

Lab Tools for Chemistry and Life Sciences

Liquid Handling

Laboratory Vacuum

Life Science Plastics

Volumetric Labware

Pipetting Robot



Table of Contents

LIQUID HANDLING 2

Introduction to Liquid Handling 2

Pipettes & Tips 4

Transferpette® *S* 4

Transferpette® electronic 8

Pipette Tips & Filter Tips 12

PLT Pipette Leak Testing Unit 25

HandyStep® *S* 26

HandyStep® touch 28

PD-Tip™ // Precision Dispenser Tips 31

PD-Tip™ // Precision Dispenser Tips 32

Transferpettor™ 33

Automated Liquid Handling 34

Liquid Handling Station 34

Bottletop Dispensers 39

Dispensette® *S* 39

Dispensette® *S* Trace Analysis 43

seripettor® 50

seripettor® *pro* 52

VITLAB® piccolo™ 54

Burettes 55

Titrette® 55

EASYCAL™ Calibration 59

Pipette Controllers 61

macro™ 61

accu-jet® *pro* 62

ASPIRATION 64

BVC Fluid Aspiration Systems 64

QuikSip™ Bottletop Aspirator 65

VACUUM PRODUCTS 66

VACUUBRAND® Vacuum Products 66

Rotary Vane Pumps 73

Vacuum Applications 74

Vacuum Gauges & Controllers 80

Non-Chemistry Diaphragm Vacuum Pumps 82

Vacuum Pump Ordering Information 83

LIFE SCIENCE PLASTICS 85

BRANDplates® Microplates 85

Sample Prep & Storage 94

BRAND® Insert 2in1 96

BRANDplates® Insert System 98

Polypropylene & Deep-Well Plates 100

BRAND® Microcentrifuge Tubes 101

PCR Consumables 102

BRAND® PCR Tubes, Strips & Plates 102

Spectrophotometry Cuvettes 104

BRAND® Plastic Cuvettes 104

BRAND® UV-Cuvettes 106

BRAND® Fluorimetry Cuvettes 108

GENERAL LAB SUPPLIES 109

Stainless Steel Support Jacks 109

Test Tube Racks 111

Sample Cups for Clinical Analyzers 112

Mucasol® Universal Detergent 112

Volumetric Glassware 113

Class A, USP, Certified Volumetric Glassware 113

Plastic Labware 116

PFA Trace Analysis Labware 116

Volumetric Labware and Containers 119

VITLAB® General Laboratory Products 126

Reference 132

Plastics Reference 132

BRAND® Quality Grade Reference 133

APPENDIX 134

Trademarks 134

Quality and Certifications 135

TERMS & CONDITIONS 136

Introduction to Liquid Handling

Dispenser, Burette, Pipette, or Robotic System—What Kind of Liquid Handling Do I Need?

Liquid handling instruments take many forms in the laboratory, and it's not always easy to know which type will make your job easier. BrandTech® is not only your liquid handling source, we are also your resource for understanding and identifying the best liquid handling tool for the job.

Bottletop Dispensers are designed to repeatedly dispense preset volumes of liquid from a bottle. Due to their design, dispensers are typically dedicated to a single reagent. Features to look for in a bottletop dispenser include:

- **Chemical resistance**—Is the dispenser suitable for the chemicals to be dispensed? If so, can the dispenser remain on top of the bottle, or does the manufacturer recommend removing it after each/daily use?
- **Safety features**—If using the dispenser with hazardous chemicals, does it have features that will help prevent splashes or inadvertent dispensing? These include reinforced discharge tubes with caps, safety discharge valves, enclosed cylinders and priming valves to help purge bubbles.
- **Thread adapters**—Can the dispenser be attached directly to the original reagent bottle, or will the chemical have to be transferred from one bottle to another?
- **One-handed operation**—Instruments with a 'floating piston' design have very low resistance, and allow the dispensing operation to be performed with one hand. Instruments with wiping seals have more resistance, and either need to be spring-loaded or used with a bottle-stand for one-handed operation.

Bottletop Burettes, while similar in appearance to bottletop dispensers, perform an entirely different function. Bottletop burettes are designed for titration, a chemistry technique for determining concentrations in which the total volume to be dispensed is unknown until the endpoint is reached. Features to look for in a bottletop burette include:

- **Accuracy**—Is the bottletop burette accurate enough for the intended application? The Titrette® bottletop burette matches the Class A accuracy of glass burettes. Most bottletop burettes do not even meet the standards for Class B burettes.
- **Easy Maintenance**—Many titrants are salt solutions that can form crystals that wear the piston seal. Can the instrument be easily disassembled for cleaning and in-lab maintenance?
- **Reliability**—Many titrant solutions are also corrosive. Is the instrument manufactured from quality components (including the electronics) that will resist corrosion and prevent premature failure?



Introduction to Liquid Handling



Pipettes aspirate, and dispense liquid – the movement from one container to another is performed purely by the operator. Pipettes fall into two broad categories:

In an air-displacement pipette, the piston does not come in direct contact with the pipetted liquid. Rather there is an “air cushion” between the piston and the liquid, which is drawn up into a disposable pipette tip. These instruments are designed around the physical characteristics of water, and the further the properties of the pipetted liquid diverge from water’s properties (density, volatility, viscosity) the less accurate the pipetted volume will be.

With positive displacement pipettes the liquid comes in direct contact with the piston. Because there is no air cushion, a positive displacement pipette is much more tolerant of viscosity, volatility and density differences than an air-displacement pipette. Additionally, the positive displacement principle is well suited for accurate fractional dispensing, as in a repeating or stepping pipette.

Air-displacement and positive displacement pipettes can be either fully mechanical or electronic/motorized. Electronic pipettes have the advantage that they can reduce the amount of operating forces and can significantly reduce repetitive motion. Because they are automated rather than manually operated, they can reduce user error.

Pipetting robots are essentially electronic pipettes that can be moved in three dimensions to move liquids in pre-defined positions. Software allows virtually all aspects of the pipetting to be automated for highly reproducible results. While smaller pipetting robots may not drastically increase throughput, they have a number of advantages—eliminating repetitive motion; eliminating user-errors in tedious tasks; and freeing up scientists to perform more “cognitive work” rather than performing repetitive manual procedures. Additionally, some automated pipetting systems offer documentation for sample tracking and process control, verification, and reporting.



Transferpette® S

NEW!

Transferpette® S pipettes are designed to deliver premium performance, simple operation, light weight, comfort, and easy service.

- **Thumb-tip volume selection**—Set and secure the volume without even shifting your hand position!
- **Short pipetting stroke**—Reduces risk of repetitive strain injury.
- **Fully autoclavable at 121° C**—Repeatedly autoclavable without disassembly or recalibration.
- **Light weight and rugged**—Made with advanced precision materials for chemical resistance, dimensional stability and light weight.
- **Full pipetting range**—Adjustable and fixed-volume single channel pipettes from 0.1 µL to 10 mL; multichannels from 0.5 µL to 300 µL.
- **Economical**—Fast, in-house cleaning, repair and calibration (without tools) for long, economical service; Accepts most quality tips.



The Transferpette® S –
the performance standard
in pipetting

Transferpette® S Single & Multichannel Pipettes

One-handed operation

Set the volume, pipette, and eject the tip—all without changing your grip

Volume change protection

Helps prevent accidental volume adjustments

Clearly accurate

4-digit display for precise volume settings; always remains visible during pipetting

Convenient

Manifold rotates 360° in both directions to allow you to pipette from any angle

Ergonomic:

Low operating forces and short stroke

Reduced static strain

Pipette suspends from relaxed hand

Smooth operation

Specially selected sealing material provides uniformly smooth pipetting stroke

Low strain

Improved O-rings and the stepped design of the tip ejector reduce tip mounting and ejection forces; O-rings support broad tip compatibility

Easy cleaning and maintenance

Patented individually removable nose cones and seals can be easily removed for cleaning or replacement



Transferpette® S Single & Multichannel Pipettes

NEW!

Precision workmanship, high grade materials, "Made in Germany" quality – it's what you see on first glance and appreciate every time you use the new Transferpette® S. The finer points of the design will be evident when the instrument is in your hand.

- **Slim hand grip**—Provides a comfortable and secure fit in any hand—right, left, big or small
- **One-handed operation**—Perform all functions (set volume, pipette, tip ejection) without changing your grip
- **Volume-change protection**—Simple to operate and clearly shows when the volume setting is locked
- **Slim shaft**—Narrow tubes? With the slim shaft, easily pipette into narrow tubes such as 15 mL conical tubes
- **Easy cleaning**—The shaft tucks inside the handgrip for smooth surfaces, making cleaning easier
- **Low forces**—Short pipetting stroke, easy mounting and tip ejection make pipetting a breeze

Color-coded

At-a-glance identification of pipette size and matching tips

Volume-change protection

Secures the set volume from accidental adjustment

Easy Calibration™ technology

Simple adjustment, without tools

Slim hand grip

Fits comfortably and securely in all hands

Slim shaft

Easy access to small vessels



One-handed operation



Volume-change protection



Integrated shaft coupling



Covered nameplate—identifies pipettes without messy tape!



Red recalibration flag indicates adjustment from factory specifications.



Benchtop rack for 6 Transferpette® S single- or multi-channel pipettes.

Transferpette® S Single & Multichannel Pipettes



Adjustable volume



Fixed volume



Shelf/rack mount

Wall mount

Capacity, μL^{**}	Model	Type of Tips See page 24	A* < $\pm$ %	CV* $\leq$ %	Subdivision, μL	Cat. No.	2020 List Price
Transferpette® S Adjustable Volume Single Channel Pipettes							
0.1-1	D-1	A, I	2	1.2	0.001	705868	\$297.00
0.1-2.5	D-2.5	A [^] , B, C [^] , I [^] , J	1.4	0.7	0.002	705869	297.00
0.5-10	D-10	A [^] , B, C, I [^] , J, K	1	0.5	0.01	705870	297.00
2-20	D-20	D, E, L, M	0.8	0.4	0.02	705872	297.00
5-50	D-50	D, E, L, M	0.8	0.3	0.05	705873	297.00
10-100	D-100	D, E, L, M	0.6	0.2	0.1	705874	297.00
20-200	D-200	D, E, L, M, N	0.6	0.2	0.2	705878	297.00
100-1000	D-1000	F, O	0.6	0.2	1	705880	297.00
500-5000 (0.5-5 mL)	D-5000	G	0.6	0.2	5	705882	297.00
1000-10000 (1-10 mL)	D-10000	H	0.6	0.2	10	705884	297.00

Transferpette® S Fixed Volume Single Channel Pipettes

Capacity, μL	Model	Type of Tips See page 24	A* < $\pm$ %	CV* $\leq$ %	Subdivision, μL	Cat. No.	2020 List Price
10	F-10	A [^] , B, C, I [^] , J, K	1	0.5	—	705808	177.40
20	F-20	D, E, L, M	0.8	0.4	—	705816	177.40
25	F-25	D, E, L, M	0.8	0.4	—	705820	177.40
50	F-50	D, E, L, M	0.8	0.4	—	705828	177.40
100	F-100	D, E, L, M	0.6	0.2	—	705838	177.40
200	F-200	D, E, L, M, N	0.6	0.2	—	705844	177.40
500	F-500	F, O	0.6	0.2	—	705854	177.40
1000	F-1000	F, O	0.6	0.2	—	705862	177.40

Pipette includes performance certificate, operating manual, shelf/rack mount and three year warranty

Starter Set	Models	Cat. No.	2020 List Price
Transferpette® S Single Channel Starter Sets			
Micro	D-2.5, D-10, D-100	705890	\$765.00
Mid-Size	D-20, D-200, D-1000	705891	765.00
Macro	D-1000, D-5000, D-10000	705892	765.00
Standard	D-10, D-100, D-1000	705893	765.00

Starter Sets include three pipettes with performance certificates, operating manual, three shelf/rack mounts, and three filled Tip-Boxes with appropriate sized tips.

Transferpette® S Single Channel package sets

NEW! Package 1	D-2.5, D10, D-20, D-200, D-1000	705896	1,220.00
NEW! Package 2	D-10, D-100, D-200, D-1000, D-5000	705897	1,220.00

Package Sets include five pipettes, a benchtop rack and three filled tip boxes (four boxes Package 2).

Capacity, μL^{**}	A* < $\pm$ %	CV* $\leq$ %	Subdivision, μL	Transferpette® S -8 Channel	2020 List Price	Transferpette® S -12 Channel	2020 List Price
Transferpette® S -8/-12 Multichannel Pipettes							
0.5-10	A, B, C, I, J, K	1.6	1.0	0.01	705900	705920	\$940.00
5-50	D, E, L, M, N	0.8	0.4	0.05	705906	705926	940.00
10-100	D, E, L, M, N	0.8	0.3	0.1	705908	705928	940.00
20-200	D, E, L, M, N	0.8	0.3	0.2	705910	705930	940.00
30-300	D, E, M, N	0.6	0.3	0.5	705912	705932	940.00

Pipette includes performance certificate, operating manual, shelf/rack mount, two tip boxes, reagent reservoir, pack of replacement O-rings. One-year warranty.

A*=Accuracy, CV*=Coefficient of Variation * The value of accuracy and coefficient of variation are final test values referring to the delivered nominal volume, instrument and distilled water at equilibrium with ambient temperature (20° C) and with smooth operation. ^ Calibration and possible adjustment necessary.

** Tip selection chart see page 24

	Cat. No.	2020 List Price
Accessories		
Benchtop Rack—for up to six Transferpette® S single or multichannel pipettes, pack of 1	704807	\$192.20
Individual Multichannel Stand - for all Transferpette® multichannel pipettes, pack of 1	703440	54.40
Shelf/rack Mount—for all Transferpette® S single or multichannel pipettes, pack of 1	704811	40.40
Wall mount- for all Transferpette® S single or multichannel pipettes, pack of 1	704812	65.00
Autoclavable Reagent Reservoirs – PP, with translucent lids, pack of 10	703459	47.40
Autoclavable Reagent Reservoirs – PP, sterile, individually wrapped, 100 pieces total	703411	314.80
Autoclavable Reagent Reservoirs – PP, sterile, 40 packs of five, 200 pieces total	703409	299.20

Transferpette® electronic

The BRAND® Transferpette® electronic single- and multichannel pipettes combine the innovation of the Transferpette® with the convenience and automation of motorized, electronic pipettes. The result is an accurate, ergonomic instrument for use in most laboratory applications. Both single- and multichannel models are available in five volume ranges, and feature an autoclavable pipette shaft or manifold, respectively.

- Delivers precise, accurate volumes
- Increases sample throughput
- Easy disassembly for cleaning
- Maximizes pipetting comfort

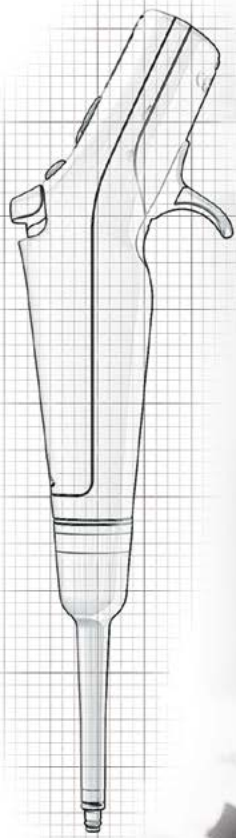
Transferpette® electronic pipettes from BRAND® – performance, value, and unbelievable comfort



Single channel stand



Charging stand
for up to three single channel
pipettes (excluding 5 mL)



Transferpette® electronic Single & Multichannel Pipettes

Clear, legible LCD screen



Intuitive interface

User-friendly design allows easy operation, even for new lab techs

Adjustable finger rest

The adjustable finger rest adapts the instrument to your most comfortable hand position

Soft touch pipetting key



Rechargeable battery

Over 4000 pipetting cycles between charges means well over a full day of uninterrupted pipetting

Multichannel O-rings

Improved O-rings and stepped design of tip ejector reduce tip mounting and ejection forces; O-rings support broad tip compatibility



Easy maintenance

Patented individually removable tip cones for easy cleaning and seal replacement—allows in-lab service



Transferpette® electronic Single & Multichannel Pipettes

Innovative Ergonomics

The Transferpette® electronic pipettes are the first single and multichannel pipettes respectively, to be independently certified “Ergonomics Approved” by a Nationally Recognized Testing Laboratory (NRTL), TÜV Rheinland. The combination of ergonomic features and intuitive design resulted in outstanding user acceptance ratings of 1.54 and 1.55.

Reduce pipetting strain!

From the very beginning, the development of the Transferpette® electronic was driven by the goal of reducing the strain of pipetting without sacrificing performance. It was that focus that led to such innovations as the adjustable finger rest.



Five Operating Modes

Quickly and easily scroll to one of five convenient operating modes that support all of the most common pipetting applications.

Pipetting (PIP Mode)

Program for standard pipetting. Previously set volume is aspirated into the pipette tip and then discharged.

Mixing of samples (PIPMix Mode)

Program for mixing liquids. The sample is repeatedly aspirated and discharged, and the number of cycles is displayed.

Reverse pipetting (revPIP mode)

Program especially designed for greater accuracy when pipetting liquids with a high viscosity, high vapor pressure or low surface tension.

Pipetting for electrophoresis (GEL mode)

Program for loading of electrophoresis gels. (Not available on 1000 µL and 5 mL instruments).

Dispensing (DISP mode)

Program for dispensing liquid in pre-defined steps. A single aspirated volume is dispensed in a number of equal aliquots.



Transferpette® electronic Single & Multichannel Pipettes

Items supplied

The Transferpette® electronic is supplied with the following items:

- Battery
- AC adapter with US plug (except instruments 705339, 705340, 705343, 705346, and 705347)
- One pipette tip sample pack (single channels only)
- Silicone oil
- Operating manual
- One-year warranty

Additional items supplied

Multichannel models also include:

- Pipette stand
- One TipBox
- One TipRefill
- Reagent reservoir
- Tip cone tool
- Set of replacement O-rings



Capacity, µL**	Tip Type See pg. 24	A* < ± %	µL	CV* ≤ %	µL	Subdivision, µL	Cat. No.	2020 List Price
Transferpette® electronic single channel pipettes								
0.5-10 with charger	A*, B, C, I*, J, K	1.0	0.1	0.4	0.04	0.01	705319	\$535.20
2-20 with charger	A*, B, C, J, K	1.0	0.2	0.4	0.08	0.02	705320	535.20
10-200 with charger	D, E, L, M, N	0.8	1.6	0.2	0.4	0.2	705323	535.20
50-1000 with charger	F, O	0.6	6	0.2	2	1.0	705326	535.20
250-5000 (0.25-5 mL) with charger	G	0.6	30	0.2	10	5.0	705327	535.20
0.5-10 without charger	A*, B, C	1.0	0.1	0.4	0.04	0.01	705339	502.80
2-20 without charger	A*, B, C	1.0	0.2	0.4	0.08	0.02	705340	502.80
10-200 without charger	D, E	0.8	1.6	0.2	0.4	0.2	705343	502.80
50-1000 without charger	F, O	0.6	6	0.2	2	1.0	705346	502.80
250-5000 (0.25-5 mL) without charger	G	0.6	30	0.2	10	5.0	705347	502.80
Transferpette®-8 electronic eight channel pipette								
0.5-10	A*, B, C, I*, J, K	1.2	0.12	0.8	0.08	0.01	705419	962.40
1-20	A*, B, C, J, K	1.0	0.2	0.5	0.1	0.02	705420	962.40
5-100	D, E, L, M, N	0.8	0.8	0.25	0.25	0.1	705423	962.40
10-200	D, E, L, M, N	0.8	1.6	0.25	0.5	0.2	705424	962.40
15-300	D, E, M, N	0.6	1.8	0.25	0.75	0.5	705426	962.40
Transferpette®-12 electronic twelve channel pipette								
0.5-10	A, B, C, I, J, K	1.2	0.12	0.8	0.08	0.01	705469	1,151.40
1-20	A, B, C, J, K	1.0	0.2	0.5	0.1	0.02	705470	1,151.40
5-100	D, E, L, M, N	0.8	0.8	0.25	0.25	0.1	705473	1,151.40
10-200	D, E, L, M, N	0.8	1.6	0.25	0.5	0.2	705474	1,151.40
15-300	D, E, M, N	0.6	1.8	0.25	0.75	0.5	705476	1,151.40

A*=Accuracy, CV*=Coefficient of Variation

* The value of accuracy and coefficient of variation are final test values referring to the delivered nominal volume, instrument and distilled water at equilibrium with ambient temperature (20° C/68° F) and with smooth operation.

** Tip selection chart see page 24

^Calibration and possible adjustment needed.

Accessories

Spare NiMH battery	705500	82.20
Single Channel Charging Stand - for up to three pipettes (excluding 5 mL), pack of 1	705392	421.80
Single Channel Stand - for 5 mL, pack of 1	705386	125.40
Stand for Transferpette®-8/-12 multichannel pipettes - holds one pipette, pack of 1	703440	54.40
AC adapter with US plug for Transferpette® electronic	705352	77.80

Pipette Tips & Filter Tips

BRAND® pipette tips and filter tips are manufactured in a cleanroom under state-of-the-art production conditions. They are automatically rack packed and packaged to ensure consistently high quality.

- High-purity polypropylene, free from DiHMDA and oleamide
- Manufactured without lubricants
- Cadmium-free pigments
- Graduation for a quick volume check
- Rack-packed tips and filter tips up to 1000 µL free of DNA (<40 fg), RNase (<8.6 fg), endotoxins (<1 pg) and ATP (<1 fg)
- Autoclavable at 121° C (2 bar), acc. DIN EN 285
- Environmentally friendly packaging systems
- CE-marked according to IVD-Directive 98/79 EC
- BIO-CERT® tips sterile according to ISO 11137 and the AAMI guidelines; a SAL of 10^{-6} is obtained

Superior quality tips –
priced for value



BRAND® Pipette tips, quality fit for reliable results

Optimum results are achieved in combination with BRAND® microliter pipettes. BRAND® quality tips seat perfectly for precise analyses.

BRAND® pipette and filter tips are tested and designed to fit BRAND® pipettes and most of the pipettes from GILSON®, Thermo Fisher Scientific FINNPIPETTE®, Eppendorf® and BIOHIT®/Sartorius®. The 5 mL tip is exclusively tested for BRAND® pipettes and Thermo Fisher Scientific FINNPIPETTE®. The 10 mL tip is suitable for BRAND® and Eppendorf® pipettes.

High Quality Tips

Pipette tips are the most frequently used disposables in the laboratory. As laboratory tests have become increasingly sensitive, tip requirements have become more stringent over time. From the raw materials, to the molding machines, and quality control procedures, many parameters need to be considered to meet the highest standards for research and standardized applications.

For the manufacturing of pipette tips and filter tips, BRAND® exclusively uses raw materials that are free from the additives di (2-hydroxyethyl) methyl dodecyl ammonium (DiHEMA) and 9-octadecenamide (oleamide). These additives are often found in raw polypropylene, and can interfere with biological tests, leading to false results. Only highly polished molds are used, so that no parting agents or demolding aids are needed.



One of the world's largest
cleanroom facilities

BRAND® disposable items for the life sciences are produced using the most advanced cleanroom techniques in one of the world's largest cleanrooms for laboratory disposable items. The ongoing cleanroom monitoring includes continuous measurements of air particulates, positive air pressure, air exchange rate, room temperature, and the relative humidity, among other things. This ensures that the actual parameters can immediately be checked against the nominal values. Deviations are detected immediately and suitable countermeasures can be taken before the limit values are exceeded. The high-precision control of environmental conditions provides a very high degree of stability in the corresponding parameters, especially the room temperature. This uniformity, together with quality testing of the final product by batch, guarantees the consistently high quality in the life science products from BRAND®. For the production of disposable items, Class 8, 7, and 5 cleanrooms are available, Class 8 compliance with ISO 14644-1 is certified by external, independent auditors.



Pipette Tip Packaging Options

TipBox/TipRefill System

Transparent window

For easy visual inspection

Usable with a partially loaded multichannel pipette

Rimless tip-tray border enables problem-free loading of individual pipette tips

Colored tip-trays with side panel labeling

Contents of box are always clearly visible

Dual function hinged and push-on lid

Simply rotate 180° to change closure method

No deflection during tip loading

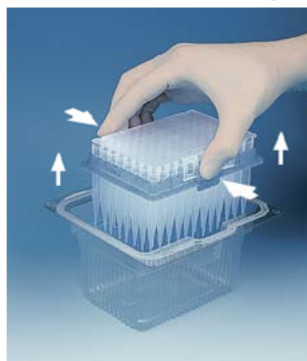
Tip-tray fabricated from especially rigid polypropylene

Open and close with one hand

Clamping mechanism holds the tip-tray securely in the box



Sterile reloading



Press the long sides of the transfer aid together and continue pressing them together while withdrawing the tip-tray. Ensure that the holding straps for the transfer aid are correctly positioned.



Insert the filled tip-tray perpendicularly from above into the previously sterilized TipBox until it locks into place.



Remove the transfer aid from the mounting plate. Finished – all without tip contact.

Dual function lid



TipBox features a unique dual function lid design. To change closure method from hinged to push-on, simply remove lid and rotate 180°.

TipRefill, TipStack™ & Transfer Aid

TipRefill

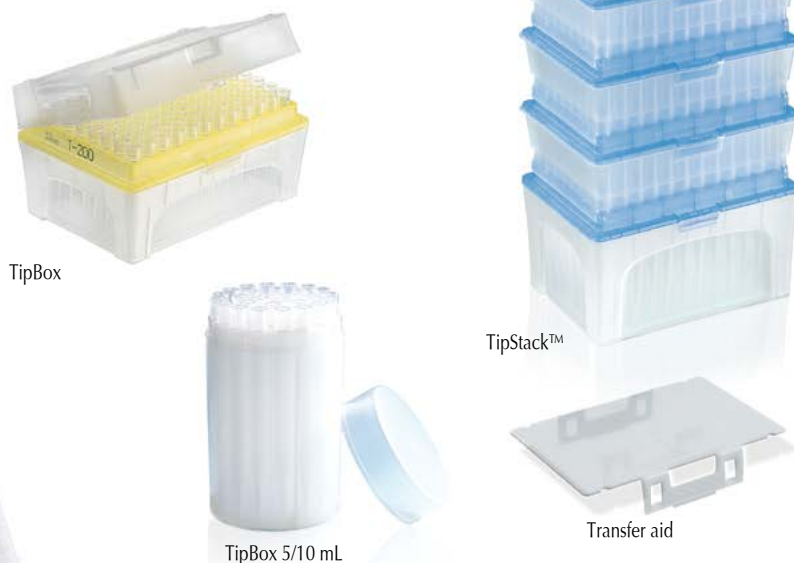
TipRefills reduce waste by 20% compared to filled TipBoxes. All rack packed pipette tips and filter tips up to 1000 µL are free of DNA, RNases, endotoxins and ATP (for detailed information see page 129). BIO-CERT® TipRefills are sterile according to ISO 11137 and the AAMI guidelines, and have a SAL of 10⁻⁶. These racks are supplied with a transfer aid that enables simple, contamination-free transfer into a TipBox. Tip size and lot number information is printed on one side of each tip-tray.



TipStack™

A tip tower containing 5 filled tip-trays and a TipBox constitute the space-saving refill system for 20 µL, 200 µL and 1000 µL tips. Tightly sealing spacers prevent the tips from getting stuck together, and keep them free from DNA, RNases, endotoxins and ATP. BIO-CERT® TipStacks are supplied with a transfer aid for contamination-free use in a TipBox.

- Recyclable components
- Reduced waste
- Sterilizable and reusable TipBox
- High purity pipette tips
- Space-saving design



TipRefills sterile and non-sterile

The TipBox refill unit is protected in environmentally compatible recyclable PET packaging. Sterile TipRefills are supplied with a transfer aid for sterile handling of tip rack.

Bulk packed in bags non-sterile

All tips are produced under supervised state-of-the-art clean-room conditions, automatically shrink-wrapped in reclosable bags, and packaged in cardboard boxes. The batch number is printed on every bag.

TipBox sterile and non-sterile

Made of polypropylene with a hinged push-on lid, the tip box is stackable and repeatedly autoclavable at 121° C (2 bar), according to DIN 285. (Empty TipBox, ordering information see page 18)

TipBox 5/10 mL non-sterile

The 5 mL and 10 mL tips are only available non-sterile in the TipBox configuration.

TipStack™ sterile and non-sterile

The TipStack™ is a space-saving, environmentally compatible refill system for TipBox. It consists of 5 racks of 96 tips and 1 TipBox. Sterile TipStacks are supplied with a transfer aid for sterile handling of tip rack.

Pipette Tip Size & Descriptions



0.1 - 20 µL (A)
0.1 - 1 µL (Filter) (I)

The nano-cap™ tip was developed for the nanoliter range and is ideal for molecular biological applications such as PCR. At 37 mm long, it features a capillary rise that is visible to the naked eye at 0.1 µL. The capillary part of the tip conveniently fills gel wells for most gel electrophoresis systems. It is suitable for pipettes up to 20 µL. The racked tips are colorless in a grey-colored tip tray.



0.5 - 20 µL (B)
0.5 - 10 µL (Filter) (J)

The slender design and 46 mm length allow pipetting in microtubes and microplates without touching the walls. Graduations at 2 µL and 10 µL simplify a quick volume check. The racked tips are colorless in a grey-colored tip tray.



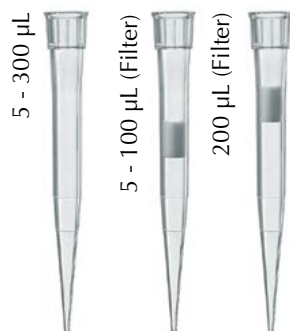
1 - 50 µL (C)
1 - 20 µL (Filter) (K)

At 50 mm, this tip is ideal for working to the bottom of narrow containers. Graduations at 2.5, 10, 25 and 50 µL for quick volume check. The racked tips are colorless in a grey-colored tip tray.



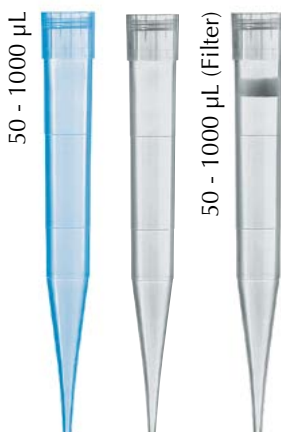
2 - 200 µL (D)
2 - 20 µL (Filter) (L)

A tested and proven thin-walled tip. Lighter in weight, 50 mm long and can be used with virtually all pipettes with yellow color code. Graduations at 20 µL and 100 µL for quick volume check. Bulk tips are colored yellow. The racked tips are colorless in a yellow-colored tip tray.



5 - 300 µL (E)
5 - 100/200 µL (Filter) (M/N)

This thin-walled tip is suitable for reverse pipetting and plate washing. It is 53 mm long and can also be used with pipettes with yellow color code. It is particularly suited for working with multichannel pipettes. Graduations at 50 and 100 µL for quick volume check. The racked tips are colorless in a green-colored tip tray.



50 - 1000 µL (F)
50 - 1000 µL (Filter) (O)

A proven thin-walled tip designed for routine laboratory and research pipetting. Its length is 70 mm. Graduations are at 250, 500 and 1000 µL for a quick volume check. Bulk tips are colored blue. The racked tips are colorless in a blue-colored tip tray.

0.5 - 5 mL (G)

Its particularly slender shape, 160 mm length, and approx. 9.6 mm diameter allows pipetting even from narrow volume measuring equipment such as volumetric flasks with NS 12/21. Suitable for Transferpette® and Thermo Fisher Scientific FINNPIPETTE® microliter pipettes.



1 - 10 mL (H)

At 156.5 mm length and approximately 15 mm diameter, this tip is ideal for working with the Transferpette® S 10 mL and is compatible with Eppendorf® systems.

0.1 - 20 µL



	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
Pipette tips, 0.1 – 20 µL, nano-cap™						
bulk	2000	2 bags, 1000 each	732002	\$95.40	—	—
bulk, xxl	10000	10 bags, 1000 each	732022	403.20	—	—
TipRefill	960	10 TipRefills, 96 each	732102	109.00	732122	\$165.80
TipBox	480	5 boxes, 96 each	732202	80.80	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732222	165.80

0.5 - 20 µL



Pipette tips, 0.5 – 20 µL, ultra-micro tips

bulk	2000	2 bags, 1000 each	732004	73.40	—	—
bulk, xxl	10000	10 bags, 1000 each	732024	311.80	—	—
TipRefill	960	10 TipRefills, 96 each	732104	17.60	732124	20.92
TipBox	480	5 boxes, 96 each	732204	11.56	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732224	24.20
TipStack™	960	2x5 refills, 96 each	732244	17.60	732264	20.92

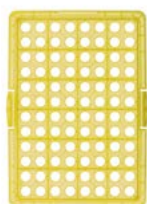
1 - 50 µL



Pipette tips, 1 – 50 µL

bulk	2000	2 bags, 1000 each	732006	73.40	—	—
bulk, xxl	10000	10 bags, 1000 each	732026	311.80	—	—
TipRefill	960	10 TipRefills, 96 each	732106	55.60	732126	146.00
TipBox	480	5 boxes, 96 each	732206	33.60	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732226	146.00

2 - 200 µL



Pipette tips, 2 – 200 µL (bulk tips are yellow colored)

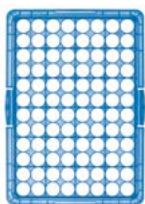
bulk	1000	1 bag, 1000 each	732008	20.00	—	—
bulk, xxl	10000	10 bags, 1000 each	732028	149.00	—	—
TipRefill	960	10 TipRefills, 96 each	732108	17.60	732128	20.92
TipBox	480	5 boxes, 96 each	732208	11.56	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732228	24.20
TipStack™	960	2x5 refills, 96 each	732248	17.60	732268	20.92

Pipette Tips

5 - 300 µL



50 - 1000 µL



0.5 - 5 mL



1 - 10 mL



	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
Pipette tips, 5 – 300 µL						
bulk	1000	1 bag, 1000 each	732010	\$31.40	—	—
bulk, xxl	10000	10 bags, 1000 each	732030	262.40	—	—
TipRefill	960	10 TipRefills, 96 each	732110	17.60	732130	\$20.92
TipBox	480	5 boxes, 96 each	732210	11.56	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732230	24.20

Pipette tips, 50 – 1000 µL (bulk tips are blue colored)

bulk	1000	2 bags, 500 each	732012	22.00	—	—
bulk, xxl	5000	10 bags, 500 each	732032	82.00	—	—
TipRefill	960	10 TipRefills, 96 each	732112	17.60	732132	20.92
TipBox	480	5 boxes, 96 each	732212	11.56	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732232	24.20
TipStack™	960	2x5 refills, 96 each	732252	17.60	732272	20.92

Pipette tips, 0.5 – 5 mL

bulk	200	1 bag, 200 each	702595	43.00	—	—
bulk, xxl	1000	5 bags, 200 each	702600	202.40	—	—
TipBox 5 mL	28	1 box, 28 each	702605	45.00	—	—

Pipette tips, 1 – 10 mL

bulk	200	2 bags, 100 each	702603	85.00	—	—
bulk, xxl	1000	10 bags, 100 each	702604	382.20	—	—
TipBox 10 mL	18	1 box, 18 each	702608	89.40	—	—



TipBox, with tip-tray, empty

	Cat. No.	2020 List Price
TipBox, with tip-tray PP, stackable, empty, pack of 1		
up to 20 µL	732990	\$7.40
for 200 µL	732992	7.40
for 300 µL	732994	7.40
for 1000 µL	732996	7.40

Filter Tips



BRAND® Filter tips are non-self sealing and have a PE filter that is free from chemical additives. Permeability is controlled by the combination of pore size and filter length, so that no aerosols can reach the pipette shaft. These filters function with consistent reliability. Liquids can pass very slowly if they accidentally contact the filter. Since the filter does not swell, as with self-sealing

filter tips, the sample can be recovered from the filter by simply actuating the pipette's blow-out function, or by centrifugation if necessary. This is clearly an important advantage of non-self-sealing filters, especially when working with valuable samples. The absence of filter additives protects samples from contamination.

0.1 - 1 µL (Filter)



	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
Filter tips, 0.1 – 1 µL						
TipRefill	960	10 Tip Refills, 96 each	732602	\$173.40	732622	\$225.80
TipBox	480	5 boxes, 96 each	732702	131.60	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732722	344.20

0.5 - 10 µL (Filter)



Filter tips, 0.5 – 10 µL						
TipRefill	960	10 Tip Refills, 96 each	732604	47.32	732624	50.60
TipBox	480	5 boxes, 96 each	732704	96.20	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732724	55.00

1 - 20 µL (Filter)



Filter tips, 1 – 20 µL						
TipRefill	960	10 Tip Refills, 96 each	732606	47.32	732626	50.60
TipBox	480	5 boxes, 96 each	732706	96.20	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732726	55.00

Filter Tips

2 – 20 µL (Filter)



	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
Filter tips, 2 – 20 µL						
TipRefill	960	10 Tip Refills, 96 each	732608	\$129.40	732628	\$170.00
TipBox	480	5 boxes, 96 each	732708	26.40	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732728	55.00

5 - 100 µL (Filter)



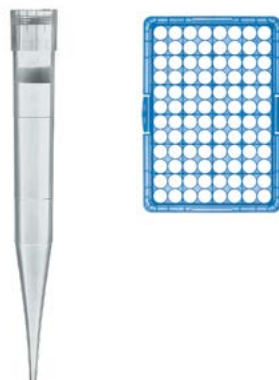
Filter tips, 5 – 100 µL						
TipRefill	960	10 Tip Refills, 96 each	732610	129.40	732630	50.60
TipBox	480	5 boxes, 96 each	732710	26.40	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732730	55.00

5 - 200 µL (Filter)



Filter tips, 5 – 200 µL						
TipRefill	960	10 Tip Refills, 96 each	732612	47.32	732632	50.60
TipBox	480	5 boxes, 96 each	732712	26.40	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732732	55.00

50 - 1000 µL (Filter)



Filter tips, 50 – 1000 µL						
TipRefill	960	10 Tip Refills, 96 each	732614	47.32	732634	50.60
TipBox	480	5 boxes, 96 each	732714	26.40	—	—
TipBox Sterile	960	10 boxes, 96 each	—	—	732734	55.00

Ultra-Low Retention Pipette Tips



Ultra Low Retention (ULR™) tips are produced through a special, patented physicochemical process. The resulting surface is homogeneous, defect-free and has extremely low surface tension – over 50% less than PTFE (see table, page 22). This significantly reduces sample loss and provides substantially higher reproducibility when working with critical media.

- **Ideal for biological samples**—Suitable for detergents such as TRITON™ X-100, SDS, Tween, etc.
- **High chemical resistance**—Ideal for working with solvents
- **No leachables**—No additives or siliconization of the tip surface
- **Autoclavable**—At 121° C (2 bar) without damaging the material properties

0.1 - 20 µL



	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
Ultra-Low Retention pipette tips, 0.1 – 20 µL						
TipBox, ULR	480	5 boxes, 96 each	732302	\$62.00	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732322	\$171.00

0.5 - 20 µL



Ultra-Low Retention pipette tips, 0.5 – 20 µL						
TipBox, ULR	480	5 boxes, 96 each	732304	41.00	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732324	112.40
TipStack™, ULR	960	2x5 refills, 96 each	732344	63.00	732364	131.20

1 - 50 µL



Ultra-Low Retention pipette tips, 1 – 50 µL						
TipBox, ULR	480	5 boxes, 96 each	732306	41.00	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732326	112.40

2 - 200 µL



Ultra-Low Retention pipette tips, 2 – 200 µL						
TipBox, ULR	480	5 boxes, 96 each	732308	30.40	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732328	106.00
TipStack™, ULR	960	2x5 refills, 96 each	732348	53.60	732368	115.40

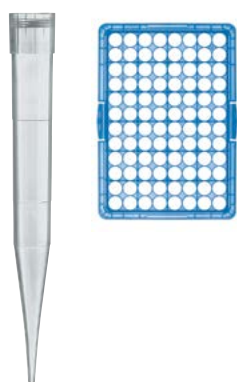
Ultra-Low Retention Pipette Tips

5 - 300 μ L



	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
Ultra-Low Retention pipette tips, 5 – 300 μL						
TipBox, ULR	480	5 boxes, 96 each	732310	\$41.00	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732330	\$106.00

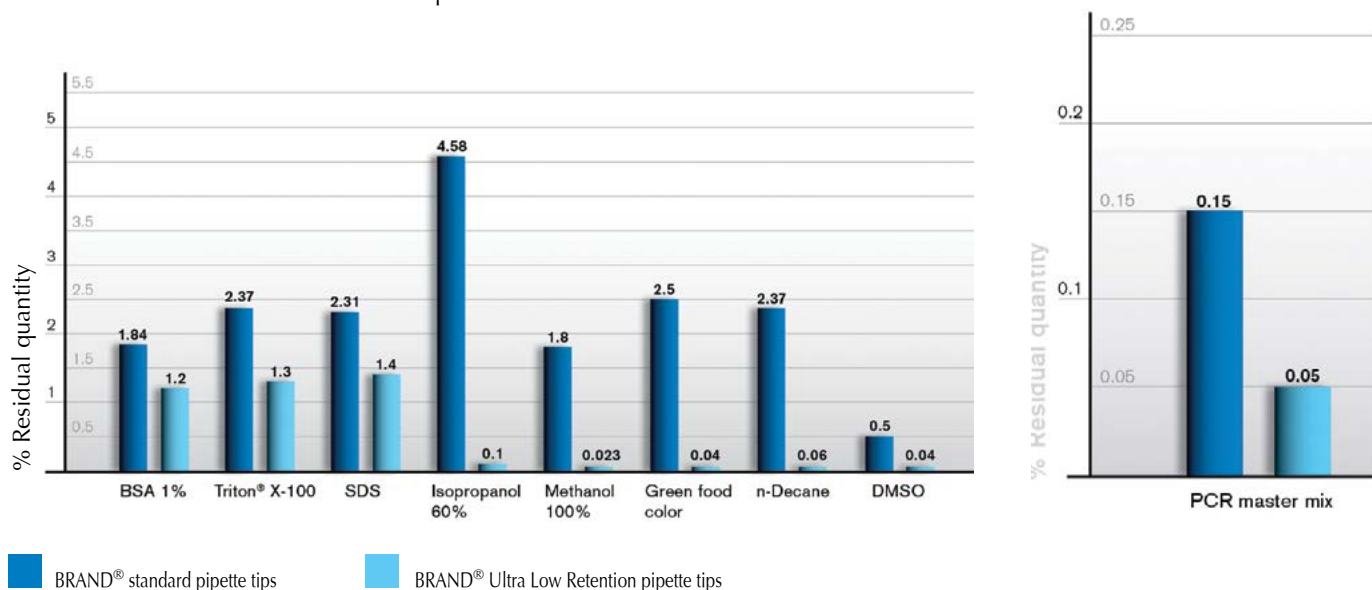
50 - 1000 μ L



Ultra-Low Retention pipette tips, 50 – 1000 μL						
TipBox, ULR	480	5 boxes, 96 each	732312	49.40	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732332	128.00
TipStack™, ULR	960	2x5 refills, 96 each	732352	88.00	732372	176.40

Ultra Low Retention tips vs standard tips

Post pipetting media retention levels of BRAND® 200 μ L Standard and Ultra Low Retention pipette tips. Measurements performed by rinsing and subsequent photometric analysis. To see a video demonstration of the process visit www.brandtech.com/ULR.



Ultra-Low Retention Filter Tips

0.1 - 1 µL (Filter)



	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
Ultra-Low Retention filter tips, 0.1 – 1 µL						
TipBox, ULR	480	5 boxes, 96 each	732802	\$96.20	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732822	\$251.80

0.5 - 10 µL (Filter)



Ultra-Low Retention filter tips, 0.5 – 10 µL						
TipBox, ULR	480	5 boxes, 96 each	732804	75.80	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732824	196.40

1 - 20 µL (Filter)



Ultra-Low Retention filter tips, 1 – 20 µL						
TipBox, ULR	480	5 boxes, 96 each	732806	75.80	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732826	196.40

2 - 20 µL (Filter)



Ultra-Low Retention filter tips, 2 – 20 µL						
TipBox, ULR	480	5 boxes, 96 each	732808	75.80	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732828	196.40

5 - 100 µL (Filter)



Ultra-Low Retention filter tips, 5 – 100 µL						
TipBox, ULR	480	5 boxes, 96 each	732810	73.80	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732830	191.00

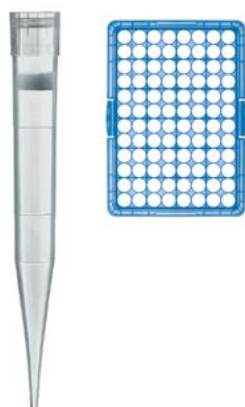
Ultra-Low Retention Filter Tips

5 - 200 µL (Filter)



	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
Ultra-Low Retention filter tips, 5 – 200 µL						
TipBox, ULR	480	5 boxes, 96 each	732812	\$73.80	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732832	\$191.00

50 - 1000 µL (Filter)



Ultra-Low Retention filter tips, 50 – 1000 µL

	Quantity	Pack of	Non-Sterile Cat. No.	2020 List Price	Sterile Cat. No.	2020 List Price
TipBox, ULR	480	5 boxes, 96 each	732814	94.20	—	—
TipBox Sterile, ULR	960	10 boxes, 96 each	—	—	732834	246.80



		Transferpette® single channel														Transferpette® multichannel				
		Nominal volume														Nominal volume				
Pipette tips Filter tips Volume range		1 µL	2.5 µL	10 µL	20 µL	20 µL***	25 µL	50 µL	100 µL	200 µL	500 µL	1000 µL	5 mL	10 mL	10 µL	50 µL	100 µL	200 µL	300 µL	
	0.1 - 20 µL (A)	✓	✓*	✓*	✓*										✓					
	0.5 - 20 µL (B)		✓	✓	✓										✓					
	1 - 50 µL (C)		✓*	✓	✓										✓					
	2 - 200 µL** (D)					✓	✓	✓	✓	✓						✓	✓	✓	✓	
	5 - 300 µL (E)					✓	✓	✓	✓	✓						✓	✓	✓	✓	
	50 - 1000 µL** (F)										✓	✓								
	0.5 - 5 mL (G)												✓							
	1 - 10 mL (H)													✓						
	0.1 - 1 µL (I)	✓	✓*	✓*											✓					
	0.5 - 10 µL (J)		✓	✓	✓										✓					
	1 - 20 µL (K)			✓	✓										✓					
	2 - 20 µL (L)					✓	✓	✓	✓	✓						✓	✓	✓		
	5 - 100 µL (M)					✓	✓	✓	✓	✓						✓	✓	✓	✓	
	5 - 200 µL (N)									✓						✓	✓	✓	✓	
	50 - 1000 µL (O)										✓	✓								

✓ = Tip volume less than pipettes nominal volume

* = Calibration and possible adjustment needed

** = Bulk tips are yellow or blue colored. racked tips are colorless in a yellow-colored or blue-colored tip tray

*** = Transferpette® with yellow color code

PLT™ Pipette Leak Testing Unit



Improve process reliability with functional validation of air-displacement pipettes

The most frequent cause of inaccuracy in piston-operated pipettes is leakage. This arises from damage either to the seals, pistons, or tip cones. Often not detectable by the naked eye, leaks may lead to significant volume errors. The patented BRAND® PLT™ Pipette Leak Tester detects even the smallest leaks in air displacement pipettes within seconds.

- Limit values for all common sizes of single and multichannel pipettes in the volume range between 1 µL to 10 mL are pre-programmed
- Test with or without tips
- Results in seconds

A calibration certificate only reflects the results at the time of testing. The time between calibrations is crucial, since leaks can occur at any time. Well over 80% of pipettes sent in for repair have leaks and are outside their volume tolerances, even if they do not drip. To ensure accurate results, air-displacement pipettes should be checked at regular intervals and the results compared to ISO 8655-2 error limits.

While the PLT unit cannot replace regular gravimetric testing, daily pipette checks can provide confidence during the periods between calibrations. Even the smallest leaks are detected and quantified! Process reliability for the pipettes is thus significantly improved.

Single-channel adapter

Display

"Start/Execute" button

LED display

"Back" button

Select knob



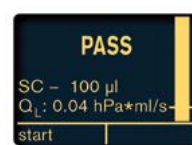
Single-channel adapter for pipettes with tip mounted

Single-channel adapter for pipettes without tip

PE filter in single and multichannel adapters

Multichannel adapter for pipettes with and without tip

PLT Connect Software allows tracking of instruments and printing of reports



Quantifiable results are generated, with pass/fail criteria for each pipette size, based on over 35 years of experience.

Items supplied:

The PLT unit is supplied with universal power supply (100-240 V, 50/60 Hz), single-channel adapters for testing with and without tips and carrying/storage case.

Description	Cat. No.	2020 List Price
PLT Pipette Leak Testing Unit	703970	\$1,643.20
Multichannel Pipette Adapter, Pack of 1	703977	236.20
Filters, PE, for Pipette Adapter, Pack of 10	703978	12.20
PLT Connect Software	703980	244.40

Testing with and without the tip

To check the complete pipette system, the test is conducted with a tip mounted. When a leak has been identified, the test can be repeated without a tip to determine whether the leak arises from the tip cone/tip coupling region.

Dynamic or static test?

In the **dynamic test** the pipette button must be pushed down numerous times during the measurement period. This may detect damage to the piston or the seal.

In the **static test**, the pipette button is not pressed during the test procedure, i.e. the piston does not move. This may detect damage to the seal or the tip cone.



HandyStep® S

The BRAND® HandyStep® S repeating pipette provides unprecedented versatility in a purely mechanical repeating pipette. In conjunction with BRAND® PD-Tip™ // Precision Dispenser Tips, the HandyStep® S offers nearly sixty different volume settings with accuracy, precision, and dependability.

- **Comfortable**—The slim design of the HandyStep® S is lightweight, well-balanced, and provides a convenient control layout for smooth dispensing and one-handed volume selection.
- **Reliable**—The robust construction, using innovative polymers, delivers a dependable instrument.
- **Ready-to-go**—The mechanical design, with no batteries to charge or replace, means the HandyStep® S is ready when you are. A convenient integrated table provides a quick reference for dispensed volumes.
- **Flexible**—Ten sizes of PD-Tip™ // Precision Dispenser Tips allow the HandyStep® S to dispense 59 different volumes. The open design allows use of third party tips—no more being locked into a sole source.
- **Contact-free**—The tip ejection system allows tip removal without handling.

More than just precise—
slim, light, and dependable



Technical Data

Operating limits and exclusions

Liquids unsuitable for use with the HandyStep® S include, but are not limited to, those with:

- Vapor pressure exceeding 500 mbar
- Viscosity: 20 mPa s with 50 mL PD-Tips™ //; 260 mPa s with 5 mL PD-Tips™ //; 977 mPa s with 1 mL PD-Tips™ //
- Reagents that attack PP (PD-Tip™ // cylinder), HDPE (PD Tip™ // piston), LCP (PD-Tip™ // piston 0.1 mL) or PC/PBT and polycarbonate
- Temperature of instrument and reagent must be between 15° and 40° C
- Instrument and tips must not be autoclaved

Items supplied

The HandyStep® S is supplied with the following items:

- Performance certificate
- Shelf/rack mount
- One each: 0.1 mL, 1 mL and 10 mL PD-Tip™ // Precision Dispenser Tips
- Operating manual
- Two-year warranty

HandyStep® S Repeating Pipette

Setting at a glance

Easy to read volume setting indicator

Perfectly aligned

Dispensing lever optimally positioned for easy thumb movement

Simple

Combined piston locking/filling lever makes aspiration easy

Hands-free disposal

Ergonomic tip ejector, for safe and contact-free ejection of contaminated dispenser tips

Chart topper

Tip/volume chart assists with tip selection and volume setting

Big wheel

Volumes easily adjusted with a simple thumb movement

Comfortable

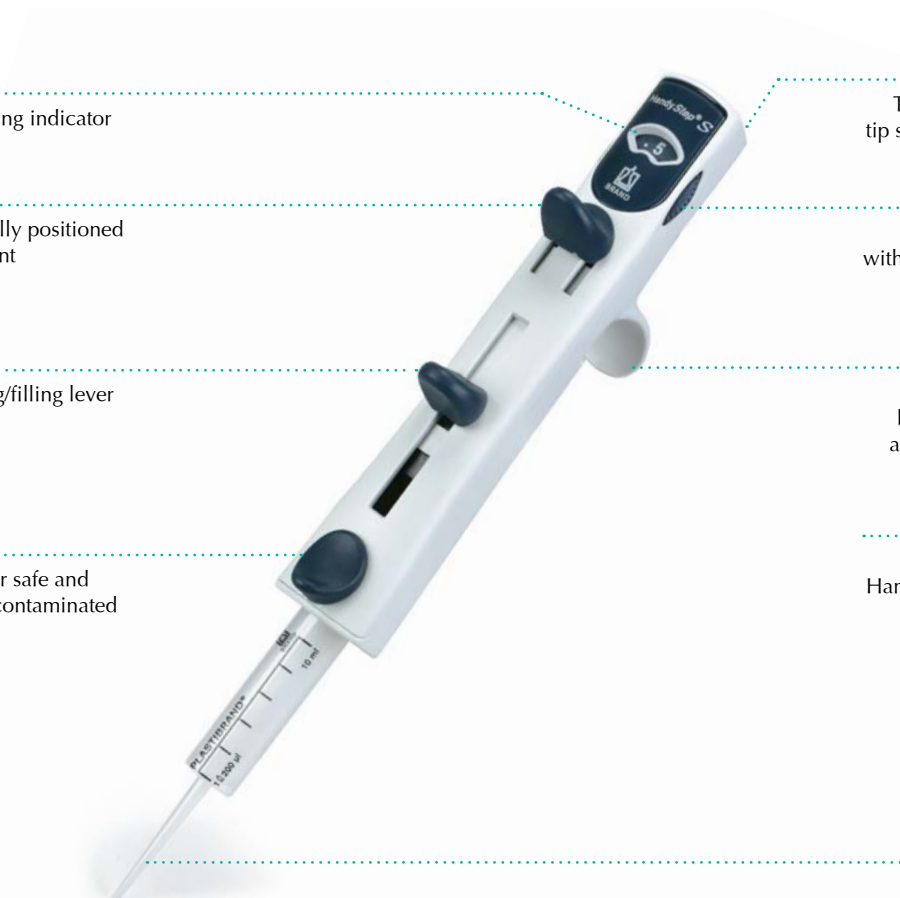
Finger rest provides balance, convenient control access, and relaxed pipetting

Shelf/rack mount

Shelf/rack mount keeps your HandyStep® S close at hand and retrofits to Transferpette® S carousel stand

Flexible

Compatible with PD-Tip™ // Precision Dispenser Tips, as well as many third-party tips



HandyStep® S with BRAND® PD-Tip™ // Precision Dispenser Tips

Accuracy Table

Nominal Volume		Stroke setting ^ % of nominal volume (A* ≤ ± %)			Stroke setting ^ % of nominal volume (CV* ≤ %)		
PD-Tip™ //, mL	Volume Range, µL	1 △ 2%	3 △ 6%	5 △ 10%	1 △ 2%	3 △ 6%	5 △ 10%
0.1	2-10	4.0	2.4	1.6	6.0	3.0	2.0
0.5	10-50	2.5	1.5	1.0	2.5	1.5	1.0
1	20-100	2.5	1.5	1.0	2.0	1.2	0.8
1.25	25-125	2.5	1.4	0.9	2.0	1.1	0.7
2.5	50-250	1.8	1.1	0.7	1.5	0.9	0.6
5	100-500	1.8	1.1	0.7	1.5	0.9	0.7
10	200-1000	1.8	1.1	0.7	2.0	1.2	0.8
12.5	250-1250	1.8	1.1	0.8	3.2	2.0	1.4
25	500-2500	1.5	0.9	0.6	3.04	1.5	1.0
50	1000-5000	1.5	0.8	0.5	5.0	1.8	1.2

A*=Accuracy, CV*=Coefficient of Variation

*Error limits refer to the partial volume set relative to the PD-Tip™ //, obtained when instrument, PD-Tip™ // and distilled water are equilibrated at ambient temperature (20° C) and with smooth operation. The testing is according to DIN EN ISO 8655-5.

Note: the nominal volume is the maximum adjustable partial volume for each PD-Tip™ // size.

Volume table

Setting	1	1.5	2	2.5	3	3.5	4	4.5	5
PD-Tip™ //, mL	Volume, µL								
0.1	2	3	4	5	6	7	8	9	10
0.5	10	15	20	25	30	35	40	45	50
1	20	30	40	50	60	70	80	90	100
1.25	25	37.5	50	62.5	75	87.5	100	112.5	125
2.5	50	75	100	125	150	175	200	225	250
5	100	150	200	250	300	350	400	450	500
10	200	300	400	500	600	700	800	900	1000
12.5	250	375	500	625	750	875	1000	1125	1250
25	500	750	1000	1250	1500	1750	2000	2250	2500
50	1000	1500	2000	2500	3000	3500	4000	4500	5000
Steps	49	32	24	19	15	13	11	10	9

Ordering information

Description	Cat. No.	2020 List Price
HandyStep® S repeating pipette	705110	\$396.80
HandyStep® S shelf/rack mount	705130	32.60

HandyStep® touch

NEW!

- Touchscreen operation with intuitive menu navigation and integrated help function
- Two models available: HandyStep® touch or HandyStep® touch S with expanded functionality

- Menu languages: English, German, Spanish, French and Chinese
- Variable volume adjustment from 1.0 µL to 50 mL
- Inductive charging with optional charging stand

A closer look

Versatile

HandyStep® touch with the standard modes Multi-Dispensing, Auto-Dispensing, Pipetting and Favorites;

HandyStep® touch S with the additional functions Sequential Dispensing, Multi-Aspiration and Titration

Long-lasting

Many hours of continuous operation with a single battery charge

Robust

High-quality materials provide long service life, and smooth surfaces make cleaning/ disinfection easy

Easy

Automatic size detection of BRAND® PD-Tip™ II

Efficient

In addition to BRAND® PD-Tip™ II, compatible third party tips can also be used.

Simple

Automatic tip ejection by the press of a button prevents contamination

USB-C connection

For quick charging by cable

STEP button

Ergonomically arranged STEP button for effortless volume filling and delivery

Convenient

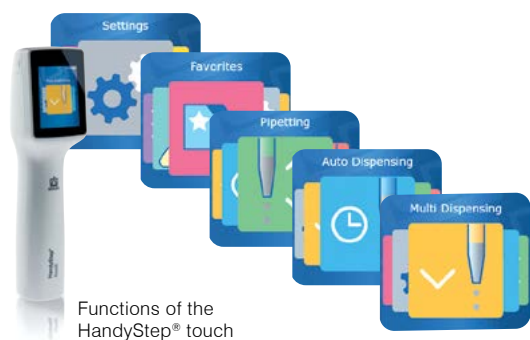
Inductive charging with the optional charging stand



HandyStep® touch Repeating Pipette

Be flexible and have the right solution at hand for every application. Even complex procedures are easy to carry out – no problem with the expanded functionality of the HandyStep® touch *S*.

Mode	Function	HandyStep® touch	HandyStep® touch <i>S</i>
Multi Dispensing (MULTI-DISP)	Successive dispensing of a set volume	✓	✓
Auto Dispensing (AUTO-DISP)	Automatic dispensing by the instrument	✓	✓
Pipetting (PIP)	Pipetting a defined volume	✓	✓
Sequential Dispensing (SEQ-DISP)	Successive dispensing of different volumes	—	✓
Multi Aspirating (MULTI-ASP)	Aspirating different volumes	—	✓
Titration	Manual or successive delivery of liquids for titration	—	✓
Favorites	Saving favorites for quick access	✓	✓
Settings	Individual customization of the device (e.g. brightness or device name)	✓	✓



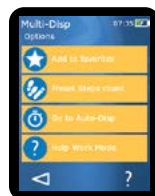
The clearly structured menus make fast work with intuitive operation possible, while the most important functions and parameters are always in view.



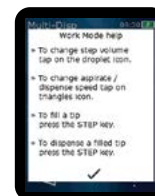
Easy to understand
Main menu with all modes for quick selection



Clearly structured
Working mode with all important information



Organized
All options visible at a glance



Helpful
Internal help right where it is needed

HandyStep® touch Repeating Pipette

Technical Data

Operating limits and exclusions

Liquids unsuitable for use with the HandyStep® touch and PD-Tip™ // Precision Dispenser Tips include, but are not limited to, those with:

- Vapor pressure exceeding 500 mbar
- Viscosity: 20 mPa s with 50 mL PD-Tips™ //; 260 mPa s with 5 mL PD-Tips™ //; 977 mPa s with 1 mL PD-Tips™ //
- Chemicals incompatible with tips used, see page 30 for PD-Tip™ // materials of construction ; and polycarbonate (device housing)
- Temperature of instrument and reagents must be between 15° and 40° C
- The HandyStep® touch cannot be autoclaved

Items supplied

Each HandyStep® touch includes:

- Li-Ion battery
- Universal power adapter
- Shelf/rack mount
- Five assorted volume PD-Tip™ // Precision Dispenser Tips
- Performance certificate
- Operating manual
- One-year warranty

Use the tips you want

The only electronic repetitive pipette compatible with all standard repeating pipette tips. The HandyStep® touch accepts:

- BRAND® PD-Tip™ // Precision Dispenser Tips
- BRAND® PD-Tip™ Precision Dispenser Tips
- Rainin® Encode™ Precision Dispenser Tips
- Eppendorf® Combitips advanced®
- Fisherbrand® Dispenser Tips
- VWR® Combi-Syringes
- Gilson® Repet-Tips

Accuracy and precision for the HandyStep® touch

PD-Tip™ //	Volume Range	Increment	A* < ±				CV* ≤			
			100%	50%	10%	1%	100%	50%	10%	1%
0.1 mL	1 µL-100 µL	0.1 µL	1	1	1.6	8	0.5	1	2	12
0.5 mL	5 µL-500 µL	0.5 µL	0.9	0.9	1	5	0.3	0.6	1	5
1.0 mL	10 µL-1000 µL	1 µL	0.6	0.9	1	5	0.3	0.5	0.8	4
1.25 mL	12.5 µL-1250 µL	1.25 µL	0.6	0.6	0.9	5	0.2	0.5	0.7	4
2.5 mL	25 µL-2500 µL	2.5 µL	0.5	0.6	0.7	3.5	0.15	0.3	0.6	3
5.0 mL	50 µL-5000 µL	5 µL	0.5	0.5	0.7	3.5	0.15	0.4	0.7	3
10.0 mL	100 µL-10 mL	10 µL	0.4	0.5	0.7	3.5	0.15	0.5	0.8	4
12.5 mL	125 µL-12.5 mL	12.5 µL	0.5	0.5	0.8	3.5	0.15	0.6	1.4	6.5
25.0 mL	250 µL-25 mL	25 µL	0.5	0.5	0.6	3	0.15	0.3	1.0	6
50.0 mL	500 µL-50 mL	50 µL	0.5	0.5	0.5	3	0.15	0.4	1.2	9

A* = Accuracy, CV* = Coefficient of variation

*Error limits refer to the nominal volumes and partial volumes relative to the PD-Tip™ // obtained with instrument and distilled water at equilibrium with ambient temperature at 20° C. . The tolerances specified in ISO 8655 are not exceeded. The nominal (100%) volume is the maximum volume which is printed on the PD-Tip™ //.

Description	Cat. No.	2020 Cat. No.
HandyStep® touch repeating pipette		
HandyStep® touch	705200	\$1,055.00
HandyStep® touch S	705210	1,299.00
Inductive charging stand bundles		
HandyStep® touch & Charging stand	705201	1,148.00
HandyStep® touch S & Charging stand	705211	1,525.00
Accessories		
Charging stand	705220	345.00
Support stand	705230	144.00
Shelf/rack mount	705235	35.00
Universal AC adapter	705250	85.00
Spare battery	705225	80.00



Support stand with HandyStep® touch



Inductive charging with the optional charging stand

NEW!

PD-Tip™ // Precision Dispenser Tips

The perfect team

Automatic size detection with PD-Tip™ // from BRAND®

Patented coding on the pistons of the PD-Tip™ // from BRAND® allows automatic tip size recognition with the HandyStep® touch, saving time and preventing errors. After inserting a PD-Tip™ //, the size is automatically recognized and displayed, making it easy to select the volume to be dispensed. The next time a new PD-Tip™ // of the same size is inserted, all instrument settings are maintained. Easy!



Multi dispensing with the HandyStep® touch and PD-Tip™ //



Sequential dispensing with the HandyStep® touch and PD-Tip™ //

BRAND® encoded PD-Tip™ // Precision Dispenser Tips are manufactured from high-quality virgin plastics for use with all standard repeating pipettes in a wide variety of applications.

- **Compatible**—with most pipettes.

PD-Tip™ // Precision Dispenser Tips are an excellent choice for the BRAND® HandyStep® S, HandyStep® electronic, and HandyStep® touch repeating pipettes; the black-handled Eppendorf® Repeater® 4780*; the Fisherbrand® repeating pipette; the Rainin® AutoRep™ E and AutoRep™ S; the Gilson® Repetman®, and other repeating pipettes using standard tips. PD-Tip™ // Precision Dispenser Tips are encoded for automatic recognition by the BRAND® HandyStep® touch and HandyStep® electronic repeating pipettes, the Rainin® AutoRep™ E, and the Gilson® Repetman®.

- **Reliable**—A precision seal between the piston and cylinder ensures smooth operation, increased accuracy, and increased precision. Extended piston design minimizes dead volume and maximizes fluid utilization.
- **Quality**—Manufactured from high quality materials PD-Tip™ // Precision Dispenser Tips are made entirely from high-quality virgin polyethylene and polypropylene. (Piston of 0.1 mL tip is liquid crystal polymer-LCP).

PD-Tip™ // Precision Dispenser Tips

NEW!

The perfect tips for your repeating pipette

Preserve Sample Integrity with BIO-CERT® quality sterile tips

BIO-CERT® PD-Tip™ // Precision Dispenser Tips are sterile, individually wrapped and certified free of DNA, RNase, endotoxins, and ATP to meet the most stringent sample integrity requirements. For more information on the sterility and purity levels, see page 130.

Calibration support

BRAND® PD-Tip™ // Precision Dispenser Tips are supplied with a batch Certificate of Performance which documents tip accuracy and precision testing.



Capacity, mL	Pack of	Classic tip Cat. No.	PD-Tip //	2020 List Price
PD-Tip™ // Precision Dispenser Tips, non-sterile				
0.1 mL	100	702402	705700	\$124.00
0.5 mL	100	702370	705702	124.00
1 mL	100	702406	705704	124.00
1.25 mL	100	702372	705706	124.00
2.5 mL	100	702374	705708	124.00
5 mL	100	702376	705710	124.00
10 mL	100	702407	705712	124.00
12.5 mL	100	702378	705714	124.00
25 mL, (one adapter included)	50	702380	705716	84.00
50 mL, (one adapter included)	25	702382	705718	42.00
PD-Tip™ // Precision Dispenser Tips, non-sterile, assorted pk. 0.5, 1, 1.25, 2.5, 5, 10 and 12.5 mL sizes	20/size	702368	705720	168.00
Adapter for 25 mL and 50 mL PD-Tip™ // Precision Dispenser Tips, non-sterile, PP, autoclavable	10	702398	702398	98.60

Capacity, mL	Pack of	Classic tip Cat. No.	PD-Tip //	2020 List Price
PD-Tip™ Precision Dispenser Tips //, BIO-CERT® sterile				
Individually wrapped				
0.1 mL	100	702683	705730	\$170.00
0.5 mL	100	702684	705732	170.00
1 mL	100	702685	705734	170.00
1.25 mL	100	702686	705736	170.00
2.5 mL	100	702688	705738	170.00
5 mL	100	702690	705740	170.00
10 mL	100	702691	705742	170.00
12.5 mL	100	702692	705744	170.00
25 mL, (one adapter included)	25	702694	705746	52.00
50 mL, (one adapter included)	25	702696	705748	52.00
Adapter for 25 mL and 50 mL PD-Tip™ // BIO-CERT® sterile, PP, autoclavable	5	702699	702399	77.60

*The Eppendorf Repeater Plus, Repeater® M4, Repeater Pro, Stream, XStream, E3 and E3x are designed to preclude their operation with any tips other than Eppendorf Combitips advanced®.

Transferpettor™

Positive Displacement Pipette



The Transferpettor™ positive displacement pipette is ideal for use with liquids that render traditional air-displacement pipettes ineffective. Unlike air displacement pipettes, the piston of the Transferpettor™ directly expels the media from the tip, wiping the tip walls completely clean. This results in negligible residual wetting and highly accurate, reproducible results, especially with viscous, foaming, high-vapor-pressure, and other “problematic” liquids.

The Transferpettor™ is suitable for use with viscous solutions and high density media such as concentrated protein solutions, oils, fats, resins, and glycerin. It is also suitable for use with high-vapor-pressure media (up to 500 mbar), including alcohols, acetone, and hydrocarbons that would otherwise vaporize in an air displacement tip.

Technical Data

Operating limits and exclusions

Liquids unsuitable for use with the Transferpettor™ include, but are not limited to, those with:

- Density exceeding 13.6 g/cm³
- Viscosity exceeding 40,000 cSt (mm²/s), depending on instrument capacity
- Vapor pressure exceeding 500 mbar
- Chemicals that attack either PP or PE (see page 128)
- Temperature of instrument and reagents must be between 15° and 40° C
- Instrument, tips, and seals are not autoclavable

Items supplied

The Transferpettor™ pipette includes:

- One tip and seal
- Seal mounting/removal tool
- Performance certificate
- Operating manual
- One-year warranty

Capacity, μL	A* < $\pm$		CV* $\leq$		Max Viscosity mm^2/sec	Subdivision, μL	Color	Cat. No.	2020 List Price
	%	μL	%	μL					
Transferpettor™									
100-500 μL	0.5	2.5	0.2	1.0	40,000	1.0	Green	702804	\$363.20
200-1000 μL	0.5	5.0	0.2	2.0	20,000	1.0	Yellow	702806	363.20
1-5 mL	0.5	25.0	0.2	10.0	6,000	10	Red	702810	363.20
2-10 mL	0.5	50.0	0.2	20.0	2,000	10	Orange	702812	363.20

Reusable Transferpettor™ Tips - Polypropylene, pack of 10

For Transferpettor™, 100-500 μL	Green	702852	29.20
For Transferpettor™, 200-1000 μL	Yellow	702854	29.20
For Transferpettor™, 1-5 mL	Red	702858	29.20
For Transferpettor™, 2-10 mL	Orange	702860	29.20

Reusable Transferpettor™ Piston Seals - Polyethylene, pack of 10

For Transferpettor™, 100-500 μL	Green	702864	47.60
For Transferpettor™, 200-1000 μL	Yellow	702866	47.60
For Transferpettor™, 1-5 mL	Red	702870	47.60
For Transferpettor™, 2-10 mL	Orange	702872	47.60

Transferpettor™ Station

Keeps 2 instruments, tips, and seals conveniently at hand in the workplace [702890](#) 166.80

A*=Accuracy, CV*=Coefficient of Variation

* The value of accuracy and coefficient of variation are final test values referring to the delivered nominal volume, instrument and distilled water at equilibrium with ambient temperature (20° C/68° F) and with smooth operation.



Liquid Handling Station

NEW!

The Liquid Handling Station (LHS) pipetting robots from BRAND® combine 45 years of experience in manual liquid handling with over 30 years of manufacturing high-precision disposable items. The system is designed for medium sample throughput. It works on the same air-interface principle as the piston-operated pipettes widely used in laboratories.

The LHS has 8 working positions, 7 of which are freely configurable for use with reagent reservoirs, tubes, microplates, PCR products, and tips. There are 6 liquid ends available with single and multichannel volumes up to 1000 µL. Adapters and racks bring labware to an even height, reducing unnecessary vertical movements to save time during pipetting.

The LHS *flow*, offering all the same features as the LHS with the addition of laminar flowbox functions, is a benchtop cleanroom for your samples. The airflow and HEPA filtration protect samples against particles and microorganisms, and meets requirements of ISO 14-644-1 (Class 5) and GMP annex 1 (Class A).

Standalone typical applications include

- PCR, qPCR and ELISA Set-up
- Serial Dilutions
- Replication and Plate Reformatting
- DNA Normalization
- Cherry Picking
- Cell Culture
- General Liquid Transfer

Truly a benchtop system, the LHS closes the gap between electronic pipettes and highly complex, expensive robots

Compact, Efficient, Affordable



Liquid Handling Station

Liquid Handling Station

Unit includes motor control unit, operating software, USB cable, power cable, user manual, and on-site training.

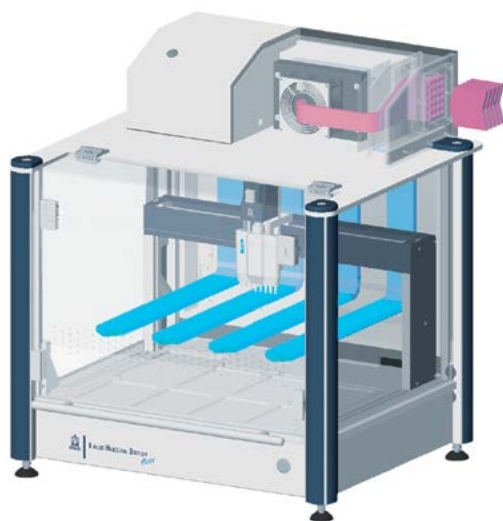


Liquid Handling Station *flow*

System includes FlowBox filtration unit, motor control unit, operating software, USB cable, power cable, user manual, and on-site training.



Description	Cat. No.
LHS	
Liquid Handling Station	709400
Liquid Handling Station flow	709402



LHS *Flow* Air Handling Specifications

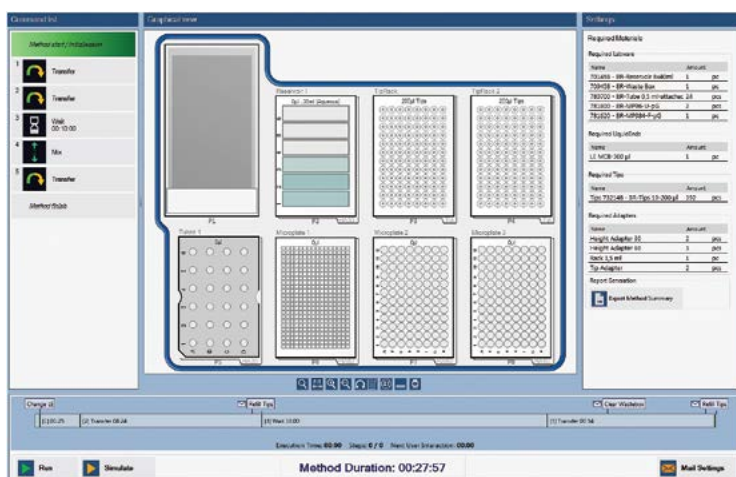
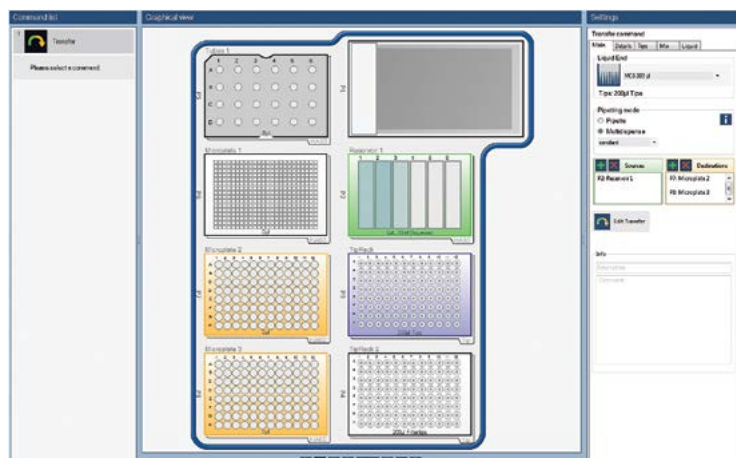
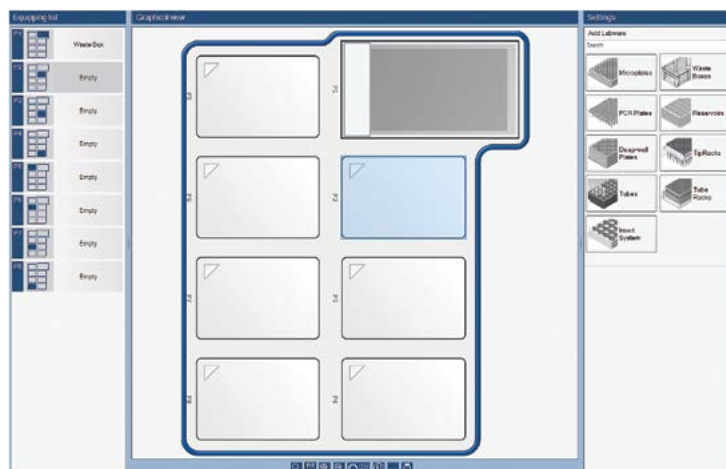
	Door closed	Door open
Noise level	60 dBA	67 dBA
Speed of air	0.4 m/s	0.5 m/s
Volumetric flow	22 m³/h	29 m³/h
Air exchange	260 times/h	330 times/h
Filter	HEPA 14 acc. to DIN EN 1822	

Liquid Handling Station

Software

The LHS comes with very intuitive software. No programming skills are needed. Conventional pipetting tasks can be easily set up as a work-flow in four easy steps.

- 1. Define name of pipetting method**—(Not shown)
- 2. Set up the work table**—Select work positions, and labware/consumables
- 3. Define the transfer commands**—Starting with high level commands: Transfer, Wait, Mix & Break. Then refining with predefined parameters such as liquid types, tip prewetting and immersion depth.
- 4. Execute**—Starts with a layout confirmation, then runs the method. Progress can be monitored and there is even a simulation function to avoid potential errors.



Accessories



Liquid Ends (Pipette modules)



Holder for Liquid Ends



Racks for single vessels & plates



Height adapters

Description	Positions	Pack of	Cat. No.
Accessories			
Liquid Ends (Pipette modules)*			
SC 1 - 50 µL	–	1	709410
SC 10 - 200 µL	–	1	709413
SC 40 - 1000 µL	–	1	709416
MC 1 - 50 µL	–	1	709420
MC 20 - 300 µL	–	1	709423
MC 40 - 1000 µL	–	1	709424

*Autoclavable at 121° C, 20 min. DE-M marking, quality certificate included

Holder for Liquid Ends

for 3 Liquid Ends	–	1	709463
for 5 Liquid Ends	–	1	709465

Adapters

Height adapter 60 mm	–	1	709430
Height adapter 30 mm	–	1	709432
Tip adapter	–	1	709434

Adapter racks for single vessels & plates

Microtube rack 1.5 mL	24	1	709450
Microtube rack 0.5 mL	24	1	709452
Microtube rack 5.0 mL	9	1	709453
Tube rack, 12 x 75mm	24	1	709455
96-well PCR rack	–	1	709446
384-well PCR rack	–	1	709448
PCR cooler– 96-well, indirect cooling		2	709456 *
Waste box		5	709458 *

*Accessories not shown; Additional racks available



Teleshake 95

Description	Cat. No.
Heater/Shaker	
Teleshake 95	709470
Controllers	
Single TEC Control (1 black slot module)	709472
Multi TEC Control (2 black slot module)	709474
Adapter Plates	
Universal adapter for 96-well PCR plates low profile	709477
Universal adapter for 96-well PCR plates standard	709478
Universal adapter for 384-well PCR plates standard	709479
Adapter for 96-well BRANDplates® F- and C-bottom	709480
Adapter for 96-well BRANDplates® V-bottom	709481
Adapter for 96-well BRANDplates® U-bottom	709482

Liquid Handling Station

Description	Working volume per column*	Bottom style	Cat. no.
Reagent Reservoirs, PP, pack of 10			
1-column	220 mL	pyramid bottom, 96-well	701450
12-column, low profile	6 mL	pyramid bottom	701452
4-column	60 mL	pyramid bottom	701454
6-column	40 mL	pyramid bottom	701456
1-column, low profile	50 mL	flat bottom	701458

* The indicated volume applies to the use with automated systems

LHS Robotic Tips

Our robotic tips are manufactured following a strict set of manufacturing requirements. Special consideration is made for tight tolerances and tip straightness to ensure precise and accurate liquid movement. All tips and filter tips are free of DNA, RNase, endotoxins, and ATP. Sterile tips and packaging are manufactured exclusively under BIO-CERT® quality certification.

Volume, µL	Pack of	Non-Sterile Cat. no.	Sterile Cat. no.
TipRack robotic tips			
1-50	10 TipRacks, 96 each	732146	732166
10-200	10 TipRacks, 96 each	732148	732168
10-300	10 TipRacks, 96 each	732150	732170
40-1000	10 TipRacks, 96 each	732152	732172
TipRack robotic filter tips			
1-20	10 TipRacks, 96 each	732646	732666
10-100	10 TipRacks, 96 each	732650	732670
10-200	10 TipRacks, 96 each	732652	732672
40-1000	10 TipRacks, 96 each	732654	732674

Accuracy table

Liquid End	Volume range, µL		A* ≤ ± %	CV* ≤ %
	µL	µL		
1-channel	1-50	50	1.5	0.5
		25	2.0	0.8
		5	6.0	3.0
	10-200	200	1.0	0.3
		100	1.5	0.4
		20	4.0	1.5
8-channel	40-1000	1000	1.0	0.2
		500	1.5	0.3
		100	3.0	1.0
	1-50	50	1.5	0.6
		25	2.0	1.0
		5	8.0	4.0
	20-300	300	1.2	0.4
		150	1.6	0.6
		30	5.0	2.5

* Final test values related to the nominal capacity (maximum volume) or the indicated volume steps indicated on the Liquid End, obtained when Liquid End and distilled water are equilibrated at ambient temperature within the Liquid Handling Station (20° C, according to DIN EN ISO 8655. A = Accuracy, CV = Coefficient of variation

Reagent reservoirs



BRAND® tips



Dispensette® S bottle-top dispensers build on the fifty year history of BRAND® dispensing expertise. Continual upgrades makes this the safest and most convenient bottle-top dispenser ever, all while retaining the features that make the Dispensette® the world's favorite bottle-top dispenser. The Dispensette® S mounts directly on most solvent and reagent bottles for faster, more convenient dispensing. Instruments are autoclavable at 121° C for use with sterile reagents.

- **Dispense most lab reagents**—Choose the Dispensette® S for acids, bases, and saline solutions, as well as many organic solvents; the Dispensette® S Organic for organic solvents, including combinatorial chemistry solvents, concentrated acids such as HCl and HNO₃, trifluoroacetic acid (TFA), tetrahydrofuran (THF), and peroxides. See Selection Chart on page 42 for help choosing the best dispenser.
- **Deliver accurate, precise volumes**—Dispensers are accurate to 0.5% (0.6% for 1 mL models), with coefficients of variation of 0.1% (0.2% for 1 mL). Digital models feature accurate and reproducible volume settings via a mechanical digital display.
- **Increase laboratory safety**—Dispensers mount on reagent bottles to reduce poured reagent transfers. They include a number of safety features to reduce the risk of injury from inadvertent dispensing and splashes. Recirculation valve system enhances reagent conservation and safety. Many accessories are available for remote, serial, and drum dispensing.
- **Resist wear and damage**—Unique design ensures smooth operation and eliminates wearing parts. Dispensers disassemble easily to simplify cleaning and maintenance. The system eliminates seals for a lifetime of reliable dispensing.
- **HF and trace analysis dispensing**—For dispensing of high purity acids and solvents, or hydrofluoric acid, choose the Dispensette® S Trace Analysis. For details, see page 41.



The standard in bottle-top
dispensing for a half century



Easy Calibration™ technique

Adjustments according to ISO 9001 and GLP done within seconds

Discharge valve with safety ball

Closes when discharge tube is not mounted to prevent accidental dispensing

Large window

Allows easy priming verification

Hinged screw cap

Swings out of the way when dispensing

Threaded safety cap

Coarse thread allows fingertip on/off

Calibration mechanism

Visible flag indicates calibration has been adjusted from factory specifications

Volume selection

With scalloped track for reproducible volume setting

Recirculation Valve

Eliminates reagent waste and splashing during priming

Freely rotating valve block

Allows bottle label to always face user

Olive-shaped filling valve

For firm filling tube attachment

Recirculation tube

Safely returns reagent to the bottle

Telescoping filling tube

Adjusts easily to a broad range of bottle sizes with no measuring or cutting required

Dispensette® S Organic Digital without recirculation valve

Dispensette® S Analog-adjustable with recirculation valve

Dispensette® S Volume Adjustment

Digital models

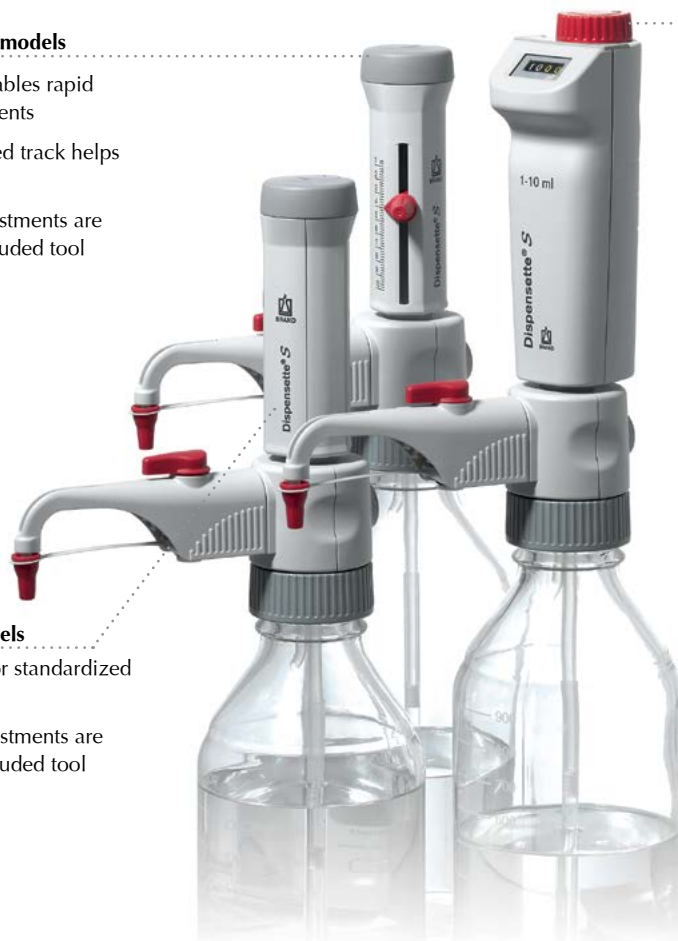
- Enable accurate and reproducible volume setting with an easy-to-read display and a convenient adjustment knob.
- Mechanical adjustment mechanism displays the volume in digits
- Features unique Easy Calibration™ technology (see page 58) for calibration adjustment in seconds without tools
- Excellent for labs with multiple users, requiring frequent volume changes to specific volumes

Analog-adjustable models

- Analog slide enables rapid volume adjustments
- Internal scalloped track helps secure setting
- Calibration adjustments are simple with included tool

Fixed-volume models

- Fixed-volume for standardized applications
- Calibration adjustments are simple with included tool



Product Features

Both the Dispensette® S and Dispensette® S Organic are constructed using the “floating piston” principle.

Each piston is matched with precise tolerances to the cylinder of the instrument. A thin film of the dispensed liquid, just a few µm thick, acts as a non-wearing seal that reduces friction, so dispensing is easy and convenient.

- The GL45 mm standard thread, plus included adapters, fit most common lab bottles.
- The valve block can be rotated 360° so that the bottle label always faces the user for safety.
- A telescoping filling tube adjusts to different bottle sizes.
- The instrument is easy to disassemble for cleaning.
- The valves are replaceable for simple, economical service.
- The valve design eliminates seals for trouble-free operation.
- The Dispensette® S and Dispensette® S Organic are autoclavable at 121° C.
- Easy to calibrate and adjust in order to comply with ISO 9001 and GLP guidelines. A positive indicator automatically indicates adjustment from factory settings.
- An extensive line of accessories facilitates specialized dispensing tasks like sterile applications or dispensing from large containers.

Dispensette® S Bottletop Dispensers

Applications



One-handed operation

"Floating piston" design eliminates the seals that often wear and fail on other dispensers. This allows the Dispensette® S piston to move very smoothly, permitting safe, simple, one-handed dispensing, even with a nearly-empty reagent bottle.



Dispensing sterile fluids

Dispensette® S and Dispensette® S Organic bottletop dispensers are autoclavable at 121° C and can be fitted with an optional microfilter to prevent contamination of bottle contents. Sterile technique must be followed.



Serial dispensing

The optional flexible discharge tube with safety handle speeds serial dispensing tasks, and permits fast and precise dispensing even into narrow test tubes. Integrated recirculation valve helps purge bubbles before use.



Dispensing sensitive reagents

Optional drying tube screws into the accessory port of the Dispensette® S to protect sensitive reagents from humidity or CO₂ (Absorbing agent not included).

Dispensing from bulk containers minimizes risk of contaminating high-purity reagents

Simply connect the Dispensette® S or Dispensette® S Organic to the optional Remote Dispensing System for accurate dispensing from drums and other bulk containers up to 10 meters away. Maximum delivery height is 1.2 meters. A quick-release connector with integrated valves simplifies changing the bulk container. The drum adapter air inlet filter minimizes risk of contaminating high-purity reagents.

NOTE—Not for use with recirculation valve, pressurized vessels, peroxides (which will react with the platinum-iridium spring), HF or other liquids which attack borosilicate glass, alumina ceramic, PFA, ETFE, FEP or PTFE. Observe all safety instructions, operating exclusions, and limitations of your specific operating manual of the Dispensette® S bottletop dispenser model.



Remote Dispensing System

Dispensette® S Trace Analysis

For dispensing high-purity chemicals

The Dispensette® S Trace Analysis bottle-top dispenser provides outstanding performance for precise-volume dispensing of high-purity media for trace analysis. The Dispensette® S Trace Analysis is also suitable for dispensing HF (Pt-Ir valve spring model).

The components of the fluid path have been selected to only contain the highest purity materials, such as fluoroplastics and sapphire. Depending on application, either platinum-iridium (Pt-Ir) or tantalum (Ta) valve springs can be chosen. The volume range is from 1 to 10 mL.

- Especially well-suited for dispensing acids, bases and hydrogen peroxide (Tantalum (Ta) models only).
- Trace metal content of dispensed liquid is generally in the low ppb range or, depending on application, even in the low ppt range.

Dispensing of high-purity chemicals in trace analysis

- Plastics in contact with media consist of high-purity materials such as PTFE, ETFE, PCTFE, FEP and PFA. The purest sapphire is used for replaceable valves. Depending on the application, platinum-iridium or tantalum are available as spring materials.
- A field-tested cleaning process before use in trace analysis is described in the operating manual.
- Easy to disassemble for replacement of the dispensing cartridge.

Recommended application range

Dispensing medium	Valve spring: Pt-Ir	Valve spring: Ta
Acetic acid	+	+
Ammonia solution	+	+
Bromine	+	+
Hydrochloric acid	+	+
Hydrofluoric acid*	+	-
Hydrogen peroxide	-	+
Nitric acid	+	+
Perchloric acid	+	+
Phosphoric acid	+	+
Sodium hydroxide, 30%	+	-
Sulfuric acid	+	+
Water	+	+

+ suitable – not suitable

* Hydrofluoric acid reacts slightly with sapphire resulting in mildly elevated aluminum values. To reduce these values we recommend discarding 3-5 dispensings of 2 mL each before performing the analysis.

The above recommendations reflect testing completed prior to publication. Always follow instructions in the operating manual of the instrument as well as the reagent manufacturer's specifications. Should you require information on chemicals not listed, please feel free to contact BrandTech®.

Status as of: 0517/2



The high-purity materials release virtually no metal ions after appropriate cleaning. This makes the Dispensette® S Trace Analysis bottle-top dispenser a superior choice for trace analysis.

Replaceable dispensing cartridge

If the piston seal is worn after a long period of use, the entire dispensing cartridge can easily be replaced without tools by the user. The cartridge is fully adjusted at the factory and delivered with a performance certificate. No calibration is required after replacement.

Serial dispensing

For easy serial dispensing, an optional flexible discharge tube with textured safety handle (not approved for HF) permits fast and precise dispensing, even into narrow test tubes. Integrated recirculation valve helps purge bubbles before dispensing.

Performing trace analysis?

See the VITLAB® PFA trace analysis labware on page 112

Areas of Application / Suggested Dispenser

■ Dispensette® S (Disp. S) ■ Dispensette® S Organic (Disp. S Organic)

Reagent	Disp. S	Disp. S Organic	Reagent	Disp. S	Disp. S Organic	Reagent	Disp. S	Disp. S Organic
Acetaldehyde	+	+	Cyclohexane	+	+	Methylene chloride	+	+
Acetic acid (glacial), 100%	+	+	Cyclohexanone	+	+	Mineral oil (Engine oil)	+	+
Acetic acid, ≤ 96%	+	+	Cyclopentane	+	+	Monochloroacetic acid	+	+
Acetic anhydride	+	+	Decane	+	+	Nitric acid, ≤ 30%	+	+
Acetone	+	+	1-Decanol	+	+	Nitric acid, 30-70% */ **	+	+
Acetonitrile	+	+	Dibenzyl ether	+	+	Nitrobenzene	+	+
Acetophenone	+	+	Dichloroacetic acid	+	+	Oleic acid	+	+
Acetyl chloride	+	+	Dichlorobenzene	+	+	Oxalic acid	+	+
Acetylacetone	+	+	Dichloroethane	+	+	n-Pentane	+	+
Acrylic acid	+	+	Dichloroethylene	+	+	Peracetic acid	+	+
Acrylonitrile	+	+	Dichloromethane	+	+	Perchloric acid	+	+
Adipic acid	+	+	Diesel oil (Heating oil), bp 250-350° C	+	+	Perchloroethylene	+	+
Allyl alcohol	+	+	Diethanolamine	+	+	Petroleum, bp 180-220° C	+	+
Aluminium chloride	+	+	Diethyl ether	+	+	Petroleum ether, bp 40-70° C	+	+
Amino acids	+	+	Diethylamine	+	+	Phenol	+	+
Ammonia, ≤ 20%	+	+	1,2 Diethylbenzene	+	+	Phenylethanol	+	+
Ammonia, 20-30%	+	+	Diethylene glycol	+	+	Phenylhydrazine	+	+
Ammonium chloride	+	+	Dimethyl sulfoxide (DMSO)	+	+	Phosphoric acid, ≤ 85%	+	+
Ammonium fluoride	+	+	Dimethylaniline	+	+	Phosphoric acid, 85% + Sulfuric acid, 98%, 1:1	+	+
Ammonium sulfate	+	+	Dimethylformamide (DMF)	+	+	Piperidine	+	+
n-Amyl acetate	+	+	1,4 Dioxane	+	+	Potassium chloride	+	+
Amyl alcohol (Pentanol)	+	+	Diphenyl ether	+	+	Potassium dichromate	+	+
Amyl chloride (Chloropentane)	+	+	Essential oil	+	+	Potassium hydroxide	+	+
Aniline	+	+	Ethanol	+	+	Potassium permanganate	+	+
Barium chloride	+	+	Ethanolamine	+	+	Propionic acid	+	+
Benzaldehyde	+	+	Ethyl acetate	+	+	Propylene glycol (Propanediol)	+	+
Benzene (Benzol)	+	+	Ethylbenzene	+	+	Pyridine	+	+
Benzine (Petroleum benzin), bp 70-180° C	+	+	Ethylene chloride	+	+	Pyruvic acid	+	+
Benzoyl chloride	+	+	Fluoroacetic acid	+	+	Salicylaldehyde	+	+
Benzyl alcohol	+	+	Formaldehyde, ≤ 40%	+	+	Scintillation fluid	+	+
Benzylamine	+	+	Formamide	+	+	Silver acetate	+	+
Benzylchloride	+	+	Formic acid, ≤ 100%	+	+	Silver nitrate	+	+
Boric acid, ≤ 10%	+	+	Glycerol	+	+	Sodium acetate	+	+
Bromobenzene	+	+	Glycol (Ethylene glycol)	+	+	Sodium chloride	+	+
Bromonaphthalene	+	+	Glycolic acid, ≤ 50%	+	+	Sodium dichromate	+	+
Butanediol	+	+	Heating oil (Diesel oil), bp 250-350° C	+	+	Sodium fluoride	+	+
1-Butanol	+	+	Heptane	+	+	Sodium hydroxide, ≤ 30%	+	+
n-Butyl acetate	+	+	Hexane	+	+	Sodium hypochlorite	+	+
Butyl methyl ether	+	+	Hexanoic acid	+	+	Sulfuric acid, ≤ 98%	+	+
Butylamine	+	+	Hexanol	+	+	Tartaric acid	+	+
Butyric acid	+	+	Hydriodic acid, ≤ 57% **	+	+	Tetrachloroethylene	+	+
Calcium carbonate	+	+	Hydrobromic acid	+	+	Tetrahydrofuran (THF) */ **	+	+
Calcium chloride	+	+	Hydrochloric acid, ≤ 20%	+	+	Tetramethylammonium hydroxide	+	+
Calcium hydroxide	+	+	Hydrochloric acid, 20-37% **	+	+	Toluene	+	+
Calcium hypochlorite	+	+	Hydrogen peroxide, ≤ 35%	+	+	Trichloroacetic acid	+	+
Carbon tetrachloride	+	+	Isoamyl alcohol	+	+	Trichlorobenzene	+	+
Chloro naphthalene	+	+	Isobutanol	+	+	Trichloroethane	+	+
Chloroacetaldehyde, ≤ 45%	+	+	Isooctane	+	+	Trichloroethylene	+	+
Chloroacetic acid	+	+	Isopropanol (2-Propanol)	+	+	Trichlorotrifluoro ethane	+	+
Chloroacetone	+	+	Isopropyl ether	+	+	Triethanolamine	+	+
Chlorobenzene	+	+	Lactic acid	+	+	Triethylene glycol	+	+
Chlorobutane	+	+	Methanol	+	+	Trifluoro ethane	+	+
Chloroform	+	+	Methoxybenzene	+	+	Trifluoroacetic acid (TFA)	+	+
Chlorosulfonic acid	+	+	Methyl benzoate	+	+	Turpentine	+	+
Chromic acid, ≤ 50%	+	+	Methyl butyl ether	+	+	Urea	+	+
Chromosulfuric acid	+	+	Methyl ethyl ketone	+	+	Xylene	+	+
Copper sulfate	+	+	Methyl formate	+	+	Zinc chloride, ≤ 10%	+	+
Cresol	+	+	Methyl propyl ketone	+	+	Zinc sulfate, ≤ 10%	+	+
Cumene (Isopropyl benzene)	+	+						

* Choose ETFE/PTFE adapters, if required, ** use PTFE seal for valve block catalog number #704486

The above recommendations reflect testing completed prior to publication. Always follow instructions in the operating manual of the instrument as well as the reagent manufacturer's specifications. In addition to these chemicals, a variety of organic and inorganic saline solutions (e.g., biological buffers), biological detergents and media for cell culture can be dispensed. Should you require information on chemicals not listed, please feel free to contact BrandTech Scientific. Status as of: 0218/13

Note:

For dispensing HF, we recommend the use of the Dispensette® S Trace Analysis bottletop dispenser with platinum-iridium valve spring (See page 41).

Dispensette® S Bottletop Dispenser Technical Data

Operating limitations (all instruments)

Liquids which form deposits may make the piston difficult to move or may cause jamming (e.g., crystallizing solutions or concentrated alkaline solutions).

When dispensing inflammable media, make sure to avoid the buildup of static charge, (e.g., do not dispense into plastic vessels; do not wipe instruments with a dry cloth).

The Dispensette® is designed for general laboratory applications and complies with the relevant standards, e.g., DIN EN ISO 8655. Compatibility of the instrument for a specific application (e.g., trace material analysis, food sector, etc.) must be checked by the user. Approvals for specific applications, (e.g., for production and administration of food, pharmaceuticals, and cosmetics) are not available.

Items supplied

Each Dispensette® S,
Dispensette® S Organic,
Dispensette® S Trace Analysis includes:

- Certificate of performance
- Discharge tube
- Valve mounting/calibration tool
- Adapters and filling tube
- Operating manual
- One-year warranty

Supplied adapters & filling tubes

Nominal Volume, mL	Adapter for bottle thread, mm	Filling tube length, mm
For Dispensette® S & Dispensette® S Organic (PP)		
1, 2, 5, 10	24, 28, 33, 38, S40	125-240
25, 50, 100	33, 38, S40	170-330
For Dispensette® S Trace Analysis (ETFE, PTFE*)		
10	28, 33, 38, S40*	125-240

Limitations of use (all instruments)

This instrument is designed for dispensing liquids, observing the following physical limits:

- Use between +15° C and +40° C (instrument and reagent)
- Vapor pressure up to max. 600 mbar (Aspirate slowly above 300 mbar, in order to prevent the liquid from boiling)
- Kinematic viscosity up to 500 mm²/s (dynamic viscosity [mPas] = kinematic viscosity [mm²/s] x density [g/cm³])
- Density—Dispensette® S/Dispensette® S Organic—up to 2.2 g/cm³ and Dispensette® S Trace Analysis up to 3.8 g/cm³

Operating exclusions – Dispensette® S

Never use the Dispensette® S with:

- Liquids which attack Al₂O₃-ceramic, ETFE, FEP, PFA and PTFE (e.g., dissolved sodium azide*)
- Liquids which attack borosilicate glass (e.g., hydrofluoric acid)
- Liquids which are decomposed catalytically by platinum-iridium (e.g., H₂O₂)
- Hydrochloric acid > 20% and nitric acid > 30%
- Tetrahydrofuran
- Trifluoroacetic acid
- Explosive liquids (e.g., carbon disulfide)
- Suspensions (e.g., of charcoal) as solid particles may clog or damage the instrument
- Liquids attacking PP (screw cap)

Operating exclusions – Dispensette® S Organic

Never use the Dispensette® S Organic with:

- Liquids which attack Al₂O₃-ceramic, tantalum, ETFE, FEP, PFA and PTFE (e.g., dissolved sodium azide*)
- Liquids which attack borosilicate glass (e.g., hydrofluoric acid)
- Bases and saline solutions
- Explosive liquids (e.g., carbon disulfide)
- Suspensions (e.g., of charcoal) as solid particles may clog or damage the instrument
- Liquids attacking PP (screw cap)

Operating exclusions – Dispensette® S Trace Analysis

Never use the Dispensette® S Trace Analysis with:

- Liquids which attack Al₂O₃ sapphire or fluoroplastics like ETFE, FEP, PFA, PCTFE, PTFA and PTFE (e.g., dissolved sodium azide*)
- Liquids which are decomposed catalytically by platinum-iridium (e.g., H₂O₂) or tantalum, depending on the construction of the instrument
- Organic solvents
- Trifluoroacetic acid
- Explosive liquids (e.g., carbon disulfide)
- Suspensions (e.g., of charcoal) as solid particles may clog or damage the instrument
- The Dispensette® S Trace Analysis must not be autoclaved

*Dissolved sodium azide permitted up to a concentration of max 0.1%

Dispensette® S Bottletop Dispensers

Dispensette® S						Without recirculation valve	With recirculation valve		
		A* < ±		CV* ≤				2020	2020
Volume, mL	Increments, mL	%	µL	%	µL	Cat. No.	List Price	Cat. No.	List Price
Dispensette® S, Digital									
0.1-1	0.005	0.6	6	0.2	2	4600310	\$526.80	4600311	\$559.60
0.2-2	0.01	0.5	10	0.1	2	4600320	526.80	4600321	559.60
0.5-5	0.02	0.5	25	0.1	5	4600330	526.80	4600331	559.60
1-10	0.05	0.5	50	0.1	10	4600340	526.80	4600341	559.60
2.5-25	0.1	0.5	125	0.1	25	4600350	711.60	4600351	744.20
5-50	0.2	0.5	250	0.1	50	4600360	722.00	4600361	754.60
Dispensette® S, Analog-adjustable									
0.1-1	0.02	0.6	6	0.2	2	4600100	461.80	4600101	482.80
0.2-2	0.05	0.5	10	0.1	2	4600120	461.80	4600121	482.80
0.5-5	0.1	0.5	25	0.1	5	4600130	461.80	4600131	482.80
1-10	0.2	0.5	50	0.1	10	4600140	461.80	4600141	482.80
2.5-25	0.5	0.5	125	0.1	25	4600150	646.60	4600151	667.60
5-50	1.0	0.5	250	0.1	50	4600160	662.20	4600161	684.20
10-100	1.0	0.5	500	0.1	100	4600170	1,031.80	4600171	1,053.80
Dispensette® S, Fixed-volume									
1		0.6	6	0.2	2	4600210	461.80	4600211	482.80
2		0.5	10	0.1	2	4600220	461.80	4600221	482.80
5		0.5	25	0.1	5	4600230	461.80	4600231	482.80
10		0.5	50	0.1	10	4600240	461.80	4600241	482.80
Dispensette® S Organic									
		A* < ±		CV* ≤				2020	2020
Volume, mL	Increments, mL	%	µL	%	µL	Cat. No.	List Price	Cat. No.	List Price
Dispensette® S Organic, Digital									
0.5-5	0.02	0.5	25	0.1	5	4630330	\$580.60	4630331	\$613.00
1-10	0.05	0.5	50	0.1	10	4630340	580.60	4630341	613.00
2.5-25	0.1	0.5	125	0.1	25	4630350	782.00	4630351	814.40
5-50	0.2	0.5	250	0.1	50	4630360	797.60	4630361	830.20
Dispensette® S Organic, Analog-adjustable									
0.5-5	0.1	0.5	25	0.1	5	4630130	499.60	4630131	532.20
1-10	0.2	0.5	50	0.1	10	4630140	499.60	4630141	532.20
2.5-25	0.5	0.5	125	0.1	25	4630150	700.00	4630151	732.60
5-50	1.0	0.5	250	0.1	50	4630160	717.00	4630161	749.40
10-100	1.0	0.5	500	0.1	100	4630170	1,124.20	4630171	1,156.80
Dispensette® S Organic, Fixed-volume									
5		0.5	25	0.1	5	4630230	499.60	4630231	532.20
10		0.5	50	0.1	10	4630240	499.60	4630241	532.20

Dispensette® S Trace Analysis						Without recirculation valve	With recirculation valve		
		A* < ±		CV* ≤				2020	2020
Volume, mL	Valve Spring	%	µL	%	µL	Cat. No.	List Price	Cat. No.	List Price
Dispensette® S Trace Analysis, Analog-adjustable									
1-10	Platinum-iridium	0.5	50	0.1	10	4640040	\$1,151.40	4640041	\$1,183.80
1-10	Tantalum	0.5	50	0.1	10	4640240	1,151.40	4640241	1,183.80

A*=Accuracy, CV*=Coefficient of Variation

* The value of accuracy and coefficient of variation are final test values referring to the delivered nominal volume, instrument and distilled water at equilibrium with ambient temperature (20° C/68° F) and with smooth operation.



Dispensette® S



Dispensette® S Organic



Dispensette® S Trace Analysis

Dispensette® Accessories



Flexible discharge tube

For Dispensette® S ♦ cap			Without recirculation valve		With recirculation valve	
Discharge tube	Shape	Length, mm	Cat. No.	2020 List Price	Cat. No.	2020 List Price
For Nominal Volume, mL						
1, 2, 5, 10	fine tip	105	708002	\$30.40	708102	\$154.40
5, 10	standard	105	708005	28.40	708104	152.20
25, 50, 100	fine tip	135	708006	36.00	708106	160.60
25, 50, 100	standard	135	708008	31.60	708109	155.40

For Dispensette® S Organic ♦ cap			Without recirculation valve		With recirculation valve	
Discharge tube	Shape	Length, mm	Cat. No.	2020 List Price	Cat. No.	2020 List Price
For Nominal Volume, mL						
5, 10	fine tip	105	708012	\$36.00	708112	\$168.00
5, 10	standard	105	708014	28.40	708114	160.60
25, 50, 100	fine tip	135	708016	36.00	708116	168.00
25, 50, 100	standard	135	708019	31.60	708119	163.80

Dispensette® S Trace Analysis ♦ cap			Without Recirculation Valve		With Recirculation Valve	
Discharge tube	Shape	Length, mm	Cat. No. Pt - Ir	2020 List Price	Cat. No. Ta	2020 List Price
Without Recirculation Valve	fine tip	105	708022	\$30.60	708024	\$30.60
With Recirculation Valve	fine tip	105	708122	190.00	708124	190.00

	Cat. No.	2020 List Price
Flexible discharge tube (for Dispensette® S, Dispensette® S Organic)		
PTFE, coiled, length 800 mm (= 31.5") with safety handle		
2, 5, 10	708132	\$196.40
25, 50, 100	708134	211.00
Not suitable for use with hydrofluoric acid. For nominal volume, mL		
Flexible discharge tubes for Dispensette® S Trace Analysis—NOT FOR USE WITH HF		
10	708132	196.40

Dispensette® S Bottletop Accessories



Dispensing cartridge



Recirculation tube

Telescoping filling tubes



Filling valve



Drying tube

Dispensette® S Trace Analysis ♦ cap

	Cat. No.	2020 List Price
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Replacement parts Dispensette® S Trace Analysis

Dosing element		
Nominal volume 1-10 mL, calibrated, includes quality certificate	708035	\$824.00

For nominal volume, mL	Length, mm (inches)	Cat. No.	2020 List Price
Telescoping filling tubes, FEP			
0.5, 1, 2, 5, 10	70 - 140 (2.6" - 5.5")	708210	\$25.00
0.5, 1, 2, 5, 10 - standard	125 - 240 (4.9" - 9.5")	708212	34.80
0.5, 1, 2, 5, 10	195-350 (7.7"-13.8")	708214	49.20
0.5, 1, 2, 5, 10	250 - 480 (9.8" - 18.9")	708216	39.40
25, 50, 100 - standard	170 - 330 (6.7" - 13.0")	708218	50.20
25, 50, 100	250 - 480 (9.8" - 18.9")	708220	52.40
Recirculation tube			
Recirculation tube only		6747	5.60

	Cat. No.	2020 List Price
Filling valve for Dispensette® S and Dispensette® S Organic, nominal volume, mL		
1, 2, 5, 10, each	6734	\$57.80
25, 50, 100, each	6735	64.40
For Dispensette® S Trace Analysis, each	6739	115.40
Discharge valve for Dispensette® S nominal volume, mL		
1, 2 each	6749	68.80
5, 10 each	6727	73.00
25, 50, 100, each	6728	86.20
Discharge valve for Dispensette® S Organic, nominal volume, mL		
1, 2, 5, 10 each	6729	73.00
25, 50, 100, each	6730	86.20
Discharge valve for Dispensette® S Trace Analysis, nominal volume, Pt-Ir, Ta		
Platinum-Iridium	6732	120.80
Tantalum	6733	120.80
Drying tube		
Without drying agent, each	707930	55.60
Micro filter connector assembly with Luer-slip connection		
To fit 0.2µm filter for sterile dispensing. Autoclavable (photo page 40).	704495	23.80

Dispensette® S Bottletop Accessories



Amber bottle



Bottle stand

	Cat. No.	2020 List Price
Amber bottle - ethylene-acrylate coated		
Threaded Bottle, PP screw cap, LDPE pouring ring, 250 mL, 33 mm	704004	\$27.80
Threaded Bottle, PP screw cap, LDPE pouring ring, 500 mL, 33 mm	704006	37.60
Threaded Bottle, PP screw cap, LDPE pouring ring, 1000 mL, 45 mm	704008	48.60
Bottle Stand, PP, 220 mm x 160 mm x 325 mm	704275	313.80

Size	PP Cat. No.	2020 List Price	ETFE Cat. No.	2020 List Price
Bottle thread adapters				
33/24 mm	704325	\$10.00	704375	\$25.80
33/28 mm/S28 mm	704328	10.00	704378	30.60
45/33 mm	704396	10.00	704398	34.60
45/35 mm	704431	19.40	—	—
45/38 mm	704397	10.00	704399	34.60
45/S40 mm (PP/PTFE)	704343	10.00	704391	54.20
Fits 33/STJ19/26	704419	33.20	—	—
Fits 33/STJ24/29	704424	33.20	—	—
Fits 33/STJ29/32	704429	38.80	—	—



Remote Dispensing System for Dispensette® S

	Cat. No.	2020 List Price
Remote Dispensing (for Dispensette® S, Dispensette® S Organic)		
Remote Dispensing System (dispenser not included)	704261	\$567.80
Dispensing System for NOWPak® containers only (includes wall mount, dispenser not included)	704284	357.80
Accessories		
Filling tube, FEP, 10 m, outer diameter 7.6 mm	704267	319.20
Thread adapter, Steel, outer thread 2", inner thread 3/4"	704270	144.80
Thread adapter, PTFE, inner thread 3/4" (33 mm), to connect remote dispensing system with drums with GL outer thread	704282	91.40
Support rod connector, for wall mounting unit	704268	86.00
Table/shelf clamp, for wall mounting unit	704272	40.40
Thread adapter, PTFE, 3/4", 33mm for direct mounting of Dispensette® S on drum	704281	77.60

seripettor®

The seripettor® bottle-top dispenser is an economical wiping seal dispenser suitable for many commonly used reagents in biological and chemical laboratories. It precisely dispenses a wide variety of liquids. Optional accessories, such as the flexible discharge tube, are available to increase productivity and convenience.

- **Dispenses most non-aggressive liquids**—The seripettor® is a low-cost, reliable tool for dispensing measured volumes of weak acids, alkaline solutions, polar solvents, isotonic solutions, and agar culture media at up to a max. temperature of 60° C. See selection guide on page 51.
- **Simplifies dispensing**—Notched volume selector allows for quick and exact volume adjustment. Spring-driven refill function enables one-handed operation.
- **Convenient cleaning and maintenance**—Innovative design permits simple disassembly and easy replacement of wearing parts, extending instrument life.
- **Fits most reagent containers**—The 45 mm standard thread, plus the included adapters with 33 mm, 38 mm and 40 mm thread, fits most common lab bottles.
- **Dispenses sterile media**—Accessories are available for sterile dispensing.



A rugged,
economical tool for
routine dispensing



Technical data

Operating limits and exclusions

Never use this instrument with:

- Liquids which attack FEP, PP, PE or EPDM
- Non-polar solvents like hydrocarbons and halogenated hydrocarbons
- Concentrated or oxidizing acids
- Explosive liquids (e.g., carbon disulfide)

This instrument is designed for dispensing liquids, observing the following limits:

- Vapor pressure up to 500 mbar
- Density up to 2.2 g/cm³
- Temperature of use between 15° and 40° C of instrument and reagent (agar culture media up to 60° C)
- Viscosity
 - 2 mL instrument: 300 mm²/s
 - 10 mL instrument: 150 mm²/s
 - 25 mL instrument: 75 mm²/s
 - (dynamic viscosity [mPas] = kinematic viscosity [mm²/s] x density [g/cm³])

Sterile dispensing

Optional accessories are available to make dispensing of agar and other sterile liquids quick and easy with the seripettor®. These include:

- Sterile dispensing cartridges
- Valve block cap
- Special filling tube for autoclaving
- 0.2 µm membrane filter



Sterile dispensing cartridge installation

Items supplied

Each seripettor® bottletop dispenser includes:

- Spare dispensing cartridge
- Discharge tube
- 250 mm filling tube
- Operating manual
- Three PP adapters: 45/S40 mm, 45/38 mm, and 45/33 mm. See page 47 for other adapters
- One-year warranty

Volume, mL	Subdivision, mL	A* < ± %	CV* ≤ %	Cat. No.	2020 List Price
seripettor®					
0.2-2	0.04	1.2	0.2	4720120	\$138.40
1-10	0.2	1.2	0.2	4720140	138.40
2.5-25	0.5	1.2	0.2	4720150	175.40

A*=Accuracy, CV*=Coefficient of Variation

* The value of accuracy and coefficient of variation are final test values referring to the delivered nominal volume, instrument and distilled water at equilibrium with ambient temperature (20° C/68° F) and with smooth operation.

Description	Photo	Pack of	Cat. No.	2020 List Price
Replacement parts				
Dispensing cartridge, for 2 mL seripettor®, non-sterile	1	3	704500	\$64.00
Dispensing cartridge, for 10 mL seripettor®, non-sterile	1	3	704502	64.00
Dispensing cartridge, for 25 mL seripettor®, non-sterile	1	3	704504	90.40
Dispensing cartridge, for 2 mL seripettor®, sterile	2	7	704507	112.40
Dispensing cartridge, for 10 mL seripettor®, sterile	2	7	704506	112.40
Dispensing cartridge, for 25 mL seripettor®, sterile	2	5	704508	119.60
Flexible discharge tubing for 25 mL seripettor®, PTFE, 800 mm	3	1	704523	222.40
Flexible discharge tubing for 2 mL & 10 mL seripettor®, PTFE, 800 mm	3	1	704522	132.40
Discharge tube for 2 mL seripettor®	6	1	704518	40.40
Discharge tube for 10 mL and 25 mL seripettor®	6	1	704520	40.40
Valve block cap for 2 mL & 10 mL seripettor®, PP	4	1	704552	36.00
Valve block cap for 25 mL seripettor®, PP	4	1	704554	36.00
Filling tube, 250 mm	–	2	704532	11.40
Filling tube, 500 mm	–	2	704534	16.20
Filling tube for sterile applications, 250 mm	–	1	704536	11.40
Filling tube for sterile applications, 500 mm	–	1	704538	16.20
Membrane filter, 0.2 µm, non-sterile	5	10	26535	119.60

Bottles & adapters

See detailed listing on page 47



[1] Dispensing cartridge, non-sterile



[2] Dispensing cartridge, sterile



[3] Flexible discharge tube



[4] Valve block cap



[5] 0.2 µm membrane filter



[6] Discharge tube

seripettor[®] pro

The seripettor[®] pro is a bottletop dispenser designed to handle a wider range of liquids than the seripettor[®] for customers who do not require all of the features of the Dispensette[®]. Like the seripettor[®], it features an easily-replaceable wiping seal dispensing cartridge, making it especially suitable for liquids that tend to form crystals.

- **Wide chemical range**—Valves and seals on the seripettor[®] pro allow a broader range of liquids to be dispensed than the regular seripettor[®].
- **Protects light-sensitive reagents**—Pump assembly with Hastalloy stainless steel spring. An opaque upper sleeve helps protect liquid from UV-light during dispensing operations, while permitting observation of cylinder to confirm purging of bubbles.
- **Replaceable dispensing cartridge**—Quick-change cartridge makes service a breeze and keeps life-time service costs low. If wiping seals wear out, or are damaged by crystallizing reagents, just change the inexpensive cartridge, and you're back in business!
- **Telescoping filling tube**—Filling tube adjusts to fit many bottles without cutting.
- **Discharge tube with a threaded safety screw cap**—Attach and remove the discharge tube with a quick twist.
- **Spring-loaded piston**—One-handed, semi-automatic operation is possible.
- **Threaded safety cap**—Cap is attached and removed with a quick twist.

An economical, versatile
wiping-seal dispenser



Volume, mL	Subdivision, mL	A* < ± %	CV* ≤ %	Cat. No.	2020 List Price
seripettor[®] pro					
0.2-2	0.04	1.2	0.2	4720420	\$348.40
1-10	0.2	1.2	0.2	4720440	348.40
2.5-25	0.5	1.2	0.2	4720450	497.60

A*=Accuracy, CV*=Coefficient of Variation

* The value of accuracy and coefficient of variation are final test values referring to the delivered nominal volume, instrument and distilled water at equilibrium with ambient temperature (20° C/68° F) and with smooth operation.



[1] Dispensing cartridge, non-sterile



[2] Flexible discharge tube



[3] Telescoping filling tubes, FEP

Description	Photo	Pack of	Cat. No.	2020 List Price
Dispensing cartridges				
Dispensing cartridge, for 2 mL seripettor [®] pro, non-sterile	1	3	704500	\$64.00
Dispensing cartridge, for 10 mL seripettor [®] pro, non-sterile	1	3	704502	64.00
Dispensing cartridge, for 25 mL seripettor [®] pro, non-sterile	1	3	704504	90.40
Flexible discharge tube for 2 mL & 10 mL seripettor [®] pro	2	1	704522	132.40
Flexible discharge tube for 25 mL seripettor [®] pro	2	1	704523	222.40
Discharge tube for 2 mL seripettor [®] pro		1	707915	83.00
Discharge tube for 10 mL seripettor [®] pro		1	707916	77.60
Discharge tube for 25 mL seripettor [®] pro		1	707918	77.60

Bottle thread adapters see detailed thread adapter listing on page 47

For Nominal Volume, mL	Length, mm	Photo	Pack of	Cat. No.	2020 List Price
Telescoping filling tubes					
2, 10	70 - 140 (2.6" - 5.5")	3	1	708210	\$25.00
2, 10	125 - 240 (4.9" - 9.5")	3	1	708212	34.80
2, 10	195 - 350 (7.7" - 13.8")	3	1	708214	49.20
2, 10	250 - 480 (9.8" - 18.9")	3	1	708216	39.40
25	170 - 330 (6.7" - 13.0")	3	1	708218	50.20
25	250 - 480 (9.8" - 18.9")	3	1	708220	52.40

Items supplied

Each seripettor[®] pro bottletop dispenser includes:

- Spare dispensing cartridge
- Discharge tube
- Three PP adapters: 45/S40 mm, 45/38 mm and 45/33 mm.
- Telescoping filling tube
- Operating manual
- One-year warranty

Operating limits and exclusions

Never use this instrument with:

- Liquids which attack PP, PE, Al₂O₃ - ceramic, ETFE, FEP, PFA and PTFE (e.g., dissolved sodium azide*)
- Liquids which attack borosilicate glass (e.g., hydrofluoric acid)
- Liquids which are decomposed catalytically by platinum-iridium (e.g., H₂O₂)
- Non-polar solvents like hydrocarbons and halogenated hydrocarbons
- Concentrated or oxidizing acids (excluding HCl)
- Explosive liquids (e.g., carbon disulfide)
- Suspensions (e.g., of charcoal) as solid particles may clog or damage the instrument

This instrument is designed for dispensing liquids, observing the following limits:

- Vapor pressure up to 500 mbar
- Density up to 2.2 g/cm³
- Temperature 15° to 40° C
- Viscosity
2 mL instrument: 300 mm²/s
10 mL instrument: 150 mm²/s
25 mL instrument: 75 mm²/s
(dynamic viscosity [mPas] = kinematic viscosity [mm²/s] x density [g/cm³])

*Dissolved sodium azide permitted up to a max. of 0.1%

Areas of application / Chemical selection list

seripettor® dispenser

seripettor® pro dispenser

Reagent	seripettor®	seripettor pro®	Reagent	seripettor®	seripettor pro®
Acetaldehyde		+	Glycol (Ethylene glycol)	+	+
Acetic acid, 5%	+	+	Glycolic acid, 50%	+	+
Acetic acid, 96%		+	Hexanoic acid	+	+
Acetic acid (glacial), 100%		+	Hexanol		+
Acetone		+	Hydriodic acid	+	+
Acetonitrile		+	Hydrobromic acid		+
Acetophenone	+		Hydrochloric acid, 37%		+
Acetylacetone	+	+	Hydrogen peroxide, 35%	+	
Acrylic acid		+	Isoamyl alcohol		+
Acrylonitrile		+	Isobutanol	+	+
Adipic acid	+	+	Isopropanol (2-Propanol)	+	+
Agar (60° C)	+		Lactic acid	+	+
Allyl alcohol	+	+	Methanol	+	+
Aluminium chloride	+	+	Methyl benzoate		+
Amino acids	+	+	Methyl ethyl ketone		+
Ammonia 30%	+	+	Methyl propyl ketone		+
Ammonium chloride	+	+	Mineral oil (Engine oil)		+
Ammonium fluoride	+	+	Monochloroacetic acid		+
Ammonium sulfate	+	+	Nitric acid, 10%		+
Amyl alcohol (Pentanol)	+	+	Oxalic acid	+	+
n-Amyl acetate		+	Perchloric acid		+
Aniline		+	Phenol		+
Barium chloride	+	+	Phosphoric acid, 85%		+
Benzaldehyde		+	Piperidine		+
Benzyl alcohol		+	Potassium chloride	+	+
Benzylamine		+	Potassium dichromate	+	+
Benzylchloride		+	Potassium hydroxide	+	+
Boric acid, 10%	+	+	Potassium hydroxide in ethanol	+	+
Butanediol	+	+	Potassium permanganate	+	+
1-Butanol		+	Propionic acid	+	+
Butylamine		+	Propylene glycol (Propanediol)	+	+
n-Butyl acetate		+	Pyridine		+
Calcium carbonate	+	+	Pyruvic acid	+	+
Calcium chloride	+	+	Salicylaldehyde		+
Calcium hydroxide	+	+	Salicylic acid	+	+
Calcium hypochlorite		+	Silver acetate	+	+
Chloroacetaldehyde, 45%		+	Silver nitrate	+	+
Chloroacetic acid		+	Sodium acetate	+	+
Chromic acid, 50%		+	Sodium chloride	+	+
Copper sulfate	+	+	Sodium dichromate	+	+
Cumene (Isopropyl benzene)		+	Sodium fluoride	+	+
Diethylene glycol	+	+	Sodium hydroxide, 30%	+	+
Dimethyl sulfoxide (DMSO)		+	Sodium hypochlorite (active Chlorine approx. 10%)		+
Dimethylaniline		+	Sulfuric acid, 10%	+	+
Ethanol	+	+	Tartaric acid		+
Formaldehyde, 40%	+	+	Urea	+	+
Formamide	+	+	Zinc chloride, 10%	+	+
Formic acid, 100%		+	Zinc sulfate, 10%	+	+
Glycerol	+	+			

The above recommendations reflect testing completed prior to publication. Always follow instructions in the operating manual of the instrument as well as the reagent manufacturer's specifications. In addition to these chemicals, a variety of organic and inorganic saline solutions (e.g., biological buffers), biological detergents and media for cell culture can be dispensed. Should you require information on chemicals not listed, please feel free to contact BrandTech. Status as of: 1017/8

For the most current version of this chart, visit our website www.brandtech.com.

NOTE: The seripettor® & seripettor® pro bottletop dispensers cannot be used with hydrofluoric acid (HF). See page 41 for a description of the Dispensette® S Trace Analysis Pt-Ir dispenser which is the only BRAND® dispenser designed for use with HF.



VITLAB® piccolo™



The piccolo™ is a compact wiping seal dispenser for dispensing small measured quantities of liquids in all areas of biochemical and medical research.

Made from high quality materials, its small size and semi-automatic operation make it a natural for standardized procedures and kits where small volumes of reagents need to be dispensed. The spring-loaded piston design enables one-handed operation.

The piccolo™ comes in two versions—The piccolo™ 1 is a fixed volume instrument, while the piccolo™ 2 model has two preset volumes.

Never use the piccolo™ with aggressive media. The piccolo™ is especially designed for applications in connection with aqueous and highly diluted agents.

All piccolo™ instruments are supplied with a GL 28 thread, valve mounting tool, 150 mm filling tube, and operating manual.

Instrument type	Volume setting(s), μL	A* ±%	CV* ≤%	Cat. No.	2020 List Price
Piccolo™ bottle-top dispenser					
piccolo™ 1	100	3.0	0.4	V1610501	\$380.60
piccolo™ 1	200	2.5	0.4	V1610502	380.60
piccolo™ 1	250	2.0	0.4	V1610503	380.60
piccolo™ 1	500	1.5	0.3	V1610504	380.60
piccolo™ 1	1000	1.0	0.2	V1610506	380.60
piccolo™ 2	100 / 250	2.0	0.4	V1611503	428.60
piccolo™ 2	500 / 1000	1.0	0.2	V1611506	428.60
piccolo™ 2	1000 / 2000	1.0	0.2	V1611508	428.60

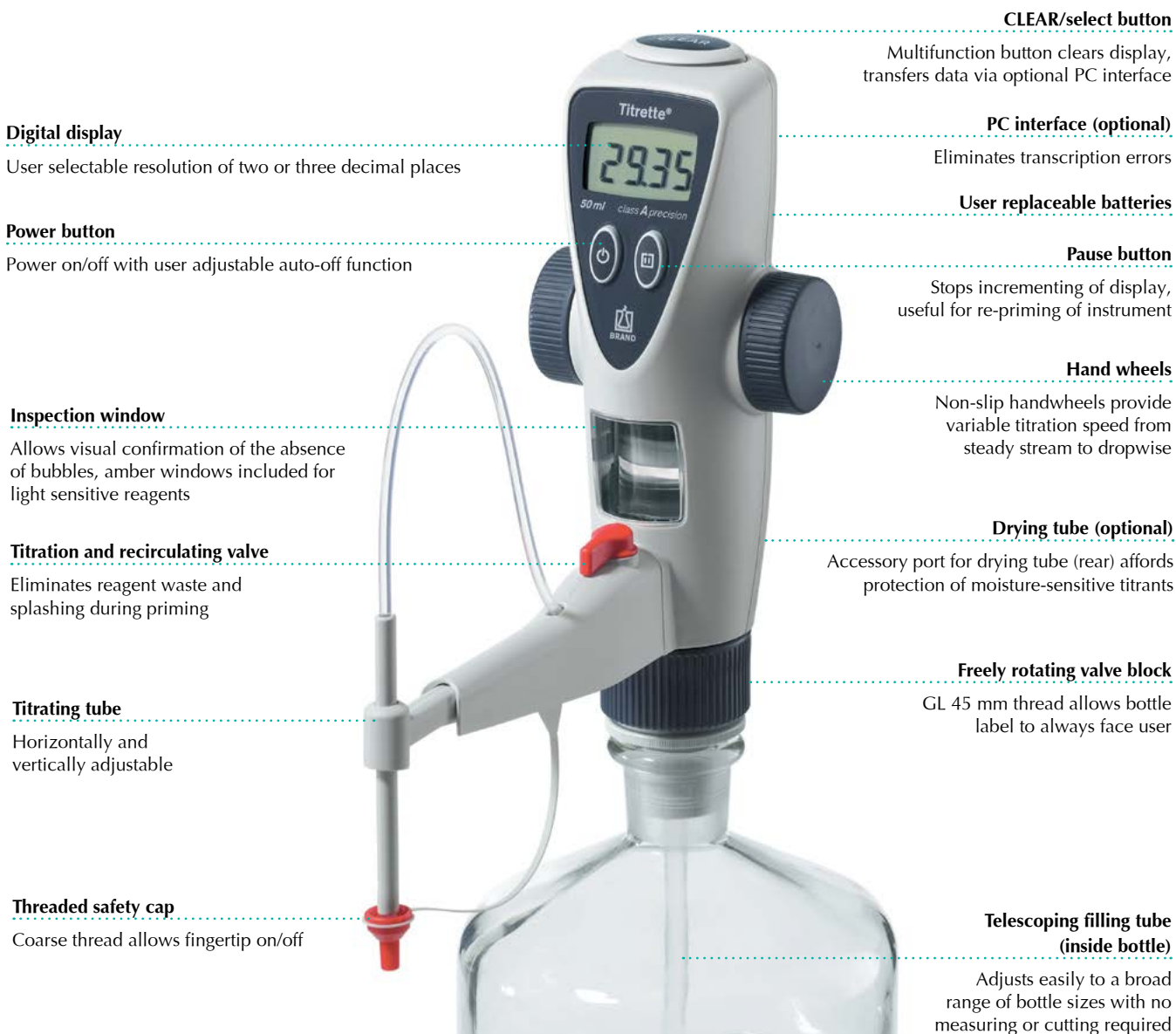
A*=Accuracy, CV*=coefficient of variation according to DIN EN ISO 8655-5
Other volumes are available upon request.

An adapter is available to mount the piccolo™ to GL 32/33 mm threaded bottles. Inquire about other thread adapters for the piccolo™.

Description	Dispenser thread	Bottle thread	Cat. No.	2020 List Price
Adapter				
piccolo™ thread adapter	GL28	GL32	V1670145	\$20.40



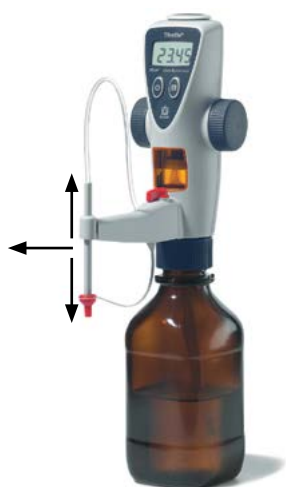
The BRAND® Titrette® bottle-top burette makes routine titrations faster, easier, and more accurate. The Titrette® minimizes the risk of spills from poured transfers to glass or plastic burettes, eliminates meniscus reading errors, and offers accuracy that satisfies the tolerances for Class A glass burettes. The instrument is well suited for general chemistry, water treatment applications, food/beverage analysis, industrial titrations, and environmental work in the lab or field.



The world's only
bottle-top burette
with Class A precision



Titrette® Bottletop Burette



Lightweight and compact

All components move within the housing, reducing headroom requirements. The compact design and light weight ensure stability. The titrating tube can be horizontally and vertically adjusted to provide flexibility when using a magnetic stirrer or different bottle sizes.



User serviceable

The Titrette® can be quickly and easily disassembled for cleaning, to replace the piston/cylinder, or to replace the batteries. Maintenance is conveniently and easily completed in the lab, in a few minutes and the instrument is ready to go again!



Light protection

Amber colored light shield inspection windows are included to protect light sensitive media. Installation is quick and easy, as the windows just clip into place.

Chemical Applicability

The Titrette® is suitable for use with the following titrating agents up to a concentration of 1mol/L

- | | | |
|--|--|--|
| – Acetic acid | – Oxalic acid solution | – Sodium nitrite solution |
| – Alcoholic potassium hydroxide solution | – Perchloric acid | – Sodium thiosulfate solution |
| – Ammonium iron (II) sulfate solution | – Perchloric acid in glacial acetic acid | – Sulfuric acid |
| – Ammonium thiocyanate solution | – Potassium bromate solution | – Tetra-n-butylammonium hydroxide solution |
| – Barium chloride solution | – Potassium bromate bromide solution | – Triethanolamine in acetone* |
| – Bromide bromate solution | – Potassium dichromate solution | – Zinc sulfate solution |
| – Cerium (IV) sulfate solution | – Potassium hydroxide solution | |
| – EDTA solution | – Potassium iodate solution | |
| – Hydrochloric acid | – Potassium permanganate solution* | |
| – Hydrochloric acid in acetone | – Potassium thiocyanate solution | |
| – Iodide iodate solution* | – Silver nitrate solution* | |
| – Iodine solution* | – Sodium arsenite solution | |
| – Iron (II) sulfate solution | – Sodium carbonate solution | |
| – Nitric acid | – Sodium chloride solution | |
| | – Sodium hydroxide solution | |

This partial list reflects testing completed prior to publication of this catalog Status as of 11/15/4. Always follow instructions in the operating manual of the instrument as well as the reagent manufacturer's specifications. For information on reagents not listed, please contact us.

* Use amber-colored lightshield inspection window

Technical Data

Operating limits and exclusions

This instrument is designed for titrating liquids, observing the following limits:

- Temperature of instrument and reagents must be between 15° and 40° C
- Vapor pressure up to 500 mbar
- Viscosity up to 500 mm²/s
- Altitude—maximum 3000 m above sea level
- Relative humidity—20% to 90%

Chemically resistant materials

When the Titrette® is properly handled, dispensed liquid will only come into contact with the following chemically resistant materials: borosilicate glass, Al₂O₃, ETFE, PFA, FEP, PTFE, platinum-iridium; PP (screw cap).

Limitations of use

- Chlorinated and fluorinated hydrocarbons or chemical combinations which form deposits may make the piston difficult to move or may cause jamming.
- Suitability of the instrument for a special application (e.g., trace material analysis) must be checked by the user. For additional information, please contact the manufacturer.
- The Titrette® is NOT autoclavable!



Items supplied

- Titrette® bottletop burette
- 45 mm thread
- Performance certificate
- Telescoping filling tube, 170-330 mm
- Recirculation tube
- 2 batteries, AAA/UM4/LR03
- 4 PP bottle adapters: 45/33 mm, 45/S40 mm, 33 mm/STJ29/32 and 45/38 mm
- 2 amber-colored light shield inspection windows
- Operating manual
- One-year warranty

Comparison of Error Limits

		Titrette® bottletop burette				Bottletop burettes according to DIN EN ISO 8655-3				Glass burettes Class A according to DIN EN ISO 385 and ASTM E287
Volume mL	Partial volume mL	A* ≤ ± %	μL	CV* ≤ %	μL	A* ≤ ± %	μL	CV* ≤ %	μL	EL** (DIN EN ISO) Volumetric Tolerance (ASTM) ± μL
10	10	0.10	10	0.05	5	0.3	30	0.1	10	20
	5	0.20	10	0.10	5	0.6	30	0.2	10	20
	1	1.00	10	0.50	5	3	30	1	10	20
25	25	0.07	18	0.025	6	0.2	50	0.1	25	30
	12.5	0.14	18	0.05	6	0.4	50	0.2	25	30
	2.5	0.70	18	0.25	6	2	50	1	25	30
50	50	0.06	30	0.02	10	0.2	100	0.1	50	50
	25	0.12	30	0.04	10	0.4	100	0.2	50	50
	5	0.60	30	0.20	10	2	100	1	50	50

A*=Accuracy, CV*=Coefficient of Variation

* Error limits related to the nominal capacity (= maximum volume) indicated on the instrument, obtained when instrument and distilled water are equilibrated at ambient temperature (20° C) and with smooth operation.

** Error limit—EL = A + 2CV

The maximum resolution of the display—The titration volume is displayed in steps of 1 μL for instruments with 10 mL and 25 mL size and in steps of 2 μL for 50 mL size instruments. For titration volumes above 20 mL the display will automatically switch to steps of 10 μL.

NOTE: If you need an official certification which confirms the error limits that are much stricter than those of DIN EN ISO 8655-3, we recommend a calibration certificate from an accredited calibration laboratory (e.g., the DAKS laboratory at BRAND®).

Titrette® Bottletop Burette

PC interface (optional)

The Titrette® is available with an optional RS232 communications interface.

- The titration results are automatically transmitted to the PC by double-clicking the CLEAR key. This eliminates transcription errors while recording primary data, and complies with GLP requirements.
- The Titrette® sends the titrated volume, the serial number of the instrument, the nominal volume and the adjustment value, as well as the next scheduled calibration date with each data transfer. Thus, all raw data is collected.
- The transmitted data is recognized as keyboard inputs by the PC. This universal input format ensures that the instrument is compatible with all PC applications that accept keyboard inputs.
- To connect the instrument to a USB interface, simply use a standard USB/RS232 adapter.



Titrette® bottle-top burette

Description	Standard Cat. No.	Standard 2020 List Price	Interface Cat. No.	Interface 2020 List Price
10 mL	4760141	\$1,075.80	4760241	\$1,497.60
25 mL	4760151	1,075.80	4760251	1,497.60
50 mL	4760161	1,075.80	4760261	1,497.60

Interface models include: connector cable (Sub-D plug connector, 9-pin), one CD (driver software and open RS232 communication protocol). The CD also includes an example application in XLS-file format, as well as a special operating manual.



Titrating tube



Filling valve



Dispensing cylinder



Telescoping filling tube



Inspection window



Piston head



Reservoir bottle



Drying tube

Titrette® parts & accessories

Description	Cat. No.	2020 List Price
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Titrating tube

With screw cap and integrated discharge and recirculation valve. Pack of 1

For 10 mL vol. [707525](#) \$104.40

For 25 mL and 50 mL vol. [707529*](#) 104.40

* For instruments manufactured from Jan 2012 onwards (serial #01K)

Filling valve For nominal volume, mL

With olive-shaped nozzle and sealing ring for Titrette®. Pack of 1

10, 25, 50 [6636](#) 70.80

Telescoping filling tube For nominal volume, mL

10, 25, 50- standard 170 - 330 mm (6.7" - 13.0") [708218](#) 50.20

10, 25, 50 250 - 480 mm (9.8" - 18.9") [708220](#) 52.40

Dispensing cylinder

With valve head. Pack of 1

For 10 mL vol. [707533](#) 174.20

For 25 mL vol. [707535*](#) 174.20

For 50 mL vol. [707537*](#) 174.20

* For instruments manufactured from Jan 2012 onwards (serial #01K)

Piston head, Pack of 1

For 10 mL vol. [707531](#) 66.80

For 25 mL vol. [707530](#) 66.80

For 50 mL vol. [707532](#) 66.80

Inspection window, Pack of 1

[6783](#) 21.20

Drying tube

Drying Tube with sealing-ring (without drying agent). Pack of 1 [707930](#) 55.60

Description	Color	Cat. No.	2020 List Price
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Reservoir bottle — Boro 3.3 / soda-lime glass

2000 mL clear [23310](#) \$160.00

2000 mL amber [23320](#) 220.40

Bottle adapter 33 mm-STJ 29/32 [704429](#) 38.80

More bottles and adapters available see page 47.

EASYCAL™ 4.0 simplifies the tedious task of calibrating liquid handling, glass, and plastic volumetric instruments to ISO 9001 and GLP standards. Easy-to-follow procedures are outlined step-by-step and all calculations are performed automatically by the software. Weighing values may be entered manually into the software or imported directly from the balance via a serial port. EASYCAL™ 4.0 generates reports to document the calibration testing in accordance to ISO 8655, ISO 4787, etc., and all test records can be saved in a database for subsequent use and tracking of instrument performance.

- Simplifies data entry
- Organizes all test data
- Includes SOPs
- Clearly arranged test record

Free software!

Download free, fully-functional demo version at www.brand.de

Ordering information

Description	Cat. No.	2020 List Price
EASYCAL™ testing tubes for pipettes <50 µL, 250 pieces	708462	\$47.40
Micro-weighing container, includes 10 filters and 3 cover caps	708470	92.00
Filter pack, 20 replacement filters (capacity apx. 1000 µL)	708471	68.40
Pipette holder (clip)	708605	77.60
Cover cap set, 3 spare closures	708472	63.00

EASYCAL™ 4.0 supports many balances from A&D, Denver, Kern, Ohaus, Precisa, Sartorius, Scaltec, and YMC. Please contact your balance manufacturer for the appropriate interface cable.

Items supplied

- Installation instructions
- Operating manual
- Software also contains SOPs (English, French, German, and Spanish) for Titrette®, Dispensette®, Transferpettor™, and all Transferpette® and HandyStep® models from BRAND®, as well as BLAUBRAND® glassware

System requirements

- PC with 32 MB RAM
- Microsoft® Windows® 98/NT with SP6/ME/2000/XP
- SVGA graphics card with 256 colors
- Mouse
- CD-ROM drive
- Microsoft® Paint



Easy Calibration™

Many of BRAND®'s instruments feature Easy Calibration™ technology, making compliance to ISO 9001 and GLP standards simple. Easy Calibration™ technology enables calibration adjustments to be completed in just seconds, without tools.

If gravimetric testing yields a delivered volume that is different from the set volume, the instrument can be adjusted in just a few easy steps. The steps are essentially the same for all BRAND® instruments featuring Easy Calibration™ technology. The process is outlined below, specific instructions can be found in the instrument operating manual.

- Perform gravimetric testing to determine Accuracy (%) and Coefficient of Variation (%). If accuracy specification is greater than the stated error limits for the instrument then perform a calibration adjustment.
- Disengage the volume display mechanism.
- Set the volume display to match the actual dispensed volume.
- Reengage the volume display mechanism.
- Calibration adjustment is complete, no further testing or adjustment required! Adjustment from factory setting is indicated by a red recalibration flag.

The process is shown in more detail below for the Transferpette® S pipette and Dispensette® S Digital instruments.

Transferpette® S example

Gravimetric testing yields a delivered volume of 98.5 µL at a set volume of 100 µL. The instrument can be adjusted in five easy steps.



Step 1

Remove the label window and the label. Push the hook forward, raise it slightly and then push it back.



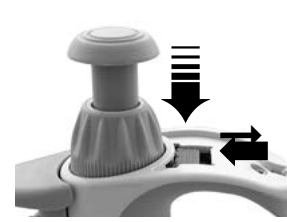
Step 2

Remove the protective film. Push the red adjustment slider completely back, and raise the volume-setting wheel and release the adjustment slider.



Step 3

Set displayed volume to actual value (e.g., 98.5 µL).



Step 4

Push the adjustment slider back, push the volume-setting wheel downwards and release the adjustment slider.

Step 5

Reinsert the label and window. It's adjusted!

Dispensette® S Digital example

Gravimetric testing yields a delivered volume of 9.90 mL at a set volume of 10 mL. The instrument can be adjusted in three easy steps.



Step 1

Open housing by moving slide lock.



Step 2

Lift the red lever on right, slide knob left to disengage gears; set the display to actual delivered volume (e.g., 9.90 mL), restore knob and lever position.



Step 3

Replace housing – done! Adjustment from factory setting is indicated by a red recalibration flag.

Suction bellows

Just a simple squeeze of the suction bellows powers the aspiration of up to 50 mL. Need to fill a 100 mL pipette? Just squeeze the bellows again and continue! The bellows are replaceable, if necessary, after years of use.

Blow-out bulb

Simply press the convenient blow-out bulb to empty the last drop from blow-out pipettes.

Unique valve system (inside)

Wide air channels allow fast filling of large pipettes. Sensitive valves give precise control of low-volume pipettes. The replaceable valve system is designed to ensure appropriate drain times for accurate measurement.

Pressure release valve (inside)

Valve facilitates easy compression of the suction bellows.

Pipette Adapter with Filter (inside)

Detachable, autoclavable silicone adapter fits 0.1-200 mL pipettes. Hydrophobic filter limits over aspiration into unit.



Simple thumb pressure controls aspiration and dispensing speed.

Pipetting Lever

A single lever controls filling, meniscus setting, and delivery speed, improved for finer control with small volume pipettes. Aspirate quickly for productivity or slowly for meniscus control. Press down gently on the lever to dispense drops; press firmly for a steady stream.



A laboratory standard for decades, the macro™ pipette controller has been completely redesigned for even finer control of all volumetric and serologic pipettes from 0.1-200 mL. All of the function that made this the world's favorite manual pipette controller has been retained - from the "one-size-fits-all" silicone adapter, and the reinforced ridge for easy tip wiping, to the sensitive toggle for smooth aspiration and dispensing.

- **Simplifies pipetting**—Operation is as simple as squeezing the suction bellows and adjusting a lever. One squeeze of the bellows powers aspiration and dispensing up to 50 mL. Equipped with a convenient blowout bulb to empty "to contain" pipettes. The macro™ is an excellent tool for laboratories with multiple and novice users.
- **Fits most pipettes**—The macro™ is compatible with glass and plastic 0.1 to 200 mL serological, volumetric, and graduated pipettes with a maximum suction tube outer diameter of 9.2 mm, calibrated "to deliver" and "to contain." The modified control mechanism allows finer control with small volume pipettes.
- **Improves lab ergonomics**—The macro™ eliminates the awkward hand positioning associated with rubber pipette bulbs while increasing control of meniscus-level and flow rate. Relaxed grip design, low weight 125 g (4oz.), and low-resistance operation minimize strain from prolonged pipetting.
- **Pipettes to Class A tolerances**—A 3 µm hydrophobic membrane filter (included) reduces cross-contamination, protects against overaspiration, and allows proper drain times for Class A pipettes.
- **Autoclavable for decontamination and sterile pipetting**—The macro™ withstands repeated autoclaving at 121° C.

macro™ Pipette Controller

Description	Cat. No.	2020 List Price
macro™ with spare 3µm filter and operating manual		
Gray	26200	\$88.00
Blue	26202	88.00
Magenta	26203	88.00
Green	26201	88.00

**macro™ Accessories**

Description	Cat. No.	2020 List Price
Membrane filter, 3 µm (PP, PTFE), non-sterile, each	26052	\$18.20
Membrane filter, 3 µm (PP, PTFE), non-sterile, pack of 10	26056	97.40
Silicone adapter, 44 mm long, each	26146	11.80
Adapter housing (gray PP) 49 mm long, each	26220	11.80
Silicone suction bellows with gray PP screw ring, each	26225	43.20
Valve system (PP, PTFE, Silicone), each	26128	47.40

accu-jet[®] *pro*

The BRAND[®] accu-jet[®] *pro* pipette controller incorporates comfort and performance features that make it one of the most popular pipette controllers on the market.

- **Comfort**—The accu-jet[®] *pro* is contoured for better fit for small and large hands. It is lightweight and well-balanced for low-fatigue pipetting.
- **Control**—Pressure-sensitive buttons control pipetting speed, plus a motor-speed-limiter control thumbwheel adds extra assurance with pipettes as small as 0.1 mL.
- **Charge indicator**—No need to worry about your pipette controller failing in the middle of your work. An LED indicates when approximately 2 hours of charge time is left. Plus, the instrument can be operated while charging.
- **Advanced electronics**—The accu-jet[®] *pro* features a long-life, environmentally-friendly Nickel-Metal hydride battery, with a special pulsed-mode charger to eliminate “lazy-battery effect.” Instrument supplies approximately 8 hours of continuous pipetting (with a 10 mL pipette) without recharging!
- **Ergonomic design**—The accu-jet[®] *pro* weighs only 190 g (6.7 oz.) and features a smoothly curved shape to eliminate pressure points for operator comfort.
- **Corrosion protection**—A built-in check valve protects against liquid penetration. The unique active vapor exhaust system vents externally to protect internal components.



The standard in
pipette controllers



Mission—Control

The accu-jet® pro adds a motor speed limiter to the pressure-sensitive buttons to provide accurate, intuitive control for the complete spectrum of pipettes from 0.1 mL to 200 mL.

- **Filling**—Simply use the upper button to bring liquid into the pipette; fill 50 mL in less than ten seconds
- **Gravity-delivery mode**—Ideal for analytical applications
- **Power-delivery mode**—Continuously adjustable dispensing speed from powered stream to dropwise dispensing including soft blowout—ideal for tissue culture applications

Speed limiter for extra assurance

For extra protection against over-aspiration or excessively powered discharge, set the speed limiter dial at low. For faster or larger volume, set at high. Pipette controller buttons still provide touch-sensitive speed control within the selected speed range.

Recharging

Dual-mode charger provides a quick charging of the environmentally-friendly NiMH battery in only 4 hours, for 8 hours of continuous, full-speed pipetting. After the full charge is complete, the charger switches automatically to a pulsed mode, to eliminate “lazy battery effect.” The accu-jet® pro is fully functional during recharging.

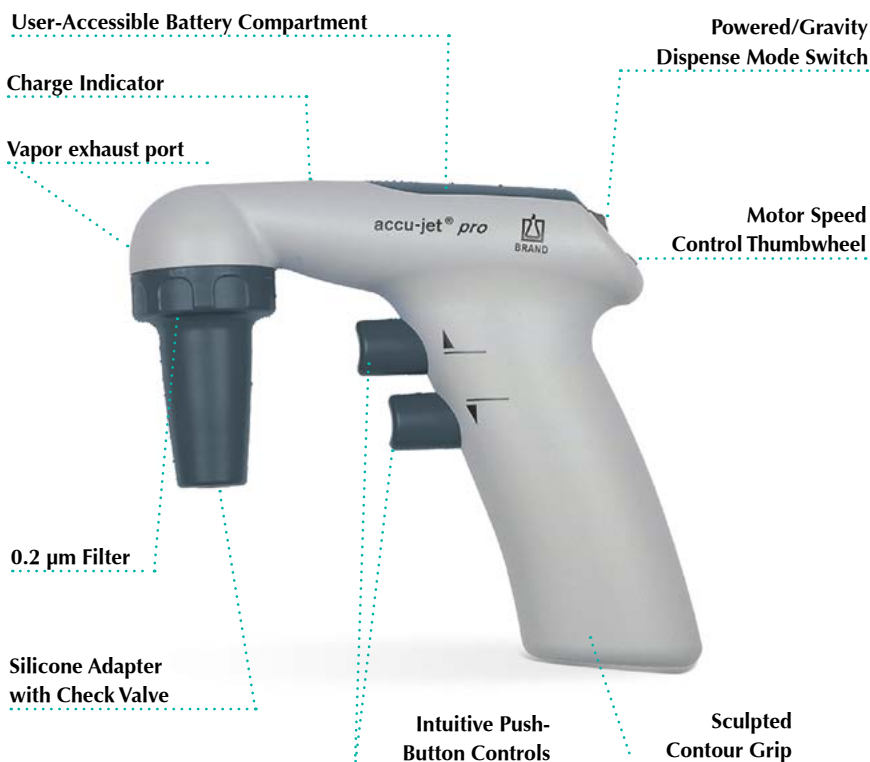
Storage

Ridged battery cover allows inverted storage of the instrument on the benchtop. To save bench space, an included wall support comes with snap tapes.

Items supplied

The accu-jet® pro pipette controller is supplied with:

- Wall support, gray
- NiMH battery
- Two battery covers; one smooth, one ridged
- Two spare, sterile* 0.2 µm membrane filters
- Charger (US plug models listed, others available)
- Operating manual
- One-year warranty



Description	Cat. No.	2020 List Price
accu-jet® pro pipette controller		
accu-jet® pro pipette controller, dark blue	26330	\$422.00
accu-jet® pro pipette controller, magenta	26331	422.00
accu-jet® pro pipette controller, green	26332	422.00
accu-jet® pro pipette controller, royal blue	26333	422.00
Spare parts & accessories		
Wall support, gray	26540	62.60
Silicone adapter with PTFE check valve	26508	36.20
Snap tapes, 12 x 65 mm	26542	32.00
Spare NiMH battery	26630	37.60
AC adapter input: AC 100-240 V, 50-60 Hz, US plug Output: DC 5 V/200mA	26603	84.80
Membrane filter, 0.2 µm, blister pack, sterile*, each	26530	15.00
Membrane filter, 0.2 µm, non-sterile, pack of 10	26535	119.60
Membrane filter for Class A pipetting, 3µm, blister pack, non-sterile, each	26052	18.20
Membrane filter for Class A pipetting, 3µm, non-sterile, pack of 10	26056	97.40
* Sterilized with ethylene oxide (EO)		

BVC Fluid Aspiration Systems

The BVC family of liquid aspiration systems are the first to account for the containment needs of a modern Biology laboratory.

- **Safety containment**—The BVC is available with a 2 or 4 liter vessel for safe collection and disposal of your biological waste. An autoclavable hydrophobic 0.2 µm aerosol safety filter protects the pump or other vacuum supply from biohazardous aerosols. The VHC^{PRO} hand controller keeps all fluid within the aspiration tubing for the ultimate in containment and cleaning convenience.
- **“Bleach proof”**—“G” models feature a 2 liter glass collection vessel with scratch and fragment protection coating for true bleach resistance. Standard versions include a 4 liter heavy duty polypropylene vacuum bottle for increased capacity.
- **Three models**—basic, control, and professional to serve your liquid aspiration needs. The control & professional models include an integrated vacuum pump; the basic requires an external vacuum source.
- **Reliable aspiration capability**—The control and professional models feature powerful VACUUBRAND® chemistry-design vacuum pumps with exceptionally long service life and enough power for two users. The professional model includes a contact-free liquid level sensor for worry-free aspiration. High quality components mean years of trouble-free operation even when working with aggressive disinfectants, resulting in low operating costs.
- **Compact, quiet and stylish**—Streamlined design incorporates bottle, controls and pump (control & professional models), in a lab friendly small footprint.
- **VHC^{PRO} hand controller**—Ergonomic design allows easy, comfortable fluid aspiration in a number of different hand positions.



BVC professional

VHC^{PRO} with optional stand



BVC basic

BVC professional G

Description	Cat. No.	2020 List Price
BVC BioChem-VacuuCenter systems		
BVC basic with 4 liter polypropylene bottle	20727000	\$1,111.40
BVC basic G with 2 liter glass bottle	20727100	1,217.40
BVC control, with 4 liter polypropylene bottle, 100-120 V, 50-60 Hz	20727203	2,216.80
BVC control G, with 2 liter glass bottle, 100-120 V, 50-60 Hz	20727303	2,327.00
BVC professional, with 4 liter polypropylene bottle, 100-120 V, 50-60 Hz	20727403	2,701.60
BVC professional G, with 2 liter glass bottle, 100-120 V, 50-60 Hz	20727503	2,701.60

Description	Cat. No.	2020 List Price
BVC Accessories		
4 liter collection bottle, polypropylene, with aspiration cap	20635810	\$478.60
2 liter collection bottle, glass, with aspiration cap	20635809	537.60
2 liter bottle adapter for BVC control and BVC professional (included in BVC control G and BVC professional G)	20635839	83.40
VHC ^{PRO} Vacuum Hand Controller with 2.5 meters of tubing	20688061	257.20
8-channel pipette tip adapter, with ejector for VHC ^{PRO}	20635679	455.60
Pipette tip adapter w/ ejector for VHC ^{PRO}	20635638	83.40
Stand for VHC ^{PRO}	20635680	158.40
Connector, to add second VHC ^{PRO} to BVC bottle aspiration cap	20699943	67.20
Aerosol filter, 0.2µm	20638266	52.20
Quick coupling to connect VHC ^{PRO} to BVC bottle aspiration cap	20635807	178.40
Quick coupling to connect bottle to pump	20635808	156.40
BVC Shuttle - allows easy movement of BVC under Biosafety cabinet	20696880	222.20



VHC^{PRO} with stand



VHC^{PRO} 8-channel adapter



BVC Shuttle

QuikSip™ Bottletop Aspirator

The QuikSip™ is a convenient bottletop aspirator that removes supernatants, cell culture media, and other biological liquids from dishes, flasks, culture bottles, centrifugation tubes, multiwell plates, and more. It is small, portable, and does not require an external vacuum or power source. The QuikSip™ includes a unique thumb-operated controller that is compatible with disposable pipette tips, micropipettes, and glass Pasteur pipettes.

Operating limits and exclusions

Liquids unsuitable for use with the QuikSip™ bottletop aspirator include, but are not limited to:

- Concentrated or oxidizing acids
- Non-polar solvents, such as hydrocarbons and halogenated hydrocarbons
- Hydrofluoric acid (HF)
- Reagents that attack PP, PE, EPDM, and silicone
- Temperature of instrument and reagents must be between 15° and 40° C
- Piston/cylinder cartridge and pump housing are not autoclavable

Items supplied with QuikSip™

- QuikSip™ controller with 200 cm of silicone tubing
- Two PP thread adapters 45/33 mm and 45/54 mm
- Spare piston/cylinder cartridge
- Operating manual
- One-year warranty

See page 47 for other adapters

Ordering information

Description	Cat. No.	2020 List Price
QuikSip™ bottletop aspirator	4723150	\$341.20
8-channel manifold; PP, autoclavable, pack of 1	704526	20.80
25 mL replacement piston/cylinder cartridge, pack of 3	704504	90.40

Bottles & adapters

See detailed listing on page 47.



VACUUBRAND® Vacuum Products

A Complete Range of Vacuum Solutions

VACUUBRAND has been a pioneer in laboratory vacuum for over 50 years, and brings convenience, performance, reliability, and economy to laboratory vacuum supply. VACUUBRAND® pump-control options also offer distinct productivity advantages compared with uncontrolled pumps, central vacuum systems, and competitive vacuum products.

- **Unsurpassed reliability**—Even with aggressive vapors. VACUUBRAND® chemistry diaphragm pumps have rugged diaphragms and valves made of corrosion resistant materials, and heads with a metallic stability core for long term reliability even in harsh chemical applications. 100% quality control testing after “run-in” ensures performance right out of the box.
- **Whisper quiet**—These are among the quietest diaphragm vacuum pumps available, operating at decibel levels comparable to a quiet conversation.
- **Lower lifetime cost**—The high flow rates, corrosion-resistant flow path materials, reliability (typical service intervals well in excess of 15,000 working hours) and durability of VACUUBRAND® pumps can save thousands of dollars per pump per year in operation and maintenance costs. Visit www.brandtech.com for details.
- **High performance**—Flow rates at typical operating pressures of VACUUBRAND® pumps are up to 100% greater than competitive oil-free pumps for faster evaporative applications and higher productivity.

Being the only manufacturer that makes nothing but vacuum technology for laboratory applications gives VACUUBRAND a unique perspective on the market. It gives them the ability to make “no compromise” application-specific solutions, for rotary evaporators, vacuum ovens, gel dryers, biofluid aspiration, and more.



PC 3001 VARIO® select
2 mbar, 1.2 cfm

Groundbreaking control for any vacuum application – VACUU·SELECT® electronic vacuum control

The **NEW VACUU·SELECT®** vacuum controller is a quantum leap forward in harnessing vacuum to perform your labwork. A multilingual touch screen interface uses smart-phone style icons to quickly navigate to the desired procedure for simple automation of rotary evaporation, short path distillation, concentration, filtration, drying ovens and more. Want to modify an existing procedure, or create a new one? Dragging and dropping application building blocks is as easy as swiping a finger.

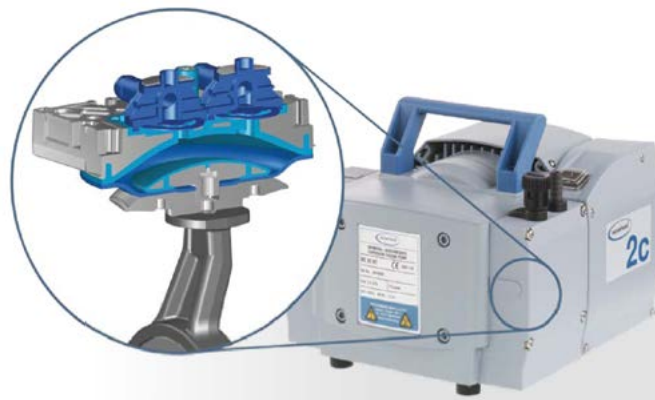
VACUU·SELECT® control is now incorporated in our pumping systems that have traditionally had electronic control. When paired with VARIO® speed controlled pumps, it delivers continuously optimized vacuum levels for faster evaporation without bumping. In the multitasking PC 520 select and PC 620 select vacuum system VACUU·SELECT® provides completely independent touch screen control for two applications.

VACUU·SELECT® control can also be brought to vacuum pumps from other manufacturers, or even central vacuum systems—subject to those systems performance specifications.



The essential oil-free, corrosion-resistant vacuum pump

High performance VACUUBRAND® chemistry-design diaphragm pumps provide dry vacuum levels as deep as 0.6 mbar, making them an excellent choice for most applications from benchtop research to pilot plant installations. Pumps without controls are well-suited to high flow applications like vacuum ovens, or for applications in which the control is provided by the vacuum application apparatus. Even operations that don't require solvent recovery or sophisticated control, benefit from a pump designed with your applications in mind. All chemistry-design multistage models feature an integrated gas ballast that permits continuous purging of condensed vapor from the pump.



Inset shows diaphragm head assembly, which incorporates thick fluoropolymer, molded over stability core, providing chemical resistance and long term reliability.

The VACUUBRAND nameplate—the sign of a quality product

VACUUBRAND continuously works to perfect an integrated management system in all departments; conforming with ISO 9001 and ISO 14001. The standard of performance is quality, customer focus, employee involvement and environmental orientation. Each vacuum pump goes through a performance test of hours to days at the VACUUBRAND facility, measuring specifications and equipment reliability with computer-controlled measuring and test instruments, with a fully automated final test. An interlock system prevents the manufacturing of a serialized nameplate until all test parameters are met. This ensures that every vacuum pump bearing the VACUUBRAND name is not only designed to an exceptionally high level engineering standard, but also offers extraordinary lifetime economy because of their low service costs and above-average lifetimes.

What's in a name?

A quick guide to VACUUBRAND diaphragm pump names

To get a better handle on the vacuum pump you are looking at, VACUUBRAND has a nomenclature that makes pump identification relatively easy:

M = "Membrane"/diaphragm pump

E, Z, D or V = From "eins," "zwei," "drei," and "vier" or 1, 2, 3 or 4 in German

Indicates the number of pump stages which gives vacuum depth. An "E" pump provides 70-100 mbar, and is suitable for filtration, degassing, solid-phase extraction, aspiration, dessication, and other pressure differential applications. Z, D, or V pumps provide increasingly deeper vacuum levels typically used for evaporative applications.

C = Chemistry design

A full fluoropolymer flowpath suitable for use with aggressive chemicals. If selecting a "non-C" diaphragm pump, make sure that the vapors passing through the pump are compatible with the materials of construction of the flowpath - typically aluminum and FKM elastomer (aluminum and PTFE in the case of the ME 1)

NT = "New Technology"

A series of pumps incorporating design changes for improved performance and easier service.

AK and EK = solvent recovery accessories

AK indicating a glass "accumulating" catchpot on the inlet (or in the case of 2AK, inlet and outlet), while EK represents an outlet "emission" condenser.

Synchro = Dual application system

A two-application vacuum system with flow control and check valves for each.

PC = Pumping unit, Chemistry

An integrated vacuum system with pump, solvent recovery, and control accessories.

SELECT = Electronic Control

Select models incorporate the innovative VACUU-SELECT® electronic controller.

Become a Vacuum Expert—A Short Course in Lab Vacuum

How deep of a vacuum do I need?

Vacuum pump specifications are typically stated as ultimate vacuum and flow rate. The ultimate vacuum required is task dependant. Most laboratory applications operate best in the range of 1-100 mbar. For filtration, liquid aspiration, and other pressure-differential (“fluid movement”) applications, 100 mbar is sufficient, achieving 90% of the possible “force” (i.e., potential pressure difference). An ultimate vacuum of 7 mbar is effective for rotary evaporation of most solvents more volatile than water. For challenging applications, like rotary evaporation of very high temperature boiling point solvents or centrifugal concentration of high boilers like DMF, a 2 mbar ultimate vacuum is needed. VACUUBRAND® oil-free diaphragm pumps can do the job for all the above applications. VACUUBRAND® oil-free pumps are whisper quiet, economical, and environmentally friendly, requiring no costly oil changes or cold traps to protect the pump. A good rule of thumb is “never use an oil pump when an oil-free pump will do the job.” Freeze-drying requires deeper vacuum, typically referred to as “fine vacuum”, in the range of 10^{-3} –1 mbar. Rotary vane or hybrid pumps are required for these applications.

What about “flow rate”?

The flow rate required for an application is determined by the application, system leakage, and your time requirements. The maximum flow rate, sometimes called “free air capacity” or “displacement”—specification of a vacuum pump represents its peak ability to move vapor at atmospheric pressure. It is important to note that actual flow rate decreases from the displacement specification to zero as a pump reaches its ultimate vacuum. A pump’s flow curve illustrates its working flow rate through its operating range and can be useful for the selection of the correct pump for an application (see figure to the right). If a pump can’t provide enough flow under vacuum, the application will proceed more slowly or in some cases not at all. VACUUBRAND® pumps are designed to retain more flow rate throughout their working range, and only drop off sharply close to their ultimate vacuum.

Control

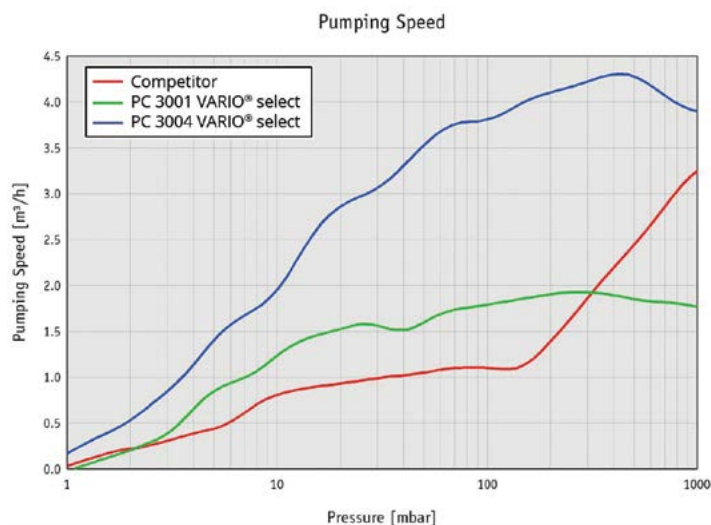
Gauges and controllers enable you to monitor and manage your laboratory vacuum applications. Whether you simply need to monitor your application, provide on/off control, need flow rate control, or require precise adaptive vacuum control, VACUUBRAND offers mercury-free gauges and controllers, as well as integrated systems to meet your requirements.

Solvent recovery

Catchpots and condensers protect the pump and your lab atmosphere from application vapors. An inlet catchpot captures condensed vapors from the vacuum line before they degrade pump performance. The outlet condenser (cooled by external means) and catchpot provide near 100% recovery of vapors that pass harmlessly through the pump’s corrosion-resistant fluoropolymer flowpath. Depending on the temperature of your application and the vapor pressure of your solvent, you may not even need a condenser, an outlet catchpot may be sufficient.

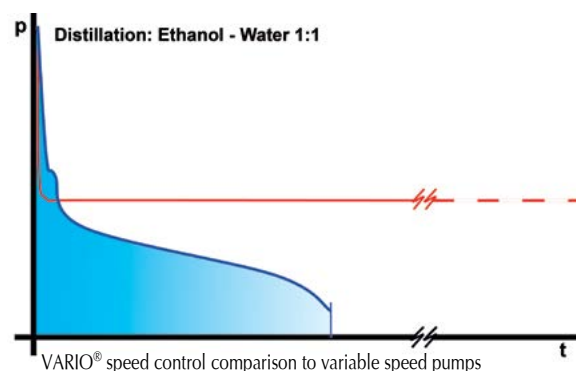
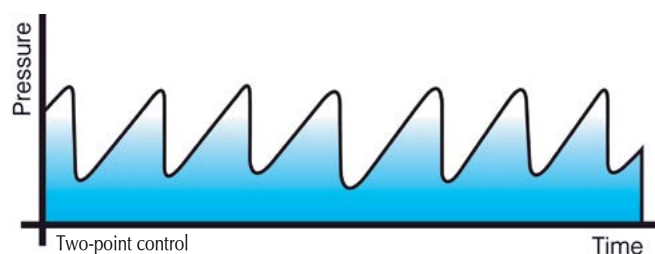
Corrosion resistance

Evaporative and other corrosive applications can be very destructive to ordinary vacuum pumps. Conventional rotary vane pumps require frequent oil changes and cold traps to minimize the damaging effects of corrosive chemical vapors. VACUUBRAND® oil-free chemistry-design pumps incorporate a fully chemistry resistant fluoropolymer flow path for excellent corrosion resistance and low maintenance. For non-corrosive, non-evaporative applications, VACUUBRAND also offers a comprehensive line of high-performance Aluminum-FKM diaphragm pumps.



Types of electronic vacuum control

- **Traditional two-point control**—Found in systems with single-speed pumps, such as, the PC 620 select two-application system or non-VARIO® single application systems. Analogous to a home thermostat, the pump runs until the desired setpoint is reached, at which point the vacuum supply is interrupted via a solenoid valve or, in less sophisticated systems, by turning off the pump. The vacuum level is allowed to rise to a set hysteresis above the setpoint, at which point vacuum supply is restored, maintaining the vacuum between two-points. In an evaporative application, the setpoint necessarily can not be below what would cause bumping and foaming. Every point above that - even within the hysteresis— is somewhat suboptimal for evaporation, lengthening the time of evaporation by some amount. As the solute concentration increases, the setpoint will need to be adjusted to maintain evaporation speed, either by programming or manual intervention.
- **VARIO® speed control**—VACUUBRAND's proprietary control for variable speed vacuum pumps automatically adjusts the speed of the vacuum pump to find boiling points and continuously optimize vacuum levels for faster evaporation. This results in reduced noise, maintenance, and electrical consumption, and improved solvent recovery when used with an outlet condenser. Increasing solute concentration or multiple solvents is easily handled with VARIO® speed control.
- **Variable speed pumps**—(as supplied by other manufacturers) Less sophisticated software can only find the first boiling point, often overshooting, requiring frequent manual intervention.



- Competitive product in the automatic mode - First boiling pressure is determined, and then maintained. Evaporation dramatically slows because the vacuum is not continuously adapted to changing boiling pressures in mixtures
- VACUUBRAND VARIO® controlled vacuum adapts automatically to all boiling points in the mixture, continuously optimizing the process for fast run times without bumping.

Vacuum pumps with manual control

Popular VACUUBRAND® chemistry-design vacuum pumps are available with manual flow control to provide the most basic management of vacuum where electronic control is unnecessary to achieve good results.

Centrifugal concentration, gel drying, and even simple rotary evaporation applications can often be effectively managed with manual control systems.

Diaphragm valve

A manually controlled PTFE diaphragm valve

Bourdon analog gauge

Dial (Bourdon) relative pressure gauge

Inlet catchpot

An "AK" inlet catchpot helps protect the pump from any condensation



Vacuum Pumps with Control

VARIO® vacuum with the VACUU-SELECT® controller

VACUUBRAND® VARIO® select vacuum systems offer users unsurpassed control of critical vacuum applications. A low maintenance chemistry-design pump is integrated with a variable speed motor and the VACUU-SELECT® touch screen controller. The system automatically finds and follows boiling curves, continuously optimizing the vacuum level without having to program presets. It's the ultimate productivity tool!

VARIO® vacuum with the VACUU-SELECT® controller.

Automatic control of all common lab applications with touch-screen control!

- **Intuitive**—The new VACUU-SELECT® controller offers smart-phone like intuitive operation of all aspects of vacuum control. Use or modify one of several different self-operating protocols for different applications, or assemble your own custom protocol using the easy drag and drop interface.
- **Faster**—VARIO® variable speed pumps continuously optimize the vacuum levels for up to 30% faster evaporations, even with solvent mixtures.
- **Less “babysitting”**—Protocols operate automatically, reducing the need for oversight, freeing you up to be a scientist rather than a machine operator.
- **Virtually no bumping**—VARIO® control gently approaches boiling points, minimizing bumping, foaming, or other artifacts of “overpumping” caused by lesser control options.
- **Nearly silent**—Standard VACUUBRAND® pumps are whisper-quiet, even when running at full speed. Typical VARIO® operation is a small fraction of that.
- **Extremely low maintenance**—Because the pump only runs as fast as necessary to maintain optimum vacuum, service intervals are greatly extended over the typical 15,000 working hours of full speed operation.
- **Sustainable**—VARIO® pumps not only eliminate the oil use and dry ice traps used for protective purposes of rotary vane pumps, they also have reduced use of wearing parts and electricity consumption compared with conventional diaphragm pumps. **The most sustainable vacuum pumps ever!**
- **Share protocols**—A USB port allows downloading and uploading of protocols on a flash drive.

Standard VACUUBRAND® two-point control (PC 510/610 select) and electronic multitasking systems (PC 511/520/611/620 select) also feature the VACUU-SELECT controller for intuitive operation, with the cost of a single speed pump.

Already have a pump? A VACUU-SELECT® complete vacuum controller can provide many of the convenience functions to your existing single speed diaphragm vacuum pump from any manufacturer. See page 78



PC 3001 VARIO® select
Vacuum System 2 mbar, 1.2 cfm

Low-profile outlet condenser reduces
height requirements.

Touch screen, automatic control
of all common lab applications!

Outlet condenser with catchpot

Condenser with an "EK" outlet catchpot captures vapors that pass through the pump, helping protect the lab atmosphere and environment

Electronic control

Solenoid valve, operated by a VACUU-SELECT® controller, provides precise two-point electronic control for critical applications

Manual control

PTFE diaphragm valve provides approximate control of vacuum levels for less demanding applications



PC 511 select
7 mbar, 1.4 cfm

Pumps with dual application control

VACUUBRAND® dual application vacuum systems harness the power of VACUUBRAND® oil-free pumps to increase lab efficiency and reduce the cost of vacuum generation. Operating two different applications from a single pump saves money and lab bench space.

These vacuum systems are available with manual control, electronic control, or both. Integrated check valves minimize interaction between applications.

All dual application systems include a high-performance 7 mbar or 1.5 mbar VACUUBRAND® NT series vacuum pump. Select a 7 mbar system (MZ 2C NT Synchro™, PC 511 select, or PC 520 select) for most lab applications and 1.5 mbar systems (MD 4C NT Synchro™, PC 611 select, PC 620 select) for larger applications or those with higher boiling point solvents.

Selecting the best pump for your application

Vacuum Pump Selection Guide online!

Not sure which vacuum pump or system is best for your lab? Help is available through the VACUUBRAND® Vacuum Pump Selection Guide.

This free guide has been designed to suggest an appropriate VACUUBRAND® vacuum pump or system for a wide variety of laboratory applications, including fluid aspiration, centrifugal concentration, rotary evaporation, and more.

Simply choose "Vacuum Pump Selection Guide" from the left hand navigation menu at www.brandtech.com to find the guide. Answer a few simple questions about your application. The software suggests the pump, controls, and solvent capture accessories that are right for your application. It even offers options for limited budgets or applications where control is critical. Because applications can vary, these suggestions are a great starting point to discuss with your BrandTech® representative.

Networked Vacuum

VACUU·LAN® Mini-Network

The VACUU·LAN® Mini-Network is a great way to serve up to three applications from a single pump, increasing utility without eating up valuable lab space. It builds on VACUUBRAND's pioneering technology in vacuum local area networks for new laboratories and renovations, transferring the technology into a simple-to-install unit to add capability to existing labs. Three VACUU·LAN® vacuum ports with flow control are mounted onto a bar—each port has an integrated check valve to minimize

interference and the possibility of cross-contamination. Corrosion resistant materials are used throughout the vapor flowpath for long life in chemistry labs. The bar can be mounted to ring stands or laboratory framework with the pre-installed mounting support rods, or can be easily attached to walls. Vacuum can be supplied by any VACUUBRAND® chemistry-design pump, or even diaphragm pumps from other manufacturers.



VACUU·LAN Mini Network (for ordering information see page 81)

VACUU·LAN vacuum port



VACUU·LAN® networks for new lab construction and renovation

Fully-customized VACUU·LAN® vacuum local area networks can provide the vacuum for your laboratory construction or renovation project.

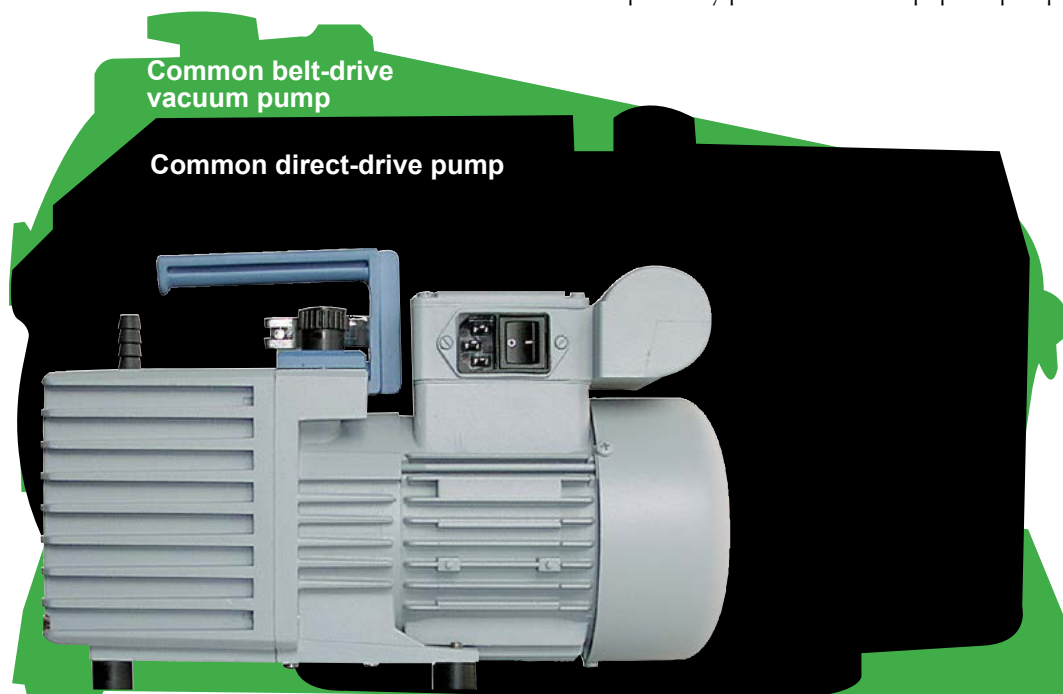
The modular network can be integrated into laboratory furniture and fume hoods, and powered by a quiet, compact VACUUBRAND® chemistry design vacuum pump that fits under your lab bench. With a VACUU·LAN® vacuum local area network, you have high-performance vacuum (as deep as 2 mbar/1.5 Torr) at each bench or fume hood port, without the instability and user interference of a central vacuum system, and without the bench space required for individual pumps. Individual ports can even be configured for electronic control, for fully programmable vacuum supply directly from the network. This modular approach offers long-term flexibility; install the vacuum you need where you need it, only when you need it.

Two decades of global experience developing VACUU·LAN® laboratory vacuum local area networks, for small college labs and major research institutions, make this VACUUBRAND innovation the smart choice for your laboratory vacuum. For more information on this innovative technology, contact BrandTech® Scientific.

Rotary Vane Pumps

VACUUBRAND XS-Series rotary vane vacuum pumps for fine vacuum applications

- **Rugged**—The XS-series have been designed from the ground-up for service in chemistry labs. They provide exceptional water vapor tolerances with minimal impact on ultimate vacuum. Internal components are designed to improve corrosion resistance, reduce wearing forces, enhance performance and simplify maintenance. Internal steel surfaces are nitrogen-plasma treated for chemical resistance and mechanical hardness.
- **Quiet**—XS-pumps are extremely low-noise and low vibration, even compared to earlier VACUUBRAND® rotary vane models.
- **Energy efficient**—Pumps have very low power consumption and generate low levels of waste heat compared to competitive models.
- **Great value**—On top of all of these advantages, VACUUBRAND® XS-series rotary vane pumps are competitively priced with other popular pumps.



vacuubrand

Big vacuum in a small package! VACUUBRAND® RZ 2.5

Extremely compact compared to popular pump models

- **Compared with a belt-drive pump**, the RZ 2.5 takes up 1/3 of the bench space, weighs half as much, occupies less than 1/4 the volume, and delivers superior flowrates.
- **Compared with competitive direct drive pumps**, the RZ 2.5 takes up half the space and weighs half as much.

Don't forget...

Adding accessories to your rotary vane pump can extend the pump lifetime and make your workplace more pleasant.

- **Inlet hose barbs**—Match the pump to your vacuum hose. A 10 mm (3/8") polypropylene hose barb is included with RZ 2.5 and RZ 6 pumps, inlet centering and clamping rings (and outlet, where applicable) are included with the pump.
- **Inlet catchpot**—Collects condensates and particles from the vacuum line, before they can contaminate pump oil and reduce pump lifetime.
- **Oil mist filter**—Captures up to 99% of oil-mist from the outlet of your pump, keeping your lab atmosphere and bench top clean (included with RC 6).
- **Pump oil B**—For best performance, and long life, use Pump Oil B (supplied with all new pumps). Its special viscosity formula is an excellent choice for VACUUBRAND® pumps.

Vacuum Applications

Vacuum pumps provide the operational muscle for your rotary evaporator. As such VACUUBRAND offers a full range of pumps and systems with integrated control that help optimize your rotary evaporation application.

To find the vacuum pump or system that best meets your needs, answer the following questions:

How much vacuum do I need?

The vacuum capacity required from a pump to support a rotary evaporation application is determined by the typical application temperatures and the solvents being evaporated. Virtually all rotary evaporation applications can be accomplished with diaphragm vacuum pumps. The vacuum pump should have the ability to reach the vapor pressure of the solvent at the application temperature. For most common solvents and bath temperatures, a two-stage (MZ-series) pump provides sufficient vacuum levels, whereas for high boiling point solvents, such as DMF, DMSO or NMP, a three-stage (MD-series) pump would be preferred.

How much control do I need?

Rotary evaporation applications often require significant oversight and control because the heat and high surface area increase evaporation rates. This can lead to solvent “bumping” or boiling over if vacuum is poorly controlled.

VARIO® adaptive vacuum control

The best way to prevent bumping is with a self-regulating, hysteresis-free vacuum control. Adaptive control, an innovation exclusive to VACUUBRAND® VARIO® pumps and systems, combines an electronic controller and a speed-controlled motor. Over twenty years of proprietary software refinement allows our VARIO® pumps to automatically perform the following tasks:

- Find and follow boiling points, hysteresis-free, without programming, even for solvent mixtures or changing conditions
- Evaporate up to 30 percent faster than two point control
- Shut the pump off when evaporation is completed

For most benchtop rotary evaporators, the PC 3001 VARIO® select vacuum system is an excellent choice. The powerful integral pump provides a deep 2 mbar ultimate vacuum – enough to evaporate DMSO at a bath temperature of 50° C. It's truly the ultimate system for the benchtop rotary evaporator.

Manual control

For applications that require only minimal control, select the economical PC 101 NT vacuum system for basic evaporation and vapor capture. It includes a 7 mbar MZ 2C NT pump along with a stand, inlet catchpot, and outlet condenser, plus a manual flow-control valve and dial gauge for economy. It's an excellent choice for basic evaporation. Or support two evaporators with an economical, space-saving Synchro™ system. See pages 69 & 81 for description and ordering information.

Did you know?

Outlet condensers not only help collect solvent vapors, keeping the lab atmosphere clean, but they also make VACUUBRAND® pumps even quieter!



PC 3001 VARIO® select Vacuum System
2 mbar, 1.2 cfm



PC 101 NT
7 mbar, 1.4 cfm



The VACUU-SELECT® complete vacuum controller lets you select a setpoint, run a complex program 'ramp', or even automatically find the first boiling point. It works with benchtop diaphragm pumps from all manufacturers.

Do I need solvent recovery?

Solvent vapor that makes it past the evaporator's condenser can condense in the vacuum line. For best pump performance, an inlet catchpot "AK" can keep these condensed vapors out of the pump. Solvent vapors that pass through the pump can be captured efficiently at atmospheric pressure at the diaphragm pump outlet with an outlet condenser "EK," minimizing pollution of the laboratory environment.

Consider the MD 1C +AK+EK for labs that already have a stand-alone vacuum controller or one integrated into their evaporator. It features the same chemistry-design pump and solvent recovery as the 2 mbar PC 3001 VARIO® select system, but without control.

For applications that do not require either control or solvent recovery, consider a stand alone pump such as the MZ 1C or MD 1C. They provide superior flow rates at working vacuum to competitive pumps, with a significantly lower price and very small footprint. Integrated gas ballast provides high condensate tolerance. The MD 1C is also preferred by customers who address vacuum control and solvent recovery through other methods.



MZ 1C
vacuum pump
12 mbar, 0.5 cfm

Electronic control

Some rotary evaporation applications might benefit from control, but might not require the precision of adaptive control. The PC 510 select system is an excellent choice for these applications. It is a great workhorse system for evaporation of many common solvents in rotary evaporators up to 5 liters in size. The integrated MZ 2C NT pump evaporates all but the highest boiling point solvents at reasonable bath temperatures, and the system includes a controller that allows preset or semi-automatic setting of vacuum level, with appropriate hysteresis adjustment. Solvent recovery is provided by an inlet catchpot and outlet condenser.

Need to run two evaporators? Consider the PC 520 select. See pages 69 & 81 for description and ordering information. It will provide different conditions to two applications at once, saving bench space and the cost of an additional pump or system. If you have a limited budget and anticipate needing a second electronically controlled port in the future, consider a PC 511 select or PC 611 select. The second flow-controlled port adds minimal cost, but can easily be upgraded to full electronic control with the purchase of a VACUU-SELECT® complete (see page 78).

What about larger or multiple rotary evaporators?

BrandTech® and VACUUBRAND offer the most comprehensive line of chemistry-design diaphragm vacuum pumps, including models that can operate rotary evaporators up to 100 liters or larger, with or without integrated VARIO® adaptive control.

We also offer systems that will run two different evaporation applications simultaneously without interference! Still not sure? Contact BrandTech® Scientific for more information.

NOT SURE WHAT PUMP IS RIGHT FOR YOUR NEEDS?

See our Vacuum Pump Selection Guide at www.brandtech.com.



MD 1C +AK+EK
vacuum pump
2 mbar, 0.88 cfm

Vacuum Oven/Gel Dryer Vacuum Solutions

Vacuum oven solutions

How much vacuum do I need?

Vacuum ovens typically require a pump with vacuum levels below 10 mbar because the evaporative effect of elevated temperature is often offset by the poor thermal transfer of the oven environment.

How much flow do I need?

Due to the highly variable solvent content and sample size, choosing an appropriate vacuum pump for an oven can be challenging. A distinction should be made between residual drying of damp samples vs. drying of high moisture content "wet" samples, which require considerably more flowrate. For residual drying, some assumptions can be made based on oven size.

The MZ 2C NT +2AK vacuum pump is an excellent selection for labs with smaller vacuum ovens (<1.0 cubic foot in capacity) and semi-dry samples. Its performance, small footprint, and integrated catchpots for solvents make it a popular choice for gels and residual drying. Evaporation of higher boiling point solvents, however, may require a more powerful pump, such as the MD 1C +AK+EK.

Laboratories with larger ovens (>1.0 cubic feet in capacity) or with samples having a high moisture content do well with the PC 201 NT. It can generate vacuum levels for evaporation of most solvents, and its high flow rate reduces process times. For truly wet samples, calculations should be made to determine the right pump size. Contact BrandTech® Scientific for assistance.

Why use a cold trap?

Using a cold trap for solvent recovery gives users greater flexibility when selecting a pump for vacuum ovens. The cold trap reduces vapor loads and eliminates the need for solvent capture by the pump. These applications are typically best-served by a stand alone pump such as the compact, economical MD 1C vacuum pump.



MD 1C
vacuum pump
2 mbar, 0.88 cfm

Gel dryer vacuum solutions

How much vacuum do I need?

The vacuum level required for gel drying applications is usually determined by the concentration of SDS-PAGE. For standard-sized gels with SDS-PAGE concentrations up to 10%, select the MZ 2C NT +2AK. It has the power to provide excellent results in most gel-drying applications and its two catchpots capture condensing vapors for clean operation.



MZ 2C NT+2AK
vacuum pump
7 mbar, 1.4 cfm

For SDS-PAGE concentrations greater than 10%, choose the MD 1C +AK+EK. Its integral pump achieves deeper vacuum levels for enhanced evaporative performance, and the catchpots and condenser protect the pump and the lab atmosphere without the cost and inconvenience of a cold trap.



PC 201 NT
vacuum system,
1.5 mbar, 2.2 cfm

Filtration, SPE and aspiration

Fluid movement applications, such as filtration, fluid aspiration, and solid phase extraction, typically don't require deep vacuum levels or high flow rates. For fluid aspiration, the best choice is usually an integrated solution like our BVC control or professional (see page 62).

However, when using an unpowered collection system like the BVC basic, or for filtration or SPE, these types of applications are best served by the VACUUBRAND® ME 1C and ME 4C NT. Users seeking additional capability or users with special circumstances, may

want to consider the VACUUBRAND® MZ 2C NT +2AK or MD 1C +AK+EK pumps with integrated solvent recovery.

When choosing the pump for your filtration or solid phase extraction application, consider the following factors:

How much vacuum do I need?

Vacuum filtration and solid phase extraction typically require just enough vacuum depth to generate a pressure differential between atmospheric pressure and the receiving vessel. These applications do not usually require control unless the vacuum level is too deep and may cause filtrate boiling.

The ME 1 vacuum pump is an excellent selection for most fluid movement applications. It is a simple, compact, stand alone pump with sufficient vacuum to perform effective vacuum filtration. For acidic vapors, choose the ME 1C.



ME 1C Vacuum Pump
100 mbar, 0.5 cfm

How much flow do I need?

Labs running multiple filtration applications may require a pump with higher flow rates to maintain sufficient vacuum at all workstations.

For 2-4 filtrations, choose the ME 2C NT; for more than 4 filtrations, the ME 4C NT vacuum pump is an excellent pump. The higher flow rate ensures better results and faster process times in large-scale filtration labs. For solid phase extraction (SPE), choose the ME 2C NT for small applications, the ME 4C NT for medium size, and the ME 8C NT for larger scale extractions.

Do I need solvent recovery?

During normal filtration and solid phase extraction applications, solvent recovery is not typically needed. However, pumps with higher performance and solvent recovery can support a broader range of applications or may be suitable for teaching laboratories, where aspiration of liquids may be inevitable. They are an excellent choice for labs seeking to support several different applications with only one pump.



MZ 2C NT +2AK
Vacuum Pump 7 mbar, 1.4 cfm

Environmental Responsibility

For decades, VACUUBRAND has looked at environmentalism from both a manufacturing and product side. They manufacture pumps designed to minimize their impact on the environment, through reduced energy and water consumption, solvent capture, and elimination of waste oil, all while conforming to the ISO 14001 standard. Recycling waste material and heat, collecting rainwater for non-potable applications, and more has been the norm at VACUUBRAND long before it was fashionable. Find out more at vacuubrand.com

Centrifugal Concentration Vacuum Solutions

The high performance and convenience of VACUUBRAND® pumps and systems makes them an excellent choice for most centrifugal concentration applications. VACUUBRAND offers a wide variety of pumps for excellent, reproducible results. When selecting the best pump for your lab, consider the following issues:

How much vacuum do I need?

Centrifugal concentration generally requires greater ultimate vacuum than other evaporative applications because it is usually performed at room temperature. Fortunately, VACUUBRAND® diaphragm pumps are available with enough power for room temperature evaporation of solvents with boiling points as high as that of DMF.

The performance demands of most tabletop concentrators are often well served with one of VACUUBRAND's three-stage vacuum pumps, the MD 1C or MD 4C NT. Both of these pumps are powerful enough to evaporate DMF. Select the MD 1C for supporting smaller concentrators and the MD 4C NT with its higher flow rate for larger benchtop concentrators. For more volatile solvents, a pump like an MZ 2C NT would be an excellent choice.

For very high boiling point solvents at room temperature, such as DMSO or ethylene glycol, rotary vane technology may be required. We suggest the unique RC 6 Chemisty-HYBRID™ pump for deeper vacuum with maximum convenience.

Do I need solvent recovery?

Large centrifugal concentrators often come with cold traps, reducing the need for integrated solvent recovery with the pump. Concentrators without cold traps should have solvent recovery integrated with the pump to prevent pump contamination and pollution of the laboratory environment.

When using a small concentrator without a cold trap, choose the MD 1C +AK+EK. It provides excellent flow rates at working vacuum to effectively operate a smaller concentrator without a cold trap (something not possible with many competitive pumps). It also captures solvent vapors itself.

Are my samples prone to bumping?

When samples often bump in a centrifugal concentrator, control may be necessary to prevent cross-contamination. For more volatile solvents, use our VARIO® systems that adjust vacuum levels automatically.

What about larger concentrators?

VACUUBRAND® pumps are available for “mega” sized concentrators used in the drug discovery marketplace. Please contact BrandTech® Scientific for assistance in selecting the best pump for these applications.



MD 12C VARIO® select,
1.5 mbar, 8.8 cfm

Pump economy and sustainability

When comparing the costs of vacuum pumps, it is important to include accessories that are needed and lifetime repair and maintenance costs. Rotary vane pumps require mist filters, catchpots, and cold traps (including dry ice, liquid nitrogen or electricity costs), plus frequent oil changes. Competitive diaphragm pumps have much shorter service intervals (3,000-4,000 hours) compared with VACUUBRAND® oil-free pumps (15,000+ hours), and competitive diaphragm pumps often recommend cold traps to enhance performance, adding substantially to operating costs and inconvenience.



MD 4C NT vacuum pump
1.5 mbar, 2.2 cfm

Lyophilization is a demanding vacuum application that requires a deeper vacuum than can be achieved with diaphragm technology alone. It is usually best-served by the innovative VACUUBRAND® RC 6 Chemistry-HYBRID™ pump.

How much vacuum do I need?

Lyophilization applications typically require vacuum levels as deep as 10^{-3} mbar. Traditionally, this requirement has been provided by oil-sealed rotary vane pumps.

To help users combat the high costs and contamination of rotary vane pumps, VACUUBRAND developed the RC 6 Chemistry-HYBRID™ pump. The RC 6 combines a rotary vane pump for vacuum capacity with a chemistry-design diaphragm pump to maintain peak performance uncompromised by solvent contamination, by continuously cleaning the pump oil during operation. This design also reduces oil changes and maintenance costs by up to 90%. The RC 6 Chemistry-HYBRID™ pump, like other oil-sealed pumps, should always be operated with a cold trap.

What about larger applications?

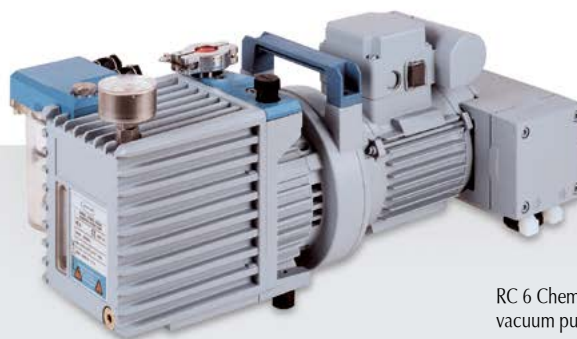
The RC 6 Chemistry-Hybrid™ pump may be used with freeze dryers with condensers of 6, 12, or 18 liters. VACUUBRAND also offers a full line of rotary vane pumps with the power to easily meet the demands of larger applications and the innovative design and quality assurance of VACUUBRAND® pumps.

For applications larger than 18 liters, contact BrandTech®.

Rotary vane options?

BrandTech® Scientific recommends that you should “never use an oil pump when an oil-free pump will do the job.” However, certain applications require deeper vacuum levels than oil-free pumps can provide.

When these situations arise, consider the RC 6 Chemistry HYBRID™ pump or a VACUUBRAND® rotary vane vacuum pump such as the RZ 2.5, RZ 6, or RZ 9. These pumps feature the same high performance, innovative design, and quality assurance as VACUUBRAND® oil-free vacuum pumps and systems. See page 71 for more information.



RC 6 Chemistry-HYBRID™
vacuum pump 2×10^{-3} mbar, 4.1 cfm

Save money with a VACUUBRAND® system!

Because VACUUBRAND® pumps provide high flow-rates at working vacuum levels, they can provide cost savings, both initially, and over the life of the pump.

- **Synchro™** multi-tasking systems harness the power of the VACUUBRAND® pump for two applications, reducing the cost per application.
- **No cold trap required** to protect VACUUBRAND® chemistry diaphragm pumps in most applications; a huge cost saving in purchase and refrigerant costs.
- **Productivity savings** with the self-adjusting VARIO® systems, which free you up to perform other work with minimal pump oversight. Their continually optimized vacuum levels speed evaporation by up to 30%.
- **Modular distributed vacuum systems** enable even greater saving by delivering vacuum where you need it. See page 70 for VACUU-LAN® systems.

Find out more details on how to save money with VACUUBRAND® vacuum pumps at www.brandtech.com.

Vacuum Gauges & Controllers

VACUUBRAND® vacuum gauges and controllers enable you to monitor and control vacuum generation for most laboratory applications. Gauges are compatible with most laboratory vacuum pumps and house vacuum, and feature both analog and digital displays. They help to rid laboratories of toxic, harmful mercury by replacing McLeod gauges and other manometers.

- **Meets the requirements of most vacuum applications**—VACUUBRAND® vacuum gauges cover the range from atmospheric pressure to 1×10^{-3} mbar/Torr/hPa. They are easy to read and feature a digital readout and analog indicator to simplify both data recording and trend-monitoring.
- **Rugged operation**—Gauges and controllers are manufactured without fragile springs or glass tubes and feature corrosion-resistant transducers to ensure rugged, reliable operation.
- **Displays results in your units**—Vacuum gauges and controllers provide results in millibar, Torr, or hectoPascal.

DVR 2pro vacuum gauge

Analog and digital display for easy monitoring of most lab applications. A transducer of corrosion-resistant ceramic for durability measures absolute pressures from atmosphere to 1 mbar/Torr/hPa with user-selectable units. Easily accessible battery power with adjustable sleep timer for long battery life.

VACUU-SELECT® complete

Innovative touch screen display provides smart-phone like convenience to vacuum control. Includes routines for nearly all laboratory applications. Custom modify standard routine procedures, or use the drag-and-drop menu to assemble your own application. A revolution in vacuum technology!

VACUU-SELECT® + VACUU-VIEW® Extended Pirani control packages for “High Vac” applications

These packages enable convenient two point vacuum control in the fine vacuum range down to 10^{-3} mbar. They consist of a VACUU-SELECT® vacuum controller, a VACUU-VIEW extended external combination capacitive-Pirani vacuum sensor, a VV-B 15C high performance chemistry in-line solenoid valve, and all necessary small flange components. Control is achieved by use of an in-line solenoid valve, minimizing noise and oil-mist generation.

VACUU-VIEW® and VACUU-VIEW® extended gauges

Vacuum gauges with corrosion-resistant transducers designed especially for the rigors of laboratory use. Both gauges are mercury-free, feature KF 16 small flange vacuum connections, with screw-in hose barbs to allow fitting of 6-10 mm ID vacuum hose.



DVR 2pro



VACUU-SELECT® complete benchtop stand



VACUU-SELECT® display (for Pirani control packages)



VACUU-SELECT® + VACUU-VIEW® extended, Pirani control package



VACUU-VIEW® extended and VACUU-VIEW gauges



VACUUBRAND Transducer Technology

Vacuum gauges and controller feature corrosion-resistant transducers designed especially for the rigors of laboratory use. All VACUUBRAND® transducers are mercury-free. VACUU-BUS® connections allow easy interfacing with VACUUBRAND® accessories, and universal power supplies are included (except DVR 2pro).

The VACUU-VIEW® gauge features a capacitive transducer made of alumina ceramic, and is suitable for absolute pressure readings in the rough vacuum range (atmosphere to 0.1 mbar/hPa/Torr). The VACUU-VIEW® extended features a dual technology gauge head — a capacitive transducer for absolute pressure readings in the rough vacuum range, paired with a Pirani transducer for measurements in the fine vacuum range. Both transducers have alumina ceramic wetted surfaces for corrosion and shock resistance.



Mercury-free,
digital/analog vacuum
instruments



Product comparison				Measuring principle		
Name	Battery-powered	Chemical resistant	Lower measuring limit in mbar	Diaphragm (Capactive)	Heat conduction (Pirani)	Measurement gas type independent
VACUU-VIEW	–	✓	0.1	✓	–	✓
VACUU-VIEW Extended	–	✓	0.001	✓	✓	Yes (>5 mbar)
DVR 2pro	✓	✓	1	✓	–	✓
VACUU-SELECT® complete	–	✓	0.1	✓	–	✓

Non-Chemistry Diaphragm Vacuum Pumps

VACUUBRAND® Aluminum-FKM (e.g., Viton®) vacuum pumps are intended specifically for non-corrosive, non-evaporative applications. They are excellent for laboratory and process-plant applications including gas transfer, backing turbo pumps, and vacuum filtration. All wetted parts of these pumps are made of aluminum, FKM, and polyethylene. Aluminum-FKM pumps should not be used with organic solvents, corrosives, or other vapors inconsistent with the materials of construction.

- **Eliminates oil changes**—These pumps utilize diaphragm vacuum technology for totally dry operation. There is no oil to change or monitor.
- **Reduces maintenance**—Diaphragms typically withstand over 15,000 hours of use before replacement – that's years in most applications, minimizing downtime and service costs. When it is finally time for service, their unique design eliminates tedious, trial-and-error stroke length recalibration.
- **Improves productivity**—These pumps feature specially engineered pump heads for high flow rates at working vacuum. Higher flow rates mean reduced process times and higher throughput.
- **Ensures reliable use**—All VACUUBRAND® pumps and systems must pass rigorous product testing before leaving the factory. It's your assurance of a reliable pump.
- **Quiet operation**—Aluminum-FKM pumps operate very quietly, at about the same volume as a conversation.
- **FKM double diaphragm**—FKM double planar diaphragms provide high performance and increased reliability.
- **Broad product range**—Pumps with vacuum as deep as 0.3 mbar and flow rates as high as 10.8 cfm (307 lpm).



ME 8 NT vacuum pump
70 mbar, 4.6 cfm



ME 1 vacuum pump
100 mbar, 0.5 cfm

ME 8 NT:

A popular choice for plate washers, cell harvesters, and other applications that require high flowrates with relatively shallow vacuum.

ME 1:

Features PTFE diaphragm and valves for enhanced corrosion resistance (not for use with acidic vapors). An excellent choice for filtration (see page 75).



Vacuum Pump Ordering Information

Chemistry design pumps

			Ultimate Vacuum		Free Air Capacity at 60 Hz			2020
Model	Controller(s)	Solvent Recovery	mbar	Torr	cfm	lpm	Cat. No.	List Price
Oil-Free Chemistry design diaphragm vacuum pumps								
ME 1C*	No	No	100	75	0.5	14	20721103	\$1,156.80
ME 2C NT	No	No	70	52	1.4	40	20730103	2,114.80
ME 4C NT	No	No	70	52	2.5	72	20731203	3,124.60
ME 4C NT +2AK								
100-120 V/200-230 V, 50-60 Hz***	No	Yes**	70	52	2.5	72	22614080	4,059.80
ME 8C NT*	No	No	70	52	4.6	130	20734203	5,295.00
ME 16C NT	No	No	70	53	10.8	307	20741303	Inquire
MZ 1C*	No	No	12	9	0.5	15	20724103	2,051.80
MZ 2C NT	No	No	7	5	1.4	38	20732303	3,125.60
MZ 2C NT +2AK	No	Yes**	7	5	1.4	38	20732503	4,082.80
MD 1C*	No	No	2	1.5	0.9	25	20696613	3,774.20
MD 1C +AK+EK	No	Yes	2	1.5	0.9	25	20696633	5,991.00
MD 4C NT	No	No	1.5	1.1	2.2	52	20736403	7,027.00
MD 12C NT	No	No	2	1.5	7.8	221	20743303	Inquire
MV 10C NT	No	No	1.5	1.1	6.3	178	20744303	Inquire

Accessories for oil-Free diaphragm vacuum pumps

VACUU-LAN® Mini-Network	22614455	1455.20
ME 1C vacuum regulation valve with manometer (suitable for use with the MZ 1C and MD 1C)	20696843	383.20
Power cord, L-shaped 120 V, US	20637655	\$42.40

Oil-free Chemistry design single application vacuum system

PC 101 NT	1 Manual	Yes	7	5	1.4	38	20733003	3,979.00
MZ 2C NT +AK+EK	1 Manual	Yes	7	5	1.4	38	20732603	4,191.00
MD 4C NT +AK+EK	1 Manual	Yes	1.5	1.1	2.2	63	20736703	8,282.20
PC 510 select	1 Electronic	Yes	7	5	1.4	38	20733153	7,714.40
PC 201 NT	1 Manual	Yes	1.5	1.1	2.2	63	20737003	7,417.20
PC 610 select	1 Electronic	Yes	1.5	1.1	2.2	63	20737153	11,991.40

Oil-free Chemistry design dual application vacuum systems

MZ 2C NT Synchro™	2 Manual	Yes	7	5	1.4	38	20732803	5,286.80
	1 Electronic							
PC 511 select	+1 Manual	Yes	7	5	1.4	38	20733253	8,394.60
PC 520 select	2 Electronic	Yes	7	71	1.4	38	20733353	11,492.80
MD 4C NT Synchro™	2 Manual	Yes	1.5	1.1	2.2	52	20736803	9,385.40
	1 Electronic							
PC 611 select	+1 Manual	Yes	1.5	1.1	2.2	52	20737253	12,542.60
PC 620 select	2 Electronic	Yes	1.5	1.1	2.2	52	20737353	15,324.00

Oil-free Chemistry design VARIO® adaptive single application vacuum systems

ME 16C VARIO® select	Adaptive	No	70	53	11.8	334	20741753	Inquire
MZ 2C VARIO® select	Adaptive	No	7	5	1.6	47	20732453	Inquire
MD 4C VARIO® select	Adaptive	No	1.5	1.1	2.7	77	20736553	12,280.00
MV 10C VARIO® select	Adaptive	No	0.6	0.45	7.7	218	20744753	Inquire
MD 12C VARIO® select	Adaptive	No	1.5	1.1	8.8	249	20743753	Inquire
PC 3001 VARIO® select	Adaptive	Yes	2	1.5	1.2	33	20700203	9,163.20
PC 3002 VARIO® select	Adaptive	Yes	7	5	1.6	47	20733553	9,761.20
PC 3003 VARIO® select	Adaptive	Yes	0.6	0.45	1.6	47	20738453	13,434.60
PC 3004 VARIO® select	Adaptive	Yes	1.5	1.1	2.7	77	20737553	13,049.60
PC 3010 NT VARIO® select	Adaptive	Yes	0.6	0.45	7.7	218	20744853	Inquire
PC 3012 NT VARIO® select	Adaptive	Yes	1.5	1.1	8.8	249	20743853	Inquire
PC 3016 NT VARIO® select	Adaptive	Yes	70	53	11.8	334	20741853	Inquire

* Can be fitted with vacuum regulation valve 20696843. **Outlet catchpot for solvent collection only. *** US power cord (#20637655) not included.

Note: All pumps 120 V, 60 Hz unless noted.



Vacuum Pump Ordering Information

Aluminum-FKM diaphragm vacuum pumps for non-corrosive applications

Model	Ultimate Vacuum		Free Air Capacity at 60 Hz		Cat. No.*	2020 List Price
	mbar	Torr	cfm	lpm		
ME 1	100	75	0.5	14	20721003	\$911.00
ME 2 NT	70	52	1.3	37	20730003	1,475.60
ME 4 NT	70	52	2.6	73	20731003	2,292.20
ME 8 NT	70	52	4.8	135	20734003	4,114.20
ME 16 NT	70	53	10.8	307	20741003	Inquire
MZ 2 NT	7	5.2	1.4	40	20732003	2,292.20
MD 1, 100-120 V/200-230 V, 50-60 Hz	1.5	1.1	0.82	23	20696087**	2,724.80
MD 4 NT	1	0.75	2.5	72	20736005**	4,324.40
MD 12 NT	2	1.5	7.8	222	20743003	Inquire
MV 2 NT	5x10 ⁻¹	4x10 ⁻¹	1.4	40	20738003	4886.80
MV 10 NT	5x10 ⁻¹	3.8x10 ⁻¹	6.8	193	20744003	Inquire

Accessory

Vacuum regulation valve with manometer for ME 1	20696842	191.00
Vacuum regulation valve with manometer for ME 2 NT	20696840	352.00
Power cord, 120 V, 60 Hz	20612065	30.40

* All pumps 120 V, 60 Hz unless noted. **Dual voltage pumps require purchase of a power cord.

Vacuum gauges & controllers

Model	Cat. No.	2020 List Price
DVR 2pro Vacuum Gauge, battery operated (9 V, alkaline)	20682906	\$996.00
VACUU-VIEW, 100-230 V, 50-60 Hz	20683220	1,316.20
VACUU-VIEW extended, 100-230 V, 50-60 Hz	20683210	1,507.20
VACUU-SELECT® complete vacuum controller, frame rod version 100-230 V, 50-60 Hz (with integrated chemistry solenoid valve and check valve)	20700080	3,482.40
VACUU-SELECT® complete vacuum controller, benchtop version, 100-230 V, 50-60 Hz (with integrated chemistry solenoid valve and check valve)	20700070	3,382.80
VACUU-SELECT® + VACUU-VIEW® extended KF 16 (Pirani control package), all inclusive, for rotary vane pumps with KF 16 small flange inlets (RZ 2.5, RZ 6, RC 6)	20700100	4,617.20
VACUU-SELECT® + VACUU-VIEW® extended KF 25 (Pirani control package), all inclusive, for rotary vane pumps with KF 25 small flange inlets (RZ 9)	20700110	4,688.60

Rotary vane pumps

Model	Ultimate Vacuum		Free Air Capacity at 60 Hz		Cat. No.	2020 List Price
	mbar	Torr	cfm	lpm		
RZ 2.5 100-120 V/200-230 V, 50-60 Hz, US plug	2x10 ⁻³	1.5x10 ⁻³	1.6	47	20698126	\$2,645.00
RZ 6 100-120 V/200-230 V, 50-60 Hz, US plug	2x10 ⁻³	1.5x10 ⁻³	4.0	113	20698136	3,632.40
RZ 9, 120 V, 60 Hz, US plug	2x10 ⁻³	1.5x10 ⁻³	6.0	170	20698143	4,659.20
Chemistry-HYBRID vacuum pumps						
RC 6, 100-120 V, 50-60 Hz, US plug	2x10 ⁻³	1.5x10 ⁻³	4.1	115	20698563	7,818.40

Model	Cat. No.	2020 List Price
Accessories for your VACUUBRAND® rotary vane pump and RC 6		
KF 16 to 10 mm (3/8") hose barb, fits RZ 2.5, RZ 6, and RC 6 inlet, aluminum	20662511	\$46.00
KF 25 to 19 mm (3/4") hose nipple, fits RZ 9 inlet and outlet, aluminum	20662532	64.00
Inlet catchpot for RZ 2.5	20698000	441.80
Inlet catchpot for RZ	20698006	647.80
Inlet catchpot for RZ 9	20698007	555.60
Oil mist filter for RZ 2.5	20698003	614.40
Oil mist filter for RZ 9	20698017	759.00
Pump Oil B, 1 liter bottle	20687010	56.60
Pump Oil B, 5 liter can	20687011	199.40

Other flanges, clamping rings, and centering rings available, contact BrandTech® Scientific.



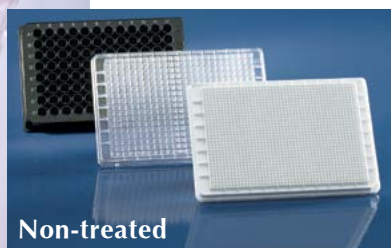
BRANDplates® Microplates

Modern research methods require high-quality disposables. BRANDplates® microplates from BRAND® can be used in all important fields of life science.

BRAND® has applied its decades of experience in premium-quality molding of lab plastic consumables from pipette tips to volumetric plasticware to cuvettes, to the challenges of microplate design. Plates are designed to minimize cross-contamination, ensure excellent recovery, and offer many options in color, well-count, surface-treatment, and well-shape.

For this comprehensive line, nine different surfaces have been developed under state-of-the-art production conditions.

The product line covers a multitude of standard applications (e.g., homogenous assays, screenings) as well as applications in the fields of immunology and cell culture technique.



Non-treated



Immunology



Cell culture

Non-treated surfaces

pureGrade™
pureGrade™ S

Immunology surfaces

immunoGrade™
hydroGrade™
lipoGrade™

Cell culture surfaces

cellGrade™
cellGrade™ plus
cellGrade™ premium
inertGrade™

A comprehensive, premium-quality line of plates for cell culture and immunoassay



BRANDplates® Microplates

Surfaces

BRANDplates® microplates are offered with 9 surface options. The surface modifications are generated via a physical-chemical process that creates stable surfaces for storage at room temperature. To enable easy identification of the surface type and well location, 96-well standard format plates have a color-coded embossing.

All BRANDplates® microplates are manufactured according to ANSI/SLAS-Standards 1 to 4, 2004 and are free from endotoxins, DNase, DNA, and RNase. Sterilized plates are guaranteed to an SAL of 10^{-6} .

Non-treated surfaces

pureGrade™	non-treated, "medium binding," non-sterile
pureGrade™ S	non-treated, "medium binding," sterile

Immunoassay surfaces

immunoGrade™	ideal for immobilization of IgG, "high binding," non-sterile
hydroGrade™	hydrophilic, ideal for immobilization of hydrophilic molecules, non-sterile
lipoGrade™	hydrophobic, ideal for immobilization of hydrophobic molecules, non-sterile

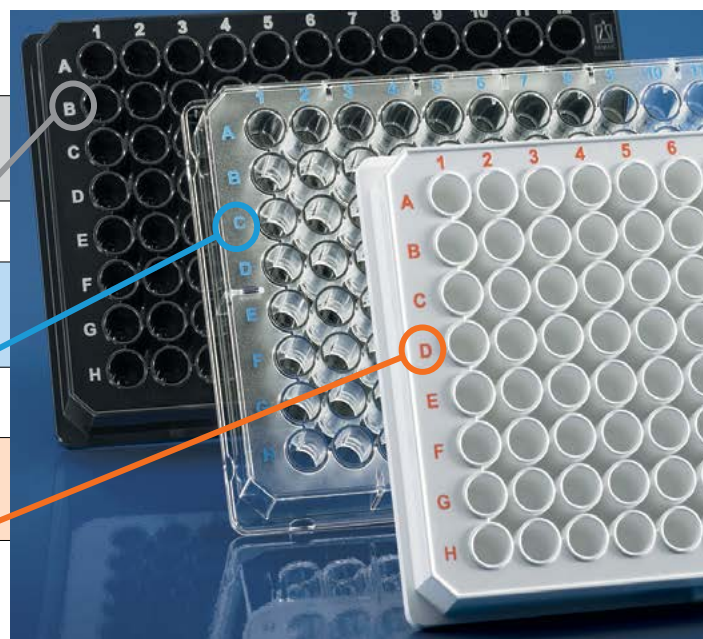
Cell culture surfaces

cellGrade™	standard tissue culture surface for the cultivation of adherent cell lines, sterile
cellGrade™ plus	surface for the cultivation of fastidious adherent cells making serum-reduced cultivation possible, sterile
cellGrade™ premium	surface treatment with similar properties to poly-D-lysine, serum-reduced or serum-free cultivation is possible, sterile
inertGrade™	surface that inhibits adhesion of cells, e.g., and reduces protein adsorption for cultivation of suspension and stem cells, sterile

Color codes—96-well plates

To enable easy identification of the surface type and facilitate legibility of the alphanumeric coding, BRANDplates® microplates in the 96-well standard format have a color-coded embossing. All microplates have alphanumeric coding.

Gray Coded	Non-treated microplates for the most diversified applications
Blue Coded	Microplates for immunoassays such as ELISA, RIA, FIA, etc.
Orange Coded	Microplates for cell culture applications



Well-count, colors, and well-shape

BRANDplates® microplates are available in a variety of different colors, well-number, and well shapes. Different combinations of these characteristics create the broad product range of BRANDplates® microplates.

Well number

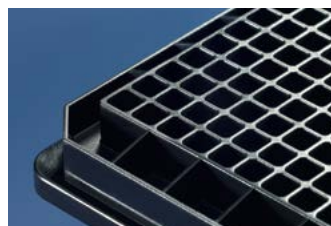
BRANDplates® microplates are offered in 96-, 384-, and 1536-well formats. BRANDplates® microplates with 96-well standard format are manufactured with a “chimney well” design. Each individual well is separated from each other to reduce cross contamination risk. In addition, lids with condensation rings are available for substantial reduction in evaporative losses. In the 384- and 1536-well microplates, rounded wells allow optimal uniform meniscus formation.

Colors and plate types

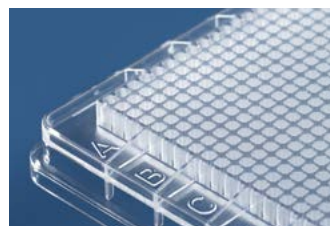
The application to be performed in the plate generally determines the color of the plates used. A basic rule is—transparent for colorimetry; white for luminescence; and black for fluorescence. Plates are available as standard solid color plates or colored with transparent bottoms depending on the optical requirements of the application.



96-well white microplate



384-well black microplate



1536-well clear microplate



Transparent bottom microplates

Well shape

96-well BRANDplates® microplates are offered with four distinct bottom shapes. 384-well and 1536-well microplates are only available with flat-bottom (F-bottom).

Round (U-bottom)—Round bottom plates have no edges and are suitable for stirring and washing of samples. This bottom shape is used for agglutination and other assays requiring these tasks.

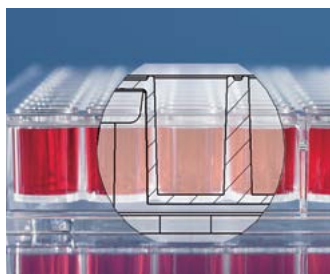
Flat (F-bottom)—Flat bottom plates are designed for precise optical measurements. Useful for many applications, including cell culture of adherent cell types.

Conical (V-bottom)—Conical bottom plates are maximized for sample recovery after centrifugation, precipitation assays, and storage applications.

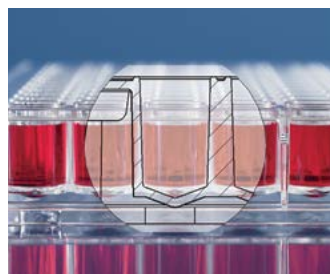
Curved (C-bottom)—The curved bottom is a flat bottom with curved edges. By combining the advantages of round and flat bottom plates, better sample mixing is obtained with precise optical measurements for immunological assays.



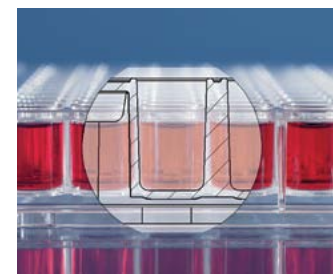
Round bottom (U)



Flat bottom (F)



Conical bottom (V)



Curved bottom (C)

BRANDplates® Microplates

Samples and plate selection

Given the broad range of available plates, use BRAND®'s online plate selection guide at www.brandtech.com/plateselection to select the optimum plate for your application. Samples are available without cost or obligation.

Barcodes

BRAND® can provide high-quality and customized barcode labeling for your plate needs. Contact BrandTech® for more information.

Accessories

BRAND® offers many accessories for use with microplate products such as lids, sealing films, and more. Lids with and without condensation rings are optimally matched to the corresponding BRANDplates® microplate to protect samples. For enhanced protection against contamination and evaporation, self-adhesive sealing films are available in a variety of materials and can be easily applied with a sealing paddle.

Condensation Rings	Height	Sterile	Pack of	Cat. No.	2020 List Price
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Lids for 96-well standard plates

Yes	8 mm	No	Pack of 100 (5 lids per bag)	782150	\$170.00
No	8 mm	No	Pack of 100 (5 lids per bag)	782151	172.00

For BRANDplates® microplates Cat. No. ranges: 781600-08, 781660-68, 781720-29, 781780-82, 781840-42, 781900-02, 781960-68, 782022-28, 782082

Lids for 96-well plates with transparent bottom and all 384-well plates

No	4.5 mm	No	Pack of 50 lids (10 lids per bag)	782152	112.40
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For BRANDplates® microplates Cat. No. ranges: 781610-27, 781670-87, 781731-42, 781910-11, 781970-87, 782030-31, 782090-91

Lids for all 1536-well plates

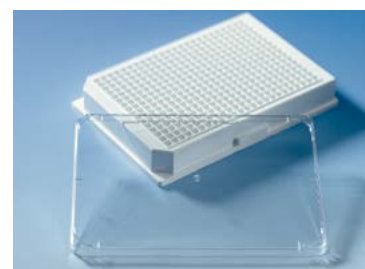
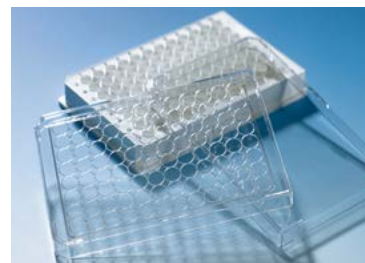
No	5.5 mm	No	Pack of 50 lids (10 lids per bag)	782153	112.40
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For BRANDplates® microplates Cat. No. ranges: 781640-42, 781700-02, 782000-02

Application	Description	Material	Pack of	Cat. No.	2020 List Price
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Self-adhesive Sealing Films

Real-Time PCR and crystallization	Single film, transparent, non-tacky	Polyolefin	100 sheets	781391ES	\$260.40
PCR and ELISA	Single film	Polypropylene	100 sheets	781390	131.20
NEW! PCR Sealing Film Strips, 1x8 Rows/Strip	8 strips/sheet	Polyester	400 sheets	781383	45.80
ELISA	Single film	Polyester	100 sheets	701390ES	78.80
ELISA	Mini-Strips (x4)	Polyester	50 4-strips	701391ES	63.00
ELISA	Single film with assorted color tabs	Polyester	5 packs of 10 sheets	701392ES	63.00
Cell and Tissue Culture	Single film, gas-permeable	Rayon	100 sheets	701364	131.20
Cell and Tissue Culture	Single film, gas-permeable, sterile	Rayon	50 sheets	701365	99.80
Pierceable and Resealable for Automation	Single film	Vinyl	100 sheets	701396ES	136.40
Cold Storage	Single film	Aluminum	100 sheets	781381	224.40
Cold Storage and Automation, Universal Fit	Single film	Aluminum	100 sheets	701395ES	120.80
NEW! Aluminum Foil Strips, 1 x Rows/Strip	6 strips/sheet	Aluminum	300 sheets	781382	56.00
DMSO Sample Storage	Single film, DMSO-resistant	Polypropylene	100 sheets	701367	331.80
Adhesive-free Zones for Automation	Single film	PE/PP	50 sheets	701370	157.40
Fluorescence Measurements	Single film	Black Vinyl	50 sheets	701371	89.40
Luminescence Measurements	Single film	White Vinyl	50 sheets	701372	73.40
Sealing Paddles for Sealing Films			Pack of 2	701381	19.60



Sealing paddles

BRANDplates® microplates at a glance

96-well Microplates

Type		Non-treated		Immunological surfaces			Cell culture surfaces			
Standard										
Color	Bottom / Well volume	pureGrade™	pureGrade™ S	immunoGrade™	hydroGrade™	lipoGrade™	cellGrade™	cellGrade™ plus	cellGrade™ premium	inertGrade™
transparent	U / 330 µL	781600	781660	781720	781780	781840	781960	—	—	781900
transparent	V / 360 µL	781601	781661	781721	—	—	781961	—	—	—
transparent	F / 350 µL	781602	781662	781722	781782	781842	781962	782022	782082	781902
transparent	C / 350 µL	781603	781663	781723	—	—	781963	—	—	—
white	U / 330 µL	781604	—	781724	—	—	—	—	—	—
white	F / 350 µL	781605	781665	—	—	—	781965	782025	—	—
white	C / 350 µL	—	—	—	—	—	—	—	—	—
black	U / 330 µL	781607	—	781727	—	—	—	—	—	—
black	F / 350 µL	781608	781668	—	—	—	781968	782028	—	—
black	C / 350 µL	—	—	781729	—	—	—	—	—	—
With transparent bottom										
Color	Bottom / Well volume	pureGrade™	pureGrade™ S	immunoGrade™	hydroGrade™	lipoGrade™	cellGrade™	cellGrade™ plus	cellGrade™ premium	inertGrade™
white	F / 330 µL	781610	781670	—	—	—	781970	782030	782090	781910
black	F / 330 µL	781611	781671	781731	—	—	781971	782031	782091	781911
Strip plates										
Color	Bottom / Well volume	pureGrade™	pureGrade™ S	immunoGrade™	hydroGrade™	lipoGrade™	cellGrade™	cellGrade™ plus	cellGrade™ premium	inertGrade™
transparent, without grid	F / 360 µL	782300	—	782305	—	—	—	—	—	—
transparent, with grid	F / 350 µL	782301	—	782306	—	—	—	—	—	—

384-well HTS Microplates

Type		Non-treated		Immunological surfaces			Cell culture surfaces			
Standard										
Color	Bottom / Well volume	pureGrade™	pureGrade™ S	immunoGrade™	hydroGrade™	lipoGrade™	cellGrade™	cellGrade™ plus	cellGrade™ premium	inertGrade™
transparent	F / 100 µL	781620	781680	781740	—	—	781980	—	—	—
white	F / 100 µL	781621	781681	781741	—	—	781981	—	—	—
black	F / 100 µL	781622	781682	781742	—	—	781982	—	—	—
With transparent bottom										
Color	Bottom / Well volume	pureGrade™	pureGrade™ S	immunoGrade™	hydroGrade™	lipoGrade™	cellGrade™	cellGrade™ plus	cellGrade™ premium	inertGrade™
white	F / 120 µL	781626	781686	—	—	—	781986	—	—	—
black	F / 120 µL	781627	781687	—	—	—	781987	—	—	—

1536-well UHTS Microplates

Type		Non-treated		Immunological surfaces			Cell culture surfaces			
Standard										
Color	Bottom / Well volume	pureGrade™	pureGrade™ S	immunoGrade™	hydroGrade™	lipoGrade™	cellGrade™	cellGrade™ plus	cellGrade™ premium	inertGrade™
transparent	F / 10 µL	781640	781700	—	—	—	782000	—	—	—
white	F / 10 µL	781641	781701	—	—	—	782001	—	—	—
black	F / 10 µL	781642	781702	—	—	—	782002	—	—	—

For plate selection guide go to www.brandtech.com/plateselection

Non-treated BRANDplates® for General Applications

pureGrade™

Non-treated surface, “medium binding,” non-sterile

- Standard plate for most applications
- PS, non-sterile
- Particularly applicable for homogeneous assays, screening, and storage
- Strip plates available (see page 89)

pureGrade™

Color	Bottom	Well volume	Cat. No.	2020 List Price
96-well standard microplates				
transparent	U-bottom	330 µL	781600	\$137.40
transparent	V-bottom	360 µL	781601	137.40
transparent	F-bottom	350 µL	781602	137.40
transparent	C-bottom	350 µL	781603	137.40
white	U-bottom	330 µL	781604	241.40
white	F-bottom	350 µL	781605	241.40
black	U-bottom	330 µL	781607	241.40
black	F-bottom	350 µL	781608	241.40

Pack of 100 plates (20 stacks of 5 plates; 1 lid per stack)

96-well transparent bottom microplates

white	F-bottom	330 µL	781610	692.60
black	F-bottom	330 µL	781611	692.60

Pack of 100 plates (4 bags of 25 plates)

384-well standard microplates

transparent	F-bottom	100 µL	781620	127.40
white	F-bottom	100 µL	781621	207.80
black	F-bottom	100 µL	781622	207.80

Pack of 50 plates (5 bags of 10 plates)

384-well transparent bottom microplates

white	F-bottom	120 µL	781626	593.00
black	F-bottom	120 µL	781627	593.00

Pack of 50 plates (2 bags of 25 plates)

1536-well standard microplates

transparent	F-bottom	10 µL	781640	1,028.60
white	F-bottom	10 µL	781641	1,028.60
black	F-bottom	10 µL	781642	1,028.60

Pack of 50 plates (5 bags of 10 plates)

pureGrade™ S

Non-treated surface, “medium binding,” sterile

- Sterilized via β -radiation
- PS, sterile
- Especially suited for bacteriological assays, screening, and storage

pureGrade™ S

Color	Bottom	Well volume	Cat. No.	2020 List Price
96-well standard microplates				
transparent	U-bottom	330 µL	781660	\$152.00
transparent	V-bottom	360 µL	781661	152.00
transparent	F-bottom	350 µL	781662	152.00
transparent	C-bottom	350 µL	781663	152.00
white	F-bottom	350 µL	781665	225.80
black	F-bottom	350 µL	781668	225.80

Pack of 50 plates (individually wrapped, with lid)

96-well transparent bottom microplates

white	F-bottom	330 µL	781670	621.20
black	F-bottom	330 µL	781671	621.20

Pack of 50 plates (individually wrapped, with lid)

384-well standard microplates

transparent	F-bottom	100 µL	781680	204.80
white	F-bottom	100 µL	781681	251.80
black	F-bottom	100 µL	781682	251.80

Pack of 50 plates (individually wrapped, with lid)

384-well transparent bottom microplates

white	F-bottom	120 µL	781686	819.60
black	F-bottom	120 µL	781687	819.60

Pack of 50 plates (individually wrapped, with lid)

1536-well standard microplates

transparent	F-bottom	10 µL	781700	1,259.40
white	F-bottom	10 µL	781701	1,259.40
black	F-bottom	10 µL	781702	1,259.40

Pack of 50 plates (individually wrapped, with lid)



Strip Plates for Immunology Applications

BRANDplates® strip plates offer high flexibility for immunoassay development. Available in two configurations of well strips in a frame with a grid, or in a frame without a grid, strip plates allow the end user to use only as many wells as necessary. In addition, two surface treatments are available for increased specificity in high binding or medium binding applications.

Selection tips:

Select a frame style (12 x F8):

- a. **Frames without a grid** allow for individual strips to be removed from the frame and reinserted. With this style frame, the strips are not divisible.
- b. **Frames with a grid** allow for individual strips to be removed from the plate and reinserted. Each strip can be divided into 8 individual vessels and inserted individually into the frame plate.

Select a surface treatment:

- c. **pureGrade™** plates are non-treated, medium binding plates. These are designed for the widest variety of applications and for binding of protein as well as nucleic acids and more.
- d. **immunoGrade™** plates are non-sterile, high binding plates. These are optimized for the immobilization of IgG and the standard ELISA assay. This surface treatment will allow for binding of a wide range of molecules, particularly with protein populations with mixed hydrophilic and hydrophobic regions.



pureGrade™

Color	Bottom	Well volume	Cat. No.	2020 List Price
Strip plates 12 x F8				
transparent, without grid, strips of 8 wells, not divisible	F-bottom	360 µL	782300	\$839.60
transparent, with grid, strips of 8 wells, divisible	F-bottom	350 µL	782301	892.00

Pack of 100 plates (4 bags of 25 plates)

immunoGrade™

Color	Bottom	Well volume	Cat. No.	2020 List Price
Strip Plates 12 x F8				
transparent, without grid, strips of 8 wells, not divisible	F-bottom	360 µL	782305	\$839.60
transparent, with grid, strips of 8 wells, divisible	F-bottom	350 µL	782306	892.00

Pack of 100 plates (4 bags of 25 plates)



BRANDplates® Microplates for Immunoassays

Suitable for ELISA, RIA, FIA, and Other Immune Testing

immunoGrade™

Optimized for the immobilization of IgG

- Optimized for immobilization of IgG, offering highest binding capacity for molecules with mixed hydrophilic and hydrophobic regions
- Surface of choice for the majority of standard ELISAs
- Suitable for solid phase immunoassays
- “High-binding”
- PS, non-sterile
- Strip plates available (see page 89)

immunoGrade™

Color	Bottom	Well volume	Cat. No.	2020 List Price
96-well standard microplates				
transparent	U-bottom	330 µL	781720	\$228.80
transparent	V-bottom	360 µL	781721	228.80
transparent	F-bottom	350 µL	781722	228.80
transparent	C-bottom	350 µL	781723	228.80
white	U-bottom	330 µL	781724	351.60
black	U-bottom	330 µL	781727	351.60
black	C-bottom	350 µL	781729	351.60

Pack of 100 plates (20 stacks of 5 plates; 1 lid per stack)

96-well transparent bottom microplates

black	F-bottom	330 µL	781731	734.60
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Pack of 100 plates (20 stacks of 5 plates; 1 lid per stack)

384-well standard microplates

transparent	F-bottom	100 µL	781740	225.80
white	F-bottom	100 µL	781741	225.80
black	F-bottom	100 µL	781742	225.80

Pack of 50 plates (10 stacks of 5 plates; 1 lid per stack)

hydroGrade™

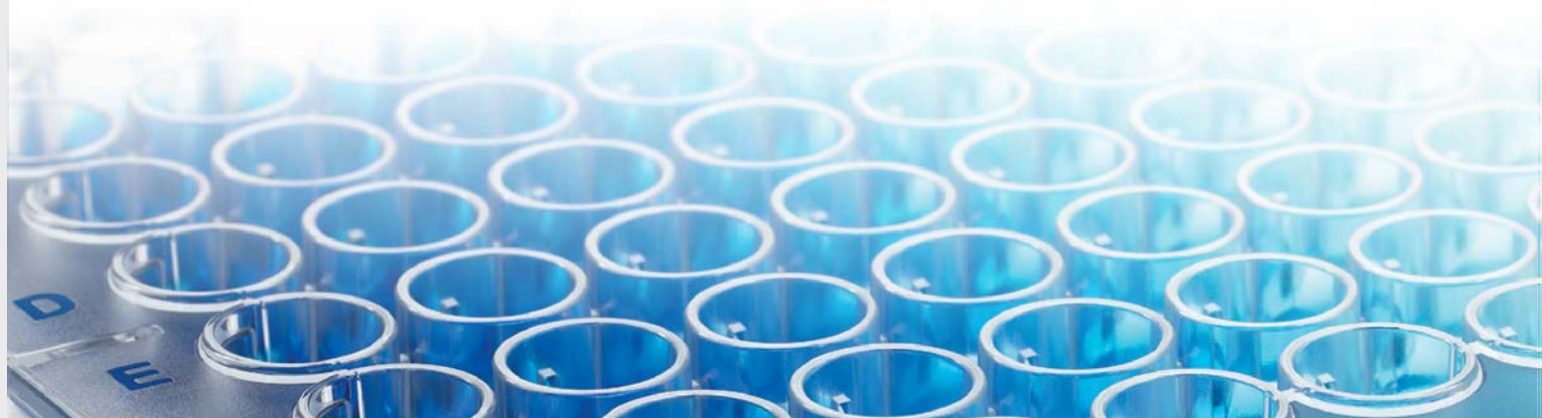
For the immobilization of hydrophilic molecules

- Strongly hydrophilic, with high affinity to hydrophilic molecules, such as glycoproteins and peptides, antibodies with predominantly hydrophilic regions, and nucleic acids
- Alternative to immunoGrade™ surface when performing solid phase assays
- Alternative for homogeneous assays with hydrophobic molecules that remain in solution
- PS, non-sterile
- For solid phase with hydrophilic molecules and liquid phase with hydrophobic molecules

hydroGrade™

Color	Bottom	Well volume	Cat. No.	2020 List Price
96-well standard microplates				
transparent	U-bottom	330 µL	781780	\$251.80
transparent	F-bottom	350 µL	781782	251.80

Pack of 100 plates (20 stacks of 5 plates; 1 lid per stack)



lipoGrade™

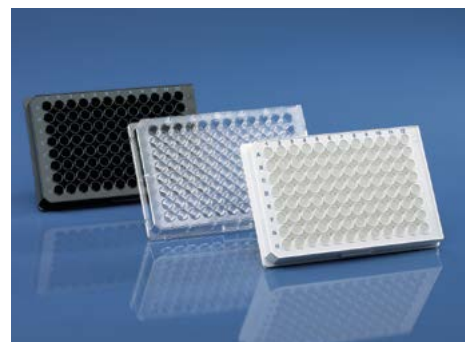
For the immobilization of hydrophobic molecules

- Strongly hydrophobic (lipophilic), for immobilization of biomolecules with predominantly hydrophobic regions
- Alternative to immunoGrade™ surface for immobilization of molecules such as lipoproteins or peptides
- Specially suited for liquid phase assays when the reaction component should stay in solution—majority of hydrophilic biomolecules are not immobilized on this surface
- PS, non-sterile
- For solid phase with hydrophobic molecules and liquid phase with hydrophilic molecules

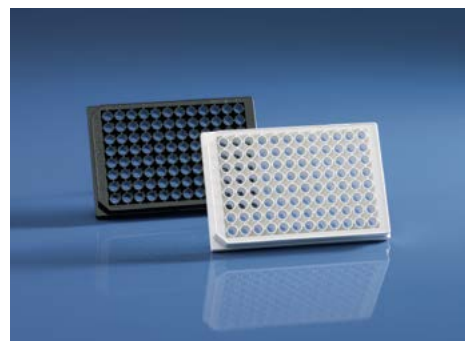
lipoGrade™

Color	Bottom	Well volume	Cat. No.	2020 List Price
96-well standard microplates				
transparent	U-bottom	330 µL	781840	\$152.20
transparent	F-bottom	350 µL	781842	152.20

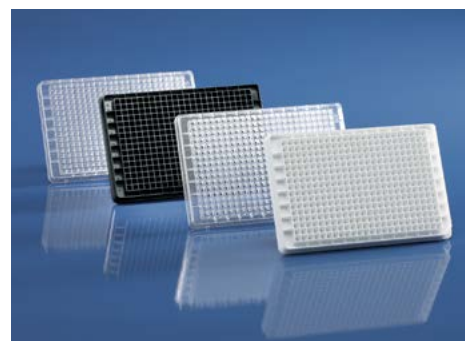
Pack of 100 plates (20 stacks of 5 plates; 1 lid per stack)



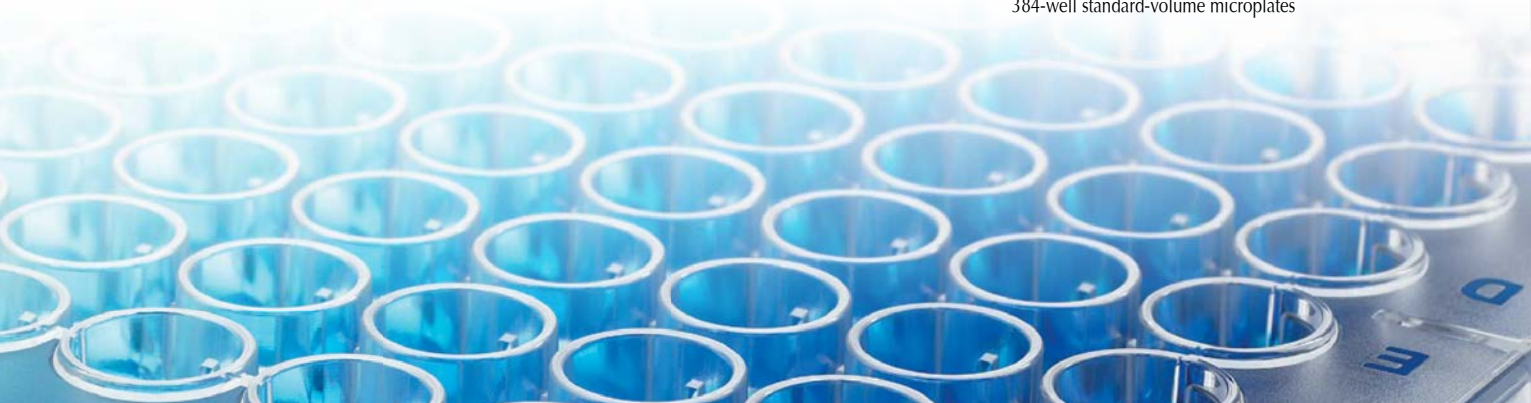
96-well standard-volume microplates



96-well transparent bottom microplates



384-well standard-volume microplates



BRANDplates® Microplates for Cell Culture

cellGrade™

For the cultivation of adherent cell lines

- Standard-volume, sterile plates for cultivation of adherent cell lines
- Surface with freely accessible chemical groups, such as carboxyl and hydroxyl groups
- Surface hydrophilic compared with non-treated PS
- Serum components easily bound onto the freely accessible chemical groups, allowing indirect adhesion of cells
- PS, sterile

cellGrade™

Color	Bottom	Well volume	Cat. No.	2020 List Price
96-well standard microplates				
transparent	U-bottom	330 µL	781960	\$173.20
transparent	V-bottom	360 µL	781961	173.20
transparent	F-bottom	350 µL	781962	173.20
transparent	C-bottom	350 µL	781963	173.20
white	F-bottom	350 µL	781965	173.20
black	F-bottom	350 µL	781968	173.20

Pack of 50 plates (individually wrapped, with lid)

96-well transparent bottom microplates

white	F-bottom	330 µL	781970	497.60
black	F-bottom	330 µL	781971	497.60

Pack of 50 plates (individually wrapped, with lid)

384-well standard microplates

transparent	F-bottom	100 µL	781980	210.00
white	F-bottom	100 µL	781981	210.00
black	F-bottom	100 µL	781982	210.00

Pack of 50 plates (individually wrapped, with lid)

384-well transparent bottom microplates

white	F-bottom	120 µL	781986	692.60
black	F-bottom	120 µL	781987	692.60

Pack of 50 plates (individually wrapped, with lid)

1536-well standard microplates

transparent	F-bottom	10 µL	782000	1,028.60
white	F-bottom	10 µL	782001	1,079.00
black	F-bottom	10 µL	782002	1,079.00

Pack of 50 plates (individually wrapped, with lid)

cellGrade™ plus

For reduced-serum media cultivation of cells

- For cultivation of fastidious cell lines
- In addition to carboxyl and hydroxyl chemical groups, free amino groups present on the surface
- Surface has a protein-like composition—cells can directly attach and spread out
- Cells adhere faster leading to better rate of yield
- Sensitive cell lines can be cultivated
- Suited for serum-reduced cultivation of cells
- PS, sterile

cellGrade™ plus

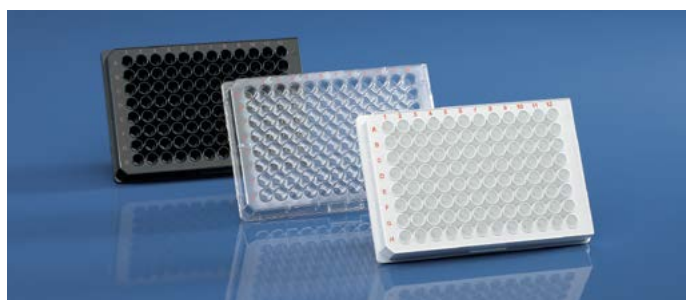
Color	Bottom	Well volume	Cat. No.	2020 List Price
96-well standard microplates				
transparent	F-bottom	350 µL	782022	\$262.40
white	F-bottom	350 µL	782025	398.80
black	F-bottom	350 µL	782028	398.80

Pack of 50 plates (individually wrapped, with lid)

96-well transparent bottom microplates

white	F-bottom	330 µL	782030	489.60
black	F-bottom	330 µL	782031	489.60

Pack of 50 plates (individually wrapped, with lid)



96-well standard volume microplates

cellGrade™ premium

Poly-D-Lysine-equivalent surface

- Poly-D-Lysine-equivalent surface, with analogous results regarding growth performance and cell morphology
- Optimal adhesion of cells to the surface reduces cell damage when washing frequently
- Cultivation of cell lines with the highest environmental demands
- Surface suited for serum-free and serum-reduced cultivation of cells
- Good shelf life at room temperature
- Alternative to biologically coated surfaces
- PS, sterile

cellGrade™ premium

Color	Bottom	Well volume	Cat. No.	2020 List Price
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96-well standard microplates

transparent	F-bottom	350 µL	782082	\$398.80
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Pack of 50 plates (individually wrapped, with lid)

96-well transparent bottom microplates

white	F-bottom	330 µL	782090	817.60
black	F-bottom	330 µL	782091	817.60

Pack of 50 plates (individually wrapped, with lid)

inertGrade™

For cultivation of suspension cell lines

- Especially suited for cell cultures when adhesion is not desired
- Optimized surface characteristics reduce cell adhesion and protein absorption, minimizing enzyme and cellular activation
- Inhibits early differentiation of stem cells
- Sterilized with ethylene oxide
- PS, sterile

inertGrade™

Color	Bottom	Well volume	Cat. No.	2020 List Price
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96-well standard microplates

transparent	U-bottom	330 µL	781900	\$524.80
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transparent	F-bottom	350 µL	781902	524.80
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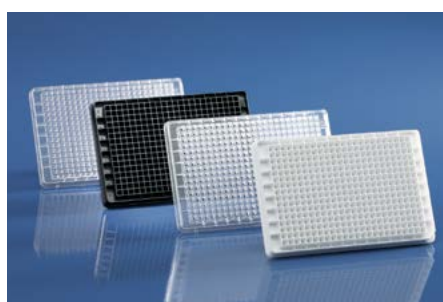
Pack of 40 plates (individually wrapped, with lid)

96-well transparent bottom microplates

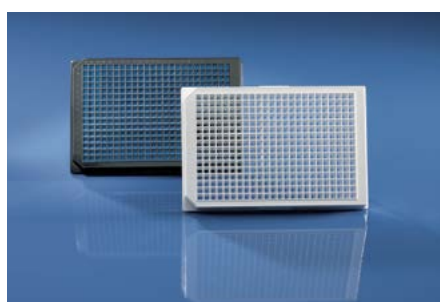
white	F-bottom	330 µL	781910	1,044.40
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black	F-bottom	330 µL	781911	1,044.40
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Pack of 40 plates (individually wrapped, with lid)



384-well standard-volume microplates



384-well transparent bottom microplates



1536-well standard-volume microplates



BRAND® Insert 2in1



Overview

- Suitable for 2D and 3D cell cultures
- Surface: cellGrade™ plus
- PC or PET membrane
- Pore sizes: 0.4 µm and 8.0 µm
- Can be used with all common 6-, 12- or 24-well multiwell plates

Flexible

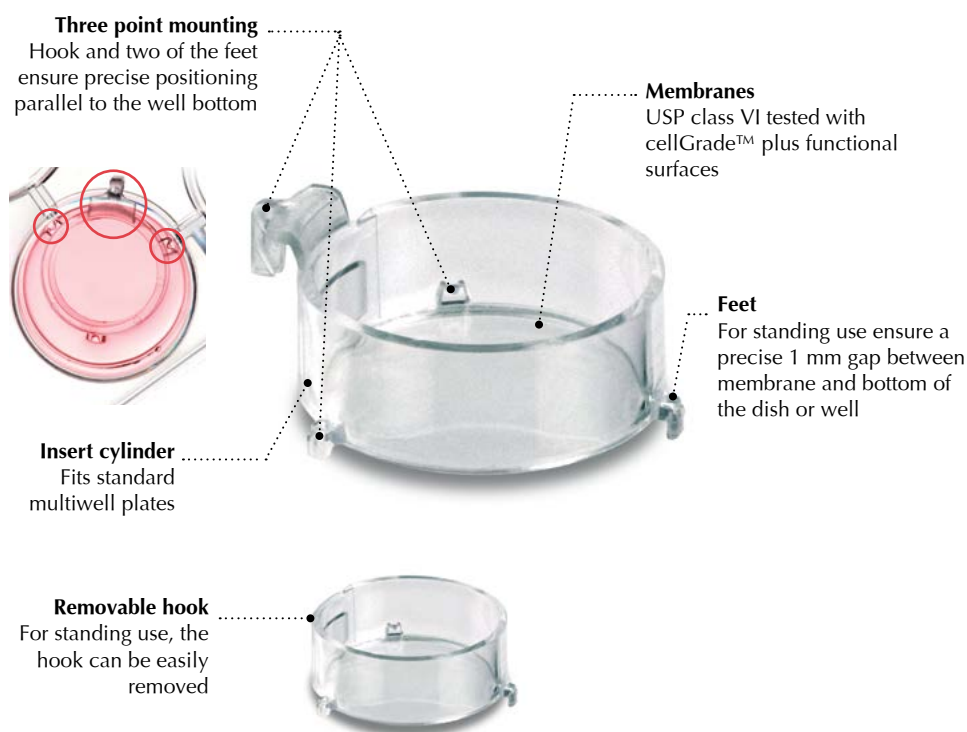
- Keep using the multiwell plates or dishes you already use in your cell culture lab – and work with the advantage of a combined hanging and standing insert when using the BRAND® Insert 2in1.
- When used as a hanging insert, the insert fits nearly all multiwell plates. For bigger wells and culture dishes, simply use the same insert as a standing insert.

Functional

- The cellGrade™ plus surface of the membranes ensures excellent cell attachment and growth. The highly transparent membranes give you good visibility of your cell cultures, and the high pore density contributes to good permeability.

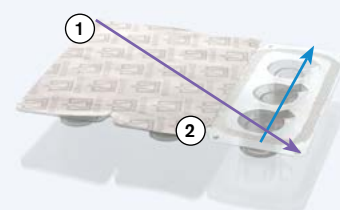
Easy to use and efficient

- Innovative packaging provides for efficient unpacking and reduces waste.



Easy-to-use packaging:

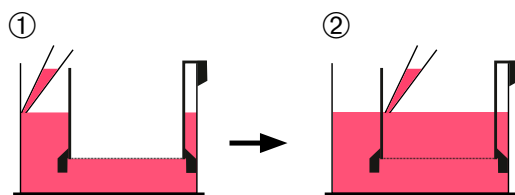
- 1 Simply open the entire blister by pulling the sealing paper in one diagonal move (lilac arrow).



- 2 A perforation in the sealing paper also allows to open only one line of inserts and leave the others securely sealed (blue arrow).

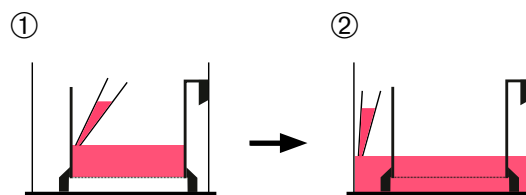
Hanging

To use the Insert 2in1 as a hanging insert, first add the medium to the multiwell plates and hang the insert inside the wells (make sure the medium comes into contact with the membrane). Then fill the insert with medium.



Standing

To use the Insert 2in1 as a standing insert, place the insert into the multiwell plate or culture dish. Add the medium to the insert first, and then into the well or culture dish.



BRAND® Insert 2in1 working volume and culture area

Well	Working volume	Culture area
24-well	150 - 400 µl	0.6 cm ²
12-well	300 - 1000 µl	1.38 cm ²
6-well	800 - 3000 µl	4.83 cm ²

BRAND® Insert 2in1 membrane properties

Membrane	Pore size	Pore density	Optic
PC membrane	0.4 µm	1 x 10 ⁸ cm ²	translucent
	8.0 µm	1 x 10 ⁵ cm ²	translucent
PET membrane	0.4 µm	2 x 10 ⁶ cm ²	transparent
	8.0 µm	1 x 10 ⁵ cm ²	translucent

Highest quality standards:

- Manufactured in a Class 8 cleanroom, in accordance with ISO 14644-1
- Insert made of medical grade polystyrene
- Sterile according to ISO 11137, Sterility Assurance Level SAL 10⁻⁶
- Non-cytotoxic according to ISO 10993-5
- Free of pyrogens and endotoxins, according to LAL test, detection limit 0.01 EU/mL



Insert 2in1 PS. cellGrade™ plus surface, sterile

Well	Pore size µm	Diameter mm	Pack of	PC membrane Cat. No.	2020 List Price	PET membrane Cat. No.	2020 List Price
24-well	0.4	8.8	48, single blister	782700	\$252.80	782710	\$252.80
	0.4	8.8	48, multi-pack blister	782701	228.40	782711	228.40
	8.0	8.8	48, single blister	782706	252.80	782716	252.80
	8.0	8.8	48, multi-pack blister	782707	228.40	782717	228.40
12-well	0.4	13.3	48, single blister	782720	280.40	782730	280.40
	0.4	13.3	36, multi-pack blister	782721	189.60	782731	189.60
	8.0	13.3	48, single blister	782726	280.40	782736	280.40
	8.0	13.3	36, multi-pack blister	782727	189.60	782737	189.60
6-well	0.4	24.8	24, single blister	782740	179.40	782750	179.40
	0.4	24.8	24, multi-pack blister	782741	167.20	782751	167.20
	8.0	24.8	24, single blister	782746	179.40	782756	179.40
	8.0	24.8	24, multi-pack blister	782747	167.20	782757	167.20

BRANDplates® Insert System

For Manual and Automated Cell and Tissue Culture Work

BRANDplates® Insert System

The BRAND® Insert System, co-developed with the Fraunhofer Gesellschaft, Stuttgart, Germany, includes a choice of two specialized cell culture plates and two types of cell culture inserts for applications such as co-culture, migration studies, chemotaxis assays, and 3D tissue culture preparation (e.g., production of full-skin or epidermis models). Insert strips and plates are available individually or packed as a system. Key features to consider when selecting which components to utilize are plate selection and well size, insert type, and membrane pore size and material.

BRANDplates® Insert System

Plate selection

24-well standard plate

- Plate includes 24 individually fillable wells that can be fitted with strips of 4 inserts and/or individual inserts.
- Used for basic applications such as co-culture, secretion studies, and migration studies.

6-well specialized plate

- Plate has 4 wells connected as one large, elongated well. This well is fitted with a strip of 4 inserts so that all 4 of the inserts in the strip can be supplied with medium at the same time.
- Used for *in vitro* preparation of tissue (3D tissue culture).
- cellGrade™ plus (sterile, hydrophilic with different chemical groups, such as carboxyl and hydroxyl groups, that are freely accessible) and pureGrade™ S surface (untreated, sterile)
- Manufactured according to the requirements in ANSI/SLAS Standards 1 and 4
- All plates have guide ridges for perfect insert fit and specially designed feeding ports for easy media changes, suitable for robotics/automation



24-well standard plate



6-well specialized plate

BRANDplates® Insert System microplates

Description	Surface	Cat. No.	2020 List Price
24-well standard plate			
transparent	pureGrade™ S	782880	\$128.00
transparent	cellGrade™ plus	782890	128.00
Packs of 10 plates (individually wrapped with lid)			
6-well specialized plate			
transparent	pureGrade™ S	782881	150.00
transparent	cellGrade™ plus	782891	160.60
Packs of 10 plates (individually wrapped with lid)			

Insert selection

Smooth-walled Inserts

- Smooth-walled for standard applications such as secretion studies, co-culture, migration studies, chemotaxis assays, etc.

Inserts with Inlet Opening System

- Inlet Opening System with special inlet channels, for automated *in vitro* preparation of human tissues. The Inlet Opening System enables rapid, consistent changing of media, from submersion culture to air-lift culture. The special inlet channels enable adjustment of the medium level without damage to the tissue model.
- Membrane material of PC or PET material for different optical requirements and cell visibility
- cellGrade™ plus surface
- Multiple membrane pore sizes available for different applications: 0.4 µm, 1.0 µm, 3.0 µm, 8.0 µm



BRANDplates® Insert Strips

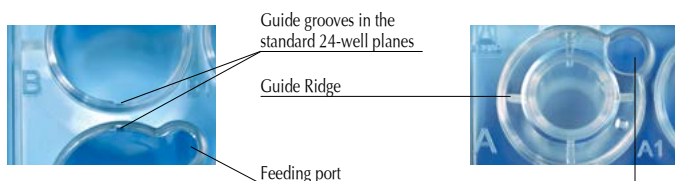
Pore Size (µm)	PC membrane Cat. No.	2020 List Price	PET membrane Cat. No.	2020 List Price
Smooth-walled insert strips				
PS, cellGrade™ plus surface, sterile. 12 strips of 4 divisible inserts, Qty. 48				
0.4	782800	\$267.80	782810	\$267.80
1	782820	267.80	—	—
3	782840	267.80	—	—
8	782860	267.80	782870	267.80

Strips with Inlet Opening System

PS, cellGrade™ plus surface, sterile. 12 strips of 4 divisible inserts, Qty. 48				
Pore Size (µm)	PC membrane Cat. No.	2020 List Price	PET membrane Cat. No.	2020 List Price
0.4	782801	\$405.20	782811	\$405.20
1	782821	405.20	—	—
3	782841	405.20	—	—
8	782861	405.20	782871	405.20

General applications

Inserts and plates should be selected with care. Plates are available in non-treated, sterile configurations (pureGrade™S) or with enhanced tissue culture treatment (cellGrade™ plus). Insert pore size and material selection should be based on application. The most common applications and recommended pore sizes or materials are listed in the tables below. To ensure your product selections will work for your applications, request a free sample at www.brandtech.com.



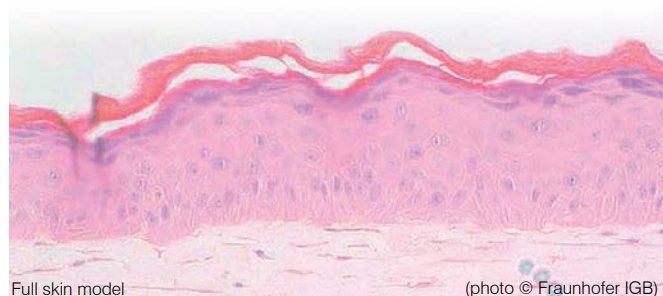
Pore size Application range

0.4 µm	Co-culture, transport studies, secretion studies, cell polarity studies, etc.
1.0 µm	Co-culture, transport studies, secretion studies, etc.
3.0 µm	Migration studies, chemotaxis studies, metastasis experiments, etc.
8.0 µm	Migration studies, chemotaxis studies, metastasis experiments, etc. See also the construction of full-thickness skin models by the Fraunhofer IGB (www.tissue-factory.com)

Properties	PC	PET
Optical properties	translucent	transparent
Cell visibility under Light Microscopy	—	+

Specialized 6-well system for 3D tissue culture applications

For advanced applications, such as 3D tissue reconstruction, preconfigured systems are available as 6-well plates pre-filled with insert strips of a defined material, pore size and with or without the Inlet Opening System. For defined protocols on epidermis or full skin model reconstruction, please visit www.brandtech.com.



BRANDplates® Insert System

Pore Size (µm)	PC membrane Cat. No.	2020 List Price	PET membrane Cat. No.	2020 List Price
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6-well plates filled with 6 insert strips

PS, cellGrade™ plus surface, sterile. Smooth-walled strips or strips with Inlet Opening System.

System with smooth-walled insert strips

0.4µm	782802	\$917.40	782812	\$917.40
1µm	782822	917.40	—	—
3µm	782842	917.40	—	—
8µm	782862	917.40	782872	917.40

System with Inlet Opening System strips

0.4µm	782803	1,083.20	782813	1,083.20
1µm	782823	1,083.20	—	—
3µm	782843	1,083.20	—	—
8µm	782863	1,083.20	782873	1,083.20

Pack of 5 plates with lids (condensation rings) and 30 insert strips

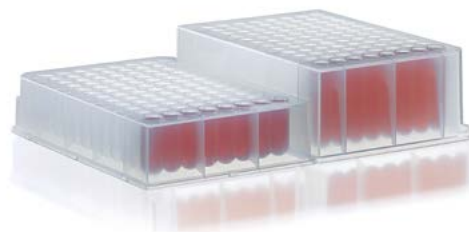


Polypropylene & Deep-Well Plates

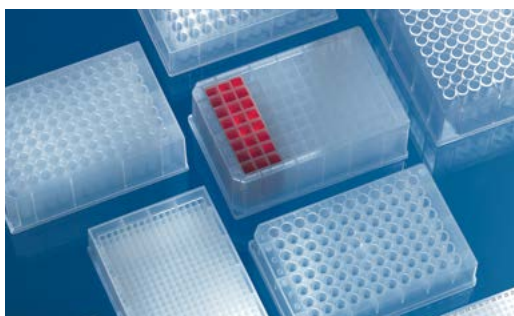
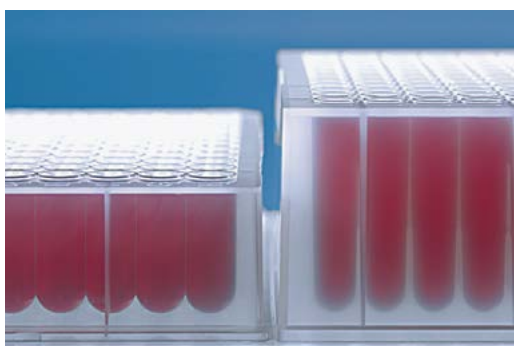
Deep-well plates

BRAND® Deep-well plates are excellent for sample storage, high throughput screening (HTS) assays requiring a motherplate, cell and tissue culture, and more. Choose polypropylene for chemical resistance to phenols, chloroform, and DMSO, or polystyrene for clarity or surface properties. Plates are compatible with most robotic samplers and automated liquid handling systems.

- Polypropylene plates are autoclavable at 121° C for 20 minutes, and withstand temperatures as low as -80° C
- Round bottom wells for optimal sample mixing
- Wells are alphanumerically coded, with a corner cutaway for easy orientation and well identification
- Conical (V-bottom) wells for pelleting and maximum sample recovery
- Compatible with multichannel pipettes and automated liquid handling systems from all leading manufacturers
- Plates come in 96-well and 384-well varieties—stackable for easy storage

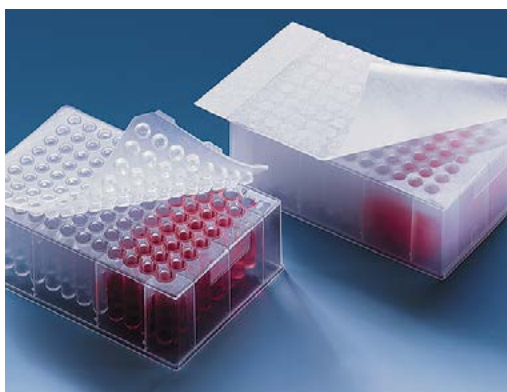


BRAND® 1.2 mL Low Profile plate reduces space requirements by approximately 30%



Description	Well Volume	Well Shape	Well Bottom	Qty./ Pack	Cat. No.	2020 List Price
Deep-well plates						
96-well, polypropylene	0.3 mL	round	U-bottom	100	701330	\$244.40
96-well, polypropylene	0.5 mL	round	U-bottom	48	701346	373.80
96-well, polypropylene	1.1 mL	round	U-bottom	24	701350	142.80
96-well, polystyrene	1.1 mL	round	U-bottom	32	701352	179.40
96-well, polypropylene, Low Profile	1.2 mL	round	U-bottom	50	701340	287.40
96-well, polypropylene	2.2 mL	square	U-bottom	24	701354	205.80
96-well, polypropylene	2.2 mL	square	V-bottom	50	DW2200	409.40
96-well, polypropylene, sterile	2.2 mL	square	V-bottom	50	DW2250	522.60
384-well, polypropylene	0.3 mL	square	V-bottom	48	701355	610.80
			Autoclavable	Qty./ Pack	Cat. No.	2020 List Price
Mat covers						
Mat for 0.5 mL 96-well plates, PP		Yes, 121° C for 15 min.		50	701358	\$388.40
Mat for 1.1 mL 96-well plates, mod. PE		Yes, 121° C for 15 min.		24	701360	114.40
Mat for 1.2 mL 96-well plates, TPE		Yes, 121° C for 15 min.		50	701368	304.40
Mat for 2.2 mL 96-well plates, EVA		No		24	701362	91.40
Pierceable Mat for 2.2 mL 96-well plates, Silicone		Yes, 121° C for 15 min.		50	M2200	398.80
Sterile Pierceable Mat for 2.2 mL 96-well plates, Silicone		Yes, 121° C for 15 min.		50	M2250	440.80
Mat for 0.3 mL 384-well plates, Silicone		Yes, 101° C for 20 min.		50	701357	584.60

Sealing films available, see page 86



Deep-well plate mat covers

Mat covers provide an effective plug seal for each well (maximum well volume is reduced).

BRAND® Microcentrifuge Tubes

BRAND® microcentrifuge tubes fit most common rotors and may be spun at 10,000 x g for 0.5 mL, 20,000 x g for 1.5 mL, 30,000 x g for tubes with lid closure. Manufactured from virgin polypropylene, these highly translucent tubes are free from flash, air bubbles, and streaks. Caps are flat with consistent thickness for trouble-free piercing.

- Uniform wall thickness for consistent, repeatable results
- Tight, leak-free seal is easy to open, even when wearing gloves
- BIO-CERT® endotoxin-, RNase-, ATP-, and DNA-free microcentrifuge tubes available for critical applications
- Colored tubes simplify sample identification
- Mini coolers hold twelve microtubes from 0.5 mL to 2.0 mL in size and, when pre-frozen, maintain the rated temperature for approximately one hour (45 minutes for -70° C model)



128-tube Rack



20-tube Rack

Tube Vol mL	Color	OD x H, mm	Qty./ Pack	Cat. No.	2020 List price
Non-sterile microcentrifuge tubes with lids					
0.5 w/lid closure	clear	10 x 30	500	780536	\$53.60
0.5	clear	8 x 32	1000	780507	70.40
1.5	clear	11 x 41	500	780500	14.40
1.5 w/lid closure	clear	11 x 39	1000	780540	79.80
1.5	yellow	11 x 41	500	780521	14.40
1.5	blue	11 x 41	500	780522	14.40
1.5	green	11 x 41	500	780523	14.40
1.5	orange	11 x 41	500	780524	14.40
1.5	amber	11 x 41	500	780525	14.40
2.0	clear	11 x 41	500	780550	55.60
2.0 w/lid closure	clear	12.8 x 40	500	780546	53.60

BIO-CERT® RNase-, DNase, DNA-free microcentrifuge tubes with lids

1.5	clear	11 x 41	450	780400	133.80
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Non-sterile microcentrifuge tubes without lid

1.5	clear	11 x 39.5	2000	780505	102.80
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Accessories

128-tube rack	5	4341052	104.00
84-tube rack	5	4341002	104.00
20-tube rack for 1.5 mL tubes and smaller*	1	780605	29.20
0.5 mL adapters for 20-tube rack	20	780608	38.40
Centrifuge tube mini cooler, 0° C	1	114930	188.40
Centrifuge tube mini cooler, -20° C	1	114935	188.40
Centrifuge tube mini cooler, -70° C	1	114940	188.40

*adapter required for 0.5 mL tubes



Centrifuge Tube Mini Cooler, -20° C



0.5 mL Microcentrifuge tubes



1.5 mL Microcentrifuge tubes



2.0 mL Microcentrifuge tubes



1.5 mL Microcentrifuge tubes with lid closure



Lid closure for 1.5 mL Microcentrifuge tubes

BRAND® PCR Tubes, Strips & Plates

BRAND® PCR tubes, strips, and plates are manufactured from high quality virgin resins for excellent, reproducible results in most PCR applications. This collection of individual tubes, tube strips, cap strips and multiwell plates are manufactured without lubricants or chemical additives that can contaminate reagents and samples.

Description	Qty./Pack	Cat. No.	2020 List Price
PCR tubes			
0.2 mL tubes with domed cap, Clear	1000	781300	\$112.40
0.2 mL tubes with flat cap, Clear	1000	781305	59.80
0.2 mL tubes with flat cap, Rose	1000	781301	59.80
0.2 mL tubes with flat cap, Yellow	1000	781302	59.80
0.2 mL tubes with flat cap, Green	1000	781303	59.80
0.2 mL tubes with flat cap, Blue	1000	781304	59.00
0.5 mL tubes with flat cap, Clear	1000	781310	63.00
0.5 mL tubes with flat cap, Rose	1000	781311	63.00
0.5 mL tubes with flat cap, Yellow	1000	781312	63.00
0.5 mL tubes with flat cap, Green	1000	781313	63.00
0.5 mL tubes with flat cap, Blue	1000	781314	63.00
PCR 8-strip tubes			
8 x 0.2 mL tube strip with individual attached flat caps, Clear (qPCR)	120	781332	101.00
8 x 0.2 mL tube strips with individual attached domed caps, Clear	120	P1300	94.40
8 x 0.15 mL low profile tube strip with individual attached flat caps, Clear (qPCR)	120	781333	101.00
8 x 0.2 mL Rigid PCR tube strips with individual attached flat caps, Clear (qPCR)	120	P1200	94.40
8 x 0.15 mL Rigid low profile PCR tube strips with individual attached flat caps, Clear (qPCR)	120	P1100	94.40
8 x 0.2 mL tube strip with attached domed strip cap	125	781330	223.40
8 x 0.2 mL tube strip with 8-strip flat caps, Clear (qPCR)	250	781326	263.40
8 x 0.2 mL tube strip with 8-strip domed caps, Clear	250	781327	217.40
8 x 0.2 mL tube strip, Clear (qPCR)	125	781320	74.40
8 x 0.2 mL tube strip, Rose	125	781321	74.40
8 x 0.2 mL tube strip, Yellow	125	781322	74.40
8 x 0.2 mL tube strip, Green	125	781323	74.40
8 x 0.2 mL tube strip, Blue	125	781324	74.40
PCR 8-strip caps			
8-strip flat caps, Clear (qPCR)	125	781334	45.00
8-strip domed caps, Clear	125	781340	30.00
8-strip domed caps, Rose	125	781341	36.40
8-strip domed caps, Yellow	125	781342	36.40
8-strip domed caps, Green	125	781343	36.40
8-strip domed caps, Blue	125	781344	36.40
8-strip flat caps, Clear (qPCR) plates*	300	781413	144.80
8-strip domed caps, Clear (qPCR) plates*	300	781414	144.80
PCR 12-strip tubes and caps			
12 x 0.2 mL tube strip, Clear	125	781280	216.20
12-strip domed caps, Clear	125	781290	55.60

*For use with 781377 & 781378

- PCR tubes, strip tubes, and plates compatible with most thermal cyclers
- Standard (0.2 mL) and low-profile (0.15 mL) products available
- All PCR products are RNase-, DNase-, and DNA-free
- Thin, uniform walls for precise thermal transfer
- White PCR products with smooth surfaces to optimize reflection of fluorescent signal for quantitative Real Time PCR (qPCR)



PCR 12-strip tubes & caps

PCR accessories

PCR mats, caps, and films are available in a variety of materials to reduce evaporative losses by up to 75%. Mats are highly flexible, autoclavable, tight sealing, and piercable. All sealing

films are DNA-, RNase-, and DNase-free. PCR racks and mini coolers are available for sample cooling and storage. A unique cap tool allows for easy and ergonomic sealing of PCR plates with strip caps.



Sealing film



PCR Mini Cooler



Cap Tool

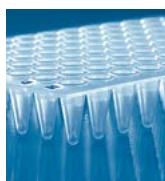


Description	Qty./Pack	Cat. No.	2020 List Price
Accessories			
Cap Tool	1	781419	\$59.00
PCR Box/Rack	5	781362	80.80
PCR Mini Cooler	2	781260	134.40
PCR sealing films			
PCR Sealing Film Strips	400	781383	45.80
PCR and ELISA	100	781390	131.20
Real Time PCR Film	100	781391ES	260.40
Sealing Paddle	2	701381	19.60

Sealing films available (see page 86)

PCR plates in clear and white are available in 24-, 48-, 96- standard (0.2 mL) and low profile (0.15 mL) and 384-well configurations for most thermal cyclers. Plates have rigid decks and blue alphanumeric coding for easy handling and sample identification. For thermal cycler compatibility or product samples, visit www.brandtech.com.

Non-skirted



Low profile (0.15mL)



Standard profile (0.2mL)



Standard profile (0.2mL),
elevated rim

Semi-skirted



Low profile (0.15mL)



Low profile (0.15mL),
raised skirt



Standard profile (0.2mL),
elevated rim

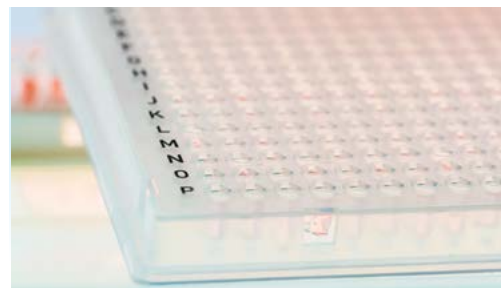


Standard profile (0.2mL)

Skirted



96-well, skirted

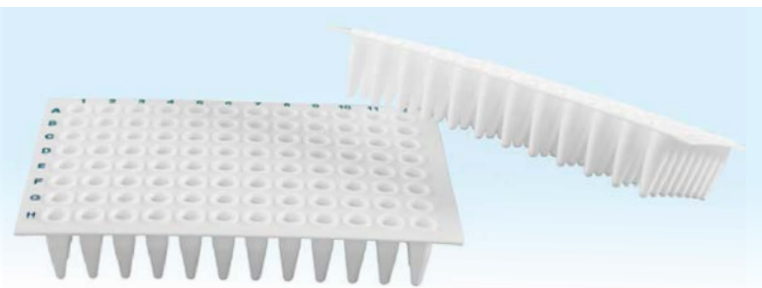


384-well, skirted

Description	Qty./ Pack	Cat. No.	2020 List Price
Clear PCR Plates			
24-well plate, non-skirted, 0.2 mL	40	781411	\$100.80
48-well plate, non-skirted, 0.2 mL	20	781415	100.80
96-well plate, non-skirted, elevated rim, 0.2 mL	50	781350	204.80
96-well plate, non-skirted, low-profile, 0.15 mL	50	781366	206.00
96-well plate, non-skirted, standard profile, 0.2 mL	50	781368	206.00
96-well plate, semi-skirted, elevated rim, 0.2 mL	50	781400	253.00
96-well plate, semi-skirted, low-profile, 0.15 mL	50	781371	206.00
96-well plate, semi-skirted, low-profile, raised skirt, 0.15 mL	50	781373	206.00
96-well plate, semi-skirted, standard profile, 0.2 mL	50	781375	206.00
96-well plate, skirted, low-profile, 0.15 mL	50	781377	363.40
384-well plate, skirted	50	781345	308.60
384-well plate, full skirt	50	781347	389.40

White PCR Plastics (all suitable for qPCR)

8 x 0.2 mL tube strip	125	781325	165.80
8 x 0.2 mL tube strip with individual attached flat caps	120	781316	101.00
8 x 0.15 mL low-profile tube strip with individual attached flat caps	120	781317	101.00
24-well plate, non-skirted, 0.2 mL	40	781412	115.40
48-well plate, non-skirted, 0.2 mL	20	781416	115.40
96-well plate, non-skirted, 0.2 mL	50	781354	254.00
96-well plate, non-skirted, low-profile, 0.15 mL	50	781367	233.20
96-well plate, non-skirted, standard profile, 0.2 mL	50	781369	233.20
96-well plate, semi-skirted, standard profile, 0.2 mL	50	781376	233.20
96-well plate, semi-skirted, standard profile, 0.2 mL	50	781357	344.20
96-well plate, semi-skirted, low-profile, 0.15 mL	50	781372	233.20
96-well plate, semi-skirted, low-profile, raised skirt, 0.15 mL	50	781374	233.20
96-well plate, skirted, low-profile, 0.15 mL	50	781378	378.00
96-well plate, low-profile, for Roche LightCycler®, 0.15 mL	50	781364	310.80
96-well plate, low-profile, for Roche LightCycler®, with fifty sheets of qPCR sealing film, 0.15 mL	50	781365	409.40
384-well plate, full skirt, for Roche LightCycler®	50	781358	589.80



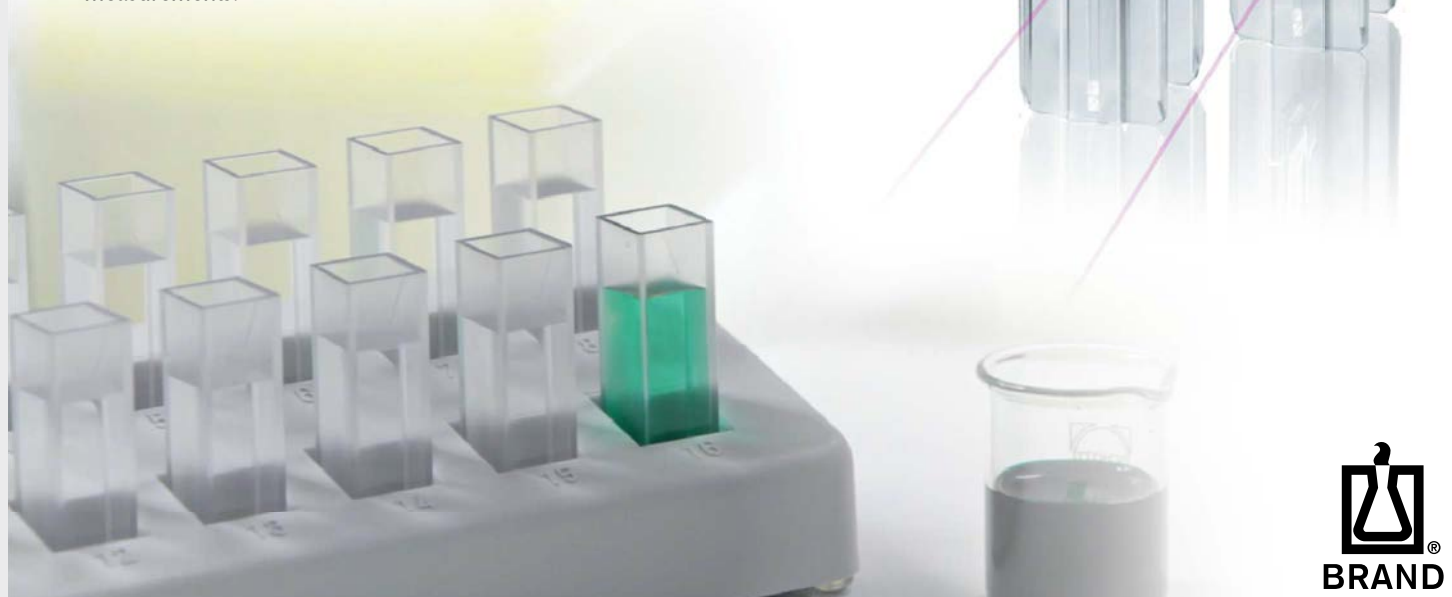
BRAND® Plastic Cuvettes

Why BRAND® Disposable Cuvettes?

BRAND® is world-renowned as the producer of premium disposable cuvettes. Over thirty years of experience manufacturing disposable cuvettes ensures that every BRAND® cuvette is manufactured to the most exacting standards for reproducible results.

- **Virgin resins**—BRAND® cuvettes are manufactured from the highest quality virgin resins for superior optical quality. Choose economical polystyrene for determinations above 340 nm. Choose polymethyl methacrylate (PMMA or “acrylic”) when performing assays above 300 nm. For assays with wavelengths as short as 230 nm, or that require enhanced chemical compatibility, choose BRAND® UV-Cuvettes, made of a proprietary resin.
- **Mold-cavity matching**—All plastic cuvettes are manufactured in multi-cavity molds, producing multiple cuvettes with each molding operation. Even with BRAND®’s experience and attention to manufacturing detail, nothing can prevent slight differences among the cavities that can lead to variation in extinction coefficients. Rather than randomly aggregate cuvettes from all cavities, BRAND®’s automated production process sorts the cuvettes by mold cavity; each package only contains cuvettes from the same mold cavity. This ensures the lowest possible cuvette-to-cuvette variance, and more accurate measurements. Robotic sorting also eliminates the risk of human error and potential contamination.
- **Protective packaging**—BRAND® cuvettes are encased in dust-free, low-scratching expanded polystyrene packaging. This ensures that premium cuvettes arrive in the laboratory in the same pristine condition they were in at the factory, with optical quality windows and free of contaminants. For applications in which the highest purity is required, BRAND® ultra-micro UV-Cuvettes are available individually wrapped and free of DNA, DNase and RNase. Individual packaging offers the convenience of disposability and a degree of sample protection that is unmatched by any reusable cuvette.
- **Fluorimetry cuvettes**—BRAND® brings three decades of experience molding high-quality spectrophotometry cuvettes to new four-sided clear cuvettes for fluorimetry. Available in standard polystyrene or a proprietary polymer with ultra-low auto-fluorescence for the highest precision measurements.

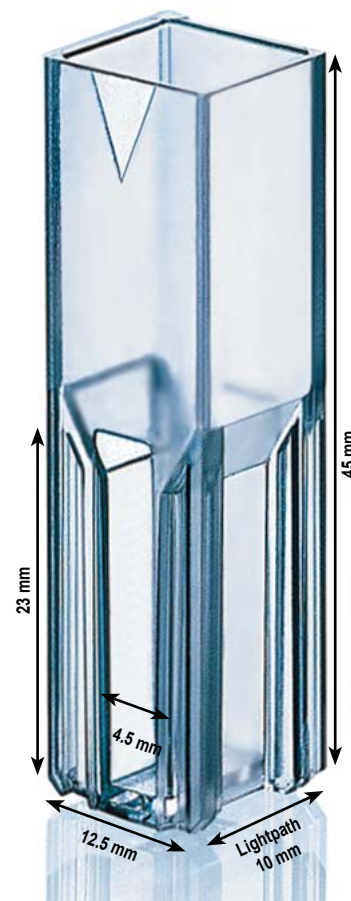
The BRAND® logo,
your assurance of
a quality cuvette



Technical Data

BRAND® plastic spectrophotometry cuvettes are an excellent choice for most spectrophotometry applications in the visible and UV ranges. Cuvettes manufactured from PS and PMMA, provide accurate, reliable results even at wavelengths as low as 300 nm. For enhanced chemical compatibility, or measurements to 230 nm, choose BRAND® UV-Cuvettes. These disposable cuvettes are available in macro and semi-micro sizes to accommodate most sample volumes. BRAND® plastic cuvettes are compatible with most spectrophotometers and photometers using a standard 10 mm path length.

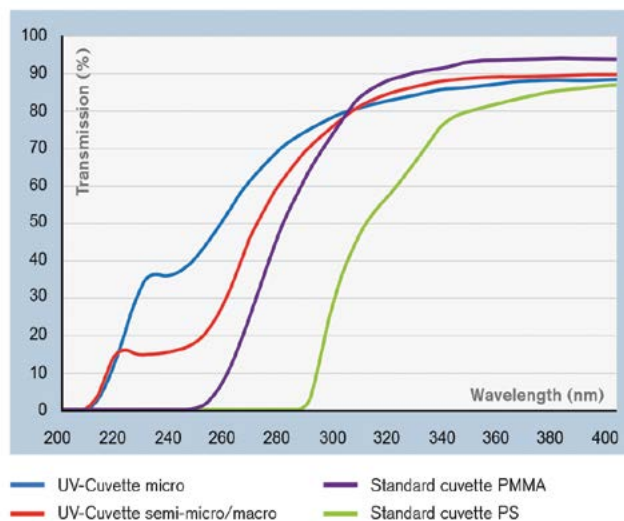
- **Easy to use**—BRAND® plastic disposable cuvettes include an arrow mark to indicate direction of transmission and reduce variation.
- **Volumes for most needs**—PS and PMMA cuvettes are available in both macro and semi-micro sizes to adapt to the needs of most laboratory applications. Semi-micro cuvettes require only 1.5 mL of sample volume to provide reliable, accurate results.
- **Perform consistently**—Cuvettes are manufactured from high-quality materials, and are grouped by manufacturing mold cavity to ensure the lowest variation in extinction coefficient.
- **Manufactured by BRAND®**—One of the world's largest producers of cuvettes, BRAND®'s nearly thirty years of quality cuvette manufacturing experience is your assurance of reliability.



BRAND® semi-micro disposable cuvette

Description	Pack of	Cat. No.	2020 List Price
BRAND® polystyrene (PS) cuvettes (specifications on p. 105)			
Macro	500	759070D	\$84.00
Macro	100	759071D	19.40
Semi-micro	500	759075D	91.40
Semi-micro	100	759076D	20.40
BRAND® methacrylate (PMMA) cuvettes (specifications on p. 105)			
Macro	500	759080D	118.40
Macro	100	759081D	27.00
Semi-micro	500	759085D	102.80
Semi-micro	100	759086D	22.40
Polypropylene cuvette rack, 16 numbered positions	1	759500	27.80

Transmission curves of different cuvettes

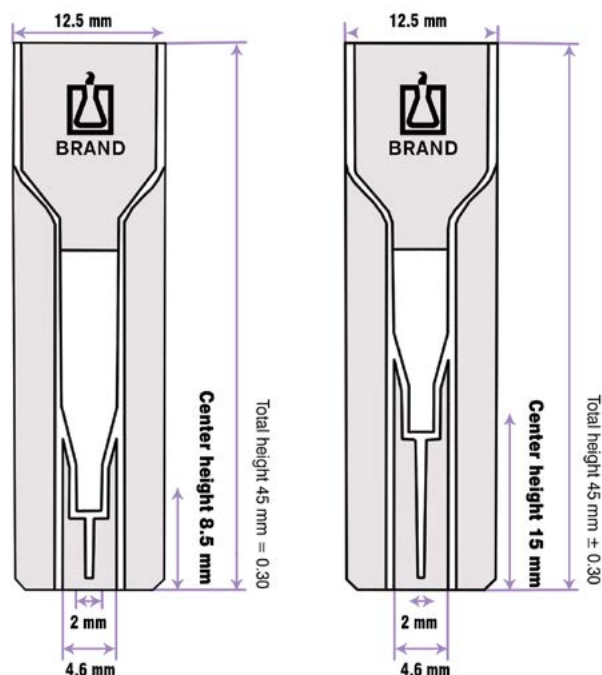


To achieve reproducible results: Before the actual measurement, always determine the blank value for the cuvette, and determine the linear range of measurement by means of a calibration curve.

BRAND® UV-Cuvettes

UV-transparent, disposable cuvettes from BRAND® replace expensive, fragile quartz cuvettes and are excellent for DNA, RNA, and protein analyses between 230-900 nm. See transmission curves on page 101. Made from a proprietary polycyclical olefin, they are resistant to many aggressive solvents and eliminate the tedious maintenance, cleaning, and contamination risk of quartz cuvettes. Additionally, they fit most commercial spectrophotometers and photometers without requiring the use of special adapters.

- **Eliminate the hassles of quartz cuvettes**—No more washing, cross-contamination, breakage, and expense associated with fragile quartz cuvettes.
- **Allow smaller sample sizes**—In addition to macro (2.5 mL) and semi-micro (1.5 mL) sizes, BRAND® UV-Cuvettes are also available in ultra-micro sizes that require only 70 µL of sample volume.
- **Ultra-micro cuvettes are available individually-wrapped**—Independently-certified DNA-, DNase-, RNase-free for an extra degree of sample protection.
- **Resist most chemicals**—UV-Cuvettes may be used with most polar organic solvents, as well as a broad range of acids and bases. They have much greater chemical resistance than PS or PMMA cuvettes and are compatible with chemicals such as acetone, butanol, DMF, and concentrated hydrochloric acid.
- **Perform consistently**—UV-Cuvettes are manufactured from scratch-resistant materials, and are grouped by manufacturing mold cavity number to ensure the lowest variation in extinction coefficient.
- **Manufactured by BRAND®**—One of the world's largest cuvette manufacturers. Nearly thirty years of experience producing quality cuvettes is your assurance of reliability.



Two window heights to fit most spectrophotometers

To reduce the sample size required by BRAND®'s ultra-micro sized UV-Cuvettes, the floor of the sample chamber is elevated to just below the light path. As there is not a single standard for light beam height, BRAND® offers ultra-micro cuvettes with two different z-dimensions to help sample conservation.

Not sure of the beam height of your instrument?
Check our website for help with cuvette selection
www.brandtech.com/beam_heights.



Polypropylene cuvette rack with 16 numbered positions. Autoclavable to 121° C



Specifications – BRAND® Cuvette

Filling volume	Ultra-micro	Semi-micro	Macro
Minimum	70 µL	1.5 mL	2.5 mL
Maximum	550 µL (15 mm window) 850 µL (8.5 mm window)	3.0 mL	4.5 mL
Window dimensions	2 x 3.5 mm (minimum)	4.5 x 23 mm	10 x 35 mm
Light path	10 mm	10 mm	10 mm
Range of application UV	230-900 nm	230-900 nm	230-900 nm
Range of application PMMA	—	300-900 nm	300-900 nm
Range of application PS	—	340-900 nm	340-900 nm

www.brandtech.com/cuvette_comp.asp for additional cuvette compatibility information.



BRAND® ultra-micro UV-Cuvettes. 15 mm (left) and 8.5 mm (right) window heights

UV-transparent, chemical-resistant, and disposable...
save time and money



Round polyethylene caps provide plug-seal for reliable sample storage. Available in 4 colors!

Description	Qty./Pack	Cat. No.	2020 List Price
BRAND® UV-Cuvette (specifications above)			
Macro	100	759170	\$88.00
Semi-micro	500	759165	395.60
Semi-micro	100	759150	88.00
BRAND® UV-Cuvette ultra-micro (15 mm window height)	500	759230	395.60
BRAND® UV-Cuvette ultra-micro (15 mm window height)	100	759220	88.00
Individually-wrapped BRAND® UV-Cuvette ultra-micro (15 mm window height)	100	759235	129.00
BRAND® UV-Cuvette ultra-micro (8.5 mm window height)	500	759210	395.60
BRAND® UV-Cuvette ultra-micro (8.5 mm window height)	100	759200	88.00
Individually-wrapped BRAND® UV-Cuvette ultra-micro (8.5 mm window height)	100	759215	129.00
Cuvette caps and accessories			
Cuvette caps, round, for ultra-micro cuvettes, Blue	100	759240	28.80
Cuvette caps, round, for ultra-micro cuvettes, Yellow	100	759241	28.80
Cuvette caps, round, for ultra-micro cuvettes, Green	100	759242	28.80
Cuvette caps, round, for ultra-micro cuvettes, Orange	100	759243	28.80
Polypropylene cuvette rack, 16 numbered positions	1	759500	27.80

Examples of chemical resistance of UV-Cuvettes

Substance	UV-Cuvette
Acetic acid 100%	+
Acetone	+
Ammonia	+
Benzaldehyde	+
Butanol	+
Chloroform	—
Dioxane	+
DMF	+
Ethyl acetate	+
Hexane	—
Hydrochloric acid 36%	+
Hydrofluoric acid 10%	+
Isopropanol	+
Nitric acid 65%	+
Sodium hydroxide	+

BRAND® Fluorimetry Cuvettes

When results count, choose BRAND® disposable cuvettes with four optically clear sides for fluorescence applications. Available in high quality polystyrene for measurements from 340 nm to 800 nm, as well as a proprietary polymer for precise measurements in both the visible and UV-range (230-800 nm), allowing for shorter excitation wavelengths than have been traditionally possible with disposable cuvettes. This UV-transparent plastic also has virtually no autofluorescence for high signal-to-noise ratios. Cuvettes have a standard 10 mm light path for use in all standard fluorimeters.

BRAND® fluorescence cuvettes, like all BRAND® cuvettes, are made of the highest quality raw materials, precision molded for the best optical clarity, with parallel walls of uniform thickness to optimize transmission and minimize refraction. They are mold-cavity sorted ensuring cuvette-to-cuvette consistency for highly reproducible results. With an industry standard 10 mm light path, BRAND® 4-sided clear cuvettes fit most common fluorimeters.

Cuvettes are packaged in trays containing 100 cuvettes. Trays are made of low-dust, non-scratching, expanded polystyrene.

- **Mold-cavity sorted**—Each tray contains cuvettes from a single mold cavity to minimize variability between cuvettes.
- **Manufactured by BRAND®**—One of the leading manufacturers of premium quality disposable cuvettes for nearly thirty years, BRAND® is your assurance of reliability.

Technical Data

Specifications – BRAND® Fluorimetry Cuvettes

Minimum filling volume	2.5 mL
Maximum filling volume	4.5 mL
Window dimensions	10 x 35 mm
Light path	10 mm
Exterior dimensions	12.5 x 12.5 x 45 mm

Description	Cat. No.	2020 List Price
BRAND® polystyrene (PS) Fluorimetry Cuvettes		
Pack of 100	759030	\$20.80
Pack of 500	759035	87.60
BRAND® UV-transparent Fluorimetry Cuvettes		
Pack of 100	759125	93.20
Pack of 500	759128	416.60



About fluorescence measurement

Fluorescence occurs when energy is supplied to a sample by electromagnetic radiation, usually UV-light (photons). The energy “excites” the molecules thereby “kicking” an electron of an atom from a lower energy state into an excited higher energy state. The lifetime of the excited state is very short (1-100 ns). When the electron falls back to a lower energy state it releases the energy in the form of light (i.e., fluorescence). Some of the fluorescent light passes through a monochromator and then reaches a detector. The fluorescent light is emitted in all directions, however the detector is usually placed at 90° to the excitation light beam to minimize interference. Hence the need for four-sided clear cuvettes for fluorescence applications.

Stainless Steel Support Jacks

Bochem® stainless steel support jacks are rugged supports that are excellent for a wide variety of critical laboratory applications. Constructed entirely from stainless steel with POM rollers and a PF31 phenolic knob, these support jacks are exceptionally stable and well-suited for corrosive environments such as fume hoods, water baths, marine and industrial labs, and more.

- **Supports a wide variety of items**—Stainless steel support jacks are available in a range of sizes and load capacities up to 60 kg, static load.
- **Robust lift mechanism**—Provides stability and torsional rigidity for safe operation.
- **Helps reduce contamination**—Support jacks feature smooth surfaces that are easy to clean and sanitize. All mechanical support jacks are fully autoclavable at 121° C for sterile applications.
- **Reaches new heights**—Maxi-Lift stainless steel support jacks have a maximum height that is approximately 30% higher than traditional support jacks for special applications.
- **Options to meet your needs**—Support jacks manufactured with anodized aluminum and powder-coated aluminum decks (on stainless steel lift mechanisms) for less critical applications.
- **Two-year warranty on all support jacks**



Maxi-Lift Stainless Steel Support Jacks

Rugged laboratory supports for critical environments



Stainless Steel Support Jacks

Ratcheting handle

A ratcheting handle is provided with the (30 x 30 cm and 40 x 40 cm) models.

Simply slides onto the handwheel to greatly reduce the effort required for raising and lowering the deck.



Remote control

The wireless remote for Electronic Lift 240 simplifies control, even when the lift is in a fume hood.



Description Plate, L x W, cm	Minimum Height, cm	Maximum Height, cm	Maximum Static Load, kg	Catalog No.	2020 List Price
Stainless steel support jacks					
10 x 10	5.5	12.0	10	B11115	\$251.80
16 x 13	6.0	27.5	30	B11120	278.20
20 x 20	6.0	27.5	30	B11130	332.80
24 x 24	6.0	27.5	30	B11140	353.80
30 x 30	9.0	47.0	60	B11180	1,721.40
40 x 40	9.0	47.0	60	B11190	1,935.40
Maxi-lift stainless steel support jacks					
16 x 13	7.5	40.0	30	B11122	332.80
20 x 20	7.5	40.0	30	B11132	405.20
Electronic Lift 240					
24 x 24	12	30.0	25*	B11220	4,292.80
Anodized aluminum deck support jacks					
10 x 10	5.5	12.0	10	B11016	194.20
16 x 13	6.0	27.5	30	B11021	217.40
20 x 20	6.0	27.5	30	B11031	262.40
24 x 24	6.0	27.5	30	B11041	291.80
30 x 30	9.0	47.0	60	B11081	1,253.20
40 x 40	9.0	47.0	60	B11091	1,478.80
Powder-coated aluminum deck support jacks					
10 x 10	5.5	12.0	10	B11015	177.40
16 x 13	6.0	27.5	30	B11020	200.40
20 x 20	6.0	27.5	30	B11030	241.40
24 x 24	6.0	27.5	30	B11040	265.40
30 x 30	9.0	47.0	60	B11080	1,097.80
40 x 40	9.0	47.0	60	B11090	1,353.80
Accessories					
Ratcheting handle (for 30x30 cm or 40x40 cm support jacks)				B11089	68.20

*Dynamic load

Also available

a. LIFT 240 Electronic adjustable support jack, with remote control, stainless steel construction and PTFE bellows to protect electronic components.

b. Support jacks with epoxy powder-coated aluminum and anodized aluminum decks, with stainless steel lift mechanisms.



a.



b.

Test Tube Racks



Test tube racks

Stainless steel test tube racks

Racks are constructed entirely of rugged, corrosion-resistant 304 stainless steel. Highly polished surfaces reduce porosity and reinforce corrosion-resistant properties.

Test tube racks

Maximum Tube Diameter, mm	Maximum # of Tubes	Format	Length mm	Width mm	Height mm	Cat. No.	2020 List Price
17	12	2 x 6	145	52	90	B8210	\$57.80
17	24	2 x 12	278	52	90	B8212	63.00
17	48	4 x 12	287	97	90	B8214	110.00
20	12	2 x 6	164	60	90	B8220	75.60
20	24	2 x 12	310	60	90	B8222	95.40



Test tube racks, Z-style

Test tube racks, Z-style

Maximum Tube Diameter, mm	Maximum # of tubes	Format	Length mm	Width mm	Height mm	Cat. No.	2020 List Price
13	50	10 x 5	50	165	85	B8290	\$50.40
17	50	10 x 5	50	220	110	B8291	50.40
13	25	5 x 5	50	85	85	B8292	37.80
17	25	5 x 5	50	110	110	B8293	37.80

Polypropylene test tube racks

Sturdy polypropylene racks with alphanumeric positions for easy sample identification. Racks are stackable, non-conductive, and will not float in water baths. Suitable for use in temperatures from -20° C to 90° C. Supplied in three pieces for easy and permanent assembly, in packs of five racks.



Test tube racks, PP

Test tube racks, PP

Maximum Tube Diameter, mm	Format	Length mm	Width mm	Height mm	White Cat. No.	Blue Cat. No.	Red Cat. No.	2020 List Price
13	6 x 14	265	126	75	4340000	4340001	—	\$80.80
16	5 x 11	265	126	75	4340060	4340061	4340062	80.80
18	5 x 11	265	126	75	4340010	4340011	4340012	80.80
20	4 x 10	265	126	75	4340020	4340021	4340022	80.80
25	4 x 8	265	126	88	4340030	4340031	4340032	80.80
30	3 x 7	265	126	88	4340040	4340041	4340042	80.80

Sample Cups for Clinical Analyzers

BRAND® sample cups are made from virgin polystyrene and are designed to fit many common analyzers. Caps and lids are made of polyethylene for a snug fit. Cups and caps meet CE-IVD Directive 98/79 (except 722060).



[a] Sample Cups for Technicon® Analyzers



[b] Push-on Caps to fit cup #115015 and 115016



[c] Sample cups for Coulter Counter® with lids



[d] Sample cups with snap caps

Sample cups

Description	Capacity mL	Upper diameter mm	Lower diameter mm	Height mm	Qty./Pack	Cat. No.	2020 List Price
Sample Cups for Technicon® Analyzers [a]	1.5	15	12.2	22.7	12000	115015	\$544.80
	2	14.8	12.8	24.9	10000	115016	481.80
	4	17	13.3	38	6000	115017	411.40
Push-on caps to fit cup #115015 and 115016 [b]					1000	115020	57.80
Sample Cups for Coulter Counter® with Lids [c]	20	32	n/a	56	1000	722055	177.40
Sample Cups with snap caps [d]	12	22	22	38	1000	722060	278.20

Mucasol® Universal Detergent

Liquid, alkaline high-performance concentrate for immersion and ultrasonic baths. Universal cleaner for laboratory equipment and instruments made of glass, porcelain, plastic, rubber, and metal. Items are cleaned in ~10-30 minutes, without mechanical help. Mucasol® replaces chromosulfuric acid, is free from chlorine and caustic alkalis, is non-toxic, non-aggressive, and biodegradable. Prolonged exposure of zinc and non-anodized aluminium surfaces should be avoided.

Ingredients

- > 30% phosphates
- < 5% anionic surfactants, amphoteric surfactants, complexing agents, corrosion inhibitors, auxiliary agents

Concentration for use

- Ultrasonic bath: 0.2 - 2% (1.4 - 14 mL/L)
- Immersion bath: 0.7 - 3% (5 - 22 mL/L)

Chemical and physical specifications

- Light green, clear liquid
- Density—approximately 1.4 g/mL
- pH value (0.7%)—approximately 11.5
- pH value (3%)—approximately 11.7

Mucasol®

Description	Cat. No.	2020 List Price
Mucasol® Universal Detergent, 2L bottle, each	44003B	\$169.80



Class A, USP, Certified Volumetric Glassware

BLAUBRAND® volumetric glassware is made of chemically resistant glass for durability and precision. Each piece of glassware is individually calibrated at BRAND®'s DIN EN ISO 9001 certified facility in Wertheim, Germany.

- **Class A**—Certified as Class A for superior accuracy.
- **USP**—BLAUBRAND® USP volumetric instruments are constructed according to DIN EN ISO standards with error limits that meet the specifications of USP/ASTM. Perfect for companies who are audited by US authorities such as the FDA.
- **Individually adjusted**—Each individual piece of glassware is marked on a computer controlled, automated production line to ensure maximum precision.
- **Certificates**—USP batch certificates are supplied. Individual USP and DAkkS calibration certificates are available upon request.
- **Thermal stress**—A carefully controlled annealing process ensures that the thermal stress of BLAUBRAND® glassware is eliminated prior to adjustment. This ensures that there is no volume change during or after heating up to 250° C.
- **High quality inks**—The annealing process also bakes on the high quality ink which provides durable long service life graduations.
- **Flexible screen stencils**—Flexible screen stencils are used for graduated cylinders and graduated pipettes to ensure that volume markings match the calibration marks at all intermediate volumes.
- **Statistical analysis**—Statistical process control ensures at least 99.6% compliance with predefined specifications.



BLAUBRAND® Class A, USP, Certified Volumetric Glassware

BLAUBRAND® Bulb Pipette, 1 mark, Class AS, USP, Certified

- AR-GLAS®
- DIN EN ISO 648
- Calibrated to deliver (TD, Ex)
- Includes one USP batch certificate

Volume (mL)	Error limit (+/-mL)	Qty./Pack	Cat. No.	2020 List Price
0.5	0.005	12	30601	\$108.40
1	0.006	12	30602	98.80
2	0.006	12	30603	110.80
3	0.01	6	30605	69.40
4	0.01	6	30606	90.00
5	0.01	6	30607	70.00
6	0.01	6	30608	95.80
7	0.01	6	30609	95.80
8	0.02	6	30610	95.80
9	0.02	6	30611	95.80
10	0.02	6	30612	70.80
15	0.03	6	30613	83.80
20	0.03	6	30614	90.60
25	0.03	6	30615	92.40
30	0.03	6	30616	105.80
40	0.05	6	30617	129.20
50	0.05	6	30618	118.00
100	0.08	6	30619	164.00

BLAUBRAND® Graduated Pipette, Class AS, USP, Certified

- AR-GLAS®
- DIN EN ISO 835
- Calibrated to deliver (TD, Ex)
- Suitable for cotton plug
- Includes one USP batch certificate

Volume (mL)	Subdivision (mL)	Error limit (+/-mL)	Qty./Pack	Cat. No.	2020 List Price
1	0.01	0.007	12	27506	\$81.40
2	0.02	0.01	12	27509	81.40
5	0.05	0.02	12	27511	99.80
10	0.1	0.03	12	27513	101.40



BLAUBRAND® Class A, USP, Certified Volumetric Glassware



BLAUBRAND® Volumetric Flask, Class A, USP, Certified, Glass Stopper

- Boro 3.3 DIN EN ISO 1042
- Includes one USP batch certificate
- Calibrated to contain (TC, In)

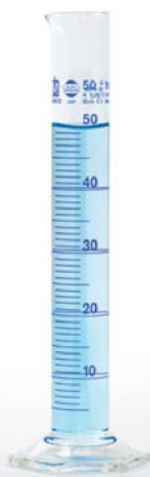
Volume (mL)	Error limit (+/-mL)	Stopper NS	Qty./Pack	Cat. No.	2020 List Price
5	0.02	10/19	2	36968	\$51.40
10	0.02	10/19	2	36973	51.40
20	0.02	10/19	2	36975	51.80
25	0.03	10/19	2	36977	51.80
50	0.05	12/21	2	36978	55.40
100	0.08	14/23	2	36979	60.00
200	0.1	14/23	2	36980	79.60
250	0.12	14/23	2	36981	83.00
500	0.2	19/26	2	36982	98.60
1000	0.3	24/29	1	36983	79.00
2000	0.5	29/32	1	36984	105.00



BLAUBRAND® Amber Volumetric Flask, Class A, USP, Certified, Glass Stopper

- Boro 3.3, DIN EN ISO 1042
- Includes one USP batch certificate
- Calibrated to contain (TC, In)

Volume (mL)	Error limit (+/-mL)	Stopper NS	Qty./Pack	Cat. No.	2020 List Price
5	0.02	10/19	2	37461	\$108.80
10	0.02	10/19	2	37462	108.80
20	0.02	10/19	2	37463	108.60
25	0.03	10/19	2	37464	108.60
50	0.05	12/21	2	37465	113.00
100	0.08	14/23	2	37467	114.00
200	0.1	14/23	2	37468	141.40
250	0.12	14/23	2	37469	156.80
500	0.2	19/26	2	37470	190.60
1000	0.3	24/29	1	37471	137.60



BLAUBRAND® Graduated Cylinder, Tall Form, Class A, USP, Certified

- Boro 3.3, DIN EN ISO 4788
- Includes one USP batch certificate
- Calibrated to contain (TC, In)
- With spout and hexagonal base

Volume (mL)	Subdivision (mL)	Error limit (+/-mL)	Height (mm)	Qty./Pack	Cat. No.	2020 List Price
5	0.1	0.05	115	2	32805	\$34.20
10	0.2	0.1	140	2	32808	34.20
25	0.5	0.17	170	2	32820	35.40
50	1	0.25	200	2	32828	40.20
100	1	0.5	260	2	32838	42.00
250	2	1	335	2	32848	80.00
500	5	2.0	365	2	32854	138.00
1000	10	3.0	465	1	32862	96.80
2000	20	6.0	505	1	32864	179.80

PFA Trace Analysis Labware

VITLAB® trace analysis labware is manufactured from PFA (a perfluoroalkoxy copolymer), which is highly resistant to heat and chemical contamination and has surface properties that greatly simplify cleaning. Use this labware for excellent results in ICP-MS, production and storage of trace analysis standards, isotope separations, sample digestions, and more.

With the increasing need in trace analysis labs for ultra-low concentration determinations in the ng/g (ppb) and pg/g (ppt) range, the use of PFA labware has become more and more important. Other materials, when not specially treated, may be subject to interaction between the vessel and the sample, standards, or reagents it contains. This may cause incorrect results with modern trace analysis instrumentation.

All VITLAB® PFA trace analysis labware features visible, accurate, and permanent graduations for precise measuring. PFA labware is suitable for sterilization using heat, gas, and chemical methods for handling sensitive biological solutions.

Excellent temperatures stability—VITLAB® PFA trace analysis labware maintains its stability in temperatures from -200° C to 250° C.

Properties

No leachable metals—PFA is manufactured without metals such as calcium, aluminum, iron, magnesium, nickel, copper, manganese or zinc. These metals can leach into samples from other containers, and contaminate samples.

Simplified cleaning—Conventional labware for trace analysis requires time-consuming and expensive cleaning. The hydrophobic and anti-adhesive properties of the exceptionally smooth-surfaced PFA labware simplify the cleaning process, making it ideal for trace analysis.

Superior chemical resistance—PFA is inert with most reagents, including the nitric and hydrochloric acid routinely used in cleaning trace analysis labware. This stability significantly reduces the risk of cross-contamination.

Excellent long-term stability—PFA containers often extend the stability of low (ppb) concentration standards. Such stability reduces the time and cost of renewing trace analysis standard solutions.

Highly translucent—Translucency is important for making accurate measurements using volumetric labware.

Please see page 128 for description of various plastics.

Performing trace analysis?

See the new BRAND® Dispensette® S Trace Analysis bottle-top dispenser for Trace Analysis on page 43.

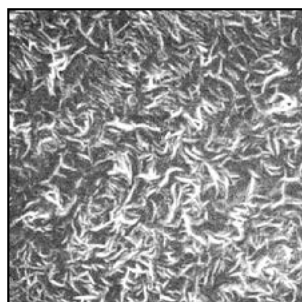


VITLAB® PFA Labware—pure, cleanable, rugged

Scanning electron microscopy illustrates the advantages of PFA in trace analysis. (Magnification: 8000X)

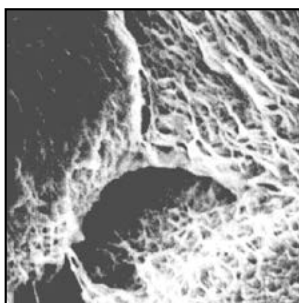
HDPE – Bottle

Scanning electron microscopy of this bottle wall shows the roughness of HDPE. The increased surface area of HDPE can lead to carryover of reagent molecules.



PTFE – Beaker

Similar to HDPE, electron micrographs of this PTFE beaker reveal a typically rough surface that can interact with reagent molecules and complicate cleaning.



PFA – Evaporating dish

Even at 8000x magnification, the surfaces of this PFA evaporating dish are very smooth. It is this smoothness, combined with PFA's hydrophobic, anti-adhesive and inert properties, that simplify cleaning.





Volumetric Flasks with screw caps, PFA

- Individually calibrated ring-markings
- Durable markings easy to read—limit cleaning temperature to 60° C to preserve ring mark
- High-transparency simplifies meniscus verification
- PFA screw caps help protect against outside contamination and leakage
- Meets Class A tolerances per DIN EN ISO 1042
- Autoclavable at 121° C without affecting tolerances

Volume mL	Tolerance mL	Height* mm	Thread GL	Qty./Pack	Cat. No.	2020 List Price
10	0.04	90	18	1	V107097	\$244.80
25	0.04	115	18	1	V107197	246.00
50	0.06	150	18	1	V107297	251.20
100	0.10	180	18	1	V107397	310.80
250	0.15	235	25	1	V107497	390.20
500	0.25	270	25	1	V107597	449.60

*Height without screw cap



Wide Mouth Reagent Bottles with screw caps, PFA

- Leach-resistant bottles for long-term storage of solvents and standards
- PFA screw caps with molded sealing ring for a positive seal
- Autoclavable at 121° C

Volume mL	Height mm	Diameter mm	Thread	Qty./Pack	Cat. No.	2020 List Price
250	150	61	S40	1	V109497	\$207.80
500	179	76	S40	1	V109597	287.20
1000	217	96	S40	1	V109697	398.60
2000	245	130	S40	1	V109797	821.80



Narrow Mouth Reagent Bottles with screw caps, PFA

- Leach-resistant bottles for long-term storage of solvents and standards
- PFA screw caps with molded sealing ring for a positive seal
- Autoclavable at 121° C

Volume mL	Height mm	Diameter mm	Thread	Qty./Pack	Cat. No.	2020 List Price
50	86	37	S28	1	V109297	\$119.80
100	120	45	S28	1	V109397	170.60
250	160	61	S28	1	V108297	198.20
500	190	76	S28	1	V108397	271.40
1000	240	96	S28	1	V108497	374.40

PFA Trace Analysis Labware

Round Bottom Flasks, PFA

- For rotary evaporators and distillation of high-purity chemicals
- With 29/32 ground socket
- Translucent surfaces simplify solvent monitoring
- Autoclavable at 121° C
- Maximum temperature under vacuum is 50° C

Volume mL	Height mm	Neck mm	Diameter	Qty./Pack	Cat. No.	2020 List Price
100	117	29/32	65	1	V107797	\$162.40
250	147	29/32	88	1	V107897	190.80
500	177	29/32	107	1	V107997	260.80



Sample Containers with screw cap, PFA

- For sample collection, transport and storage
- Supplied with a PFA screw cap
- Autoclavable at 121° C

Volume mL	Height mm	Diameter mm	Thread GL	Qty./Pack	Cat. No.	2020 List Price
30	54	38	40	1	V130297	\$77.40
60	90	38	40	1	V130397	93.40
90	62	54	56	1	V130497	106.00
180	112	54	56	1	V130597	130.40



Low-form Griffin Beakers, PFA

- Molded graduations easy to read and resistant to wear from repeated use
- Autoclavable at 121° C
- Nesting design conserves bench and storage space.

Volume mL	Grad mm	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
25	5	50	32	1	V110205	\$36.00
50	10	59	39	1	V110305	45.60
100	20	72	50	1	V110405	64.60
250	50	96	67	1	V110605	106.00
500	100	122	88	1	V110905	161.00
1000	100	141	109	1	V111005	289.60



Volumetric Labware and Containers

Class A Graduated Cylinders, PMP, certified

- Glass-clear tall-form cylinders calibrated "to contain"; Class A per DIN 12681 and ISO 6706
- Imprinted lot and year; supplied certificate includes mean test value and lot
- Red-screened graduations for legibility
- Temperatures of 60° C must not be exceeded during cleaning to preserve marks and inscriptions
- Autoclaving at 121° C will not cause permanent exceeding of tolerance limits

Volume, mL	Tolerance +/-mL	Grad mm	Height mm	Diameter mm	Qty./ Pack	Cat. No.	2020 List Price
10	0.10	0.20	145	15	2	V64614	\$24.00
25	0.25	0.50	170	22	2	V64714	25.20
50	0.50	1.00	200	27	2	V64814	26.40
100	0.50	1.00	250	33	2	V64914	35.60
250	1.00	2.00	315	44	2	V65014	55.60
500	2.50	5.00	360	58	1	V65114	45.00
1000	5.00	10.00	440	69	1	V65214	65.00
2000	10.00	20.00	535	97	1	V65414	105.00



V64914

Class A Graduated Cylinders, PMP, certified

- Glass-clear tall-form cylinders calibrated "to contain"; Class A per DIN 12681 and ISO 6706
- Molded graduations with ring marks at major increments
- Imprinted lot and year; supplied certificate includes mean test value and lot
- Autoclaving at 121° C will not cause permanent exceeding of tolerance limits

10	0.10	0.20	145	15	2	V64604	19.00
25	0.25	0.50	170	22	2	V64704	19.00
50	0.50	1.00	200	27	2	V64804	20.00
100	0.50	1.00	250	33	2	V64904	27.40
250	1.00	2.00	315	44	2	V65004	42.00
500	2.50	5.00	360	58	1	V65104	43.00
1000	5.00	10.00	440	69	1	V65204	63.00
2000	10.00	20.00	482	97	1	V65304	102.80



V64904



V649081

Class B Graduated Cylinders, PP

- Highly translucent tall-form cylinders calibrated "to contain"; Class B per DIN 12681 and ISO 6706
- Molded graduations with blue screened overprint for legibility
- Hexagonal base resists rolling
- Temperatures of 60° C must not be exceeded during cleaning to preserve marks and inscriptions



10	0.20	0.20	145	15	12	V646081	57.60
25	0.50	0.50	170	22	12	V647081	68.20
50	1.00	1.00	200	27	12	V648081	83.00
100	1.00	1.00	250	33	12	V649081	100.60
250	2.00	2.00	315	44	6	V650081	75.60
500	5.00	5.00	360	58	6	V651081	104.00
1000	10.00	10.00	440	69	6	V652081	142.60
2000	20.00	20.00	482	97	3	V653081	128.00



VITLAB® Volumetric Labware and Containers



Class B Graduated Cylinders, PP

- Highly translucent tall-form cylinders calibrated "to contain"; Class B per DIN 12681 and ISO 6706
- Molded graduations, with ring marks at major increments
- Hexagonal base resists rolling

Volume mL	Tolerance +/-mL	Grad mL	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
10	0.20	0.20	145	15	12	V646941	\$45.00
25	0.50	0.50	170	22	12	V647941	56.60
50	1.00	1.00	200	27	12	V648941	63.00
100	1.00	1.00	250	33	12	V649941	78.60
250	2.00	2.00	315	44	6	V650941	53.60
500	5.00	5.00	360	58	6	V651941	71.40
1000	10.00	10.00	440	69	6	V652941	99.60
2000	20.00	20.00	482	97	3	V653941	94.40

Class B Graduated Cylinders, SAN

- Glass-clear tall-form cylinders calibrated "to contain"; Class B per DIN 12681 and ISO 6706
- Molded graduations, with ring marks at major increments
- Hexagonal base resists rolling

50	1.00	1.00	199	28	12	V64891	83.00
100	1.00	1.00	260	34	12	V64991	110.00
250	2.00	2.00	315	47	6	V65091	82.00
500	5.00	5.00	350	61	6	V65191	111.20
1000	10.00	10.00	415	76	6	V65291	143.80

Short-form Graduated Cylinders, SAN

- Short-form design increases stability to help prevent spills
- Clear with molded graduations for easy measurement
- Circular base

50	1.00	1.00	142	27	12	V64191	92.40
100	2.00	2.00	163	37	12	V64291	104.00
250	5.00	5.00	192	51	6	V64391	76.60
500	10.00	10.00	218	67	6	V64491	108.00
1000	20.00	20.00	285	78	6	V64591	134.40

Short-form Graduated Cylinders, PP

- Short-form design increases stability to reduce spills
- Highly transparent with molded graduations for easy measurement
- Circular base

25	0.50	0.50	122	22	12	V640941	48.40
50	1.00	1.00	142	27	12	V641941	67.00
100	2.00	2.00	163	37	12	V642941	77.60
250	5.00	5.00	192	51	6	V643941	56.60
500	10.00	10.00	218	67	6	V644941	80.80
1000	20.00	20.00	285	78	6	V645941	107.00

Please see page 130 for description of various plastics.

Class A UV-protect Volumetric Flasks with PP NS stopper

- PMP, certified
- Superior light protection to amber glass at most wavelengths*
- Meets Class A tolerances per DIN EN ISO 1042**
- Supplied with imprinted lot number, batch certificate

Volume mL	Tolerance +/-mL	Height*** mm	Stopper NS	Qty./Pack	Cat. No.	2020 List Price
10	0.04	90	10/19	2	V670950	\$55.60
25	0.04	115	10/19	2	V671950	78.00
50	0.06	150	12/21	2	V672950	87.60
100	0.10	180	14/23	2	V673950	95.20
250	0.15	235	19/26	2	V674950	115.20
500	0.25	270	19/26	2	V675950	149.00
1000	0.40	310	24/29	1	V676950	97.60



V675950

Class A Volumetric Flasks, PMP, with NS stopper, PP certified

- Meets Class A tolerances per DIN EN ISO 1042**
- Supplied with imprinted lot number, batch certificate

Volume mL	Tolerance +/-mL	Height*** mm	Stopper NS	Qty./Pack	Cat. No.	2020 List Price
10	0.04	90	10/19	6	V67704	\$102.80
25	0.04	115	10/19	6	V67104	102.80
50	0.06	150	12/21	6	V67204	130.00
100	0.10	180	14/23	6	V67304	148.00
250	0.15	235	19/26	5	V67404	156.40
500	0.25	270	19/26	4	V67504	129.00
1000	0.40	310	24/29	3	V67604	115.40



V67304

V67395

Class B Volumetric Flasks, PMP, with NS stopper, PP

- Individually adjusted ring-marked flasks are Class B per DIN EN ISO 1042**

10	0.08	90	10/19	6	V67795	86.00
25	0.08	115	10/19	6	V67195	87.00
50	0.12	150	12/21	6	V67295	108.00
100	0.20	180	14/23	6	V67395	122.80
250	0.30	235	19/26	5	V67495	131.20
500	0.50	270	19/26	4	V67595	110.20
1000	0.80	310	24/29	3	V67695	96.60

* More information at www.brandtech.com.

**Autoclaving at 121° C will not cause permanent exceeding of tolerance limits; To preserve markings, cleaning at no higher than 60° C is recommended.

***Height without stopper

VITLAB® Volumetric Labware and Containers



V675941



V673895

Class B Volumetric Flasks, PP, with NS stopper, PP

- Individually adjusted ring-marked flasks are Class B per DIN EN ISO 1042**

Volume mL	Tolerance +/-mL	Height* mm	Stopper NS	Qty./Pack	Cat. No.	2020 List Price
10	0.08	90	10/19	6	V677941	\$74.40
25	0.08	115	10/19	6	V671941	74.40
50	0.12	150	12/21	6	V672941	83.00
100	0.20	180	14/23	6	V673941	87.00
250	0.30	235	19/26	5	V674941	76.60
500	0.50	270	19/26	4	V675941	71.40
1000	0.80	310	24/29	3	V676941	68.40

Class B Volumetric Flasks, PMP, with screw caps, PP

- Individually adjusted ring-marked flasks are Class B per DIN EN ISO 1042**
- Autoclaving at 121° C will not cause permanent exceeding of tolerance limits

Volume mL	Tolerance +/-mL	Height* mm	Thread GL	Qty./Pack	Cat. No.	2020 List Price
10	0.08	90	18	6	V677895	\$86.00
25	0.08	115	18	6	V671895	86.00
50	0.12	150	18	6	V672895	109.00
100	0.20	180	18	6	V673895	122.80
250	0.30	235	25	5	V674895	116.40
500	0.50	270	25	4	V675895	111.40
1000	0.80	310	32	3	V676895	96.60

Class B Volumetric Flasks, PP, with screw caps, PP

- Individually adjusted ring-marked flasks are Class B per DIN EN ISO 1042**

10	0.08	90	18	6	V677891	\$75.60
25	0.08	115	18	6	V671891	76.60
50	0.12	150	18	6	V672891	88.00
100	0.20	180	18	6	V673891	93.40
250	0.30	235	25	5	V674891	102.80
500	0.50	270	25	4	V675891	91.40
1000	0.80	310	32	3	V676891	78.80

Erlenmeyer Flasks, PP, with screw caps, PP

- Flasks made from highly translucent polypropylene
- Blue printed scale for legibility**



Volume mL	Increment mL	Thread GL	Qty./Pack	Cat. No.	2020 List Price
75	12.5	45	6	V566941	\$44.80
125	12.5	45	6	V567941	51.00
250	25	45	6	V568941	71.40
500	50	45	6	V569941	81.60
1000	100	45	4	V570941	75.40
Screw cap, blue		45	6	V83350	14.20

* Height without stopper/screw cap.

** To preserve markings, cleaning at no higher than 60° C is recommended.



V673891



V567941

Please see page 130 for description of various plastics.

VITLAB®

Griffin Beakers, PP



- Molded graduations with blue screened overprint for legibility
- Autoclavable at 121° C according to DIN EN 285
- Meets the requirements of ISO 7056

Volume mL	Grad mL	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
10**	2	36	30	12	V605081*	\$23.40
25	5	50	38	12	V606081*	23.40
50	10	60	47	12	V607081*	24.40
100	10	70	55	12	V608081	29.40
150**	20	80	66	12	V609081	40.00
250	25	95	77	6	V610081	21.40
400**	50	112	87	6	V611081	28.40
500	50	118	94	6	V618081	31.00
600**	50	127	100	6	V612081	31.40
1000	100	147	120	6	V614081	43.00
2000	200	187	149	6	V615081	86.00
3000	250	212	170	4	V616081	104.00
5000	500	247	203	4	V617081	132.40



Griffin Beakers, PP



- Molded graduations for durability
- Autoclavable at 121° C according to DIN EN 285
- Meets the requirements of ISO 7056

25	5	50	38	12	V606941	23.00
50	10	60	47	12	V607941	24.00
100	10	70	55	12	V608941	28.40
150**	20	80	66	12	V609941	38.80
250	25	95	77	6	V610941	20.00
400**	50	112	87	6	V611941	27.40
500	50	118	94	6	V618941	29.40
600**	50	127	100	6	V612941	30.40
1000	100	147	120	6	V614941	42.00
2000	200	187	149	6	V615941	85.00
3000	250	212	170	4	V616941	102.80
5000	500	247	203	4	V617941	131.20



Griffin Beakers, PMP

- Easily readable, printed red scale*
- Meets the requirements of ISO 7056

10**	2	36	30	12	V60503	32.60
25	5	50	38	12	V60603	32.60
50	10	60	47	12	V60703	41.00
100	10	70	55	12	V60803	50.40
150**	20	80	66	12	V60903	66.00
250	25	95	77	6	V61003	34.60
400**	50	112	87	6	V61103	50.40
500	50	118	94	6	V61803	53.60
600**	50	127	100	6	V61203	57.60
1000	100	147	120	6	V61403	84.00
2000	200	187	149	6	V61503	144.80
3000	250	212	170	4	V61603	157.40
5000	500	247	203	4	V61703	211.00



* Printed scale, not raised

** Variant in addition to ISO 7056.

VITLAB® Volumetric Labware and Containers

**Griffin Beakers, PMP**

- Molded graduations for durability
- Autoclavable at 121° C according to DIN EN 285
- Meets the requirements of ISO 7056

Volume mL	Grad mL	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
25	5	50	38	12	V60695	\$31.40
50	10	60	47	12	V60795	40.00
100	10	70	55	12	V60895	49.40
150*	20	80	66	12	V60995	65.00
250	25	95	77	6	V61095	33.60
400*	50	112	87	6	V61195	49.40
500	50	118	94	6	V61895	52.40
600*	50	127	100	6	V61295	56.60
1000	100	147	120	6	V61495	83.00
2000	200	187	149	6	V61595	143.80
3000	250	212	170	4	V61695	156.40
5000	500	247	203	4	V61795	210.00

* Variant in addition to ISO 7056

**Griffin Beakers, ETFE**

- Translucent with black graduations for legibility*
- Withstands temperatures from -100° C to +150° C
- High chemical resistance

25	5	50	32	1	V110204	16.80
50	10	59	39	1	V110304	19.00
100	20	72	50	1	V110404	27.40
250	50	96	67	1	V110604	51.40
400	50	109	77	1	V110704	62.00
500	100	122	88	1	V110904	70.40
600	100	125	91	1	V110804	86.00
1000	100	143	105	1	V111004	134.40

*To preserve markings, cleaning at no higher than 60° C is recommended.

Please see page 130 for description of various plastics.

VITLAB®

Graduated Pitchers, PP

- Translucent with molded graduations
- Autoclavable at 121° C according to DIN EN 285



Volume mL	Grad mL	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
50	2	70	40	24	V446941	\$47.20
100	2	80	50	24	V447941	63.00
250	5	120	74	12	V440941	54.60
500	10	140	92	12	V441941	57.60
1000	10	181	117	6	V442941	43.00
2000	20	213	152	6	V443941	65.00
3000	50	242	172	6	V444941	86.00
5000	50	270	204	6	V445941	178.40



Graduated Pitchers, PP

- Translucent with blue screened molded graduations*



50	2	70	40	24	V446081	63.00
100	2	80	50	24	V447081	71.40
250	5	120	74	12	V440081	62.00
500	10	140	92	12	V441081	69.20
1000	10	181	117	6	V442081	47.20
2000	20	213	152	6	V443081	84.00
3000	50	242	172	6	V444081	112.40
5000	50	270	204	6	V445081	179.40



Graduated Pitchers, SAN

- A safer, more durable alternative to glass pitchers
- Transparent with molded graduations



250	5	120	70	12	V44091	62.00
500	10	133	91	12	V44191	82.00
1000	10	170	116	6	V44291	59.60
2000	20	215	150	6	V44391	109.00
3000	50	242	170	6	V44491	137.40



Nesting Graduated Pitchers, PP

- Nesting design conserves bench space and simplifies storage
- Graduations printed on both sides with screening for easy, accurate measurements*



250	5	115	75	12	V480941	54.60
500**	10	140	97	12	V481941	57.60
1000**	10	167	125	12	V482941	91.40
2000	20	212	148	12	V483941	170.00
3000	50	242	170	12	V484941	229.80

*To preserve markings, cleaning at no higher than 60° C is recommended.

**Colors available – inquire

Now even more translucent color!



Please see page 130 for description of various plastics.

VITLAB® General Laboratory Products



VITgrip™ Laboratory Bottles

Excellent handling

VITgrip™ lab bottles have a slim waist which greatly enhances handling. The ergonomic and light weight design allows single-handed use of the VITgrip™ lab bottle. Molded volume graduations are exceptionally accurate and provide texture for a sure grip, especially when working with gloves. The lack of dirt-catching edges and the use of hydrophobic polypropylene, allow easy and thorough cleaning of VITgrip™ lab bottles. With double-sided graduations, the volume inside the bottle is easy to read, even during use.

Leakproof* and break resistant

Glass laboratory bottles pose a safety risk due to the hazards of broken glass, and content spillage in the event of breakage. VITgrip™ plastic (PP) lab bottles are safer because they are more resistant to breaking and are leakproof*. The bottle thread and the associated screw cap are a precisely matched pair. Together, they form a reliable sealing system without the need of a cap liner that can wear, corrode, or cause contamination. Bottles and caps are subject to a detailed quality inspection prior to delivery.

Safe storage

VITgrip™ lab bottles are supplied with tamper-evident caps, with a ring that tears off upon the first opening. It reliably signals if the bottle is still sealed before opening—ideal for ensuring secure storage of reference samples or safe transfer of samples between sampling site and lab. After the ring is torn off, the closure can be used as a regular screw cap. All VITgrip™ lab bottles have a GL 45 thread and an evenly formed neck area that allows controlled, smooth pouring of liquid.

Robust and versatile

VITgrip™ lab bottles and screw caps are made in Germany and are manufactured from polypropylene with exceptional chemical resistance against most acids, bases, and alcoholic solutions. VITgrip™ lab bottles and the supplied tamper-evident closures are suitable for contact with foodstuffs (according to regulation EU No. 10/2011).

* IMPORTANT NOTE—The term leakproof applies under the following test conditions:

The VITgrip™ lab bottle is half filled with distilled water and is closed with the supplied VITLAB® screw closure – after the ring of the tamper-evident closure clicks into place – with a torque of 5 Nm. Subsequently, the bottle is turned upside down and remains, standing on the screw cap, for 15 minutes, without the water inside escaping. The test is carried out at room temperature (approx. 20° C) and atmospheric pressure.

PLEASE NOTE—The transferability of results under test conditions to specific applications is dependent on multiple factors that are beyond our control. Therefore, we do not assume any liability for the transferability; each case has to be carefully checked by the user.



Volume mL	Graduation mL	Height** mm	Bottom-ø mm	Qty./Pack	Cat. No.	2020 List price
125	12.5	103	54	6	V110194	\$56.60
250	25	149	64	6	V110294	65.00
500	25	192	77	6	V110394	79.60
1000	50	234	97	6	V110494	113.40
2000	100	278	126	1	V110594	44.00
VITgrip starter set (1 each) 250, 500, 1000 mL				3	V111194	36.80
Replacement tamper-evident closure, PP, GL 45				6	V83330	16.80

** Height without screw cap

VITLAB 



VITsafe™ Safety Wash Bottles, LDPE, spray tube PP

- Durable safety imprint
- Material name in German, English, French, and Spanish
- Chemical formula, CAS No. hazard pictogram, signal word, risk phrases (H phrases), safety phrases (P phrases), as well as NFPA code

Reagent	Cap Color	Volume mL	Diameter mm	Height* mm	Qty./Pack	Cat. No.	2020 List Price
Distilled Water	Blue	500	76	166	12	V1352819	\$209.00
Ethanol	Orange	500	76	166	12	V1352869	209.00
Acetone	Red	500	76	166	12	V1452829	209.00
Heptane	Red	500	76	166	6	V1352899	106.40
Hexane	Red	500	76	166	6	V1352909	106.40
Xylene	Red	500	76	166	6	V1352959	106.40

*Height without spray tube



Dropping Bottles, LDPE, with dropper screw cap, HDPE



Volume mL	Thread GL	Diameter mm	Height mm	Qty./Pack	Cat. No.	2020 List Price
50	18	37	129	24	V94587	\$68.20
100	18	43	155	24	V94687	76.60
250	25	58	183	12	V94987	56.60
500	25	74	228	12	V95087	74.40
1000	32	92	269	12	V95187	100.80

Reagent Bottles, PP, with NS stoppers, PP

- Good chemical resistance, ideal for long-term storage of liquids
- Autoclavable at 121° C according to DIN EN 285

Volume mL	Stopper* NS	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
100	14/23	106	52	20	V100394	\$72.40
1000	29/32	213	108	10	V100694	96.60

*Stopper type A: With square knob and red core.



Reagent Bottles, PP, with screw caps, PP



- Screw caps help protect against outside contamination and leakage
- Autoclavable to 121° C according to DIN EN 285, except for V100989 and V100889

Volume mL	Thread GL	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
100	18	100	52	20	V100389	\$64.00
250	25	132	70	20	V100489	85.00
500	25	165	87	10	V100589	61.00
1000	32	202	108	10	V100689	80.80
2000	32	245	131	6	V100789	100.80
5000	45	315	178	1	V100889*	29.40
10000	63	394	222	1	V100989*	73.40

*Bottle V100889 includes 1 handle; bottle V100989 includes 2 handles.



VITLAB® General Laboratory Products

Wide Mouth Reagent Bottles, PP, with screw caps, PP

- Screw caps help protect against outside contamination and leakage
- Wider mouth for easier filling
- Autoclavable at 121° C according to DIN EN 285



Volume mL	Thread GL	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
100	32	96	55	20	V101589	\$85.00
250	45	132	73	20	V101689	108.00
500	45	172	87	10	V101789	69.20
1000	63	204	108	10	V101889	125.00
2000	63	243	131	6	V101989	94.40



Bottles, LDPE, with screw caps, PP

- Screw caps help protect against outside contamination and leakage



50	18	85	37	24	V94589	65.00
100	18	144	43	24	V94689	69.20
250	25	135	65	12	V94989	48.40
500	25	180	74	12	V95089	69.20



Wide Mouth Bottles LDPE, with screw caps, PP

- Screw caps help protect against outside contamination and leakage
- Wider mouth for easier filling



250	45	146	58	12	V93789	55.60
500	45	166	76	12	V93989	76.60
1000	63	226	91	12	V94189	109.00



Square Bottles, HDPE, with screw caps, LDPE

- Screw caps help protect against outside contamination and leakage
- Space-saving smaller footprint with square-shaped bottle

Volume mL	Thread GL	Height mm	Size mm	Qty./Pack	Cat. No.	2020 List Price
100	25	76	43 x 43	24	V91789	\$77.60
250	28	80	80 x 80	24	V91989	104.00
500	32	106	90 x 90	12	V92089	69.20
1000	32	187	80 x 80	12	V92189	94.40



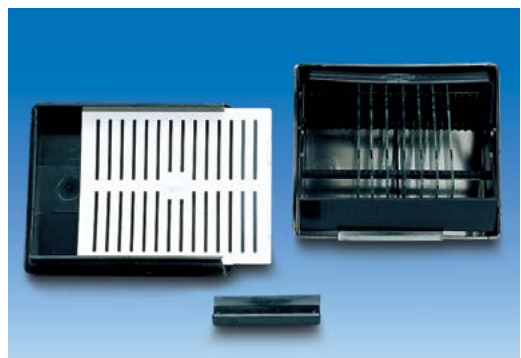
Wide Mouth Square Bottles, HDPE, with screw caps, LDPE

- Screw caps help protect against outside contamination and leakage
- Space-saving smaller footprint with square-shaped bottle

100	32	78	46 x 46	24	V92489	102.80
250	50	83	80 x 80	24	V92689	116.40
500	65	120	90 x 90	12	V92789	87.00
1000	65	168	90 x 90	12	V92889	109.00



VITLAB® General Laboratory Products



Forceps

Length mm	Qty./Pack	Cat. No.	2020 List Price
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Forceps, PMP with pointed ends

115	10	V67895	\$28.40
145	10	V67995	33.60

Forceps, POM with rounded ends

115	5	V68099	13.20
145	5	V68199	16.00
180	5	V68299	30.00
250	5	V68399	47.40

Scoops

Volume mL	Length mm	Qty./Pack	Cat. No.	2020 List Price
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Measuring Scoops, PP, volume marked on handle

2	60	12	V39194	\$6.60
5	82	12	V39294	8.00
10	100	12	V39394	10.40
25	135	12	V39494	11.00
50	160	12	V39594	21.00
100*	200	12	V39694	27.40
250	260	6	V39794	34.60
500	315	6	V39894	48.40
1000	385	6	V39994	59.80

*Colors available – inquire



Measuring Scoops, HDPE

15	115	12	V40093	11.60
25	135	12	V40193	17.00
65	185	12	V40293	22.00
110	215	12	V40393	31.40
150	250	12	V40493	36.80
350	310	6	V40593	35.60
750	350	6	V40693	58.80
1250	400	6	V40793	82.00



Slide Staining Kit, POM

Description	Size mm	Height mm	Qty./Pack	Cat. No.	2020 List Price
Universal Slide Staining Kit*	100 x 87	51	5	V99099	\$183.80
Staining jar	100 x 87	51	5	V99199	132.40
Staining rack	91 x 79	38	10	V99299	105.00

*Universal Kit V99099 includes one staining jar and a staining rack for 25 slides, 76 x 26 mm.



Please see page 130 for description of various plastics.

VITLAB® General Laboratory Products

Funnels, PP

- Handle with loop for hanging

Diameter mm	Approx vol. mL	Length mm	Stem Diameter mm	Qty./pack	Cat. No.	2020 List Price
30	5	45	1.5	24	V40894	\$21.00
30	6	47	4	24	V41094	21.00
40	14	65	4	24	V41194	25.20
50	32	85	7	24	V41294	31.40
75	88	108	7	12	V41394	20.00
100	222	155	8	12	V41494	37.80
120	342	180	11	12	V41594	47.40
150	817	220	15	12	V41694	63.00

Large Funnels, PP or HDPE*

- Integrated handle (except V41994)

200 (PP)	1300	200	22	6	V41794	72.40
250 (PP)	3200	260	30	6	V41894	126.00
350 (PP)	12500	440	35	1	V41994	44.00
400 (HDPE)*	12500	365	42	1	V42294	112.40
430 (HDPE)*	17500	420	37	1	V42393	149.00

*HDPE Large Funnels V42294 and V42393 are not food-safe products.

Powder Funnels, PP

65	70	15	10	V70794	27.00
80	75	21	10	V70894	38.80
100	92	24	10	V70994	41.00
120	105	27	10	V71094	50.40
150	138	28	5	V71194	32.60

Sample Vials, PP, with snap caps, LDPE

Volume mL	Height mm	Diameter mm	Qty./pack	Cat. No.	2020 List Price
5	25	20	25	V68594	\$48.40
18	57	22	25	V68894	62.00
50	97	30	10	V69194	32.20
160	110	50	10	V69294	37.60

Sample Vials, PP, with screw caps, PP

Volume mL	Height mm	Diameter mm	Thread GL	Qty./pack	Cat. No.	2020 List Price
60	90	38	40	10	V130394	\$111.40
180	112	54	56	10	V130594	162.80



Funnels



Large funnels



Powder funnels



Sample Vials, with snap caps



Sample Vials with screw caps

Please see page 130 for description of various plastics.



Bucket, PP



Bucket, HDPE

Buckets, PP, with handles, pouring lips, and graduations.



- With handle and lip for ease of pouring
- Markings at 1L graduations

Volume L	Height mm	Diameter mm	Qty./Pack	Cat. No.	2020 List Price
12	330	310	1	V96694	\$49.40
15	370	310	1	V96794	55.60

Buckets, HDPE, with handles



- With carrying handle
- Markings at 1L graduations

5	240	250	1	V96093	24.40
10	300	290	1	V96393	29.40
Lid for 5L bucket (LDPE)	—	—	1	V96293	6.60
Lid for 10L bucket (LDPE)	—	—	1	V96593	7.60



Imhoff Sedimentation Cones, SAN

- Transparent
- Screw closure allows drainage
- Graduated to 1000 mL

1000 mL Cone	1	388000	36.20
Rack, PMMA, (for 2 cones) 150x300x290 mm	1	388050	311.40

VITLAB® custom imprinting

VITLAB® has specialized capabilities in high-precision printing on plastic products with superior chemical and break resistance. Many VITLAB® products can be imprinted with logos or custom graduations for OEM or promotional use in relatively small quantities. Custom imprinted VITLAB® products are ideal for handling granulates, powders or liquids commonly used in agriculture, laboratories, and in the food, beverage and chemical industries. From multi-color logos to specialized measuring scales, VITLAB® can imprint plastic labware to meet your individual requirements and specifications. Custom imprinted labware by VITLAB® is of the highest quality, and offers a unique and functional means of presenting your company brand. Beakers, pitchers and scoops can also be made in colored plastic.

Contact BrandTech® Scientific for more information.

VITLAB®



Plastics Reference

	Suitable for Microwaves	Suitable for Autoclaving	Transparency	Max. Operating Temp (°C)	Brittleness Temp (°C)	Density (g/cm ³)
ETFE	Yes	Yes	Translucent	150	-100	1.70
FEP	Yes	Yes	Translucent	205	-100	2.15
HDPE	Yes	No	Translucent	105	-50	0.95
LDPE	Yes	No	Translucent	80	-50	0.92
PC	Yes	Yes*	Transparent	125	-130	1.20
PFA	Yes	Yes	Translucent	260	-200	2.17
PMMA	No	No	Transparent	65-95	-50	1.18
PMP	Yes	Yes	Transparent	150	0	0.83
POM	No	Yes*	Opaque	130	-40	1.42
PP	Yes	Yes	Translucent	125	0	0.90
PS	No	No	Transparent	70	-20	1.05
PTFE	Yes	Yes	Opaque	260	-200	2.17
SAN	No	No	Transparent	70	-40	1.03

* Frequent autoclaving may reduce mechanical stability. "Autoclaving" refers to steam sterilization at 121°C (250°F) at 15 PSIG for 20 minutes

+ Excellent chemical resistance	o Good to limited resistance	- Poor chemical resistance
Continuous exposure to the substance does not cause damage within 30 days. The plastic may remain resistant for years.	Continuous exposure to the substance causes minor damage, some of which is reversible, within 7-30 days (e.g., swelling, softening, decrease of mechanical strength, discoloration).	Not suitable for continuous exposure to the substance. Immediate damage may occur (loss of mechanical strength, deformation, discoloration, cracking, dissolution).

Chemical resistance of plastics to classes of substances at 20°C

	SAN	PC	POM	PMP	LDPE	HDPE	PP	ETFE	PFA	FEP	PTFE	PMMA	PS
Alcohols, aliphatic	+	+	+	+	+	+	+	+	+	+	+	-	+
Ethers	-	-	+	-	o	o	o	+	+	+	+	-	-
Aldehydes	-	o	o	o	o	+	+	+	+	+	+	o	-
Esters	-	-	-	o	o	o	o	+	+	+	+	o	-
Hydrocarbons, aliphatic	-	o	+	o	o	+	+	+	+	+	+	+	-
Hydrocarbons, aromatic	-	-	+	-	o	+	o	+	+	+	+	-	-
Hydrocarbons, halogenated	-	-	+	-	o	o	o	+	+	+	+	-	-
Ketones	-	-	+	o	o	o	o	o	+	+	+	-	-
Alkalis	+	-	+	+	+	+	+	+	+	+	+	+	+
Acids, strong or concentrated	-	-	-	+	+	+	+	+	+	+	+	-	o
Acids, weak or diluted	o	o	-	+	+	+	+	+	+	+	+	-	o
Oxidizing acids, oxidizing agents	-	-	-	-	-	-	-	+	+	+	+	-	-

Abbreviations of the described plastics to DIN 7728

SAN	Styrene-acrylonitrile copolymer	PMP	Polymethylpentene
PMMA	Polymethyl methacrylate	ETFE	Ethylenetetrafluoro ethylene copolymer
PC	Polycarbonate	FEP	Perfluoroethylene-propylene copolymer
POM	Polyoxymethylene	PFA	Perfluoroalkoxy copolymer
LDPE	Low-density Polyethylene	PS	Polystyrene
HDPE	High-density Polyethylene	PTFE	Polytetrafluoroethylene
PP	Polypropylene		

The recommendations listed here are based on technical literature and information provided by the manufacturers of raw materials. They were prepared carefully and are intended to inform and advise. However, they cannot replace suitability testing performed by the user under actual working conditions.



Food-safe products according to EC Directive No. 10/2011

BRAND® Quality Grade Reference

The proper quality grade for every application

The right quality grade should be used in each application. Consequently, BRAND® offers a range of quality grades so that the optimal one is always available.

	sterile acc. ISO 11 137	free of DNA	free of RNase	free of endotoxins	free of ATP	free of cytotoxic substances acc. ISO 10 993
Pipette tips and filter tips standard racked		✓	✓	✓	✓	
Pipette tips and filter tips BIO-CERT®	✓	✓	✓	✓	✓	
PD-Tips BIO-CERT®	✓	✓	✓	✓	✓	
Microcentrifuge tubes sterile BIO-CERT®	✓	✓	✓	✓	✓	
Microcentrifuge tubes with lid closure		✓	✓	✓		
PCR products		✓	✓	✓		
Deep-well plates		✓	✓	✓		
BRANDplates® standard		✓	✓	✓		✓
BRANDplates® sterile	✓	✓	✓	✓		✓
UV-Cuvettes micro, individually wrapped		✓	✓	✓		

BIO-CERT® products correspond to the highest quality grade –

They are sterile, free from DNA, RNases, endotoxins and ATP

Sterility—Sterility means being free of living organisms. BRAND® products are sterilized with beta radiation according to ISO 11 137 and the AAMI Guidelines. The radiation dose is at least 12.1 kGy. The inertGrade™ microplates are an exception; these are sterilized with ethylene oxide due to their special surface characteristics.

An SAL (sterility assurance level) of 10^{-6} is guaranteed, meaning no more than one part in 1×10^6 can be contaminated! This level of sterility complies with the requirements of USP 29 and the Ph.Eur.

DNA and RNases—DNA (deoxyribonucleic acid) is the carrier of genetic information. RNases (ribonucleases) are enzymes that can degrade ribonucleic acid (RNA) through hydrolysis. Products from BRAND® are free from DNA ($< 4 \times 10^{-14}$ g/tip = 40 fg), to avoid false positive results, e.g., in PCR, and free from RNases ($< 8.6 \times 10^{-15}$ g/tip = 8.6 fg), to make it possible to work with RNA.

Endotoxins—Endotoxins are an indicator of the presence of Gram negative bacteria and make up the largest group of pyrogens. These two are often falsely believed to be synonymous. The concentration of endotoxins in products from BRAND® is determined by the kinetic-turbidimetric limulus amoebocyte lysate (LAL) test. The detection limit is 0.01 EU/mL. This corresponds to an endotoxin concentration of $< 1 \times 10^{-12}$ g/tip (1 pg/tip). Freedom from endotoxins is required in pharmaceutical manufacture and cell culture.

ATP—ATP serves as a marker for detecting viable bacteria, yeasts, and human cells, etc. Products from BRAND® are free of ATP (ATP concentration $< 1 \times 10^{-15}$ g/tip = 1 fg) and thus are especially suitable for luminescence measurements.

Trademarks

Trademark	Owner	Trademark	Owner
accu-jet®	BRAND® GMBH + CO KG	sartorius®	SARTORIUS AG
AutoRep™	Mettler-Toledo Rainin, LLC	seripettor®	BRAND® GMBH + CO KG
BIO-CERT®	BRAND® GMBH + CO KG	Synchro™	VACUUBRAND GMBH + CO KG
BIOHIT®	Sartorius Biohit Liquid Handling Oy	TipStack™	BRAND® GMBH + CO KG
BOCHEM®	Bochem Instrumente GmbH	Titrette®	BRAND® GMBH + CO KG
BRAND®	BRAND® GMBH + CO KG	Transferpette®	BRAND® GMBH + CO KG
BRANDplates®	BRAND® GMBH + CO KG	Transferpettor™	BRAND® GMBH + CO KG
BrandTech®	BrandTech Scientific, Inc.	Tween®	ICI Americas, Inc.
cellGrade™	BRAND® GMBH + CO KG	VACUUBRAND®	VACUUBRAND GMBH + CO KG
Combitips advanced®	Eppendorf AG	VACUU-BUS®	VACUUBRAND GMBH + CO KG
Daigger®	A. Daigger and Company, Inc.	VACUU-CONTROL™	VACUUBRAND GMBH + CO KG
Dispensette®	BRAND® GMBH + CO KG	VACUU-LAN®	VACUUBRAND GMBH + CO KG
DistriTips®	Gilson, Inc.	VACUU-SELECT®	VACUUBRAND GMBH + CO KG
Easy Calibration™	BRAND® GMBH + CO KG	VARIO®	VACUUBRAND GMBH + CO KG
EASYCAL™	BRAND® GMBH + CO KG	VITLAB®	VITLAB GmbH
Encode™	Rainin Instruments, LLC	VITON®	DuPont Performance Elastomers, LLC
Eppendorf®	Eppendorf AG	VWR®	VWR International, LLC
Finnpipette®	Thermo Fisher Scientific, Inc.	Windows®	Microsoft Corporation
Fisherbrand®	Thermo Fisher Scientific, Inc.	Windows® NT	Microsoft Corporation
Gilson®	Gilson, Inc.		
HandyStep®	BRAND® GMBH + CO KG		
hydroGrade™	BRAND® GMBH + CO KG		
immunoGrade™	BRAND® GMBH + CO KG		
LightCycler®	Roche Diagnostics GmbH		
lipoGrade™	BRAND® GMBH + CO KG		
LTS™	Rainin Instruments, LLC		
macro™	BRAND® GmbH + CO KG		
Microsoft®	Microsoft Corporation		
MucasoI®	Schülke & Mayr GmbH		
nano-cap™	BRAND® GMBH + CO KG		
PD-Tip™	BRAND® GMBH + CO KG		
Peltronic™	VACUUBRAND GMBH + CO KG		
PLT™	BRAND® GMBH + CO KG		
pureGrade™	BRAND® GMBH + CO KG		
QuikSip™	BRAND® GMBH + CO KG		
Rainin®	Rainin Instrument, LLC		
RC 6 Chemistry-HYBRID™	VACUUBRAND GMBH + CO KG		
Repeater®	Eppendorf AG		

Other product names, corporate names or titles used within this catalog may be trademarks or registered trademarks of other companies, and are mentioned only in an explanatory manner and for identification purposes to the benefit of their respective owners, and without intent to infringe.

Quality and Certifications

ISO 9001

The ISO 9001 and 9002 certifications earned by BRAND®, BOCHEM®, VACUUBRAND and VITLAB®, are your guarantee that the high performance standards designed into our products are consistently met in production and quality control. This certification ensures our customers and business partners that they are receiving products designed and manufactured to the highest international quality standards.

ISO 14001

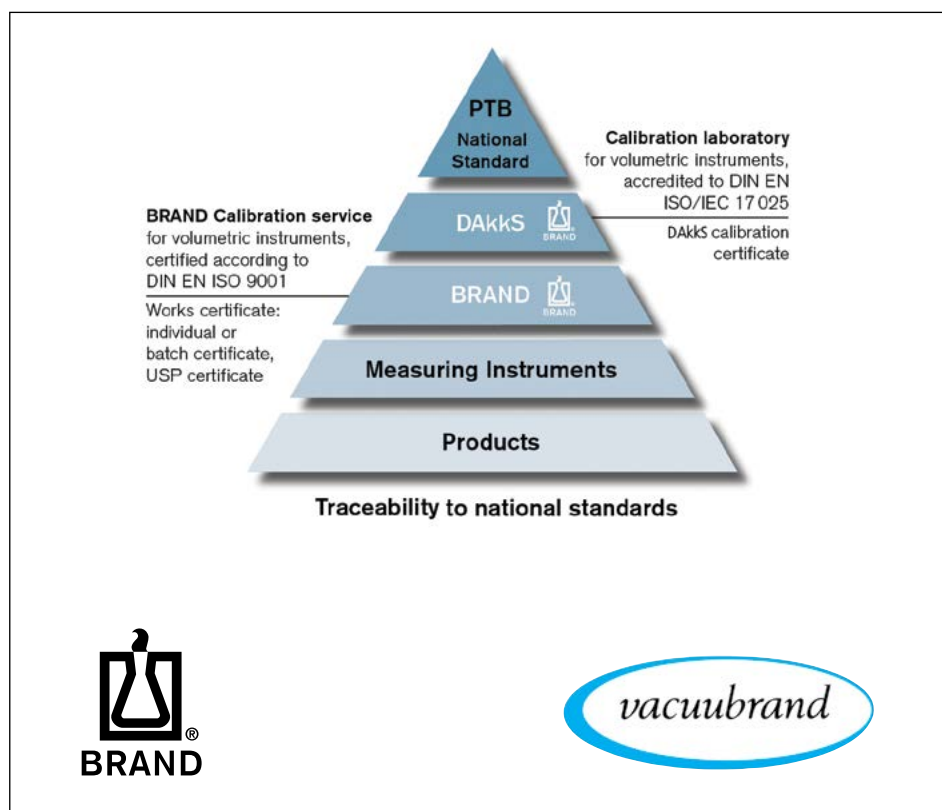
Active protection of the environment is an integral part of our partners' manufacturing philosophies. BRAND®, and VITLAB® participate in the voluntary European Community environmental management program, and have been certified according to the internationally recognized ISO 14001 standard for the environmental sensitivity of their corporate operations.

DAkkS Calibration Laboratories

This accreditation documents instrument traceability to national and international standards. VACUUBRAND was accredited in 1997 as a calibration laboratory for vacuum gauges in the pressure range of 1300 mbar to 10^{-3} mbar. In 1998, a calibration laboratory at BRAND® was officially accredited for volumetric instruments such as piston-operated pipettes and burettes, and for volumetric instruments made of glass and plastics. Both companies are thus certified to calibrate the instruments that you depend on to control your operations. This technical achievement by both companies is your assurance that your instruments are the most reliable you can buy.

DAkkS is the successor to the DKD (Deutscher Kalibrierdienst) for German calibration laboratories. It is a member of the European Cooperation for Accreditation (EA). A multilateral agreement assures obligatory recognition of the DAkkS-Calibration Certificate in a

variety of countries. DAkkS, as part of the European Cooperation for Accreditation (EA), has signed the international convention for reciprocal recognition, the "Mutual Recognition Agreement (MRA) of the International Laboratory Accreditation Corporation (ILAC). Under this convention, the subscribing bodies agree to reciprocal recognition and to promote acceptance of calibration certificates and test reports from the laboratories accredited by the signatories. The complete text of this convention, as well as a wealth of other information on this topic, can be read at www.ilac.org.



Terms and Conditions of Sale of BrandTech® Scientific, Inc. ("Agreement")

These terms and conditions (these "Terms") set forth the business terms on which BrandTech® Scientific, Inc., a Delaware corporation ("Seller"), agrees to sell Products (as defined herein) to the Buyer (as defined herein). These Terms may only be changed by written agreement signed by both parties. The issuance of a purchase order by Buyer for any of Seller's products or services constitutes Buyer's acceptance of these Terms.

Definitions: The term "Product(s)" shall refer to the materials, supplies, items and equipment covered by the related order. The term "Contract" shall refer to, collectively, an accepted order and these Terms. Other defined terms have the meanings given to them herein. The term "Buyer(s)" shall refer to the person, institute, company, organization, or corporation making the order in exchange for Product(s).

1. Acceptance by BrandTech® Scientific, Inc.

All orders are subject to credit approval and acceptance by the Seller in Essex, CT. These Terms constitute the sole terms and conditions which govern the sale of the Product(s) covered hereby. This Contract is the sole and complete agreement between Buyer and Seller and supersedes all prior discussions, agreements, or understandings whether stated orally or in writing. No deviating or additional terms shall be binding unless expressly agreed to in writing signed by an authorized representative of Seller. These Terms prevail over any of Buyer's general terms and conditions of purchase regardless of whether or when Buyer has submitted its purchase order or such terms. Fulfillment of Buyer's order does not constitute acceptance of any of Buyer's terms and conditions and does not serve to modify or amend these Terms. Seller may, in its sole discretion and at any time for any reason, change these Terms or any policies or guidelines. The most current terms and conditions are available at www.brandtech.com which may contain additional and supplementary terms and conditions, and are hereby incorporated by reference. Buyer is responsible for reviewing these terms and conditions, the online terms, and any applicable changes.

2. Shipping Terms

Delivery shall be made Ex Works Essex, CT. Payment terms shall be net 30 days for Buyers with credit approved and established prior to order and if written on face of invoice. All other shipments must be prepaid or paid by credit card. All payments shall be made in U.S. dollars. Products will only be shipped to valid addresses within the United States of America and Canada. Buyer is responsible for any federal, state, local, sales, VAT, GST, or other taxes whether or not those taxes are set forth on the applicable invoice from Seller. Seller may, in its sole discretion, without liability or penalty, make partial shipments of Products to Buyer. Each shipment will constitute a separate sale, and Buyer shall pay for the units shipped whether such shipment is in whole or partial fulfillment of Buyer's purchase order.

3. Title and Risk of Loss

Title and risk of loss passes to Buyer upon delivery of the Products. As collateral security for the payment of the purchase price of the Products, Buyer hereby grants to Seller a lien on and security interest in and to all of the right, title and interest of Buyer in, to and under the Products, wherever located, and whether now existing or hereafter arising or acquired from time to time, and in all accessions thereto and replacements or modifications thereof, as well as all proceeds (including insurance proceeds) of the foregoing. The security interest granted under this provision constitutes a purchase money security interest under the Connecticut Uniform Commercial Code.

4. Payment Terms

Buyer shall pay all invoiced amounts due to Seller within 30 days of Seller's invoice. Buyer shall make all payments hereunder by ACH, Wire Transfer, check, or credit card and in U.S. dollars. Past due accounts will be subject to payment of a finance charge on all late payments. Buyer shall pay interest on all late payments at the lesser of the rate of 11 1/2% per month (18% per annum) or the highest rate permissible under Connecticut law. In the event Buyer's account is past due, the total amount outstanding shall be payable immediately, and Seller shall have no obligation to deliver any Products or deliveries in process. In such event Seller may demand that all outstanding orders be paid in advance of shipment. Buyer shall not withhold payment of any amounts due and payable by reason of any set-off of any claim or dispute with Seller, whether relating to Seller's breach, bankruptcy or otherwise.

5. Prepaid shipping charges

Buyer is responsible for all shipping, duties, customs, and brokerage fees. At the request of Buyer, Seller may prepay freight charges and include such charges on the invoice. Such prepaid charges, if paid, are an accommodation to the Buyer only, and do not modify the Ex Works Essex, CT delivery term.

6. Shipping dates

Shipping dates listed on purchase orders are estimates only, and Seller shall not be liable for non-shipment or delay due to acts of God, strikes, accidents or any other causes beyond control of Seller, whether or not similar in class or kind to those mentioned. Seller shall not be liable for delays, loss or damage in transit.

7. Inspection and claims

Claims for damage in shipment must be filed in accordance with the delivering carrier's procedures. Claims for shortages, shipping errors or any claim that the Products do not conform to the terms of the Contract must be submitted to the Seller in writing within five (5) days of receipt. If Buyer fails to give such notice, the Products shall be deemed in conformance with the Contract terms and accepted by Buyer, and Buyer shall pay for the Products in accordance with the Contract. Buyer waives any right to reject or revoke acceptance after such five (5) day period. All claims must be accompanied by a copy of the packing slip. [If Buyer timely notifies Seller of any nonconforming Products, Seller shall, in its sole discretion, (i) replace such nonconforming Products with conforming Products, or (ii) credit or refund the price for such nonconforming Products.

Buyer acknowledges and agrees that the remedies set forth in this Paragraph 7 are Buyer's exclusive remedies for the delivery of nonconforming Products.

8. Returns

Buyer has no right to return Product(s) purchased hereunder to Seller, and Seller has no obligation to accept any such returns, without Seller's express prior written authorization, which may be withheld in Seller's sole discretion. In the event Buyer desires to return a Product or Products, Buyer must obtain Seller's written authorization within thirty (30) days of shipment. Unless indicated otherwise by Seller, any written authorization given to Buyer will expire within thirty (30) days of issuance. With the exception of those returns specified in Paragraph 13, returns will be accepted only if Product is in new, unused, resalable condition in the original packaging. All Product returns must be accompanied by a completed Health and Safety Declaration regarding potential contamination with hazardous materials due to Buyer's use of the Product. In the event of a return, Seller shall be entitled to handling charges of 25% of the purchase price of the Product(s) or such greater amount as expended by Seller in connection with such returns.

9. Cancellations and Modifications

In the event of cancellation of a purchase order by Buyer, Seller shall be entitled to cancellation charges of 25% of the cancelled order or such greater amount as expended by Seller in connection with such cancellations. Product appearance, catalog numbers, prices, specifications, and technical information are subject to change without notice.

10. Deferred orders

Requests by Buyer for changes in a shipping schedule on an order in process are subject in all cases to approval and acceptance by Seller in writing, and will be further subject to revisions in price and/or charges for work already in progress.

11. Typographical or printing errors

Any typographical, printing, stenographic, clerical, or other errors are subject to correction by the Seller.

12. Prices

All prices are subject to change without notice. In the event the price of a Product increases from a previously defined price, Seller will so notify Buyer prior to shipment, and Buyer shall have ten (10) days to cancel that part of the purchase order as applies to such Product if the increased price is unacceptable. All prices are exclusive of all sales, use and excise taxes, and any other similar taxes, duties and charges of any kind imposed by any governmental authority on any amounts payable by Buyer. Buyer shall be responsible for all such charges, costs and taxes; provided, that Buyer shall not be responsible for any taxes imposed on, or with respect to, Seller's income, revenues, gross receipts, personnel or real or personal property or other assets.

TO THE EXTENT PERMITTED BY LAW, THE LIMITED WARRANTY SET FORTH ABOVE IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND THAT SELLER MAKES NO OTHER WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCTS, INCLUDING ANY WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, WARRANTY OF TITLE, OR WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY, WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE. THE BUYER ACKNOWLEDGES THAT IT IS NOT RELYING ON THE SELLER'S SKILL OR JUDGEMENT TO SELECT OR FURNISH GOODS SUITABLE FOR ANY PARTICULAR PURPOSE AND THAT THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THOSE SET FORTH HEREIN. TO THE EXTENT PERMITTED BY LAW, IN NO EVENT SHALL SELLER BE LIABLE FOR BUYER'S LOSS OF PROFIT OR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES OF ANY KIND. THE REMEDIES SET FORTH IN THIS SECTION 13 SHALL BE THE BUYER'S SOLE AND EXCLUSIVE REMEDY AND SELLER'S ENTIRE LIABILITY FOR ANY BREACH OF LIMITED WARRANTY SET FORTH IN THIS SECTION 13.

13. Limited Warranty

Seller warrants to Buyer to the warranty period indicated, by product, at www.brandtech.com that its Products are free from defects in materials and workmanship as set forth in applicable operating instructions at the date of shipment to the original Buyer and will conform to the Contract specifications or such other specifications which constitute technical improvements to the Products.* The exclusive remedy of the Buyer in the event of a breach of the foregoing warranty is replacement or repair (at Seller's option) of any defective Product. No Products shall be returned to Seller for repair or replacement pursuant to this warranty without prior written approval and accompanied by a completed health and safety declaration (as specified in Paragraph 8). All cleaning, decontamination, and shipping costs shall be the sole responsibility of the Buyer together with any damage to the Products that might occur in transit to or from Seller. Under no circumstances does Seller's responsibility or warranty extend to Products other than those manufactured or distributed by Seller; nor does Seller's liability extend to any Products, articles or parts which are furnished by Buyer or obtained from other manufacturers or suppliers at Buyer's request and/or in accordance with Buyer's specifications. In the event that Seller is unwilling or unable to repair or replace any defective or nonconforming Product due to change in technical standards, technical modifications, unavailability of material or parts, or any other reason, Buyer shall be entitled to a return of the purchase price paid for such Product as its sole and exclusive remedy. Seller assumes no responsibility for the effective performance of any specific scientific application relying on Products supplied under this Contract beyond published Product specifications at the time of sale. Seller assumes no responsibility for conformance with local building codes as they may apply in the installation of Products supplied by the Seller. Seller assumes no responsibility whatsoever for