	10	442-0483
40	8	5	442-0484
50	8	5	442-0485

VWR COLLECTION

SELECTED FOR YOU

Magnetic stirring bars, cylindrical, with centre ring



PTFE covered, strong Alnico V magnetic core. Smooth surface. For containers with slightly uneven bases.

- Very good chemical resistance
- Temperature resistant, suitable for use at high and low temperatures (–200 to +280 °C)

Length (mm)	Ø (mm)	Pk	Cat. No.
8	3	10	442-4500
12	6	10	442-4501
15	4,5	10	442-4502
15	8	10	442-4503
20	6	10	442-4504
25	6	10	442-4505
25	10	10	442-4506
30	6	10	442-4507
35	6	10	442-4508
40	8	10	442-4509
45	8	10	442-4510
50	8	5	442-4511
57	24	1	442-0256
60	10	5	442-4512
70	10	5	442-4513
108	24	1	442-0257
159	24	1	442-0258

Laboratory glassware washer, Basic Line, 60 cm, GW1160 series

Smeg

The Smeg disinfection machines guarantee excellent washing and effective thermal disinfection of laboratory glassware as well as complex and delicate instruments. Designed to meet the requirements of all laboratories it has efficacious washing and disinfection capabilities and small footprint so effective use of the available working space. The Basic Line models demonstrate numerous advantages when it comes to both management and safety aspects; for example, no manual procedures are required, no chemical disinfectants are required, there is no direct contact with dangerous substances, the impact on the environment is reduced by separating the drained fluids so effective washing and disinfection are guaranteed.

The GW1160 models are equipped with automatically regenerating water softeners, use freshly drawn water in every phase and have a dispenser for alkaline powder and a peristaltic pump for the acid neutraliser.

- Washing up to 95 °C - antibacterical thermal disinfection
- Programmable microprocessor controller
- Electronic programming: 9 fixed programs plus 6 free programs
- RS232 for connection to external printer or PC
- External panels in AISI 304 stainless steel, washing chamber and internal door in AISI 316L stainless steel
- 2 independent washing levels through telescopic guides, active thermodynamic drying
- Integrated water softener with salt sensor, cold water and demineralised water connections
- Electronic door lock for user safety

Ordering information: Although the Basic Line series are equipped with top and bottom baskets, additional injector racks should be ordered as appropriate.

Delivery information: The upper and lower baskets are included. Supplied as standard with 3 phase electrical supply but single phase is available on request.

Model	GW1160	GW1160C	GW1160S
No. of washing levels	1 – 2		
Controller/programs	9 standard programs and 6 customisable programs		
Program operation/display	8 pre-washing, washing, neutralisation, 2 mains water rinses, 2 demineralised water rinses, hot rinsing, with segments and warning light display		
Metering devices	Detergent dispenser for powder or liquid detergent (max. 1 powder and 3 liquid), alkaline powder detergent dispenser and peristaltic pump to dispense acid neutraliser liquid (max. three feed pumps)		
Circulation pump (Qmax)	400 l/min		
Adjustable parameters	Execution times, operating temperatures, quantity of additives, number of phases		
Control	Microprocessor; safety lock with electromagnetic release and automatic opening		
Temperature (°C)	+95 max.		
Water connection	Cold and demineralised water inlets		
Water heating power	6,3 kW		
Power connection	3P+N 400V 50Hz 7kW max		
Noise level	max. 50 dB(A)		
W×D×H (mm)	600×605×850		
Chamber W×D×H (mm)	520×515×545		
Weight (kg)	77		

Description	Pk	Cat. No.
Laboratory glassware washer, Basic Line, GW1160, with powder detergent dispenser and peristaltic pump for neutraliser	1	**141-0682**
Laboratory glassware washer, Basic Line, GW1160C with powder detergent dispenser, peristaltic pump for neutraliser and steam condenser	1	**141-0683**
Laboratory glassware washer, Basic Line, GW1160S, with peristaltic pumps for detergent and peristaltic pump for neutraliser	1	**141-0294**

Description	For	Pk	Cat. No.
Accessories			
Plinth, stainless steel, with lock: 600×530×400 mm (W×D×H). Raises load level to 70 cm above floor	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060P, GW3060S, GW4060, GW4060C, GW4060S, GW4060SC	1	**141-0652**
P14060 dosing pump for liquid detergent	GW0160, GW1160, GW1160C, GW1160S, GW1160SC, GW4060, GW4060C, GW4060S, GW4060SC, GW4190	1	**141-0759**
PAD2 booster pump for non pressurised RO or DI water feed, where tank is positioned at floor level. Requires PAD2R when installed in Basic Line models	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW2045, GW3060BX, GW3060BXC, GW3060P, GW3060SC, GW4060, GW4060C, GW4060S, GW4060SC, GW4090C, GW4190, GW4190C, GW4190S, GW4190SC	1	**141-0764**
PAD2R relay kit, required to control PAD2 pump on Basic Line machines	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW2045, GW3060BX, GW3060BXC,GW3060P,GW3060SC, GW4060, GW4060C, GW4060S, GW4060SC, GW4090C, GW4190, GW4190S, GW4190SC GW4190C, GW4090, GW4090C	1	**141-0765**
Stainless steel top for 60 cm built-in models, up to 825 mm high	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060P, GW3060S, GW4060, GW4060C, GW4060S, GW4060SC	1	**141-0805**
KP100 upper jet rack with 100 nozzles, stainless steel, for test tubes, vials, centrifuge tubes	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060P, GW3060S	1	**141-0702**
KP200 dual level jet rack, 100 nozzles on each level,, stainless steel, for test tubes, vials, centrifuge tubes	GW1160, GW1160C, GW1160S, GW3060BX, GW3060BXC, GW3060P, GW3060S, GW3060SC	1	**141-0704**
LB16S upper jet rack with 16 nozzles, stainless steel, for bottles, max. diam 101 mm, max. height 245 mm	GW0160, GW0160S, GW1160, GW1160C , GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060P, GW3060S	1	**141-0714**
LB8 jet rack, stainless steel, with 16 nozzles, for bottles, max. height 500 mm	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060,P GW3060S	1	**141-0724**

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Description	For	Pk	Cat. No.
Accessories			
LBT4 jet rack, stainless steel, with 4 nozzles, for 5 litre Erlenmeyer flasks	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060,P GW3060S	1	**141-0726**
LBT5 jet rack, stainless steel, with 5 nozzles, for 5 litre bottles, max 180×500 mm (Ø×H)	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060,P GW3060S	1	**141-0728**
LM40 universal jet rack, stainless steel, 40 assorted nozzles, for washing narrow necked glassware	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060,P GW3060S	1	**141-0734**
LPT100 jet rack for 100 pipettes, max. height 450 mm, stainless steel	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060,P GW3060S	1	**141-0748**

Professional washing machine, Easy Wash, Basic Line, 60 cm, GW0160 series

Smeg

Multipurpose washer for professional use able to wash up to 85 °C (thermal disinfection) and dose liquid detergent and neutraliser by peristaltic pumps. This washer represents a perfect choice to wash and disinfect all kinds of instruments used in small laboratories, universities, schools, specialised clinics, veterinary clinics and more.

- 7 standard programs stored
- Microprocessor electronic control
- LCD display with LED indicators for easy communication
- Washing chamber and internal door in high grade AISI 304 stainless steel
- Integrated water softener and salt sensor
- Cold water and demineralised water connections
- Electronic door lock system for user safety
- Up 2 dosing peristaltic pumps for liquid dosing (liquid dosing improves the washing performance)

Delivery information: Delivered without baskets, please contact your local VWR sales office for details.

Model	GW0160	GW0160S
No. of washing levels	2	
Capacity	150 l (washing chamber)	
Controller/programs	7 standard programs	
Program operation/display	7 standard programs stored, LCD display	
Metering devices	Pump for liquid neutraliser	Two liquid dispensers for powder reagents, mounted on the interior of the door
Control	Microprocessor electronic control, electronic door lock system	
Temperature (°C)	+85 max.	
Water connection	Cold and demineralised water inlets	
Power connection	230V, (1 phase), 2,8 kW	
W×D×H (mm)	600×605×850	
Chamber W×D×H (mm)	520×515×545	
Weight (kg)	70	

Description	Pk	Cat. No.
Professional glassware washer, with powder detergent dispenser, stainless steel, basic line, GW0160	1	**141-0680**
Professional glassware washer, with pump for liquid neutraliser, stainless steel, basic line, GW0160S	1	**141-0681**

Description	For	Pk	Cat. No.
Accessories			
Plinth, stainless steel, with lock: 600×530×400 mm (W×D×H). Raises load level to 70 cm above floor	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060P, GW3060S, GW4060, GW4060C, GW4060S, GW4060SC	1	**141-0652**
P14060 dosing pump for liquid detergent	GW0160, GW1160, GW1160C, GW1160S, GW1160SC, GW4060, GW4060C, GW4060S, GW4060SC, GW4190	1	**141-0759**
PAD booster pump for low pressure RO or DI water, tank at least 85 cm above floor level. Requires PAD2R when installed in Basic Line models	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW2045, GW4060, GW4060C, GW4060S, GW4190, GW4190C, GW4190S, GW4190SC	1	**141-0763**
PAD2 booster pump for non pressurised RO or DI water feed, where tank is positioned at floor level. Requires PAD2R when installed in Basic Line models	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW2045, GW3060BX, GW3060BXC, GW3060P, GW3060SC, GW4060, GW4060C, GW4060S, GW4060SC, GW4090C, GW4190, GW4190C, GW4190S, GW4190SC	1	**141-0764**
PAD2R relay kit, required to control PAD2 pump on Basic Line machines	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW2045, GW3060BX, GW3060BXC,GW3060P,GW3060SC, GW4060, GW4060C, GW4060S, GW4060SC, GW4090C, GW4190, GW4190S, GW4190SC GW4190C, GW4090, GW4090C	1	**141-0765**
Stainless steel top for 60 cm built-in models, up to 825 mm high	GW0160, GW0160S, GW1160, GW1160C, GW1160S, GW1160SC, GW3060BX, GW3060BXC, GW3060P, GW3060S, GW4060, GW4060C, GW4060S, GW4060SC	1	**141-0805**

VWR BDH PROLABO CHEMICALS

SELECTED FOR YOU

Detergents and cleaning agents, LABWASH® Premium

LABWASH PREMIUM Classic

LABWASH PREMIUM Alkamatic

A more concentrated version of the LABWASH® range.

- Residue-free laboratory glassware cleaning
- Excellent cleaning power at low dosage levels
- NTA-free (no Nitrilotriacetic acid)
- Protects the environment, active ingredients are biodegradable
- Acid rinse concentrates available to neutralise alkaline cleaners

Application	Manual Cleaning					Machine cleaning							
	LABWASH® Premium Extra	LABWASH® Premium Neutral	LABWASH® Premium Extra PF	LABWASH® Premium Classic	Sodium Hydroxide solution	LABWASH® Premium Powder	LABWASH® Premium Powder PF	LABWASH® Premium Alkamatic	LABWASH® Premium Alkamatic PF	LABWASH® Premium Acidrinse P	LABWASH® Premium Acidrinse C	LABWASH® Premium EasyRinse	LABWASH® Premium Pure
Aldehyde resins	x		x	x									x
Aluminium		x											
Amines					x					x	x		x
Analytical laboratories	x	x	x	x		x		x				x	x
Balsam resins	x		x	x			x		x				x
Bitumen	x		x										
Blood	x		x	x			x						x
Brass		x											x
Breweries	x	x	x	x	x	x	x		x				x
Bronze		x					x						
Calcareous deposits					x					x	x	x	
Carbonates					x					x		x	
Cells		x		x								x	
Chemical glassware	x	x	x	x		x		x					
Culture media				x			x		x				
Dairies	x	x	x	x	x	x	x		x				
Distillation residues	x		x	x			x		x			x	
Enzymes	x	x	x	x		x	x	x	x	x	x		x
Fat residues	x		x	x			x						x
Felt-tip pen	x	x	x			x	x	x	x				
Foam													
Food industries	x	x	x	x	x	x	x		x				
Food waste	x	x		x		x	x	x	x				x
Glass and porcelain equipment	x	x		x			x		x			x	
Grease for joints	x			x			x		x				x
Heavy oils	x		x	x			x		x				x
Hydroxides					x					x	x		
Lab. floors	x		x		x								
Metal equipment		x				x		x					
Mucus				x									
Neutralisation					x					x			
Nickel	x	x	x			x					x		
Oil	x		x	x	x		x		x				
Petri dishes	x	x	x	x		x	x	x	x	x	x		

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Application	Manual Cleaning					Machine cleaning							
Phosphate analysis equip.			x										
Pipettes		x		x		x		x					
Plaster residues	x	x	x		x								
Plastic equipment						x		x				x	
Precision equipment		x		x									
Protein residues	x		x	x			x						
Proteins	x		x	x					x				
Quartz equipment		x											
Rubber		x											
Saliva	x		x	x									
Silicones	x		x						x		x		
Spectacle lenses		x											
Stainless steel	x	x	x	x	x				x				
Thin film plates	x		x		x	x							
Tiled surfaces	x		x		x				x				
Tough residues				x			x						
Ultrasound	x	x	x										
Wax	x		x	x									
Zinc		x											

Description	pH value	Temp. range (°C)	Pk	Cat. No.
Manual cleaning - immersion cleaning				
LABWASH® Premium Classic, mildly alkaline concentrate for manual cleaning of laboratory glassware	12,2	20...85	5 l	**84545.360**
	12,2	20...85	10 l	**84545.410**
LABWASH® Premium Extra, concentrate for the manual cleaning of laboratory glassware and precision components	11,8	10...40	5 l	**84546.360**
	11,8	10...40	10 l	**84546.410**
LABWASH® Premium Extra PF, phosphate-free concentrate for manual cleaning of laboratory glassware	12,7	10...70	5 l	**84554.360**
	12,7	10...70	10 l	**84554.410**
LABWASH® Premium Neutral, pH-neutral concentrate for the cleaning of laboratory glassware and precision components	7,4	10...60	5 l	**84547.360**
	7,4	10...60	10 l	**84547.410**
Automated cleaning - laboratory washing machines				
LABWASH® Premium Powder, mildly alkaline cleaning powder for laboratory washing machines	12,1	10...60	1 kg	**84548.290**
	12,1	10...60	10 kg	**84548.410**
LABWASH® Premium Powder PF, phosphate-free, alkaline powder cleaner for laboratory washing machines	13	0...95	1 kg	**84557.290**
	13	0...95	10 kg	**84557.410**
LABWASH® Premium Pure, concentrate for soak and spray cleaning of laboratory glassware	11,8	0...95	5 l	**84555.360**
	11,8	0...95	10 l	**84555.410**
LABWASH® Premium Alkamatic, mildly alkaline, liquid cleaning concentrate for washing machines	12	20...95	5 l	**84549.360**
	12	20...95	10 l	**84549.410**
LABWASH® Premium Alkamatic LA, highly alkaline, intensive cleaner for laboratory washing machines	12,5	20...95	5 l	**84556.360**
	12,5	20...95	10 l	**84556.410**
LABWASH® Premium Alkamatic PF, alkaline, phosphate-free, chlorine-free, liquid cleaning concentrate for washing machines for heavy contamination	11,6	10...95	5 l	**84550.360**
	11,6	10...95	10 l	**84550.410**
LABWASH® Premium Acidrinse P, neutraliser and pre-cleaner for washing machines	2,1	40...85	5 l	**84552.360**
	2,1	40...85	10 l	**84552.410**
LABWASH® Premium Acidrinse C, phosphate-free neutraliser for washing machines	2,7	40...85	5 l	**84551.360**
	2,7	40...85	10 l	**84551.410**
LABWASH® Premium Easyrinse, acidic, ecological rinsing concentrate with shiny effect	2,2	0...60	5 l	**84553.360**
	2,2	0...60	10 l	**84553.410**

pH value at 1% concentration

Laboratory cleansers, Extran®

A range of cleansers, for both manual cleaning and machine washing, that has been developed to meet the cleaning requirement for glassware and small equipment in the laboratory.

- Prevents carry-over of residues to the next analysis
- Chlorine-free and biodegradable

Extran® detergents for manual use (MA)

The manual cleansers are provided as concentrates and the cleaning solutions are simply made up with tap water. Typically immersion for up to 2 hours is sufficient, but for particularly difficult residues the time period can be extended. Alternatively, warming the solution or use with an ultrasonic bath can speed up the process. To ensure no residues are left, the user can rinse initially with tap water and finally with distilled or demineralised water.

Extran® cleansers, liquid concentrates, for use with washing machines (AP)

These products have been developed with leading instrument manufacturers for their suitability for washing machines. The Extran® products have been tested extensively for their effectiveness and low degree of foaming. It is advisable to neutralise the alkaline cleansers with an acid rinse subsequent to the cleaning process. The alkaline cleansers, except Extran® AP 13, do not contain surfactants.

Description	Pk	Cat. No.
Extran® cleansers , liquid concentrates, for manual use (MA)		
Extran® MA 01, universal alkaline cleanser for heavy deposits, can be used with water up to 40° hardness	1 l	**1.07555.1000**
Extran® MA 01, universal alkaline cleanser for heavy deposits, can be used with water up to 40° hardness	2,5 l	**1.07555.2500**
Extran® MA 01, universal alkaline cleanser for heavy deposits, can be used with water up to 40° hardness	10 l	**1.07555.9010**
Extran® MA 05, nitrilotriacetic acid (NTA)-free, phosphate-free, alkaline cleanser for heavy deposits for use without restriction in very hard water	2,5 l	**1.40000.2500**
Extran® MA 05, nitrilotriacetic acid (NTA)-free, phosphate-free, alkaline cleanser for heavy deposits for use without restriction in very hard water	5 l	**1.40000.5000**
Extran® MA 05, nitrilotriacetic acid (NTA)-free, phosphate-free, alkaline cleanser for heavy deposits for use without restriction in very hard water	10 l	**1.40000.9010**
Extran® cleansers for washing machines (AP)		
Extran® AP17 is a nitrilotriacetic acid (NTA)-free, liquid alkaline universal cleaning agent for the main wash cycle of washing machines. Also phosphate-free, surfactant-free, chlorine-free and free from odorants/dyestuffs	2,5 l	**1.40006.2500**
Extran® AP17 is a nitrilotriacetic acid (NTA)-free, liquid alkaline universal cleaning agent for the main wash cycle of washing machines. Also phosphate-free, surfactant-free, chlorine-free and free from odorants/dyestuffs	5 l	**1.40006.5000**
Extran® AP 21, liquid acidic rinse with phosphoric acid for pre-rinsing of carbonate, hydroxide, protein residues and post-washing neutralisation, also helps prevent build-up of limescale	2,5 l	**1.07559.2500**
Extran® AP 21, liquid acidic rinse with phosphoric acid for pre-rinsing of carbonate, hydroxide, protein residues and post-washing neutralisation, also helps prevent build-up of limescale	10 l	**1.07559.9010**
Extran® AP 22, liquid acidic rinse with citric acid for gentle pre-rinsing and post-washing neutralisation, also helps prevent build-up of limescale	2,5 l	**1.07561.2500**
Extran® AP 22, liquid acidic rinse with citric acid for gentle pre-rinsing and post-washing neutralisation, also helps prevent build-up of limescale	10 l	**1.07561.9010**
Extran® AP33 liquid anti-foaming reagent	2,5 l	**1.40007.2500**

Micro and ultramicro balances, Cubis®

Sartorius

MSA2.7S-000-DM

MSA6.6S-000-DF

MSE6.6S-000-DF

The modular concept of the Cubis® range has been extended to microbalances for highly accurate weighing of microgram quantities. The range meets the most stringent requirements of analytical laboratories and pharmaceutical research, offering the user the highest level of safety in terms of result reliability and standard conformity.

Short measurement times and convenient access to the weighing chamber saves operator time. The motorised 100% glass draught shield means that working with minimum sample sizes is fast and effortless. The intelligent learning capability allows individual adaptation of the opening angle to suit every workflow.

- isoCal – full and configurable management of the microbalance's calibration routines
- Q-Level – warning when your balance is out of level and easy guidance for re-levelling
- GLP compliant data printout - user configurable for MSA models
- Q-Com full communications package USB and RS232 with Bluetooth® wireless option

Microbalances for filter weighing

The special DF stainless steel filter draught shield minimises electrostatic effects and is optimised for ultra-precise weighing of filters. Different weighing pan diameters are available for different filter sizes (50 mm as standard - 75 mm and 90 mm optional).

MSE control unit

- Black and white basic backlit LC display
- Ideal for straightforward high accuracy weighing

MSA control unit

- High resolution colour, tiltable and configurable TFT graphical touch screen display
- Advanced Pharma Compliance - password protection allowing definable Administrator and users with appropriate access levels. Full audit trail and Alibi weighing data storage memory
- SQ Min – warning prompt when minimum sample weight has not been reached according to the USP
- SD card slot & Ethernet for transfer of not only data but task configurations and settings from balance to balance or to PC
- Q-Guide and Task management options facilitate the easiest possible navigation through the user interface to manage your daily routines

Ordering information: A range (0CE suffix) of verified versions for use in legal metrology in the European Economic area is available - please enquire or see website for details.

Model	Readability (µg)	Weighing cap. (g)	Repeatability (µg)	Pan (mm)	Pk	Cat. No.
Micro- and ultramicrobalances						
MSA2.7S-000-DM	0,1	2,1	0,25±	Ø 20	1	**611-2514**
MSE2.7S-000-DM	0,1	2,1	0,25±	Ø 20	1	**611-2519**
MSA3.6P-000-DM	1 / 2 / 5	1,1 / 2,1 / 3,1	3± / 4± / 5±	Ø 30	1	**611-2515**
MSE3.6P-000-DM	1 / 2 / 5	1,1 / 2,1 / 3,1	3± / 4± / 5±	Ø 30	1	**611-2547**
MSA6.6S-000-DM	1	6,1	1±	Ø 30	1	**611-2517**
MSE6.6S-000-DM	1	6,1	1±	Ø 30	1	**611-2521**
Microbalances for filter weighing						
MSA2.7S-000-DF	0,1	2,1	0,25±	Ø 50	1	**611-2513**
MSE2.7S-000-DF	0,1	2,1	0,25±	Ø 50	1	**611-2518**
MSA6.6S-000-DF	1	6,1	1±	Ø 50	1	**611-2516**
MSE6.6S-000-DF	1	6,1	1±	Ø 50	1	**611-2520**
0CE versions of selected microbalances						
MSA2.7S-0CE-DM	0,1	2,1	0,25±	Ø 20	1	**611-2623**
MSE2.7S-000-DM	0,1	2,1	0,25±	Ø 20	1	**611-2626**
MSA3.6P-0CE-DM	1 / 2 / 5	1,1 / 2,1 / 3,1	3± / 4± / 5±	Ø 30	1	**611-2624**
MSE3.6P-0CE-DM	1 / 2 / 5	1,1 / 2,1 / 3,1	3± / 4± / 5±	Ø 30	1	**611-2627**
MSA6.6S-000-DM	1	6,1	1±	Ø 30	1	**611-2625**
MSE6.6S-0CE-DM	1	6,1	1±	Ø 30	1	**611-2628**

Description	Pk	Cat. No.
Accessories		
Printer YDP10-0CE with cable	1	**611-1869**
Barcode scanner for Cubis® balances	1	**611-1868**

Analytical balances, Cubis®

Sartorius

MSA

MSU

MSE

The Cubis® range represents a modular concept from Sartorius to allow the customer to choose the components that suit the application area that is of interest. For the customer, the modular concept delivers quality weighing together with a high degree of flexibility without having to invest in expensive equipment that has features that may never be required.

Three different display and control units are available to cover all facets of laboratory applications and enable a range of options for balance operation. The customer can then add the appropriate weighing platform to the choice of control unit.

In the analytical range (4/5 figure balances), the choices are not only the control unit and balance capability, but the type of draught shielding that will benefit the application.

- Choice of draught shield: Manual (DU); automatic (DA); automatic with built-in de-ioniser for effective removal of static charges (DI)
- Second-generation monolithic weigh cells are even more rugged than their predecessors, which allows for top loading semi-microbalances (5 figure) with 0 to 200 g weighing capability
- All models have removable control units and displays
- RS232 and USB interfaces are included, and additionally on MSA and MSU models an Ethernet interface with implemented web services, plus SD card reader are also included
- Easy to upgrade separate modules
- IsoCAL; fully automatic calibration and adjustment

MSE control unit

- Black and white basic backlit LCD
- Ideal for straightforward high accuracy weighing

MSU control unit

- High resolution black and white, graphical and tiltable display
- APC (Advanced Pharma Compliance) to meet the stringent requirements of the pharmaceutical industry
- Suitable for wide ranging complex weighing tasks and includes SD card reader for transfer of not only data but task configurations and settings from balance to balance or to PC
- Q-Pan; compensation of off centre loading effects/errors
- Q-Level; intelligent warning function to detect if balance is perfectly level and provide adjustment prompts for the user to correct and re-level the balance

MSA control unit

- High resolution colour configuable TFT, graphical and tiltable, touch screen display
- APC (Advanced Pharma Compliance) to meet the stringent requirements of the pharmaceutical industry
- Suitable for wide ranging complex weighing tasks and includes SD card reader for transfer of not only data but task configurations and settings from balance to balance or to PC
- Q-Pan; compensation of off centre loading effects/errors
- Q-Level; intelligent warning function to detect if balance is perfectly level and provide adjustment prompts for the user to correct and re-level the balance

As an example the model MSA124S-000-DI where the modules are described as follows:
MSA = Colour touch screen applications display module
124S-000 = 120 g four decimal place weighing module, not verified for use in legal metrology
DI = Automatic draught shield with built-in static de-ioniser

Ordering information: VWR offers a range of pre-configured models that address the most common application areas. For the full range of available configurations, including automated motorised self-levelling versions (100 suffix) or a range (0CE suffix) of verified versions for use in legal metrology in the European Economic area, please contact your local VWR sales office.

Model	Readability (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
MSA control unit					
MSA124S-000-DA	0,1	120	85×85	1	**611-1710**
MSA124S-000-DU	0,1	120	85×85	1	**611-1711**
MSA125P-000-DA	0,01 / 0,1	60 / 120	85×85	1	**611-1714**
MSA125P-000-DI	0,01 / 0,1	60 / 120	85×85	1	**611-1715**
MSA224S-000-DA	0,1	220	85×85	1	**611-1718**
MSA224S-000-DI	0,1	220	85×85	1	**611-1719**

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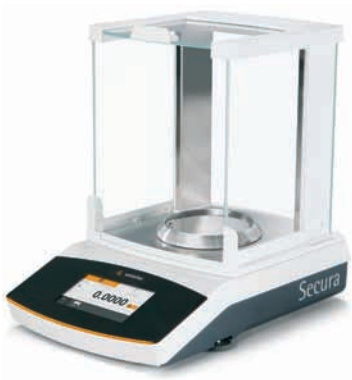
Model	Readability (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
MSA control unit					
MSA224S-000-DU	0,1	220	85×85	1	**611-1720**
MSA225P-000-DA	0,01 / 0,02 / 0,05	60 / 120 / 220	85×85	1	**611-1724**
MSA225P-000-DI	0,01 / 0,02 / 0,05	60 / 120 / 220	85×85	1	**611-1725**
MSA225S-000-DA	0,01	220	85×85	1	**611-1728**
MSA225S-000-DI	0,01	220	85×85	1	**611-1729**
MSA324P-000-DA	0,1 / 0,2 / 0,5	80 / 160 / 320	85×85	1	**611-1733**
MSA324S-000-DA	0,1	320	85×85	1	**611-1735**
MSA324S-000-DI	0,1	320	85×85	1	**611-1736**
MSU control unit					
MSU124S-000-DU	0,1	120	85×85	1	**611-1751**
MSU125P-000-DI	0,01 / 0,1	60 / 120	85×85	1	**611-1753**
MSU125P-000-DU	0,01 / 0,1	60 / 120	85×85	1	**611-1754**
MSU224S-000-DU	0,1	220	85×85	1	**611-1757**
MSU225P-000-DU	0,01 / 0,02 / 0,05	60 / 120 / 220	85×85	1	**611-1760**
MSU225S-000-DI	0,01	220	85×85	1	**611-1763**
MSU225S-000-DU	0,01	220	85×85	1	**611-1764**
MSU324P-000-DU	0,1 / 0,2 / 0,5	80 / 160 / 320	85×85	1	**611-1768**
MSU324S-000-DU	0,1	320	85×85	1	**611-1770**
MSE control unit					
MSE125P-000-DU	0,01 / 0,1	60 / 120	85×85	1	**611-1742**
MSE224S-000-DU	0,1	220	85×85	1	**611-1743**
MSE225P-000-DU	0,01 / 0,02 / 0,05	60 / 120 / 220	85×85	1	**611-1744**
MSE225S-000-DU	0,01	220	85×85	1	**611-1745**
MSE324P-000-DU	0,1 / 0,2 / 0,5	80 / 160 / 320	85×85	1	**611-1747**
MSE324S-000-DU	0,1	320	85×85	1	**611-1748**
EU approved (0CE)					
MSE524S-0CE-DU	0,1	520	85×85	1	**611-3132**

Description	Pk	Cat. No.
Accessories		
Printer YDP10-0CE with cable	1	**611-1869**
Barcode scanner for Cubis® balances	1	**611-1868**
Density determination kit for solids and liquids for modules with a readability <1 mg	1	**611-2526**
Q-Grip, flexible holder for weigh in containers and filters up to 120 mm diameter	1	**611-2528**
Anti-static weighing pan, Ø 130 mm, for weighing modules with a readability of 0,1 or 0,01 mg	1	**611-2529**

Analytical balances, Secura®

Sartorius



Advanced balances designed for easy, reliable and secure weighing operations for regulated areas. These analytical balances deliver stabilisation times of 2-3 seconds with excellent repeatability (0,1 mg) and linearity (0,2 mg). The Secura® range features a range of APC functions (Advanced Pharma Compliance) to help with documentation and monitoring requirements. The GLP compliant printout documentation is also controlled by the inbuilt security control, as data transfer to a printer or PC is blocked, when common operating errors occur, such as the balance is not level, minimum sample weight has not been achieved or temperature fluctuations require isoCAL calibration adjustment.

- Touch screen with graphical user interface optimised for users in pharmaceutical laboratories
- Cal Audit Trail function to document the quality of each weigh-in procedure you perform
- IsoCAL internal calibration and adjustment function linked to CAL Audit Trail
- SQmin - monitoring of compliance with USP minimum sample weight limits
- Password protection of set-up settings
- LevelControl continuously checks to see if the balance is perfectly level

Delivery information: Supplied with universal power adapter, in-use cover, application guide, dust cover for analytical balances, draught ring for 0,1 mg balances.

Model	Readability (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
Standard balances					
SECURA124-1S	0,1	120	Ø 90	1	**611-2631**
SECURA224-1S	0,1	220	Ø 90	1	**611-2633**
Approved balances					
SECURA124-1CEU	0,1	120	Ø 90	1	**611-2670**
SECURA124-1CCH	0,1	120	Ø 90	1	**611-2669**
SECURA124-1CFR	0,1	120	Ø 90	1	**611-2630**
SECURA124-1CIT	0,1	120	Ø 90	1	**611-2671**
SECURA224-1CEU	0,1	220	Ø 90	1	**611-2673**
SECURA224-1CCH	0,1	220	Ø 90	1	**611-2672**
SECURA224-1CFR	0,1	220	Ø 90	1	**611-2632**
SECURA224-1CIT	0,1	220	Ø 90	1	**611-2674**

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Description	Pk	Cat. No.
Accessories		
Standard printer YDP40-0CE with connector cable	1	**611-2637**
Printer YDP30-0CE with connector cable, for GLP printouts	1	**611-2636**
Adapter cable (USB to RS232)	1	**611-2634**
USB data cable	1	**611-2635**
Density kit for analytical balances	1	**611-2675**

Analytical balances, Discovery series
Ohaus

The Discovery series was designed for ease of operation in a laboratory or for industrial applications requiring precise measurements whilst ensuring traceable results to comply with GLP/GMP requirements, including RS232 interface for recording data to an optional printer or PC. The balances feature glass and steel construction, a large stainless steel pan and stability indicator. Multiple application modes include statistics, density, pipette calibration, dynamic weighing, check weighing and parts counting. The advanced AutoCal™ feature automatically adjusts the balance when it senses a temperature change sufficient enough to affect accuracy. As importantly, the advanced AutoCal™ minimises weighing errors, by using two internal calibration weights to perform a linearity calibration.

- Superior repeatability and linearity performance
- Integral hook for below balance weighing
- Square three door glass and steel draught shield
- Two line backlit LCD and SmarText™ software to guide the user through set-up and applications
- Advanced AutoCal™; internal calibration with two weights to perform linearity calibration

Ordering information: OIML EC Type approved models with Autocal™ (designated CM e.g. DV214CM) are also available on request.

Model	Readability (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
DV114C	0,1	110	Ø 90	1	**611-4191**
DV214C	0,1	210	Ø 90	1	**611-4192**
DV314C	0,1	310	Ø 90	1	**611-4193**
DV215CD	0,01 / 0,1	81 / 210	Ø 90	1	**611-4194**

Model	Readability (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
OIML EC type approved models					
DV114CM	0,1	110	Ø 90	1	**611-4195**
DV214CM	0,1	210	Ø 90	1	**611-4196**
DV314CM	0,1	310	Ø 90	1	**611-4197**
DV215CDM	0,01 / 0,1	81 / 210	Ø 90	1	**611-4198**

Description	Pk	Cat. No.
Printers		
SF40A impact printer for Ohaus balances (supplied with printer cables 611-2571 and 611-2572)	1	**611-2573**
STP103 thermal printer for Ohaus balances, UK-plug	1	**611-2539**
Accessories		
Printer cable SF40A for Discovery/Explorer®/Adventurer™ Pro/Pioneer™/Defender™ 3000/5000/MB series/Ranger™	1	**611-2571**
Printer cable kit (STP103) for MB series, Discovery, Adventurer™ Pro, Pioneer™ and Defender™ models with ABS indicator (D31P and D51P)	1	**611-2541**
PC cable 9 pin for MB series, Discovery, Ranger™, Defender™ DxxP, Defender™ TxxP Indicators, Pioneer™	1	**611-2423**

Analytical balances, Quintix®
Sartorius

A series of ergonomic balances designed for easy, intuitive operation, with a large touch screen, self explanatory icons and plain text prompts. In addition to the standard applications including general weighing, density, percentage, check weighing, peak hold, counting, and averaging, the Quintix® range also provides mixing, components, statistics and conversion funtionalities. Results can be transferred via a mini-USB interface to a printer or a computer directly into a Microsoft Excel® spreadsheet without additional software. Menu with choice of 10 languages.

- High contrast colour touch screen
- Stabilisation times of 2-3 seconds with excellent repeatability (0,1 mg) and linearity (0,2 mg)
- IsoCAL internal calibration and adjustment function
- Draught shield with doors that glide smoothly open that also can be completely disassembled for easy cleaning
- Supervisor lock to prevent any unintentional changes to settings
- Optional GLP compliant YDP30 printer that is automatically detected by the Quintix® balance

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Model	Readability (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
Standard balances					
QUINTIX64-1S	0,1	60	Ø 90	1	**611-3124**
QUINTIX124-1S	0,1	120	Ø 90	1	**611-2648**
QUINTIX124-1S	0,1	220	Ø 90	1	**611-2645**
Approved balances					
QUINTIX124-CEU	0,1	120	Ø 90	1	**611-2665**
QUINTIX124-CFR	0,1	120	Ø 90	1	**611-2666**
QUINTIX124-CEU	0,1	220	Ø 90	1	**611-2667**
QUINTIX124-CFR	0,1	220	Ø 90	1	**611-2668**

Description	Pk	Cat. No.
Accessories		
Standard printer YDP40-0CE with connector cable	1	**611-2637**
Printer YDP30-0CE with connector cable, for GLP printouts	1	**611-2636**
Adapter cable (USB to RS232)	1	**611-2634**
USB data cable	1	**611-2635**
Density kit for analytical balances	1	**611-2675**

Analytical balances, Explorer® series
Ohaus

A range of 4-place balances that incorporate touch screen, advanced weighing and proximity sensor technologies. The easy to use control unit can be mounted on the base, above the base on an optional column, on a wall or remotely (up to 3 m distance with an optional cable). The touch screen display with universal icons and informative prompts simplifies set-up functions and basic operation. The operator has the added choice to use the proximity sensors for hands-free operation for handling sensitive samples. The balances have multiple application modes for basic weighing to SQC applications together with short stabilisation times and optimised performance specifications.

The balances feature a frameless glass draught shield with easy access, central light and removable doors for cleaning.

- Colour touch screen display with viewing angle adjustment in a demountable control unit
- Advanced weighing technology with stabilisation times of less than 3 seconds
- SmarText™ software with text prompts for ease of menu navigation including 'Level assist' feature with illuminated level indicator
- AutoCal™ internal calibration
- Dual multifunctional proximity sensors for hands-free operation of basic or user-selectable functions

Ordering information: A selection of OIML EC approved balances are also available from VWR. For models with automatic draught shield door operation via touch-free sensors and also a full range of accessories for the Explorer® balances, please contact your local VWR sales office.

Model	Readability (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
EX124	0,1	120	Ø 90	1	**611-2393**
EX224	0,1	220	Ø 90	1	**611-2394**
EX324	0,1	320	Ø 90	1	**611-2396**

Model	Readability (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
OIML EC type approved balances					
EX224M	0,1	220	Ø 90	1	**611-2395**
EX324M	0,1	320	Ø 90	1	**611-2397**

Description	Pk	Cat. No.
Printers		
SF40A impact printer for Ohaus balances (supplied with printer cables 611-2571 and 611-2572)	1	**611-2573**
STP103 thermal printer for Ohaus balances, UK-plug	1	**611-2539**
Accessories		
Printer cable SF40A for Discovery/Explorer®/Adventurer™ Pro/Pioneer™/Defender™ 3000/5000/MB series/Ranger™	1	**611-2571**
Printer cable kit (STP103) for Discovery/Explorer®/Adventurer™ Pro/Pioneer™/Defender™ 3000/5000/MB series	1	**611-2540**
Density determination kit for Explorer®/Adventurer® balances (0.1 and 1 mg models only)	1	**611-2413**
Anti-theft device (Laptop lock) for Explorer®/Adventurer®/MB series	1	**611-0598**

Precision balances, Secura® series

Sartorius

SECURA213-1S

SECURA2102-1S

Advanced balances designed for easy, reliable and secure weighing operations for regulated areas. The Secura® range features a range of APC functions (Advanced Pharma Compliance) to help with documentation and monitoring requirements. The GLP compliant printout documentation is also controlled by the in-built security control, as data transfer to a printer or PC is blocked when common operating errors occur, such as the balance is not level, minimum sample weight has not been achieved or temperature fluctuations require isoCAL calibration adjustment.

- Touch screen with graphical user interface optimised for users in pharmaceutical laboratories
- Cal Audit Trail function to document the quality of each weighing procedure you perform
- IsoCAL internal calibration and adjustment function linked to CAL Audit Trail
- SQmin - monitoring of compliance with USP minimum sample weight limits
- Password protection of set-up settings
- LevelControl continuously checks to see if the balance is perfectly level

Delivery information: Supplied with universal power adapter, in-use cover, application guide.

Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
Standard balances						
SECURA213-1S	0,001	±2	210	Ø 120	1	**611-2725**
SECURA313-1S	0,001	±2	310	Ø 120	1	**611-2733**
SECURA513-1S	0,001	±2	510	Ø 120	1	**611-2741**
SECURA613-1S	0,001	±2	610	Ø 120	1	**611-3135**
SECURA612-1S	0,01	±20	610	Ø 180	1	**611-3134**
SECURA1102-1S	0,01	±20	1100	Ø 180	1	**611-2713**
SECURA2102-1S	0,01	±20	2100	Ø 180	1	**611-2718**
SECURA3102-1S	0,01	±20	3100	Ø 180	1	**611-2726**
SECURA5102-1S	0,01	±20	5100	Ø 180	1	**611-2734**
SECURA6102-1S	0,01	±20	6100	Ø 180	1	**611-3133**
Approved balances						
SECURA213-CCH	0,001	±2	210	Ø 120	1	**611-2750**
SECURA213-CEU	0,001	±2	210	Ø 120	1	**611-2723**
SECURA213-CFR	0,001	±2	210	Ø 120	1	**611-2724**
SECURA213-CIT	0,001	±2	210	Ø 120	1	**611-2751**
SECURA313-1CEU	0,001	±2	310	Ø 120	1	**611-2731**
SECURA313-1CFR	0,001	±2	310	Ø 120	1	**611-2732**
SECURA313-1CCH	0,001	±2	310	Ø 120	1	**611-2752**
SECURA313-1CIT	0,001	±2	310	Ø 120	1	**611-2753**
SECURA513-1CCH	0,001	±2	510	Ø 120	1	**611-2754**
SECURA513-1CEU	0,001	±2	510	Ø 120	1	**611-2739**
SECURA513-1CFR	0,001	±2	510	Ø 120	1	**611-2740**
SECURA513-1CIT	0,001	±2	510	Ø 120	1	**611-2755**
SECURA1102-CCH	0,01	±20	1100	Ø 180	1	**611-2714**
SECURA1102-CEU	0,01	±20	1100	Ø 180	1	**611-2715**
SECURA1102-CFR	0,01	±20	1100	Ø 180	1	**611-2716**
SECURA1102-CIT	0,01	±20	1100	Ø 180	1	**611-2717**
SECURA2102-CCH	0,01	±20	2100	Ø 180	1	**611-2719**
SECURA2102-CEU	0,01	±20	2100	Ø 180	1	**611-2720**
SECURA2102-CFR	0,01	±20	2100	Ø 180	1	**611-2721**
SECURA2102-CIT	0,01	±20	2100	Ø 180	1	**611-2722**
SECURA3102-CCH	0,01	±20	3100	Ø 180	1	**611-2727**
SECURA3102-CEU	0,01	±20	3100	Ø 180	1	**611-2728**
SECURA3102-CFR	0,01	±20	3100	Ø 180	1	**611-2729**
SECURA3102-CIT	0,01	±20	3100	Ø 180	1	**611-2730**
SECURA5102-CCH	0,01	±20	5100	Ø 180	1	**611-2735**
SECURA5102-CEU	0,01	±20	5100	Ø 180	1	**611-2736**
SECURA5102-CFR	0,01	±20	5100	Ø 180	1	**611-2737**
SECURA5102-CIT	0,01	±20	5100	Ø 180	1	**611-2738**

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Description	Pk	Cat. No.
Accessories		
Standard printer YDP40-0CE with connector cable	1	**611-2637**
Printer YDP30-0CE with connector cable, for GLP printouts	1	**611-2636**
Adapter cable (USB to RS232)	1	**611-2634**
USB data cable	1	**611-2635**
Density kit for precision balances	1	**611-2676**

Precision balances, Cubis®
Sartorius

MSA

MSU (with draught shield)

MSE

The Cubis® range represents a modular concept from Sartorius to allow the customer to choose the components that suit the application area that is of interest. For the customer, the modular concept delivers quality weighing together with a high degree of flexibility without having to invest in expensive equipment that has some features that may never be required.

Three different display and control units are available to cover all facets of laboratory applications and enable a range of options for balance operation. The customer can then add the appropriate weighing platform to the choice of control unit.

- All models have removable control units and displays
- Manual operation draught shields are supplied as standard on precision milligram models (denoted -DE)
- RS232 and USB interfaces are included, and additionally on MSA and MSU models an Ethernet interface with implemented web services, plus SD card reader are also included
- Easy to upgrade separate modules
- IsoCAL; fully automatic calibration and adjustment

MSE control unit

- Black and white basic backlit LCD display
- Ideal for straightforward high accuracy weighing

MSU control unit

- High resolution black and white, graphical and tiltable display
- APC (Advanced Pharma Compliance) to meet the stringent requirements of the pharmaceutical industry
- Suitable for wide ranging complex weighing tasks and includes SD card reader for transfer of not only data but task configurations and settings from balance to balance or to PC
- Q-pan; compensation of off-centre loading effects/errors
- Q-Level; intelligent warning function to detect if balance is perfectly level and provide adjustment prompts for the user to correct and re-level the balance

MSA control unit

- High resolution, tiltable and TFT graphical touch screen display
- APC (Advanced Pharma Compliance) to meet the stringent requirements of the pharmaceutical industry
- Suitable for wide ranging complex weighing tasks and includes SD card reader for transfer of not only data but task configurations and settings from balance to balance or to PC
- Q-pan; compensation of off-centre loading effects/errors
- Q-Level; intelligent warning function to detect if balance is perfectly level and provide adjustment prompts for the user to correct and re-level the balance

As an example the model MSU8201S-000-D0 where the modules are described as follows:
MSU = Monochrome applications display module with cursor navigation keys
8201S-000 = 8200 g, one decimal place weighing module, not verified for use in legal metrology
-D0 = No draught shield

Ordering information: VWR offers a range of pre-configured models that address most common application areas. For the full range of available configurations, including a range (0CE suffix) of verified versions for use in legal metrology in the European Economic area, please contact your local VWR sales office.

Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
MSA control unit						
MSA323S-000-DE	0,001	<±2	320	140×140	1	**611-1732**
MSA623S-000-DE	0,001	<±2	620	140×140	1	**611-1740**
MSA623P-000-DE	0,001 / 0,002 / 0,005	<±5	150 / 300 / 620	140×140	1	**611-1739**

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Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
MSA control unit						
MSA1203S-000-DE	0,001	<±2	1200	140×140	1	**611-1777**
MSA2203S-000-DE	0,001	<±3	2200	140×140	1	**611-1781**
MSA2203P-000-DE	0,001 / 0,01	<±5	1000 / 2200	140×140	1	**611-1780**
MSA1202S-000-D0	0,01	<±20	1200	206×206	1	**611-1776**
MSA2202S-000-D0	0,01	<±20	2200	206×206	1	**611-1779**
MSA4202S-000-D0	0,01	<±20	4200	206×206	1	**611-1783**
MSA6202S-000-D0	0,01	<±20	6200	206×206	1	**611-1786**
MSA6202P-000-D0	0,01 / 0,02 / 0,05	<±50	1500 / 3000 / 6200	206×206	1	**611-1785**
MSA8202S-000-D0	0,01	<±20	8200	206×206	1	**611-1788**
MSA10202S-000-D0	0,01	<±20	10200	206×206	1	**611-1775**
MSA5201S-000-D0	0,1	<±50	5200	206×206	1	**611-1784**
MSA8201S-000-D0	0,1	<±50	8200	206×206	1	**611-1787**
MSA12201S-000-D0	0,1	<±50	12200	206×206	1	**611-1778**
MSU control unit						
MSU323S-000-DE	0,001	<±2	320	140×140	1	**611-1767**
MSU623S-000-DE	0,001	<±2	620	140×140	1	**611-1773**
MSU623P-000-DE	0,001 / 0,002 / 0,005	<±5	150 / 300 / 620	140×140	1	**611-1772**
MSU1203S-000-DE	0,001	<±2	1200	140×140	1	**611-1805**
MSU2203S-000-DE	0,001	<±3	2200	140×140	1	**611-1809**
MSU2203P-000-DE	0,001 / 0,01	<±5	1000 / 2200	140×140	1	**611-1808**
MSU1202S-000-D0	0,01	<±20	1200	206×206	1	**611-1804**
MSU2202S-000-D0	0,01	<±20	2200	206×206	1	**611-1807**
MSU4202S-000-D0	0,01	<±20	4200	206×206	1	**611-1811**
MSU6202S-000-D0	0,01	<±20	6200	206×206	1	**611-1814**
MSU6202P-000-D0	0,01 / 0,02 / 0,05	<±50	1500 / 3000 / 6200	206×206	1	**611-1813**
MSU8202S-000-D0	0,01	<±20	8200	206×206	1	**611-1816**
MSU10202S-000-D0	0,01	<±20	10200	206×206	1	**611-1803**
MSU5201S-000-D0	0,1	<±50	5200	206×206	1	**611-1812**
MSU8201S-000-D0	0,1	<±50	8200	206×206	1	**611-1815**
MSU12201S-000-D0	0,1	<±50	12200	206×206	1	**611-1806**
MSE control unit						
MSE323S-000-DE	0,001	<±2	320	140×140	1	**611-1746**
MSE623S-000-DE	0,001	<±2	620	140×140	1	**611-1750**
MSE623P-000-DE	0,001 / 0,002 / 0,005	<±5	150 / 300 / 620	140×140	1	**611-1749**
MSE1203S-000-DE	0,001	<±2	1200	140×140	1	**611-1791**
MSE2203S-000-DE	0,001	<±3	2200	140×140	1	**611-1795**
MSE2203P-000-DE	0,001 / 0,01	<±5	1000 / 2200	140×140	1	**611-1794**
MSE3203S-000-DE	0,001 / 0,01	<±5	1000 / 3200	140×140	1	**611-2569**
MSE1202S-000-D0	0,01	<±20	1200	206×206	1	**611-1790**
MSE2202S-000-D0	0,01	<±20	2200	206×206	1	**611-1793**
MSE4202S-000-D0	0,01	<±20	4200	206×206	1	**611-1797**
MSE6202S-000-D0	0,01	<±20	6200	206×206	1	**611-1800**
MSE6202P-000-D0	0,01 / 0,02 / 0,05	<±50	1500 / 3000 / 6200	206×206	1	**611-1799**
MSE8202S-000-D0	0,01	<±20	8200	206×206	1	**611-1802**
MSE10202S-000-D0	0,01	<±20	10200	206×206	1	**611-1789**
MSE5201S-000-D0	0,1	<±100	5200	206×206	1	**611-1798**
MSE8201S-000-D0	0,1	<±100	8200	206×206	1	**611-1801**
MSE12201S-000-D0	0,1	<±100	12200	206×206	1	**611-1792**

Description	Pk	Cat. No.
Accessories		
Printer YDP20-0CE with connector cable	1	**611-1774**
Barcode scanner for Cubis® balances	1	**611-1868**
Density determination kit for solids and liquids for modules with a readability of 1 mg	1	**611-2527**
Q-Grid grid weighing pan for Cubis® models with readability of 10 or 100 mg	1	**611-2544**

Precision balances, Explorer® series

Ohaus

A range of balances that incorporate touch screen, advanced weighing and proximity sensor technologies. The easy to use control unit can be mounted on the base, above the base on an optional column, on a wall or remotely (up to 3 metres distant with an optional cable). The touch screen display with universal icons and informative prompts simplifies set-up functions and basic operation. Then the operator has the added choice to use the proximity sensors for hands-free operation for handling sensitive samples. The balances have multiple application modes for basic weighing to SQC applications together with short stabilisation times and optimised performance specifications.

The 1 mg balances feature a frameless glass draught shield with easy access, central light and removable doors for cleaning.

- Colour touch screen display with viewing angle adjustment in a demountable control unit
- Advanced weighing technology with stabilisation times of less than 2 seconds
- SmarText™ software with text prompts for ease of menu navigation including 'Level assist' feature for illuminated level indicator
- AutoCal™ internal calibration
- Dual multi-functional proximity sensors for hands-free operation of basic or user selectable functions

Ordering information: A selection of OIML EC approved balances are also available from VWR. For the full range of accessories for the Explorer® range please contact your local VWR sales office.

Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
Standard balances with internal calibration						
EX223	0,001	±2	220	Ø 130	1	**611-2398**
EX423	0,001	±2	420	Ø 130	1	**611-2399**
EX623	0,001	±2	620	Ø 130	1	**611-2401**
EX1103	0,001	±2	1100	Ø 130	1	**611-2402**
EX2202	0,01	±20	2200	190×200	1	**611-2404**
EX4202	0,01	±20	4200	190×200	1	**611-2405**
EX6202	0,01	±20	6200	190×200	1	**611-2407**
EX6201	0,1	±200	6200	190×200	1	**611-2408**
EX10202	0,01	±20	10200	190×200	1	**611-2409**
EX10201	0,1	±200	10200	190×200	1	**611-2411**
OIML EC type approved balances with internal calibration						
EX423M	0,001	±2	420	Ø 130	1	**611-2400**
EX1103M	0,001	±2	1100	Ø 130	1	**611-2403**
EX4202M	0,01	±20	4200	180×210	1	**611-2406**
EX10202M	0,01	±20	10200	180×210	1	**611-2410**
EX10201M	0,1	±200	10200	180×210	1	**611-2412**
Balances without AutoCal™ requiring external calibration						
EX223/E	0,001	±2	220	Ø 130	1	**611-5302**
EX423/E	0,001	±2	420	Ø 130	1	**611-5303**
EX2202/E	0,01	±20	2200	190×200	1	**611-5304**
EX4202/E	0,01	±20	4200	190×200	1	**611-5305**
EX6202/E	0,01	±20	6200	190×200	1	**611-5306**
EX6201/E	0,1	±200	6200	190×200	1	**611-5307**

Description	Pk	Cat. No.
Printers		
SF40A impact printer for Ohaus balances (supplied with printer cables 611-2571 and 611-2572)	1	**611-2573**
Printer accessories		
Ink ribbon cassette for printer SF40A	1	**611-2579**
Paper roll for printer SF40A, 57,5 mm width	2	**611-2580**
Accessories		
Density determination kit for Explorer®/Adventurer® balances (0.1 and 1 mg models only)	1	**611-2413**
Printer cable for SF42 and SRP275 for MB series, Discovery, Ranger, Defender DxxP, Defender TxxP Indicators, Pioneer™ and Adventurer™ Pro	1	**611-1525**
Anti-theft device (Laptop lock) for Explorer®/Adventurer®/MB series	1	**611-0598**

Precision balances, Quintix® series

Sartorius

QUINTIX2102-1S

QUINTIX213-1S

A series of ergonomic balances designed for easy, intuitive operation, with a large touch screen, self explanatory icons and plain text prompts. In addition to the standard applications including general weighing, density, percentage, check weighing, peak hold, counting, and averaging, the Quintix® range also provides mixing, components, statistics and conversion funtionalities. Results can be transferred via a mini-USB interface to a printer or a computer directly into Microsoft Excel® spreadsheet without additional software. Menu with choice of 10 languages.

- High contrast colour touch screen
- Stabilisation times of just 1,5 - 2 seconds
- IsoCAL internal calibration and adjustment function
- Draught shield on 1 mg balances with doors that glide smoothly open that also can be completely disassembled for easy cleaning
- Supervisor lock to prevent any unintentional changes to settings
- Optional, GLP compliant YDP30 printer is automatically detected by the Quintix® balance

Delivery information: Supplied with universal power adapter, in-use cover and application guide.

Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
Standard balances						
QUINTIX213-1S	0,001	±2	210	Ø 120	1	**611-2646**
QUINTIX313-1S	0,001	±2	310	Ø 120	1	**611-2643**
QUINTIX513-1S	0,001	±2	510	Ø 120	1	**611-2639**
QUINTIX613-1S	0,001	±2	610	Ø 120	1	**611-3125**
QUINTIX412-1S	0,01	±30	410	Ø 180	1	**611-3127**
QUINTIX612-1S	0,01	±30	610	Ø 180	1	**611-2638**
QUINTIX1102-1S	0,01	±30	1100	Ø 180	1	**611-2649**
QUINTIX2102-1S	0,01	±30	2100	Ø 180	1	**611-2647**
QUINTIX3102-1S	0,01	±20	3100	Ø 180	1	**611-2644**
QUINTIX5102-1S	0,01	±20	5100	Ø 180	1	**611-2640**
QUINTIX6102-1S	0,01	±20	6100	Ø 180	1	**611-3130**
QUINTIX5101-1S	0,1	±300	5100	Ø 180	1	**611-2641**
QUINTIX6101-1S	0,1	±300	6100	Ø 180	1	**611-3128**
QUINTIX5100-1S	1,0	±1000	5100	Ø 180	1	**611-2642**
QUINTIX6100-1S	1,0	±1000	6100	Ø 180	1	**611-3129**
Approved balances						
QUINTIX213-CEU	0,001	±2	210	Ø 120	1	**611-2686**
QUINTIX213-CCH	0,001	±2	210	Ø 120	1	**611-2742**
QUINTIX213-CFR	0,001	±2	210	Ø 120	1	**611-2687**
QUINTIX213-CIT	0,001	±2	210	Ø 120	1	**611-2743**
QUINTIX313-CEU	0,001	±2	310	Ø 120	1	**611-2692**
QUINTIX313-CCH	0,001	±2	310	Ø 120	1	**611-2744**
QUINTIX313-CFR	0,001	±2	310	Ø 120	1	**611-2693**
QUINTIX313-CIT	0,001	±2	310	Ø 120	1	**611-2745**
QUINTIX513-CEU	0,001	±2	510	Ø 120	1	**611-2709**
QUINTIX513-CCH	0,001	±2	510	Ø 120	1	**611-2746**
QUINTIX513-CFR	0,001	±2	510	Ø 120	1	**611-2710**
QUINTIX513-CIT	0,001	±2	510	Ø 120	1	**611-2747**
QUINTIX612-CEU	0,01	±30	610	Ø 180	1	**611-2711**
QUINTIX612-CCH	0,01	±30	610	Ø 180	1	**611-2748**
QUINTIX612-CFR	0,01	±30	610	Ø 180	1	**611-2712**
QUINTIX612-CIT	0,01	±30	610	Ø 180	1	**611-2749**
QUINTIX1102-EU	0,01	±30	1100	Ø 180	1	**611-2679**
QUINTIX1102-CH	0,01	±30	1100	Ø 180	1	**611-2678**
QUINTIX1102-FR	0,01	±30	1100	Ø 180	1	**611-2680**
QUINTIX1102-IT	0,01	±30	1100	Ø 180	1	**611-2681**
QUINTIX2102-EU	0,01	±30	2100	Ø 180	1	**611-2683**
QUINTIX2102-CH	0,01	±30	2100	Ø 180	1	**611-2682**
QUINTIX2102-FR	0,01	±30	2100	Ø 180	1	**611-2684**

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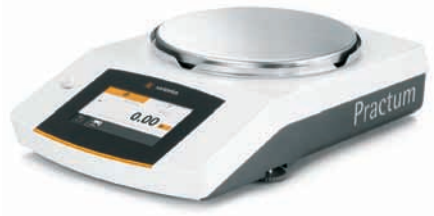
Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
Approved balances						
QUINTIX2102-IT	0,01	±30	2100	Ø 180	1	**611-2685**
QUINTIX3102-EU	0,01	±20	3100	Ø 180	1	**611-2689**
QUINTIX3102-CH	0,01	±20	3100	Ø 180	1	**611-2688**
QUINTIX3102-FR	0,01	±20	3100	Ø 180	1	**611-2690**
QUINTIX3102-IT	0,01	±20	3100	Ø 180	1	**611-2691**
QUINTIX5102-EU	0,01	±20	5100	Ø 180	1	**611-2706**
QUINTIX5102-CH	0,01	±20	5100	Ø 180	1	**611-2705**
QUINTIX5102-FR	0,01	±20	5100	Ø 180	1	**611-2707**
QUINTIX5102-IT	0,01	±20	5100	Ø 180	1	**611-2708**
QUINTIX5101-EU	0,1	±300	5100	Ø 180	1	**611-2699**
QUINTIX5101-CH	0,1	±300	5100	Ø 180	1	**611-2698**
QUINTIX5101-FR	0,1	±300	5100	Ø 180	1	**611-2703**
QUINTIX5101-IT	0,1	±300	5100	Ø 180	1	**611-2704**
QUINTIX5100-EU	1	±1000	5100	Ø 180	1	**611-2695**
QUINTIX5100-CH	1	±1000	5100	Ø 180	1	**611-2694**
QUINTIX5100-FR	1	±1000	5100	Ø 180	1	**611-2696**
QUINTIX5100-IT	1	±1000	5100	Ø 180	1	**611-2697**

Description	Pk	Cat. No.
Accessories		
Standard printer YDP40-0CE with connector cable	1	**611-2637**
Printer YDP30-0CE with connector cable, for GLP printouts	1	**611-2636**
Adapter cable (USB to RS232)	1	**611-2634**
USB data cable	1	**611-2635**
Density kit for precision balances	1	**611-2676**

Precision balances, Practum® series
Sartorius

PRACTUM213-1S



PRACTUM1102-1S

A practical basic balance that incorporates Sartorius' renowned weighing technology to deliver reliable professional results. Weighing applications include general weighing, density, percentage, check weighing, peak hold, counting, and averaging. Results can be transferred via a mini-USB interface to a printer or a computer directly into Microsoft Excel® spreadsheet without additional software. Menu with choice of 10 languages.

- High contrast colour touch screen
- Automatic calibration and adjustment with an external weight
- Robust housing design and rugged weigh cell
- Supervisor lock to prevent any unintentional changes to settings
- Built-in overload protection

Delivery information: Supplied with a calibration weight, universal power adapter, in-use cover and application guide.

Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
PRACTUM213-1S	0,001	±2	210	Ø 120	1	**611-2659**
PRACTUM313-1S	0,001	±2	310	Ø 120	1	**611-2661**
PRACTUM513-1S	0,001	±2	510	Ø 120	1	**611-2890**
PRACTUM412-1S	0,01	±30	410	Ø 180	1	**611-2892**
PRACTUM612-1S	0,01	±30	610	Ø 180	1	**611-2664**
PRACTUM1102-1S	0,01	±30	1100	Ø 180	1	**611-2656**
PRACTUM2102-1S	0,01	±30	2100	Ø 180	1	**611-2658**
PRACTUM3102-1S	0,01	±30	3100	Ø 180	1	**611-2891**
PRACTUM2101-1S	0,1	±300	2100	Ø 180	1	**611-2894**
PRACTUM5101-1S	0,1	±300	5100	Ø 180	1	**611-2663**
PRACTUM6101-1S	0,1	±300	6100	Ø 180	1	**611-2893**
PRACTUM5100-1S	1,0	±1000	5100	Ø 180	1	**611-2662**
PRACTUM6100-1S	1,0	±1000	6100	Ø 180	1	**611-2895**

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Description	Pk	Cat. No.
Accessories		
Standard printer YDP40-0CE with connector cable	1	**611-2637**
Adapter cable (USB to RS232)	1	**611-2634**
USB data cable	1	**611-2635**
Density kit for precision balances	1	**611-2676**

Precision balances, Adventurer™ Pro series
Ohaus

AV213

AV212

AV812

The Adventurer™ Pro series offers multiple applications and additional features that ensure traceable results to comply with GLP/GMP requirements including RS232 interface for recording data to an optional printer or PC. Additional features also include stainless steel pan, SmarText™ plain text prompts and four adjustable feet with levelling bubble on the front of the display.

- Draught shield with flip top and sliding door frameless design on 1 mg models
- Two line backlit LCD and SmarText™ software to guide user through set-up and applications
- Internal (C) and external calibration models available

Ordering information: OIML EC Type approved models are available, please ask your VWR sales office for details.

Delivery information: Supplied with A/C adapter.

Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
AV213**	0,001	±2	210	Ø 120	1	**611-1279**
AV213C**	0,001	±2	210	Ø 120	1	**611-1280**
AV313**	0,001	±2	310	Ø 120	1	**611-1460**
AV313C**	0,001	±2	310	Ø 120	1	**611-1543**
AV413**	0,001	±2	410	Ø 120	1	**611-1285**
AV413C**	0,001	±2	410	Ø 120	1	**611-1286**
AV212*	0,01	±20	210	Ø 120	1	**611-0494**
AV212C**	0,01	±20	210	Ø 120	1	**611-1291**
AV412*	0,01	±20	410	149×162	1	**611-0495**
AV412C**	0,01	±20	410	168×180	1	**611-1423**
AV812*	0,01	±20	810	149×162	1	**611-0496**
AV812C**	0,01	±20	810	168×180	1	**611-1428**
AV2102**	0,01	±20	2100	168×180	1	**611-1433**
AV2102C**	0,01	±20	2100	168×180	1	**611-1434**
AV3102**	0,01	±20	3100	168×180	1	**611-1463**
AV3102C**	0,01	±20	3100	168×180	1	**611-1548**
AV4102**	0,01	±20	4100	168×180	1	**611-1439**
AV4102C**	0,01	±20	4100	168×180	1	**611-1440**
AV2101*	0,1	±200	2100	149×162	1	**611-0497**
AV2101C**	0,1	±200	2100	168×180	1	**611-1445**
AV4101*	0,1	±200	4100	149×162	1	**611-0498**
AV4101C**	0,1	±200	4100	168×180	1	**611-1450**
AV8101*	0,1	±200	8100	149×162	1	**611-0499**
AV8101C**	0,1	±200	8100	168×180	1	**611-1455**

Description	Pk	Cat. No.
Printers		
SF40A impact printer for Ohaus balances (supplied with printer cables 611-2571 and 611-2572)	1	**611-2573**
STP103 thermal printer for Ohaus balances, UK-plug	1	**611-2539**
Accessories		
Printer cable SF40A for Discovery/Explorer®/Adventurer™ Pro/Pioneer™/Defender™ 3000/5000/MB series/Ranger™	1	**611-2571**
In use display cover for Adventurer™ Pro 'large housing'	1	**611-1864**
In use display cover for Adventurer™ Pro 'small housing'	1	**611-1865**

* Models have a small housing and can operate with 4×AA batteries (not supplied) or via mains power.
** Models have a large housing and operate with mains power adapter (supplied).

VWR COLLECTION

SELECTED FOR YOU

Disposable weighing boats

PS, square

These flexible weighing boats with smooth surfaces enable accurate pour-out with minimal sample loss. They are biologically inert and resistant to dilute and weak acids, aqueous solutions, alcohols and bleaches. Ideal for use with microwaves, balances or moisture analysers.

- Shallow form with wide, flat bottom avoids tipping
- Rounded corners simplify transfer
- Temperature resistant up to +70 °C

Capacity (ml)	W×D×H (mm)	Colour	Pk	Cat. No.
Standard				
7	46×46×8	Blue	500	**611-9168**
7	46×46×8	Black	500	**611-9175**
7	46×46×8	White	500	**611-0093**
100	85×85×24	Blue	500	**611-9169**
100	85×85×24	Black	500	**611-9176**
100	85×85×24	White	500	**611-0094**
250	140×140×22	Blue	500	**611-9170**
250	140×140×22	Black	500	**611-9177**
250	140×140×22	White	500	**611-0095**
Anti-static				
7	46×46×8	Black	500	**611-9181**
7	46×46×8	White	500	**611-9178**
100	85×85×24	Black	500	**611-9182**
100	85×85×24	White	500	**611-9179**
250	140×140×22	Black	500	**611-9183**
250	140×140×22	White	500	**611-9180**

VWR COLLECTION

SELECTED FOR YOU

Disposable weighing boats

PS, diamond

These flexible boats feature smooth surfaces to provide accurate pour-out with minimal sample loss. They are biologically inert and resistant to dilute and weak acids, aqueous solutions, alcohols and bases. Ideal for use with microwaves and moisture analysers.

- Wide, flat bottom avoids tipping
- Temperature resistant up to +70 °C

Capacity (ml)	W×D×H (mm)	Colour	Pk	Cat. No.
Standard				
5	55×35×6	Black	500	**611-1996**
5	55×35×6	White	500	**611-1993**
25	80×50×14	Black	500	**611-9184**
25	80×50×14	White	500	**611-0097**
30	80×60×14	Black	500	**611-9185**
30	80×60×14	White	500	**611-9161**
100	125×100×19	Black	500	**611-9186**
100	125×100×19	White	500	**611-9162**
Anti-static				
5	55×35×6	Black	500	**611-1995**
5	55×35×6	White	500	**611-1994**
25	80×50×14	Black	500	**611-9190**
25	80×50×14	White	500	**611-9187**
30	80×60×14	Black	500	**611-9191**
30	80×60×14	White	500	**611-9188**
100	125×100×19	Black	500	**611-9192**
100	125×100×19	White	500	**611-9189**

Disposable weighing dishes

Aluminium, light gauge

Ideal for weighing, sampling, dispensing, storage, food processing, evaporating or general laboratory use.

- Flanged edge with curled lip for increased stability
- Contaminant- and oil-free
- Stackable

Capacity (ml)	I-Ø×H (mm)	Pk	Cat. No.
20	44×13	100	**611-1374**
70	63×19	100	**611-1373**
75	65×30	100	**611-1376**
200	110×29	50	**611-1377**
500	180×25	50	**611-1375**

Pour-boat weighing dishes

PS

Samples are easily dispensed with the pour spout design without flexing the dish. These flat bottomed dishes are made from 0,3 mm thick polystyrene for better strength, stability and handling.

- Flat bottom avoids tipping
- Temperature resistant to +70 °C

W×D×H (mm)	Pk	Cat. No.
43×58×13	500	**611-9163**
83×132×26	500	**611-9164**
108×183×26	500	**611-9165**

Weighing boats, borosilicate glass

Borosilicate 3,3 glass

- Ideal for weighing small samples
- Powders can be tapped or rinsed through the tubular stem of the weighing boats into the receiving vessel

Capacity (ml)	Length (mm)	Pk	Cat. No.
3	70	3	**611-9194**
6	85	3	**611-9195**
10	100	3	**611-9196**

Weighing bottles
Lenz

DURAN®

- Interchangeable lids with ground joint
- Writing area in white

Capacity (ml)	Ø×H (mm)	NS	Pk	Cat. No.
Low form				
6	25×25	24/12	1	**611-9302**
15	40×25	40/12	1	**611-9303**
15	35×30	34/12	1	**611-9304**
30	50×30	50/12	1	**611-9305**
45	60×30	60/12	1	**611-9306**
80	80×30	80/12	1	**611-9307**

VWR COLLECTION

SELECTED FOR YOU

Calibration weights, class F1, Cal-Box, 3 weight set, certified

An economical range of calibration sets, with only three stainless steel weights, to meet routine calibration requirements of precision and analytical balances.

- Class F1 tolerances
- Each set has a individual serial number and calibration certificate
- Each weight, from 1 g upwards, has a unique identification number for traceability

Delivery information: Weights supplied in modern aluminium case with tweezers and balance brush

Weight set	No. of weights	Type	Pk	Cat. No.
200 mg; 5 g; 50 g	3	With certificate	1	**611-2428**
200 mg; 10 g; 100 g	3	With certificate	1	**611-2429**
200 mg; 20 g; 200 g	3	With certificate	1	**611-2430**
200 mg; 50 g; 500 g	3	With certificate	1	**611-2432**
2 g; 20 g; 200 g	3	With certificate	1	**611-2431**
2 g; 50 g; 500 g	3	With certificate	1	**611-2433**
2 g; 100 g; 1 kg	3	With certificate	1	**611-2434**
20 g; 100 g; 1 kg	3	With certificate	1	**611-2435**
20 g; 200 g; 2 kg	3	With certificate	1	**611-2436**
20 g; 500 g; 5 kg	3	With certificate	1	**611-2437**

VWR COLLECTION

SELECTED FOR YOU

Calibration weight sets, class E2

Weights made from solid, anti-magnetic, polished stainless steel. Suitable for high resolution electronic balances.

- Wire weights up to 500 mg
- Identification number guarantees traceability for weights from 1 g upwards
- Available with or without COFRAC certificate

Conform to OILM R111 recommendations.

Ordering information: All weight sets listed in the "set contents" table are available with or without COFRAC certificate - please visit www.vwr.com or contact your local VWR sales office. Weights are also available individually - please search for product "Calibration weights, class E2".

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Set	Weights included													
		1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg				
1 - 500 mg		1	2	1	1	2	1	1	2	1				
	Includes	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1 kg	2 kg	5 kg	10 kg
1 mg - 50 g	1 - 500 mg set	1	2	1	1	2	1							
1 mg - 100 g	1 - 500 mg set	1	2	1	1	2	1	1						
1 mg - 200 g	1 - 500 mg set	1	2	1	1	2	1	1	2					
1 mg - 500 g	1 - 500 mg set	1	2	1	1	2	1	1	2	1				
1 mg - 1 kg	1 - 500 mg set	1	2	1	1	2	1	1	2	1	1			
1 mg - 2 kg	1 - 500 mg set	1	2	1	1	2	1	1	2	1	1	2		
1 mg - 5 kg	1 - 500 mg set	1	2	1	1	2	1	1	2	1	1	2	1	
1 mg - 10 kg	1 - 500 mg set	1	2	1	1	2	1	1	2	1	1	2	1	1
1 g - 50 g		1	2	1	1	2	1							
1 g - 100 g		1	2	1	1	2	1	1						
1 g - 200 g		1	2	1	1	2	1	1	2					
1 g - 500 g		1	2	1	1	2	1	1	2	1				
1 g - 1 kg		1	2	1	1	2	1	1	2	1	1			
1 g - 2 kg		1	2	1	1	2	1	1	2	1	1	2		
1 g - 5 kg		1	2	1	1	2	1	1	2	1	1	2	1	
1 g - 10 kg		1	2	1	1	2	1	1	2	1	1	2	1	1

Weight set	No. of weights	Total weight (g)	Pk	Cat. No.
E2 weight sets in wooden boxes with certificate				
1 mg - 500 mg	12	1,11	1	**611-8742**
1 mg - 50 g	20	111,11	1	**611-8743**
1 mg - 100 g	21	211,11	1	**611-8744**
1 mg - 200 g	23	611,11	1	**611-8745**
1 mg - 500 g	24	1111,11	1	**611-8746**
1 mg - 1 kg	25	2111,11	1	**611-8747**
1 mg - 2 kg	27	6111,11	1	**611-8748**
1 mg - 5 kg	28	11111,11	1	**611-8749**
1 mg - 10 kg	29	21111,11	1	**611-8750**
1 g - 50 g	8	110	1	**611-8751**
1 g - 100 g	9	210	1	**611-8752**
1 g - 200 g	11	610	1	**611-8753**
1 g - 500 g	12	1110	1	**611-8754**
1 g - 1 kg	13	2110	1	**611-8755**
1 g - 2 kg	15	6110	1	**611-8756**
1 g - 5 kg	16	11110	1	**611-8757**
1 g - 10 kg	17	21110	1	**611-8758**
E2 weight sets in plastic cases with certificate				
1 mg - 500 mg	12	1,11	1	**611-8454**
1 mg - 100 g	21	211,11	1	**611-8455**
1 mg - 200 g	23	611,11	1	**611-8456**
1 mg - 500 g	24	1111,11	1	**611-8457**
1 g - 100 g	9	210	1	**611-8458**
1 g - 200 g	11	610	1	**611-8459**
1 g - 500 g	12	1110	1	**611-8460**
E2 weight sets in wooden boxes without certificate				
1 mg - 500 mg	12	1,11	1	**611-8722**
1 mg - 50 g	20	111,11	1	**611-8723**
1 mg - 100 g	21	211,11	1	**611-8724**
1 mg - 200 g	23	611,11	1	**611-8725**
1 mg - 500 g	24	1111,11	1	**611-8726**
1 mg - 1 kg	25	2111,11	1	**611-8727**
1 mg - 2 kg	27	6111,11	1	**611-8728**
1 mg - 5 kg	28	11111,11	1	**611-8729**
1 mg - 10 kg	29	21111,11	1	**611-8730**
1 g - 50 g	8	110	1	**611-8731**
1 g - 100 g	9	210	1	**611-8732**
1 g - 200 g	11	610	1	**611-8733**
1 g - 500 g	12	1110	1	**611-8734**
1 g - 1 kg	13	2110	1	**611-8735**
1 g - 2 kg	15	6110	1	**611-8736**
1 g - 5 kg	16	11110	1	**611-8737**
1 g - 10 kg	17	21110	1	**611-8738**

VWR COLLECTION

SELECTED FOR YOU

Calibration weights, class E2

Weights made from solid, anti-magnetic, polished stainless steel. Suitable for high resolution electronic balances.

- Wire weights up to 500 mg
- Identification number guarantees traceability for weights from 1 g upwards
- Available with or without COFRAC certificate

Conform to OILM R111 recommendations.

Ordering information: All weights from 1 mg to 20 kg are available with or without COFRAC certificate - please visit www.vwr.com or contact your local VWR sales office. A range of weight sets are also available - please search for product "Calibration weight sets, class E2".

Weight	Tolerance (± mg)	Pk	Cat. No.
E2 weights in plastic cases with COFRAC certificate			
1 mg	0,006	1	**611-8131**
2 mg	0,006	1	**611-8132**
5 mg	0,006	1	**611-8133**
10 mg	0,008	1	**611-8134**
20 mg	0,010	1	**611-8135**
50 mg	0,012	1	**611-8136**
100 mg	0,016	1	**611-8137**
200 mg	0,020	1	**611-8138**
500 mg	0,025	1	**611-8139**
1 g	0,03	1	**611-8140**
2 g	0,04	1	**611-8141**
5 g	0,05	1	**611-8142**
10 g	0,06	1	**611-8143**
20 g	0,08	1	**611-8144**
50 g	0,10	1	**611-8145**
100 g	0,16	1	**611-8146**
200 g	0,30	1	**611-8147**
500 g	0,75	1	**611-8148**
1 kg	1,6	1	**611-8149**
2 kg	3,0	1	**611-8150**
5 kg	7,5	1	**611-8151**
10 kg	16,0	1	**611-8152**
20 kg	30,0	1	**611-8428**
E2 weights in wooden boxes with COFRAC certificate			
500 g	0,75	1	**611-8399**
1 kg	1,6	1	**611-8400**
2 kg	3	1	**611-8423**
5 kg	7,5	1	**611-8424**
10 kg	16	1	**611-8425**
20 kg	30	1	**611-8426**
50 kg	50	1	**611-8427**
E2 weights in plastic cases without certificate			
1 mg	0,006	1	**611-8101**
2 mg	0,006	1	**611-8102**
5 mg	0,006	1	**611-8103**
10 mg	0,008	1	**611-8104**
20 mg	0,010	1	**611-8105**
50 mg	0,012	1	**611-8106**
100 mg	0,016	1	**611-8107**
200 mg	0,020	1	**611-8108**
500 mg	0,025	1	**611-8109**
1 g	0,03	1	**611-8110**
2 g	0,04	1	**611-8111**
5 g	0,05	1	**611-8112**
10 g	0,06	1	**611-8113**

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Weight	Tolerance (± mg)	Pk	Cat. No.
E2 weights in plastic cases without certificate			
20 g	0,08	1	**611-8114**
50 g	0,10	1	**611-8115**
100 g	0,16	1	**611-8116**
200 g	0,30	1	**611-8117**
500 g	0,75	1	**611-8118**
1 kg	1,6	1	**611-8119**
2 kg	3,0	1	**611-8120**
5 kg	7,5	1	**611-8121**
10 kg	16,0	1	**611-8122**
20 kg	30,0	1	**611-8398**
E2 weights in wooden boxes without certificate			
500 g	0,75	1	**611-8391**
1 kg	1,6	1	**611-8392**
2 kg	3	1	**611-8393**
5 kg	7,5	1	**611-8394**
10 kg	16	1	**611-8395**
20 kg	30	1	**611-8396**
50 kg	50	1	**611-8397**

VWR COLLECTION

SELECTED FOR YOU

Calibration weight sets, class F1

Weights made from anti-magnetic, polished stainless steel. Suitable for medium resolution precision electronic balances. Weights have adjustment cavities for weights of more than 20 g.

- Wire weights up to 500 mg
- Identification number guarantees traceability for weights from 1 g upwards
- Available with or without COFRAC certificate

Conform to OILM R111 recommendations.

Ordering information: All weight sets listed in the "set contents" table are available with or without COFRAC certificate - please visit www.vwr.com or contact your local VWR sales office. Weights are also available individually - please search for product "Calibration weights, class F1".

Set	Weights included													
		1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg				
1 - 500 mg		1	2	1	1	2	1	1	2	1				
	Includes	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1 kg	2 kg	5 kg	10 kg
1 mg - 100 g	1 - 500 mg set	1	2	1	1	2	1	1						
1 mg - 200 g	1 - 500 mg set	1	2	1	1	2	1	1	2					
1 mg - 500 g	1 - 500 mg set	1	2	1	1	2	1	1	2	1				
1 mg - 1 kg	1 - 500 mg set	1	2	1	1	2	1	1	2	1	1			
1 mg - 2 kg	1 - 500 mg set	1	2	1	1	2	1	1	2	1	1	2		
1 mg - 5 kg	1 - 500 mg set	1	2	1	1	2	1	1	2	1	1	2	1	
1 mg - 10 kg	1 - 500 mg set	1	2	1	1	2	1	1	2	1	1	2	1	1
1 g - 100 g		1	2	1	1	2	1	1						
1 g - 200 g		1	2	1	1	2	1	1	2					
1 g - 500 g		1	2	1	1	2	1	1	2	1				
1 g - 1 kg		1	2	1	1	2	1	1	2	1	1			
1 g - 2 kg		1	2	1	1	2	1	1	2	1	1	2		
1 g - 5 kg		1	2	1	1	2	1	1	2	1	1	2	1	
1 g - 10 kg		1	2	1	1	2	1	1	2	1	1	2	1	1

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Weight set	No. of weights	Total weight (g)	Pk	Cat. No.
F1 Weight sets in wooden boxes with certificate				
1 mg - 500 mg	12	1,11	1	611-8632
1 mg - 50 g	20	111,11	1	611-8633
1 mg - 100 g	21	211,11	1	611-8634
1 mg - 200 g	23	611,11	1	611-8635
1 mg - 500 g	24	1111,11	1	611-8636
1 mg - 1 kg	25	2111,11	1	611-8637
1 mg - 2 kg	27	6111,11	1	611-8638
1 mg - 5 kg	28	11111,11	1	611-8639
1 mg - 10 kg	29	21111,11	1	611-8640
1 g - 100 g	9	210	1	611-8642
1 g - 200 g	11	610	1	611-8643
1 g - 500 g	12	1110	1	611-8644
1 g - 50 g	8	110	1	611-8641
1 g - 1 kg	13	2110	1	611-8645
1 g - 2 kg	15	6110	1	611-8646
1 g - 5 kg	16	11110	1	611-8647
1 g - 10 kg	17	21110	1	611-8648
F1 Weight sets in plastic cases with certificate				
1 mg - 500 mg	12	1,11	1	611-8461
1 mg - 100 g	21	211,11	1	611-8462
1 mg - 200 g	23	611,11	1	611-8463
1 mg - 500 g	24	1111,11	1	611-8464
1 mg - 2 kg	27	6111,11	1	611-8649
1 mg - 5 kg	28	11111,11	1	611-8650
1 g - 100 g	9	210	1	611-8465
1 g - 200 g	11	610	1	611-8466
1 g - 500 g	12	1110	1	611-8467
1 g - 2 kg	15	6110	1	611-8651
1 g - 5 kg	16	11110	1	611-8652
F1 Weight sets in wooden boxes without certificate				
1 mg - 500 mg	12	1,11	1	611-8602
1 mg - 50 g	20	111,11	1	611-8603
1 mg - 100 g	21	211,11	1	611-8292
1 mg - 200 g	23	611,11	1	611-8604
1 mg - 500 g	24	1111,11	1	611-8605
1 mg - 1 kg	25	2111,11	1	611-8606
1 mg - 2 kg	27	6111,11	1	611-8607
1 mg - 5 kg	28	11111,11	1	611-8608
1 mg - 10 kg	29	21111,11	1	611-8609
1 g - 50 g	8	110	1	611-8610
1 g - 100 g	9	210	1	611-8611
1 g - 200 g	11	610	1	611-8612
1 g - 500 g	12	1110	1	611-8613
1 g - 1 kg	13	2110	1	611-8614
1 g - 2 kg	15	6110	1	611-8615
1 g - 5 kg	16	11110	1	611-8616
1 g - 10 kg	17	21110	1	611-8617
F1 Weight sets in plastic cases without certificate				
1 mg - 2 kg	27	6111,11	1	611-8618
1 mg - 5 kg	28	11111,11	1	611-8619
1 g - 2 kg	15	6110	1	611-8620
1 g - 5 kg	16	11110	1	611-8621

VWR COLLECTION

SELECTED FOR YOU

Calibration weights, class F1

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Weights made from anti-magnetic, polished stainless steel. Suitable for medium resolution precision electronic balances. Weights have adjustment cavities for weights of more than 20 g.

- Wire weights up to 500 mg
- Identification number guarantees traceability for weights from 1 g upwards
- Available with or without COFRAC certificate

Conform to OILM R111 recommendations.

Ordering information: All weights from 1 mg to 20 kg are available with or without COFRAC certificate - please visit www.vwr.com or contact your local VWR sales office. A range of sets of weights are also available - please search for product "Calibration weight sets, class F1".

Weight	Tolerance (± mg)	Pk	Cat. No.
F1 weights in plastic cases with certificate			
1 mg	0,020	1	**611-8231**
2 mg	0,020	1	**611-8232**
5 mg	0,020	1	**611-8233**
10 mg	0,025	1	**611-8234**
20 mg	0,03	1	**611-8235**
50 mg	0,04	1	**611-8236**
100 mg	0,05	1	**611-8237**
200 mg	0,06	1	**611-8238**
500 mg	0,08	1	**611-8239**
1 g	0,10	1	**611-8240**
2 g	0,12	1	**611-8241**
5 g	0,15	1	**611-8242**
10 g	0,20	1	**611-8243**
20 g	0,25	1	**611-8244**
50 g	0,30	1	**611-8245**
100 g	0,50	1	**611-8246**
200 g	1,0	1	**611-8247**
500 g	2,5	1	**611-8248**
1 kg	5	1	**611-8249**
2 kg	10	1	**611-8250**
5 kg	25	1	**611-8251**
10 kg	50	1	**611-8252**
20 kg	100	1	**611-8094**
F1 weights in wooden boxes with certificate			
500 g	2,5	1	**611-8040**
1 kg	5	1	**611-8041**
2 kg	10	1	**611-8042**
5 kg	25	1	**611-8049**
10 kg	50	1	**611-8058**
20 kg	100	1	**611-8071**
50 kg	250	1	**611-8093**
F1 weights in plastic cases without certificates			
1 mg	0,020	1	**611-8201**
2 mg	0,020	1	**611-8202**
5 mg	0,020	1	**611-8203**
10 mg	0,025	1	**611-8204**
20 mg	0,03	1	**611-8205**
50 mg	0,04	1	**611-8206**
100 mg	0,05	1	**611-8207**
200 mg	0,06	1	**611-8208**
500 mg	0,08	1	**611-8209**
1 g	0,10	1	**611-8210**
2 g	0,12	1	**611-8211**
5 g	0,16	1	**611-8212**
10 g	0,20	1	**611-8213**
20 g	0,25	1	**611-8214**
50 g	0,30	1	**611-8215**
100 g	0,50	1	**611-8216**
200 g	1,0	1	**611-8217**
500 g	2,5	1	**611-8218**
1 kg	5	1	**611-8219**
2 kg	10	1	**611-8220**
5 kg	25	1	**611-8221**
10 kg	50	1	**611-8222**
20 kg	100	1	**611-8039**
F1 weights in wooden boxes without certificates			
500 g	2,5	1	**611-8028**
1 kg	2,5	1	**611-8029**
2 kg	10	1	**611-8033**
5 kg	25	1	**611-8035**
10 kg	50	1	**611-8036**
20 kg	100	1	**611-8037**
50 kg	150	1	**611-8038**

Anti-vibration weighing surface

Polished granite

Four absorbing feet dampen the transmission of extraneous vibrations to this slab making it suitable for not only high precision weighing but also microscopy and other similar delicate instrumentation.

Weight: 44 kg

Description	W×D×H (mm)	Pk	Cat. No.
Anti-vibration weighing surface, granite	560×450×65	1	**611-2536**

Weighing table, granite, for micro and analytical balances

High performance microbalances and analytical balances should be placed in an environment where interfering vibration is at a minimum, to give fast stabilisation of the reading. The VWR weighing table features a sturdy stable frame.

- Granite weighing surface
- Adjustable feet
- Meets highest standards of anti-vibration with 4 vibration dampers
- Facilitates fast stabilisation times

Description	Colour	W×D×H (mm)	Pk	Cat. No.
Balance table, granite, with vibration dampers and adjustable feet	Grey-White	900× 600×760	1	**611-2549**

Beakers, low form

Grade 3.3 borosilicate glass, with spout

The economical alternative for a wide range of laboratory applications. With volume graduations and labelling area.

- Very good chemical resistance
- High temperature resistance
- Autoclavable

DIN 12331, ISO 3819

Capacity (ml)	Height (mm)	Ø ext. (mm)	Pk	Cat. No.
25	50	34	10	**213-1120**
50	60	42	10	**213-1121**
100	70	50	10	**213-1122**
150	80	60	10	**213-1123**
250	95	70	10	**213-1124**
400	110	80	10	**213-1125**
600	125	90	10	**213-1126**
800	135	100	10	**213-1127**
1000	145	105	10	**213-1128**
2000	185	130	10	**213-1129**
3000	210	150	1	**213-1130**
5000	270	170	1	**213-1131**
10000	350	217	1	**213-1132**

Beakers, tall form

Grade 3.3 borosilicate glass, with spout

The economical alternative for a wide range of laboratory applications. With volume graduations and labelling area.

- Very good chemical resistance
- High temperature resistance
- Autoclavable

DIN 12331, ISO 3819

Capacity (ml)	Height (mm)	Ø ext. (mm)	Pk	Cat. No.
50	70	38	10	**213-1169**
100	80	48	10	**213-1170**
150	95	54	10	**213-1171**
250	120	60	10	**213-1172**
400	130	70	10	**213-1173**
600	150	80	10	**213-1174**
800	175	90	10	**213-1175**
1000	180	95	10	**213-1176**
2000	240	120	10	**213-1177**
3000	280	135	1	**213-1178**

VWR COLLECTION

SELECTED FOR YOU

Erlenmeyer flasks, narrow or wide mouth, with beaded rim

Borosilicate glass, grade 3.3, clear

The economical alternative for a wide range of laboratory applications. Flasks have flared rim with markings for approximate volume graduations and a white labelling area.

- Very good chemical resistance
- High temperature resistance
- Minimal thermal expansion, giving relatively high resistance to temperature changes

ISO 1773 (narrow mouth)

DIN ISO 24450 (wide mouth)

Capacity (ml)	Height (mm)	Ø ext. (mm)	Neck Ø ext. (mm)	Pk	Cat. No.
Narrow mouth					
50	90	51	22	10	**214-1130**
100	105	64	22	10	**214-1131**
200	135	79	34	10	**214-0157**
250	145	85	34	10	**214-1132**
500	180	105	34	10	**214-1133**
1000	220	131	42	10	**214-1134**
2000	280	153	50	10	**214-1135**
3000	310	187	50	1	**214-1136**
5000	365	220	50	1	**214-1137**
Wide mouth					
50	85	51	34	10	**214-1170**
100	105	64	34	10	**214-1171**
200	131	79	50	10	**214-0158**
250	140	85	50	10	**214-1172**
300	156	87	50	10	**214-1173**
500	175	105	50	10	**214-1174**
1000	220	131	50	10	**214-1175**
2000	280	153	69	10	**214-1176**

VWR COLLECTION

SELECTED FOR YOU

Facial tissues

Two ply facial tissues made from 100% cellulose.

- Extra soft

Colour: White

LxW (mm)	Packed	Pk	Cat. No.
195×200	150 sheets per box	150	**115-0600**

VWR COLLECTION

SELECTED FOR YOU

Wipes for general applications

Absorbent, soft, thick and low-lint fleece wipes. For light use in the laboratory, electronics, computer industry, pharmaceuticals, biotechnology, optics, etc.

- High absorbency, in three formats, available in single or triple ply
- Practical dispenser box with anti-static, plastic film window for removal
- Table and wall-mounted dispensers for one handed removal of the wipes are available separately

Colour: White

Description	LxW (mm)	Packed	Pk	Cat. No.
Wipes				
Tissue wipes, 1 ply	213×114	In box	280	**115-0202**
Tissue wipes, 1 ply	424×355	In box	140	**115-0203**
Tissue wipes, 3 ply	424×368	In box	90	**115-0204**

Description	Pk	Cat. No.
Dispensers for wipes for general applications		
Dispenser, small, for 115-0202	1	**115-0205**
Dispenser, medium, for 115-0203	1	**115-0206**
Dispenser, large, for 115-0204	1	**115-0207**

SAFETY CATALOGUE

HEAD TO TOE PROTECTION

- HEAD PROTECTION
- EYE PROTECTION
- HEARING PROTECTION
- RESPIRATORY PROTECTION
- GLOVES
- FOOTWEAR
- DISPOSABLE WORKWEAR
- DISPOSABLE CHEMICAL PROTECTIVE WORKWEAR
- WORKWEAR
- FIRST AID
- FALL PROTECTION
- WORKPLACE SAFETY
- HOUSEKEEPING

VWR Safety Catalogue 2013-2015

Complete with norms and standards, sizing guides and pictograms for quick selection.

Make sure your safety officer has got a copy!
Contact your local VWR sales office or vwr.com

Acids for analysis, Analar NORMAPUR®

- Reagents for analysis with very high purity
- Specifications of possible impurities quoted in parts per million (ppm)
- Real values displayed on the labels and certificate of analysis (CoA)

Description	Pk	Cat. No.
Acetic acid glacial ACS, Reag. Ph. Eur. analytical reagent	1 l	**20104.298**
Acetic acid glacial ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20104.323**
Acetic acid glacial ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20104.334**
Hydrochloric acid 25% AnalaR NORMAPUR® analytical reagent	1 l	**20257.296**
Hydrochloric acid 25% AnalaR NORMAPUR® analytical reagent	2,5 l	**20257.321**
Hydrochloric acid 32% AnalaR NORMAPUR® analytical reagent	2,5 l	**20254.401**
Hydrochloric acid 37% AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent	1 l	**20252.290**
Hydrochloric acid 37% AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent	2,5 l	**20252.324**
Hydrochloric acid 37% AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent	2,5 l	**20252.420**
Hydrofluoric acid 40% AnalaR NORMAPUR® analytical reagent	1 l	**20307.290**
Nitric acid 65% AnalaR NORMAPUR® analytical reagent	1 l	**20429.291**
Nitric acid 65% AnalaR NORMAPUR® analytical reagent	2,5 l	**20429.320**
Nitric acid 68% AnalaR NORMAPUR® analytical reagent	1 l	**20422.297**
Nitric acid 68% AnalaR NORMAPUR® analytical reagent	2,5 l	**20422.322**
Orthophosphoric acid 85% AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 l	**20624.295**
Orthophosphoric acid 85% AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**20624.420**
Perchloric acid 60% AnalaR NORMAPUR® analytical reagent	500 ml	**20583.260**
Perchloric acid 60% AnalaR NORMAPUR® analytical reagent	2,5 l	**20583.327**
Sulphuric acid 95% AnalaR NORMAPUR® analytical reagent	1 l	**20700.298**
Sulphuric acid 95% AnalaR NORMAPUR® analytical reagent	2,5 l	**20700.323**

Acids for analysis, EMSURE®

Description	Pk	Cat. No.
Acetic acid glacial EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 l	**1.00063.1000**
Acetic acid glacial EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 l	**1.00063.1011**
Acetic acid glacial EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	2,5 l	**1.00063.2500**
Acetic acid glacial EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	2,5 l	**1.00063.2511**
Acetic anhydride EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 l	**1.00042.1000**
Dodecamolybdophosphoric acid hydrate EMSURE® ACS, Reag. Ph. Eur. analytical reagent	100 g	**1.00532.0100**
Formic acid 98-100% EMSURE® ACS, Reag. Ph. Eur. analytical reagent	1 l	**1.00264.1000**
Hydriodic acid 57% EMSURE® analytical reagent	250 ml	**1.00344.0250**
Hydriodic acid 67% EMSURE® analytical reagent	250 ml	**1.00345.0250**
Hydrochloric acid 37% EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 l	**1.00317.1000**
Hydrochloric acid 37% EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	2,5 l	**1.00317.2500**
Hydrochloric acid 37% EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	2,5 l	**1.00317.2501**
Nitric acid 100% fuming EMSURE® ACS, Reag. Ph. Eur. analytical reagent	1 l	**1.00455.1000**
Nitric acid 65% EMSURE® ISO analytical reagent	1 l	**1.00456.1000**
Nitric acid 65% EMSURE® ISO analytical reagent	2,5 l	**1.00456.2500**
Nitric acid 69% EMSURE® ACS, Reag. Ph. Eur. analytical reagent	1 l	**1.01799.1000**
Nitric acid 69% EMSURE® ACS, Reag. Ph. Eur. analytical reagent	2,5 l	**1.01799.2500**
ortho-Boric acid EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	500 g	**1.00165.0500**
ortho-Boric acid EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 kg	**1.00165.1000**
Orthophosphoric acid 85% EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 l	**1.00573.1000**
Orthophosphoric acid 85% EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	2,5 l	**1.00573.2500**
Sulphuric acid 25% EMSURE® analytical reagent	1 l	**1.00716.1000**
Sulphuric acid 95-97% EMSURE® ISO analytical reagent	1 l	**1.00731.1000**
Sulphuric acid 95-97% EMSURE® ISO analytical reagent	1 l	**1.00731.1011**
Sulphuric acid 95-97% EMSURE® ISO analytical reagent	2,5 l	**1.00731.2500**
Sulphuric acid 95-97% EMSURE® ISO analytical reagent	2,5 l	**1.00731.2511**
Sulphuric acid 98% EMSURE® analytical reagent	1 l	**1.12080.1000**

Caustics and bases

Description	Pk	Cat. No.
Ammonia 28% AnalaR NORMAPUR® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 l	**21190.292**
Ammonia 28% GPR RECTAPUR	1 l	**21182.294**
Ammonia 28% GPR RECTAPUR	5 l	**21182.363**
Potassium hydroxide, pellets AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent	500 g	**26668.263**

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Description	Pk	Cat. No.
Potassium hydroxide, pellets AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent	1 kg	**26668.296**
Potassium hydroxide, pellets GPR RECTAPUR®	500 g	**26669.266**
Potassium hydroxide, pellets GPR RECTAPUR®	1 kg	**26669.290**
Sodium hydroxide, pellets AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	500 g	**28244.262**
Sodium hydroxide, pellets AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 kg	**28244.295**
Sodium hydroxide, pellets AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	5 kg	**28244.364**
Sodium hydroxide, pellets GPR RECTAPUR®	500 g	**28245.265**
Sodium hydroxide, pellets GPR RECTAPUR®	1 kg	**28245.298**

Caustics and bases, EMSURE®

Description	Pk	Cat. No.
Ammonia 25% EMSURE® analytical reagent	1 l	**1.05432.1000**
Ammonia 25% EMSURE® analytical reagent	1 l	**1.05432.1011**
Ammonia 25% EMSURE® analytical reagent	2,5 l	**1.05432.2500**
Ammonia 28-30% EMSURE® ACS, Reag. Ph. Eur. analytical reagent	1 l	**1.05423.1000**
Calcium hydroxide EMSURE® ACS, Reag. Ph. Eur. analytical reagent	500 g	**1.02047.0500**
Potassium hydroxide, pellets EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent (max. 0.002% Na)	250 g	**1.05021.0250**
Potassium hydroxide, pellets EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent (max. 0.002% Na)	1 kg	**1.05021.1000**
Potassium hydroxide, pellets EMSURE® analytical reagent	500 g	**1.05033.0500**
Potassium hydroxide, pellets EMSURE® analytical reagent	1 kg	**1.05033.1000**
Potassium hydroxide, pellets EMSURE® analytical reagent	5 kg	**1.05033.5000**
Sodium hydroxide, pellets EMSURE® ACS, Reag. Ph. Eur. analytical reagent (max. 0.0002% K)	250 g	**1.06495.0250**
Sodium hydroxide, pellets EMSURE® ACS, Reag. Ph. Eur. analytical reagent (max. 0.02% K)	1 kg	**1.06469.1000**
Sodium hydroxide, pellets EMSURE® analytical reagent	500 g	**1.06498.0500**
Sodium hydroxide, pellets EMSURE® analytical reagent	1 kg	**1.06498.1000**
Sodium hydroxide, pellets EMSURE® analytical reagent	5 kg	**1.06498.5000**
Sodium hydroxide 10% in aqueous solution EMSURE® analytical reagent	1 l	**1.05588.1000**
Sodium hydroxide 32% in aqueous solution EMSURE® for nitrogen analysis	2,5 l	**1.05590.2500**

Inorganic salts for analysis, Analar NORMAPUR®

- Reagents for analysis with very high purity
- Specifications of possible impurities quoted in parts per million (ppm)
- Real values displayed on the labels and Certificate of analysis

Description	Pk	Cat. No.
Calcium carbonate AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent low in alkali, precipitated	1 kg	**22300.290**
di-Sodium hydrogen phosphate dihydrate AnalaR NORMAPUR® analytical reagent	500 g	**28029.260**
di-Sodium hydrogen phosphate dihydrate AnalaR NORMAPUR® analytical reagent	1 kg	**28029.292**
Iron (III) chloride hexahydrate AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	250 g	**24208.237**
Lithium chloride AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent	500 g	**25012.260**
Potassium chloride AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent	1 kg	**26764.298**
Potassium hydrogen carbonate AnalaR NORMAPUR® analytical reagent	1 kg	**26733.292**
Potassium iodide AnalaR NORMAPUR® analytical reagent	500 g	**26846.268**
Potassium iodide AnalaR NORMAPUR® analytical reagent	1 kg	**26846.292**
Silver nitrate AnalaR NORMAPUR® analytical reagent	100 g	**21572.188**
Silver nitrate AnalaR NORMAPUR® analytical reagent	250 g	**21572.235**
Sodium chloride AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 kg	**27810.295**
Sodium hydrogen carbonate AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	1 kg	**27778.293**
Sodium sulphate, anhydrous AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent	1 kg	**28114.296**
tri-Sodium citrate dihydrate AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent	500 g	**27833.260**

Salts for analysis, EMSURE®

Description	Pk	Cat. No.
Ammonium acetate EMSURE® ACS, Reag. Ph. Eur. analytical reagent	500 g	**1.01116.0500**
Ammonium acetate EMSURE® ACS, Reag. Ph. Eur. analytical reagent	1 kg	**1.01116.1000**
Ammonium chloride EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	500 g	**1.01145.0500**
Ammonium chloride EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 kg	**1.01145.1000**
Bismuth (III) nitrate basic EMSURE® Reag. Ph. Eur. analytical reagent	100 g	**1.01878.0100**
Calcium chloride dihydrate EMSURE® ACS, Reag. Ph. Eur. analytical reagent	1 kg	**1.02382.1000**
Cobalt (II) nitrate hexahydrate EMSURE® ACS, Reag. Ph. Eur. analytical reagent (max. 0.001% Ni)	250 g	**1.02554.0250**
Magnesium chloride hexahydrate EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 kg	**1.05833.1000**

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Description	Pk	Cat. No.
Potassium chloride EMSURE® analytical reagent	1 kg	**1.04936.1000**
Potassium dihydrogen phosphate EMSURE® ISO analytical reagent	1 kg	**1.04873.1000**
Potassium dihydrogen phosphate EMSURE® ISO analytical reagent	5 kg	**1.04873.5000**
Potassium iodide EMSURE® ISO, Reag. Ph. Eur. analytical reagent	250 g	**1.05043.0250**
Potassium iodide EMSURE® ISO, Reag. Ph. Eur. analytical reagent	500 g	**1.05043.0500**
Potassium iodide EMSURE® ISO, Reag. Ph. Eur. analytical reagent	1 kg	**1.05043.1000**
Silver nitrate EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 kg	**1.01512.1000**
Sodium chloride EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 kg	**1.06404.1000**
Sodium chloride EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	5 kg	**1.06404.5000**
Sodium dihydrogen phosphate monohydrate EMSURE® ACS, Reag. Ph. Eur. analytical reagent	1 kg	**1.06346.1000**
Sodium sulphate, anhydrous EMSURE® ACS, ISO, Reag. Ph. Eur. analytical reagent	1 kg	**1.06649.1000**
Zinc (II) nitrate tetrahydrate EMSURE® analytical reagent	1 kg	**1.08833.1000**

Anhydrous solvents

A complete range of high purity anhydrous solvents packed in special septum sealed 250 ml glass bottles. The packaging has a double screw cap system. The inner cap comes with the six puncture points for the silicone/PTFE lined septum to enable repetitive withdrawal of dry solvents. The 1 litre pack size is supplied in a standard bottle.

- Specifically purified by chemical treatment and glass distillation, to minimise impurities
- Filtered at 0,2 µm and packed under nitrogen
- Very low evaporation residue
- Simplicity - just tick the used puncture holes with any marker to prevent multiple puncturing

Description	Pk	Cat. No.
1,4-Dioxane, anhydrous (max. 0.003% H_2O)	250 ml	**83674.230**
Acetone, dehydrated (max. 0.01% H_2O)	250 ml	**83683.230**
Acetonitrile, anhydrous (max. 0.001% H_2O)	250 ml	**83676.230**
Acetonitrile, anhydrous (max. 0.001% H_2O)	1 l	**83676.290**
Dichloromethane, anhydrous (max. 0.001% H_2O)	250 ml	**83682.230**
Dichloromethane, anhydrous (max. 0.001% H_2O)	1 l	**83682.290**
Diethyl ether, anhydrous (max. 0.0025% H_2O)	250 ml	**83671.230**
Dimethyl sulphoxide, anhydrous (max. 0.005% H_2O)	250 ml	**83673.230**
Dimethyl sulphoxide, anhydrous (max. 0.005% H_2O)	1 l	**83673.290**
Ethanol absolute, anhydrous (max. 0.003% H_2O)	250 ml	**83672.230**
Ethanol absolute, anhydrous (max. 0.003% H_2O)	1 l	**83672.290**
N,N-Dimethylformamide, anhydrous (max. 0.005% H_2O)	250 ml	**83675.230**
N,N-Dimethylformamide, anhydrous (max. 0.005% H_2O)	1 l	**83675.290**
Toluene, anhydrous (max. 0.002% H_2O)	250 ml	**83680.230**
Toluene, anhydrous (max. 0.002% H_2O)	1 l	**83680.290**

Chemicals for synthesis and formulation

Description	Pk	Cat. No.
2-Propanol GPR RECTAPUR®	1 l	**20839.297**
2-Propanol GPR RECTAPUR®	5 l	**20839.366**
Acetone GPR RECTAPUR®	2,5 l	**20065.327**
Acetone GPR RECTAPUR®	5 l	**20065.362**
Dichloromethane GPR RECTAPUR®	2,5 l	**23367.321**
Dichloromethane GPR RECTAPUR®	5 l	**23367.365**
Dichloromethane GPR RECTAPUR®	2,5 l	**25631.327**
Dichloromethane GPR RECTAPUR®	5 l	**25631.362**
Ethanol 95-97% (v/v) GPR RECTAPUR®	2,5 l	**20824.321**
Ethanol 95-97% (v/v) GPR RECTAPUR®	5 l	**20824.365**
Ethyl acetate GPR RECTAPUR®	2,5 l	**23880.324**
Ethyl acetate GPR RECTAPUR®	5 l	**23880.368**
Methanol GPR RECTAPUR®	2,5 l	**20846.326**
Methanol GPR RECTAPUR®	5 l	**20846.361**
n-Hexane, dehydrated (max. 0.01% H_2O) GPR RECTAPUR® for synthesis	2,5 l	**24580.324**
n-Hexane TECHNICAL	5 l	**24611.366**
Tetrahydrofuran GPR RECTAPUR®	2,5 l	**28552.324**
Tetrahydrofuran GPR RECTAPUR®	5 l	**28552.368**
Toluene TECHNICAL	5 l	**28701.364**

Organic reagents for synthesis of flavours and fragrances for cosmetics

Description	Pk	Cat. No.
(±)-2-Octanol for synthesis	100 ml	**8.20925.0100**
(R)-(+)-Limonene for synthesis	100 ml	**8.18407.0100**
1-Decanol for synthesis	100 ml	**8.03463.0100**
1-Decanol for synthesis	1 l	**8.03463.1000**
1-Octanol for synthesis	100 ml	**8.20931.0100**
Acetic acid 99-100% for synthesis	1 l	**8.18755.1000**
Acetic acid 99-100% for synthesis	2,5 l	**8.18755.2500**
Azelaic acid for synthesis	100 g	**8.20116.0100**
Azelaic acid for synthesis	1 kg	**8.20116.1000**
Benzaldehyde for synthesis	100 ml	**8.01756.0100**
Benzaldehyde for synthesis	500 ml	**8.01756.0500**
Benzoic acid for synthesis	100 g	**8.22257.0100**
Benzoic acid for synthesis	1 kg	**8.22257.1000**
Benzophenone for synthesis	5 g	**8.01801.0005**
Benzophenone for synthesis	250 g	**8.01801.0250**
Benzyl alcohol for synthesis	100 ml	**8.22259.0100**
Benzyl alcohol for synthesis	1 l	**8.22259.1000**
Benzyl benzoate for synthesis	100 ml	**8.18701.0100**
Caproic acid for synthesis	250 ml	**8.00198.0250**
Ethyl acetoacetate for synthesis	1 l	**8.09622.1000**
Ethyl acetoacetate for synthesis	2,5 l	**8.09622.2500**
Isoamyl alcohol for synthesis	1 l	**8.18969.1000**
Isopropyl acetate for synthesis	1 l	**8.20560.1000**
Isopropyl myristate for synthesis	100 ml	**8.22102.0100**
Isopropyl myristate for synthesis	1 l	**8.22102.1000**
Methyl nicotinate for synthesis	500 g	**8.18713.0500**
Phenylacetic acid for synthesis	250 g	**8.20993.0250**
Stearic acid for synthesis	500 g	**8.00673.0500**
Stearic acid for synthesis	1 kg	**8.00673.1000**
Valeric acid for synthesis	1 l	**8.00821.1000**
Vanillin for synthesis	100 g	**8.18718.0100**

Process chemicals for organic synthesis of cosmetics

Description	Pk	Cat. No.
2-Phenylethanol for synthesis	250 ml	**8.07006.0250**
Diethylamine for synthesis	100 ml	**8.03010.0100**
Diethylamine for synthesis	500 ml	**8.03010.0500**
Diethylamine for synthesis	1 l	**8.03010.1000**
Glycolic acid 70% in aqueous solution for synthesis	1 l	**8.14186.1000**
Glyoxal 40% in aqueous solution for synthesis	100 ml	**8.20610.0100**
Glyoxal 40% in aqueous solution for synthesis	1 l	**8.20610.1000**
Sodium dehydracetate for synthesis	5 g	**8.14085.0005**
Sodium dehydracetate for synthesis	1 kg	**8.14085.1000**

Auxiliares for organic synthesis

Description	Pk	Cat. No.
1-Hexadecanol (Cetyl alcohol) for synthesis	100 g	**8.18704.0100**
2-Phenoxyethanol for synthesis	1 l	**8.07291.1000**
Hydrogen peroxide-urea	500 g	**8.18356.0500**
Maleic acid for synthesis	100 g	**8.00380.0100**
n-Dodecane for synthesis	100 ml	**8.20543.0100**
p-Phenylenediamine for synthesis	5 g	**8.07246.0005**
p-Phenylenediamine for synthesis	250 g	**8.07246.0250**
p-Phenylenediamine for synthesis	1 kg	**8.07246.1000**
Taurine for synthesis	250 g	**8.08616.0250**
Tween® 20 (Polysorbate) for synthesis	500 ml	**8.22184.0500**
Tween® 20 (Polysorbate) for synthesis	1 l	**8.22184.1000**
Tween® 80 (Polysorbate) for synthesis	500 ml	**8.22187.0500**
Tween® 80 (Polysorbate) for synthesis	1 l	**8.22187.1000**

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