PALL Life Sciences

www.pall.com/lab

Ensure Contamination Control

Microbiology Products for Pharmaceutical, Industrial, and Environmental Quality Assurance

*Filtration. Separation. Solution.*SM

Pall Is Your Partner

For dependable detection, identification and enumeration of harmful microorganisms.

When left undetected, microorganisms can halt the production of pharmaceuticals, spoil food, ruin the taste of beverages, negatively impact the performance of computer chips, and cause serious illness. That's why Pall is dedicated to finding new and better ways to help you accurately and reliably identify these microorganisms. Together, we can work toward advancing the knowledge of microbial science and help protect both public safety and the integrity of industrial assets.

Membranes for accurate analysis

See pages 4-5

- Meet stringent microbial regulations with GN-6 Metricel® membrane.
- Realize ease-of-use in counting colonies with Metricel Black membrane.
- Gain additional benefits with Supor® membrane through low drug and protein binding characteristics.

Disposable filter funnels

See pages 6-8

- Choose from the widest variety of MicroFunnel™ filter funnel options. Ideal for quality control analysis of aqueous fluids used in a range of applications, including pharmaceutical production.
- Prevent contamination. Individually bagged for user convenience and purity.
- Obtain quick access to membrane. A simple squeeze separates funnel from the base, making these the easiest to use funnels available.

Ampoule media

See page 9

- Choose from a wide variety of ampoule media types, configurations, and packaging certified for use with the MF Technique.

Filtration holders and accessories

See pages 10-11

- Instill confidence with reliable engineering. Offering a wide variety of compact, lightweight filtration products and equipment.
- Work with unique, patented designs. Built with customer needs in mind for ease-of-use and convenience.
- Pall's cost effective hardware choices are great additions to any laboratory.

Water and wastewater testing

See pages 12-13

- Increase capture and recovery of target organisms with Envirochek® sampling capsules. Validated for monitoring raw and finished water for *Cryptosporidium* and *Giardia*.
- Ensure suspended solids testing of water and wastewater samples with high wet strength glass fiber filters.

Disposable monitors

See page 14

- Featuring 37 mm Quality Monitor and Microcheck® Beverage Monitor.
- Disposable single-use products eliminate the need for cleaning and sterilizing.
- Designed for ease of use and microbial visibility.

Membranes for Accurate Analysis

Improve your process and ensure reliable results with Pall

Pall is the recognized expert in membrane development, dedicating substantial resources to Research and Development, and partnering with leaders in the scientific community. Through decades of commitment, we have pioneered the use of membrane technology into hundreds of diverse applications.

Results you can depend on

When it comes to laboratory analysis, your time, money and effort are considerable assets. That's why Pall optimizes its membranes by application – helping you ensure accurate, reliable results across processes. Our membranes offer exceptionally high recoveries, typically greater than 90%. As an added assurance, all of our quality control membrane filters come with Pall's Certificate of Performance – guaranteeing product excellence.

Media options for laboratory applications

- Mixed cellulose esters membrane
- Polyethersulfone membrane
- Glass fiber media, offering high flow rates, wet strength and solid holding capacities
- Disc filters available in black, white, gridded, and non-gridded designs

How to select membranes for analysis

Characteristics	Application
White	Ideal contrast for colored colonies
Black	Ideal contrast for light colonies
Gridded	Provides guidance for counting colonies
Non-gridded	No interference with automated colony counters
0.45 µm	Standard pore size for MF Technique
0.2 µm	Ideal for recovery of stunted organisms
0.8 µm	Typically used for yeast and mold detection
Sterile	Individually packed and ready to use
Non-sterile	Direct placement in holder for sterilization

Product selection guide

Applications and Test Methods

Test Method	Method Number*	Recommended Filter	Media Broth
Total Coliforms	9222	GN-6 Metricel, MicroFunnel	MF-Endo
Fecal Coliforms, *E. coli*	9222	GN-6 Metricel, MicroFunnel	M-FC
Total Bacteria	9215; USP 61; 71	GN-6 Metricel, MicroFunnel, Supor 200 S-Pack	M-TGE; TSB-USP; HPC
***Lactobacillus sp.* detection**	—	GN-6 Metricel, MicroFunnel	Orange Serum
Yeast and Mold	9610	GN-6 Metricel, Metricel Black Membrane	M-Green YM
Fecal *Streptococcus*	9230	GN-6 Metricel, MicroFunnel	KF-Streptococcal
Pseudomonas sp.	9213	MicroFunnel, Supor 200 S-Pack	Pseudomonas
Total Suspended Solids	2540	A/E Glass Fiber	—
Cryptosporidium* or *Giardia	1622, 1623	Envirochek Capsule, Envirochek HV Capsule	—

** Standard Methods for the Examination of Water and Wastewater, current edition and U.S. Pharmacopoeia current edition.*

MF Technique Certified for Bacterial Analysis

The Membrane Filter (MF) Technique is accepted worldwide as an effective method for analyzing aqueous solutions for microbial or particulate contamination. It is approved by the United States Environmental Protection Agency (U.S. EPA) and other comparable agencies around the world for detecting the presence of Total and Fecal Coliforms in drinking water. Plus, the MF Technique is widely used for:

- Heterotrophic plate counts
- Fungal (yeast and mold) counts
- Isolation of *E. coli, Pseudomonas sp., Lactobacillus sp.* and other specific organisms

Pall's individually packaged membrane filters are certified for bacterial analysis in accordance with the MF Technique. When you purchase and use our membrane filters, we'll provide you with a signed certificate that can be kept as a permanent record at your facility.

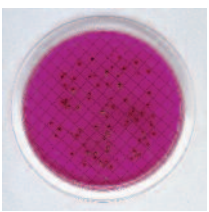
Process advantages

The MF Technique provides numerous benefits when analyzing water samples for microbiological contamination.

- Requires less preparation time than many other traditional methods, allowing isolation and enumeration of microorganisms – while providing presence or absence information – in as little as 24 hours.
- Permits concentration of large sample volumes.
- Allows isolation and enumeration of discrete colonies.
- Enables optimization of buffers and rinse volumes.
- Facilitates the removal of inhibitory or biocidal agents that would not be removed in Pour Plate, Spread Plate, or Most Probable Number techniques.

Applying the MF Technique

Starting with a Pall 47 mm filter, pass 100 mL of your sample fluid through the membrane, utilizing a filter funnel and vacuum system. Any organisms present in the sample will concentrate on the surface of the membrane. Next, place the membrane into a Petri dish on top of an absorbent pad soaked with a nutrient medium. The passage of nutrients through the filter will facilitate the growth of organisms on the upper surface of the membrane. For a more detailed description of how to analyze a sample using the MF Technique, see the step-by-step process outlined below.



1. Collect the sample and make any necessary dilutions. Select the appropriate medium, dispense the broth into a sterile Petri dish, evenly saturating the absorbent pad. Flame the forceps and remove the membrane from the sterile package. Place the membrane filter into the funnel assembly.
2. Flame the pouring lip of the sample container and pour the sample into the funnel. Turn on the vacuum and allow the sample to draw completely through the filter. Rinse the funnel with sterile buffered water. Turn on vacuum and allow the liquid to draw completely through the filter.
3. Place the membrane filter into the prepared Petri dish. Incubate at the proper temperature for the appropriate time period.
4. Count the colonies under 10-15x magnification and identify type of contamination.

Disposable Filter Funnels

Ready-to-use with no time-consuming presterilization or cleanup required

Helping you eliminate potential contamination risks is what Pall's MicroFunnel™ filter funnel is designed to do. Because environmental microorganisms are opportunistic by nature, they readily grow when introduced to a wide variety of aqueous solutions. If left unnoticed, these harmful microbes can result in a significant loss of time, money and productivity.

Our disposable, gamma irradiated MicroFunnel filter funnels come ready-to-use and are individually bagged. These convenient filter funnels provide quality assurance when testing for microbial contamination – especially when employing the MF Technique. Offered in 100 mL and 300 mL sizes, MicroFunnel filter funnels are available in a variety of models featuring a wide selection of membrane options to meet your specific application requirements.

- **MicroFunnel Filter Funnels**
  Our standard filter funnel provides easy squeeze separation from the base, preventing membrane disruption and offering fast, no-hassle operation.
- **MicroFunnel LP Filter Funnels**
  Features a built-in Petri dish lid kit and comes complete with absorbent pad.
- **MicroFunnel ST Filter Funnels**
  Ideal for sterility testing, these funnels are double bagged to facilitate use within isolators. A complete sterility testing validation guide is also available for added assurance of product performance.
- **MicroFunnel Plus Filter Funnels**
  Combines a filter funnel and sample cup into one easy-to-use device. Featuring a vented, capped lid that snaps to a liquid-tight seal. Plus, the lid's flexible pull-tab makes removal easy.
- **MicroFunnel Plus AP Filter Funnels**
  Our new MicroFunnel Plus AP filter funnel offers a sample port on the lid for aseptic connection and collection of your sample. The high temperature compatible tubing is aseptically attached between the filter funnel and the sample port on the water line. After the sample is collected, the tubing is removed and the cap is replaced on the MicroFunnel filter funnel lid.

Special features

Easy squeeze separation

Quickly remove funnel from base to access membrane.

Ready to use

Preassembled and gamma irradiated. Units fit directly on most filter manifolds.

Reduced contamination risk

Individually bagged, disposable filter units prevent cross-contamination.

Applications

- Quality control in pharmaceutical and other product manufacturing.
- Convenient for last minute samples at the end of the day.
- Quantify yeasts, molds and other organisms.
- Monitor hot loop water samples.
- Alternative to closed-system sterility testing.

How to select the right MicroFunnel filter funnel

MicroFunnel Product	Applications
MicroFunnel Plus and MicroFunnel Plus AP Filter Funnels	Feature a vented, capped lid that snaps to a liquid-tight seal and eliminates the need for a separate sample collection cup. *Products with Supor membrane are optimized to collect hot water.*
MicroFunnel ST Filter Funnels	Convenient and economical alternative to costly closed-system sterility testing when using an isolator or containment suite. Complete validation guide for sterility testing is available for added assurance of product performance.
MicroFunnel Filter Funnels	Test any aqueous solution for microbial contamination using the principles of the MF Technique. Ideal for quality control analysis in pharmaceutical production.

Reference material

For complete product information – featuring technical reports, guides, reports and more – visit www.pall.com/lab and click “Literature Library” to view the following documents.

- Performance Guide, MicroFunnel Filter Funnels
- Product Data, MicroFunnel Filter Funnels, PN 32969
- Product Data, MicroFunnel Plus Filter Funnel, PN 33237
- Product Data, MicroFunnel ST Disposable Filter Funnels
- Product Data, MicroFunnel Vacuum Manifolds, PN 33258
- Protocol, Membrane Filter Technique, PN 32860
- Sell Sheet, MicroFunnel Filter Funnels, PN 33345
- Sell Sheet, MicroFunnel Plus and MicroFunnel Plus AP Filter Funnels, PN 33384
- User Guide, MicroFunnel Filter Funnels, PN 87228H
- User Guide, MicroFunnel Plus and MicroFunnel Plus AP Filter Funnels, PN 87457H
- User Guide, MicroFunnel ST Sterility Testing Funnel, PN 87449C
- User Guide, Vacuum Manifolds for MicroFunnel Filter Funnel, PN 89100B
- Validation Guide, MicroFunnel ST Filter Funnel Validation of Suitability for Sterility Testing Applications, PN 33235
- Webcast, Using MicroFunnel Plus Filter Funnels to Reduce Sample Contamination

Disposable Filter Funnels (continued)

Standard procedures using MicroFunnel™ Plus filter funnels

Analyzing ambient samples

1. Carefully remove the vented lid and collect the sample.

2. Securely snap lid in place to prevent sample loss. Transport sample to laboratory for filtration.

3. Remove membrane vent from base, place funnel directly onto manifold, and filter the sample.

4. Gently grasp base then remove and discard lid.

5. Release cylinder from base by squeezing the midpoint of the cylinder.

6. Remove the membrane, plate the filter, and incubate.

Collecting hot water samples

1. Place funnel into holder with graduations visible through the viewing slot. Carefully remove the vented lid and collect the hot water sample.

2. With funnel and holder resting on a firm, level surface, securely snap lid in place to prevent sample loss. Remove funnel from holder and transport sample to laboratory for filtration. (*Proceed with steps 3-6 for ambient water.)*

Note: When using this product for sampling hot water loops, observe safety precautions which include the use of insulated rubber gloves, safety glasses, and Pall Life Sciences Funnel Holder for critical sample sites (PN 4824 for 100 mL funnels and PN 4825 for 300 mL funnels).

Procedures for MicroFunnel LP filter funnel

1. Dispense the contents of an ampoule of culture medium onto the absorbent pad in the Petri dish lid kit, supplied only with MicroFunnel LP, PN 4810.
2. With Petri dish lid kit removed, perform filtration then access membrane by gently squeezing the funnel cylinder.
3. Remove the membrane filter from the base with forceps.
4. Place the membrane filter onto the broth-soaked absorbent pad in the Petri dish lid kit and incubate.

Ampoule Media

Increase productivity with Pall's ready-to-use ampoule media

Pall's ampoule media is available in a variety of selective, nutrient broths for use in municipal water, food and beverage, pharmaceutical, and microelectronics industries. Our user-friendly glass and plastic ampoule media come ready to use in your choice of pre-measured 2 mL or 100 mL bottles.

Wide mouth glass ampoules offer easy pouring of nutrient media without having to shake the vial to remove the broth. Plastic ampoules can be used with a range of broths, featuring an easy-open design and no glass breakage. Both glass and plastic versions dispense into standard Petri dishes and are ideal for use with Pall's MicroFunnel™ filter funnels. For busy labs, Pall offers MF-Endo in 100 mL bottles – providing enough media for up to 50 tests.

Available in the following nutrient broth selections

- HPC broth
- KF-Streptococcal broth
- MF-Endo broth
- M-FC broth
- M-Green YM broth
- M-TGE broth
- Orange Serum broth
- Pseudomonas broth
- TSB broth

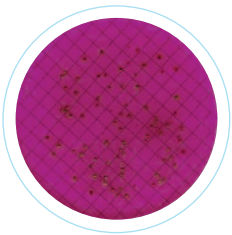
Applications

- Certified for analysis using the MF Technique.
- Media is available in a variety of nutrient broths for use in municipal water, food and beverage, pharmaceutical, and microelectronics industries.

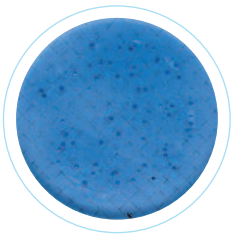
Reference material

For complete product information, visit www.pall.com/lab and click "Literature Library."

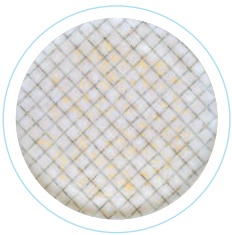
- Product Data, Ampoule Media for Microbiological Analysis, PN 32883
- Protocol, Membrane Filter Technique, PN 32860



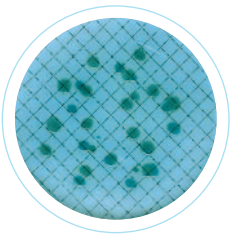
MF-Endo Broth
E. coli 24 hr. culture
@ 35 °C (95 °F)



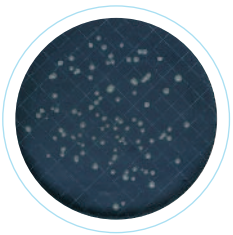
M-FC Broth
E. coli 24 hr. culture
@ 45.5 °C (112 °F)



M-TGE Broth
S. epidermidis 24 hr. culture
@ 35 °C (95 °F)



Pseudomonas Broth
P. aerufinosa 48 hr. culture
@ 35 °C (95 °F)



M-Green YM Broth
S. cerevisiae 24 hr. culture
@ 35 °C (95 °F)

Filtration Holders and Accessories

Innovative tools for demanding applications

47 mm Magnetic filter funnel

Pall's patented Magnetic filter funnel features magnets enclosed in a sturdy base and funnel to provide an integral, leak-proof seal. Simple one-handed operation for vacuum filtration makes this a favorite, essential tool of laboratory professionals. Choose from 300 mL and 150 mL sizes for easy fit into autoclaves. For larger samples, select 500 mL size.

Special features

Unique magnetic seal

Allows for easy, one-handed use.

Polyphenylsulfone construction

Compatible with anti-foaming agents and many other solvents. Added durability and safety for less than the cost of most glass funnels.

Easy filter retrieval

Featuring handy forceps access point.

Accurate sample measurement

With easy-to-read graduations starting at 50 mL.

NOTE: Filter funnels also available in glass. For more information, visit www.pall.com/lab.

Stainless steel filter funnels

The one-liter capacity Parabola Stainless Steel filter is the perfect choice for large volume vacuum filtration of samples. Its bayonet twist-lock seal provides reliable sealing without an O-ring. Designed for the vacuum filtration of large scale microbiological samples.

Our durable chemically resistant 47 mm stainless steel filter funnel offers 100 mL capacity and is intended specifically for the analysis of liquids. Quickly and easily seals the filter to its base. Designed for use with standard manifold systems or vacuum flasks.

Special features

Durable construction

Made of durable 316 stainless steel for chemical resistance.

Accurate measurement

47 mm filter funnel offers 100 mL capacity with 50 mL calibration for easy measurement.

Filter funnel vacuum manifolds

Increase filtering efficiency when you select Pall's convenient 1-, 3- or 6-place aluminum manifolds. Or, for tight work areas, choose the smaller 3-place polyurethane manifold.

Special features

- Aluminum manifolds work with all Pall Life Sciences MicroFunnel filter funnels including the 100 mL and 300 mL sizes.
- Available in aluminum or polyurethane.
- Single-place manifold has a small footprint, is easy to move and stores out of the way.

Vacushield™ Vent devices

Designed for the protection of valves and pumps from liquids, these helpful devices are used in a wide range of lab settings and applications. Placed between the pump and receiving vessel, Vacushield Vent devices provide highly effective retention of aerosols without restricting pump performance.

Special features

Protects equipment from fluid

Incorporates a hydrophobic PTFE membrane. Allows air and gases to freely pass while blocking aqueous solutions and aerosol contaminants. Meets OSHA regulations for protection of vacuum lines (29 CFR Part 1910.1030).

Efficient design

Offers highly effective retention of bacteria with minimal restriction of pump performance.

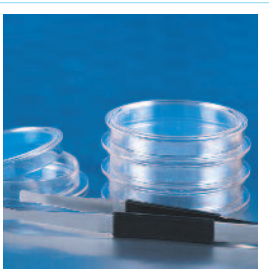
Vacuum/Pressure pumps

Our Vacuum Pump offers continuous or intermittent oil-less operation – featuring self lubricating ball bearings that never need oiling.

Special features

Contamination reduction

Oil-free and dust-free vacuum/pressure delivery reduces the risk of sample contamination with an air seal between the pump and cylinder.



Accessories

- **Petri Dish** – Available with or without absorbent pads, Pall's compact Petri dish can easily be opened with one hand, yet closes to a tight seal. Made of polystyrene and gamma irradiated.
- **Absorbent Pad Kits** – Easily dispense clean, absorbent cellulose pads into Petri dishes without touching the pad. Available non sterile or gamma irradiated.
- **Stainless Steel Forceps** – Tips have a flat, smooth surface to avoid membrane filter damage. Featuring polypropylene finger grips for a comfortable and secure hold, these sturdy forceps are available in a variety of colors.

Water and Wastewater Testing

Improve overall efficiency with convenient lab essentials

Envirochek® capsules – for reliable monitoring of water quality

Pall's Envirochek and Envirochek HV sampling capsules are designed for the concentration and recovery of *Cryptosporidium* oocysts and *Giardia* cysts from source water, municipal water supplies, samples in containers, or wells. Found in 70% of the world's surface water, these pathogens have become the number one detection priority of governments worldwide.

	Approximate Time to Process Eight Samples (Minutes)	
Step	**Envirochek Capsule**	**Other Major Device**
Set-up	5	50
Elution	55	240
Concentration	65	240
Cleaning Equipment	0	320
Total Time	125	850
Time/Test (minutes)	16	106

Validated, approved water sampling technology

Pall's Envirochek and Envirochek HV sampling capsules are validated and listed in U.S. EPA Methods 1622 and 1623, and used for sampling source water for *Cryptosporidium* and *Giardia*. Envirochek HV capsules are designed for sampling up to 1,000 liters or more of treated water and validated for up to 50 liters of source water. Envirochek HV capsules (PNs 12096 and 12097) are approved for the United Kingdom DWI regulatory testing of finished water and listed in ISO/DIS 15553-2006.

Delivers time-saving results

Envirochek's innovative laboratory shaker helps you save time by allowing up to eight Envirochek sampling capsules to be processed at once. Featuring a consistent shaking speed with a digital read-out, the Envirochek system ensures reliable test results.

Special Features

Simple to use

No assembly or cleaning of filter holder and elution equipment.

Saves time

Allows for the processing of multiple samples at the same time.

Disposable

Designed to eliminate false positives from cross contamination.

Reliable

Ensures greater that 70% recovery of target organisms.

No false negatives

The 1 µm absolute rated membrane provides confidence in capture of *Cryptosporidium* and *Giardia* organisms.

Safer to use

Self-contained capsules eliminate the need to handle the filter element, preventing contamination of personnel and laboratory.

Easy to use and cost effective

The Envirochek® sampling capsule is easily used in the field for concentrating samples and eliminating the need to transport bulk water containers. Envirochek's light weight capsule helps reduce costs by allowing for inexpensive shipping to your testing lab of choice.

Applications

- Source water testing
- Finished water testing
- Bottled water production

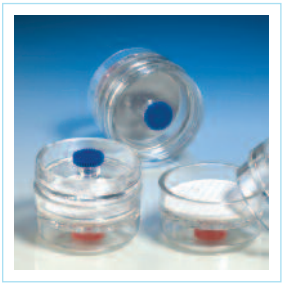
Reference material

For complete product information, visit www.pall.com/lab and click “Literature Library.”

- Product Data, Envirochek and Envirochek HV Sampling Capsules and Accessories, PN 33142
- Protocol, Envirochek HV Sampling Capsule, PN 33210
- Protocol, Envirochek Sampling Capsule
- Technical Article, Analysis of Envirochek Sampling Capsule Versus Traditional String Wound Cartridges for Collection and Recovery of *Cryptosporidium*
- Technical Article, The Envirochek HV Capsule: Recovering *Cryptosporidium* from High Volume Source and Finished Drinking Water Samples, PN 33249

Disposable Monitors

For reliable contamination control



37 mm Quality Monitor

Used in the electronics industry, the 37 mm Quality Monitor is ideal for testing high purity water systems for microbial contamination.

Special features

Convenient to use

Membrane is enclosed to protect sample from contamination during filtration.

Disposable design

Single-use monitor eliminates the need for cleaning and sterilizing.

Contrasting colors

Available in contrasting white or black membranes for easy colony viewing.

Applications

- Monitor high purity water systems for microbial contamination.
- Simple design allows for sampling at the source or filtration in the lab.
- Typical sample size is 50 mL to 1 L.
- A sample of water is filtered directly through the 37 mm Quality Monitor and ampoule media added for culturing.

Reference material

For complete product information, visit www.pall.com/lab and click “Literature Library.”

- Product Data, 37 mm Quality Monitor, PN 33410

Microcheck® II Beverage Monitors

In the highly competitive beverage market, spoilage of product and shortened shelf life due to microbial contamination can have devastating results. Our Microcheck II Beverage Monitor is used to analyze beverages for contamination, helping you identify potential problems before they leave your lab. Choose from 0.45 or 0.8 µm pore size for recovery of bacteria or fungi. Available in white or black membrane for optimal colony contrast.

Special features

Easy to access membrane

A simple squeeze separates the funnel from its base.

Versatile design

Quickly convert to a Petri dish for culturing, or easily remove membrane and place on agar dish.

Convenient use

Disposable monitor eliminates cleaning and sterilizing.

Applications

- Finished product testing of beverages for microbial contamination prior to release.
- Monitoring process conditions for bioburden levels assures consistent manufacturing results and process control.
- Evaluate raw materials such as syrups, flavorings, water, and other liquid additives for microbial content.

Reference material

For complete product information, visit www.pall.com/lab and click “Literature Library.”

- Product Data, Microcheck II Beverage Monitor, PN 33376

Ordering Information

Membrane disc filters

GN-6 Metricel® MCE Membrane Disc Filters

Individual Gamma Irradiated Packages (S-Packs)

Part Number	Description	Pkg
66265	0.45 µm, 47 mm, plain	200/pkg
66278	0.45 µm, 47 mm, grid	200/pkg
66068	0.45 µm, 47 mm, grid	1000/pkg
66191	0.45 µm, 47 mm, grid	2000/pkg
66539	0.45 µm, 50 mm, grid	200/pkg
60016	0.45 µm, 85 mm, grid (not individually packed)	50/pkg

Autoclave Packages

(packages of 10 membranes and 10 absorbent pads, ready for autoclaving)

Part Number	Description	Pkg
63077	0.45 µm, 47 mm, grid, gamma irradiated	100/pkg

Non-sterile Packages

Part Number	Description	Pkg
63066	0.45 µm, 13 mm, plain	100/pkg
63068	0.45 µm, 25 mm, plain	100/pkg
64191	0.45 µm, 25 mm, grid	100/pkg
64382	0.45 µm, 37 mm, plain, with support pads	100/pkg
63069	0.45 µm, 47 mm, plain	100/pkg
63020	0.45 µm, 47 mm, grid	100/pkg
66536	0.45 µm, 142 mm, plain	25/pkg

Metricel Black PES Membrane Disc Filters

Part Number	Description	Pkg
60138	0.45 µm, 25 mm, grid	100/pkg
66585	0.45 µm, 47 mm, grid, S-Pack, gamma irradiated	200/pkg
66586	0.45 µm, 47 mm, grid	100/pkg
60065	0.8 µm, 25 mm, grid	100/pkg
66587	0.8 µm, 47 mm, grid, S-Pack, gamma irradiated	200/pkg
66588	0.8 µm, 47 mm, grid	100/pkg

Supor® 200 PES Membrane Disc Filter

Part Number	Description	Pkg
66234	0.2 µm, 47 mm, grid, S-Pack, gamma irradiated	200/pkg

Disposable filter funnels

MicroFunnel™ Filter Funnels (Gamma Irradiated)

Part Number	Description	Pkg
4800	0.45 µm GN-6 Metricel membrane, white, gridded, individually bagged, 100 mL	50/pkg
4801	NB unit with 0.45 µm GN-6 Metricel membrane, white, gridded, 100 mL	50/pkg
4803	SP unit with 0.2 µm Supor membrane, white, gridded, individually bagged, 100 mL	50/pkg
4804	0.45 µm GN-6 Metricel membrane, white, gridded, individually bagged, 100 mL	200/pkg
4805	YMB unit with 0.45 µm Metricel Black membrane, black, gridded, individually bagged, 100 mL	50/pkg
4806	SNG unit with 0.2 µm Supor membrane, white, no grid, individually bagged, 100 mL	50/pkg
4810	LP unit with 0.45 µm GN-6 Metricel membrane, white, gridded, individually bagged, Petri dish lid, 100 mL	50/pkg
4815	0.45 µm GN-6 Metricel membrane, white, gridded, individually bagged, 300 mL	20/pkg
4817	YMB unit with 0.45 µm Metricel Black membrane, black, gridded, individually bagged, 300 mL	20/pkg
4818	SP unit with 0.2 µm Supor membrane, white, gridded, individually bagged, 300 mL	20/pkg
4819	YMB unit with 0.8 µm Metricel Black membrane, black, gridded, individually bagged, 300 mL	20/pkg
4826	0.45 µm GN-6 Metricel membrane, white, no grid, individually bagged, 100 mL	50/pkg
4827	0.45 µm Metricel Black membrane, black, no grid, individually bagged, 100 mL	50/pkg
4828	0.45 µm Supor membrane, white, gridded, individually bagged, 300 mL	20/pkg
4852	0.45 µm Supor membrane, white, gridded, individually bagged, 100 mL	50/pkg

MicroFunnel Plus Filter Funnels (Gamma Irradiated)

Part Number	Description	Pkg
4807	0.45 µm GN-6 Metricel membrane, white, gridded, individually bagged,100 mL	50/pkg
4808	0.45 µm Metricel Black membrane, black, gridded, individually bagged, 100 mL	50/pkg
4809*	0.2 µm Supor membrane, white, gridded, individually bagged, 100 mL	50/pkg
4813*	0.2 µm Supor membrane, white, gridded, individually bagged, 300 mL	20/pkg
4814*	0.45 µm Supor membrane, white, gridded, individually bagged, 300 mL	20/pkg
4823*	0.45 µm Supor membrane, white, gridded, individually bagged, 100 mL	50/pkg
4829	0.45 µm GN-6 Metricel membrane, white, gridded, individually bagged, 300 mL	20/pkg
4843	Plus AP funnel, 0.2 µm Supor membrane, white, gridded, individually bagged, 100 mL	50/pkg
4844	Plus AP funnel, 0.45 µm Supor membrane, white, gridded, individually bagged, 100 mL	50/pkg

* *When using these products for hot water applications, observe safety precautions which include the use of insulated rubber gloves, safety glasses, and Pall Life Sciences Funnel Holders for critical sample sites.*

Ordering Information (continued)

Disposable filter funnels *(continued)*

Accessory Products

Part Number	Description	Pkg
4701	Autoclavable adapters for vacuum manifold when using rubber stopper	3/pkg
4713	Vacuum pump adapter	1/pkg
4824	Funnel Holder, 100 mL	1/pkg
4825	Funnel Holder, 300 mL	1/pkg
4845	Sampling tubes for MicroFunnel Plus AP, individually bagged, sterile	50/pkg

MicroFunnel™ ST Disposable Filter Funnels (Gamma Irradiated)

Part Number	Description	Pkg
4750**	0.45 µm Supor membrane, plain, 100 mL	40/pkg
4751**	0.45 µm Supor membrane, plain, 300 mL	20/pkg
4811**	0.45 µm GN-6 Metricel membrane, gridded, 100 mL	40/pkg
4812**	0.45 µm GN-6 Metricel membrane, gridded, 300 mL	20/pkg
4851**	0.2 µm Supor membrane, gridded, 100 mL	40/pkg

** *100 mL funnels (40 units total per box): 10 individually bagged funnels within an overpack bag, 4 overpack bags per box.*

300 mL funnels (20 units total per box): 5 individually bagged funnels within an overpack bag, 4 overpack bags per box.

Microbiological Media

2 mL Plastic Ampoules

Part Number	Description	Pkg
4302	M-FC Broth with rosolic acid, Fecal Coliforms	50/pkg
4306	Pseudomonas Broth, *Pseudomonas sp.*	50/pkg
4307	Trypticase Soy Broth – USP, Total Bacteria	50/pkg
4352	HPC Media with TTC Indicator, Total Bacteria	50/pkg
68105	MF-Endo Broth, Total Coliforms	50/pkg
68106	M-TGE Broth, Total Bacteria	50/pkg
68107	M-Green YM Broth, yeast and mold	50/pkg
68108	KF-Streptococcal Broth, *Fecal Streptococcus*	50/pkg
68109	Orange Serum Broth, *Lactobacillus sp.*	50/pkg
68111	M-TGE with TTC Indicator, Total Bacteria	50/pkg

2 mL Wide-mouth Glass Ampoules

Part Number	Description	Pkg
68100	M-FC Broth, Fecal Coliforms	20/pkg
68101	M-FC Broth with rosolic acid, Fecal Coliforms	20/pkg
68102	MF-Endo Broth, Total Coliforms	20/pkg

100 mL Bottle

Part Number	Description	Pkg
4313	MF-Endo Broth, Total Coliforms, Bottle	1/pkg

Gamma Irradiated Petri Dishes

Part Number	Description	Pkg
7242	Petri dishes, without absorbent pads	100/pkg
7232	Petri dishes, bulk pack, without absorbent pads	500/pkg
7245	Petri dishes, with absorbent pads	100/pkg

Stainless Steel Forceps

Part Number	Description	Pkg
51147	Stainless steel forceps, black grips	1/pkg
4690	Stainless steel forceps, multi-colored grips	3/pkg

Water and wastewater testing

Envirochek™ and Envirochek HV Sampling Capsules

Part Number	Description	Pkg
12096	Envirochek HV sampling capsule, for U.K. DWI	25/pkg
12097	Envirochek HV sampling capsule, for U.K. DWI	1/pkg
12098	Envirochek HV sampling capsule, bulk pack, individually bagged	25/pkg
12099	Envirochek HV sampling capsule	1/pkg
12107	Envirochek sampling capsule, bulk pack, individually bagged	25/pkg
12110	Envirochek sampling capsule	1/pkg

Accessory Products

Part Number	Description	Pkg
4820	Laureth-12 Paste, 50 g bottle	1/pkg
4821	Laboratory Shaker, 115 V, 50/60 Hz	1/pkg
4822	Laboratory Shaker, 230 V, 50/60 Hz CE	1/pkg

Hardware and accessories

47 mm Magnetic Filter Funnels

Part Number	Description	Pkg
4247	150 mL capacity	1/pkg
4242	300 mL capacity	1/pkg
4241	300 mL capacity, with lid	1/pkg
4238	500 mL capacity	1/pkg

Accessories and Replacement Parts

Part Number	Description	Pkg
4235	Stainless steel support screen	1/pkg
4246	Lid kit (for 300 mL funnel only)	1/pkg
4244	Base, without support screen	1/pkg
4248	150 mL funnel housing	1/pkg
4243	300 mL funnel housing	1/pkg
4254	500 mL funnel housing	1/pkg
87264	Support screen, polyphenylsulfone	1/pkg

47 mm Filter Funnel, Stainless Steel

Part Number	Description	Pkg
4221	100 mL capacity, stainless steel	1/pkg

47 mm Parabola Filter Funnel, Stainless Steel

Part Number	Description	Pkg
4230	1 L capacity, stainless steel	1/pkg

Vacuum/Pressure Pumps

Part Number	Description	Pkg
13157	115 V, 60 Hz, single phase	1/pkg
13158	230 V, 50/60 Hz, single phase* CE	1/pkg

* *PN 13158 has interchangeable power cords to accommodate European 2 round-pin sockets and UK 3 flat-blade sockets.*

Filter Funnel Manifolds

Aluminum Manifolds

Part Number	Description	Pkg
15408	1-place Aluminum, for MicroFunnel filter funnels	1/pkg
15411	3-place Aluminum, for MicroFunnel filter funnels	1/pkg
15413	6-place Aluminum, for MicroFunnel filter funnels	1/pkg
15402	3-place Aluminum	1/pkg
15403	6-place Aluminum	1/pkg

Polyurethane Manifold

Part Number	Description	Pkg
4205	3-place Polyurethane	1/pkg

Vacushield™ Vent Device

Part Number	Description	Pkg
4402	0.45 µm, 50 mm, hose barb	3/pkg

Disposable filtration products

37 mm Quality Monitors

Part Number	Description	Pkg
4717	2 piece, GN-6 Metricel membrane, white, gridded	50/pkg
4718	2 piece, Metricel Black membrane, black, gridded	50/pkg
4719	2 piece, 0.2 µm Supor membrane, white, gridded	50/pkg
4849	Sampling tube, 11.c cm (4.5 in.) individually bagged, gamma irradiated	50/pkg

Microcheck® II Beverage Monitors

Part Number	Description	Pkg
4761	GN-6 Metricel membrane, 0.45 µm, white, gridded, 100 mL	50/pkg
4762	GN-4 Metricel membrane, 0.8 µm, white, gridded, 100 mL	50/pkg
4763	Metricel Black membrane, 0.45 µm, black, gridded, 100 mL	50/pkg
4764	Metricel Black membrane, 0.8 µm, black, gridded, 100 mL	50/pkg

Absorbent Pad Kits

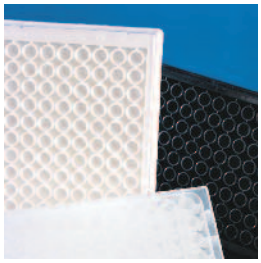
Part Number	Description	Pkg
66025	47 mm pads, gamma irradiated	1000/pkg
66190	47 mm pads, non-sterile	1000/pkg

Other Great Filtration Products From Pall Life Sciences.

Our commitment to customer service and technical support is firmly rooted in the philosophy that it is our obligation to help you select the right filtration products for your applications.

Centrifugal devices

Simplify your nucleic acid and protein handling procedures with Pall's ultra filtration centrifugal devices – for use in separation and small-scale general filtration procedures. These devices can be combined with chromatography resins to create a fast, efficient method for purifying proteins of interest. Choose from a variety of devices designed to handle sample volumes of 0.5 mL to 60 mL.



Filter plates

As samples get smaller and more numerous, the need for novel methods to purify proteins and improve assays has led Pall to develop a broad line of multi-well filter plates – targeted specifically to address a range of application challenges. AcroPrep™ and AcroWell™ filter plates feature individually sealed membranes that eliminate crosstalk and solution weeping. Our proprietary sealing technology allows us to seal virtually any type of membrane or media configuration into a device platform to meet ever-changing industry needs.

Pleated capsule filters

This convenient family of economical, disposable capsules features a variety of Pall membranes, offering easy microfiltration for laboratories and small-volume processors. Pall Life Sciences' pleated capsules combine the efficiency of a membrane disc filter with the large filtration capacity of a pleated surface. Because all capsule membranes are sealed in the housing, minimum setup time is required. Capsules can be used inlet up, inlet down, or horizontally.

Syringe filters

Pall's Acrodisc® syringe filters offer sterile or non-sterile filtration and are designed for use in a variety of laboratory applications. Non-sterile syringe filtration is typically employed in the protection of columns and instrumentation against particulate build-up, but can be used in virtually all aqueous sample filtration processes. Available in a wide range of pore sizes and membrane types.

Syringe filters are sterilized by gamma irradiation to eliminate potential contamination by EtO residuals. Use 0.1 and 0.2 µm pore sizes to provide sterilization of small volumes of buffers, culture media, and additives.

Pall is Your Total Solutions Provider

At Pall we are involved in every stage of the development, production or processing of fluids in a broad range of industries including pharmaceutical, food and beverage, municipal water, and microelectronics. Pall is the world leader in systems for fluid purification in these industries. Our rapid technologies detect the presence/absence of microbial bioburden in minutes – and identify target bacteria by genetic analysis within hours.

Our monitoring systems are characterized by their convenience, ease-of-use and full documentation/validation packages. And because we want to be your filtration partner of choice, Pall also offers extensive operator training support, plus global technical assistance and service.

New products for fast process monitoring

GeneDisc® Technology System – results within three hours!

Get accurate results in hours – not days. For rapid testing and real-time risk management, the GeneDisc Technology system enables quantification of multiple organisms within three hours. Rapid, reliable results enable you to make quick and effective decisions when dealing with harmful microbial contamination challenges.

Special features

- **Fast results** – receive rapid, real-time quantified results.
- **Easy to use** – all inclusive product from sample to result.
- **Real-time accuracy** – closed, immediate PCR technology minimizes operator intervention.
- **User friendly** – simple software provides direct display of results for fast decision making and seamless data transfer.

Pallchek™ Rapid Microbiology System – results in less than one minute!

For quality control and environmental monitoring, the portable Pallchek Rapid Microbiology System is the ideal choice for presence/absence detection of organisms. Using the ATP bioluminescence technique, this innovative system is the first of its type to be used in an approved protocol for microbiological applications in FDA and EMEA registered drug manufacturing processes.

The Pallchek Rapid Microbiology System can be used in a variety of applications, such as early product release and environmental monitoring. The system is also ideal for raw material and process monitoring, including microbial limit tests, WFI systems tests, bioburden of terminally sterilized products tests, sterilization validation testing of biological indicators, and preservative efficacy screening.

Special features

- **Sensitive** – enables detection to 1 CFU, using an enrichment step with culture media.
- **Fast** – get reproducible test results in minutes.
- **User friendly** – system is portable, simple to use and install.
- **Cost effective** – returns considerable operating cost and time savings.
- **Supported** – comprehensive validation and IQ/OQ support package available.

Rapid microbiology reference center

For more information and technical specifications on Pall's rapid response microbial testing systems, visit www.pall.com. To speak with a filtration expert regarding how these products can work in your application, call 1.516.484.5400, or 800.717-7255 in the U.S. or send an email to biotech@pall.com.

Pall Life Sciences
600 South Wagner Road
Ann Arbor, MI 48103-9019 USA

800.521.1520 USA and Canada
(+)800.PALL.LIFE Outside USA and Canada
734.665.0651 phone
734.913.6114 fax

Visit us on the Web at www.pall.com/lab

E-mail us at LabCustomerSupport@pall.com

Australia – Cheltenham, VIC
Tel: 03 9584 8100
1800 635 082 (in Australia)
Fax: 1800 228 825
Austria – Wien
Tel: 00 1 49 192 0
Fax: 00 1 49 192 400
Brasil – São Paulo, SP
Tel: +55 11 5501 6000
Fax: +55 11 5501 6025
Canada – Ontario
Tel: 905-542-0330
800-263-5910 (in Canada)
Fax: 905-542-0331
Canada – Québec
Tel: 514-332-7255
800-435-6268 (in Canada)
Fax: 514-332-0996
800-808-6268 (in Canada)
China – P. R., Beijing
Tel: 86-10-6780 2288
Fax: 86-10-6780 2238
France – St. Germain-en-Laye
Tel: 01 30 61 32 32
Fax: 01 30 61 58 01
Lab-FR@pall.com

Germany – Dreieich
Tel: 06103-307 333
Fax: 06103-307 399
Lab-DE@pall.com
India – Mumbai
Tel: 91 (0) 22 67995555
Fax: 91(0) 22 67995556
Italy – Buccinasco
Tel: +3902488870.1
Fax: +39024880014
Japan – Tokyo
Tel: 03-6901-5800
Fax: 03-5322-2134
Korea – Seoul
Tel: 82-2-560-8711
Fax: 82-2-569-9095
Malaysia – Selangor
Tel: +60 3 5569 4892
Fax: +60 3 5569 4896
Poland – Warszawa
Tel: 22 510 2100
Fax: 22 510 2101
Russia – Moscow
Tel: 5 01 787 76 14
Fax: 5 01 787 76 15

Singapore
Tel: 65 6 389-6500
Fax: 65 6 389-6501
South Africa –
Johannesburg
Tel: +27-11-2662300
Fax: +27-11-3253243
Spain – Madrid
Tel: 91-657-9876
Fax: 91-657-9836
Sweden – Lund
Tel: (0)46 158400
Fax: (0)46 320781
Switzerland – Basel
Tel: 061-638 39 00
Fax: 061-638 39 40
Taiwan – Taipei
Tel: 886 2 2545 5991
Fax: 886 2 2545 5990
Thailand – Bangkok
Tel: 66 2937 1055
Fax: 66 2937 1066
United Kingdom –
Farlington
Tel: 02392 302600
Fax: 02392 302601
Lab-UK@europe.pall.com

*Filtration. Separation. Solution.*SM

11/09, 10k, AA GN09.2882

PN33558