sartorius

Combisart®
The Economic Way for Fast and Reliable Colony Counting

turning science into solutions

Industrial Quality Management

Sartorius Stedim Biotech brings more than 70 years of worldwide experience in membrane technology to each application. As a leading international supplier, we provide innovative products, cost-effective solutions, certified quality and responsive technical support.

Increasing Our High Quality Standard

We place our highest priority on quality. From product design, testing and production to marketing and administration, quality assurance is our most important activity. Sartorius Stedim Biotech is also an accredited institution, playing a major role in quality assurance issues, including the development of new standards.

Innovative Manufacturing Processes

Our casting machines for manufacturing filter membranes have set new process and environmental standards in Germany and throughout the world. We recycle 99% of the solvents used in production and we reuse 96% of the recycled material in our production processes.

Application Research and Development

Sartorius Stedim Biotech relies on their customers for input and experience to help guide our new product development. This interaction helps the Sartorius Stedim Biotech R&D team to create innovative products and systems that meet customer needs and exceed customer expectations.

Today, in cooperation with our partners and accredited science and research institutes at industrial centers throughout the world, Sartorius Stedim Biotech is developing the international standards of technology for tomorrow.

Up-to-Date Expertise Through Training

We stress continuous training and qualification of our employees in all areas. We also offer standard or customized training programs for our customers employees who work with Sartorius Stedim Biotech separation technology products.

Pharmaceutical Industry

Quality requirements for pharmaceutical, chemical and cosmetic products are precisely defined. Worldwide pharmacopoeia and industrial organizations, such as the current editions of the EP, USP, JP, the American Standard Methods APHA as well as ISO standards provide guidelines and detailed specifications on product bioburden and particle content.

Food and Beverage Industry

The consumer's steadily growing requirements for the quality and the longer shelf life of foods and beverages must be met by the manufacturer. In the food and beverage industries the microbiological and hygienic quality including the biological stability of the products are important criteria for their assessment. The reason: just a few microbes are often all it takes to spoil large quantities of a production run.

Quality Assurance

The final product quality required can only be attained if the entire production process is adequately and

reliably protected against contamination. Although the explosive technological development has reduced the risk of contamination by spoilage microbes, the issue of shelf life has taken on new dimensions as a result of the enormous production output now possible. Quality control of bottling and filling, in terms of chemical and, above all, biological stability, must be adapted to this development by state-of-the-art test methods.

Applications

To assure the quality of a manufacturing process, appropriate in-process samples are taken of the raw materials and the final products. These samples are examined for the microbial colony and particle counts. Depending on the results, specific action is taken in production to guarantee product compliance with the quality specifications.

Microbial Enumeration

Microbial enumeration is the quantitative determination of microorganisms present in a sample. The quantity can represent either the total bioburden, e.g., all bacteria, yeasts and molds; or the detection and quantification of a particular species of product-specific micro-organisms. The counts are expressed in colony-forming units per 1 ml sample volume (CFU/ml).

Particle Analysis

Particle count depends on the particle sizes found in the sample, and is expressed in units per sample for each particle spectrum.

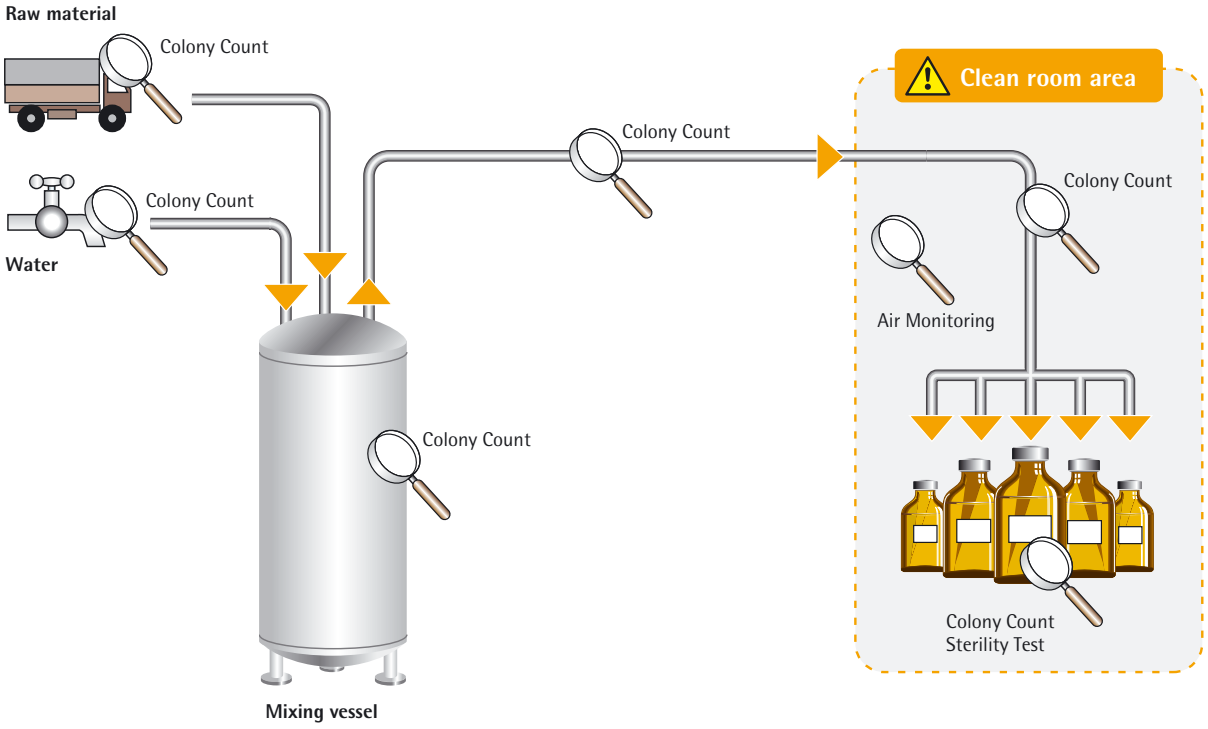
Air Monitoring

Air monitoring involves active sampling of airborne microorganisms and viruses present in the air within the entire production area. The count is given in CFU/m3.

Sterility Test

Sterility of the final product is determined by microorganism growth in prescribed liquid nutrient media. Results show whether the sample is sterile or unsterile.

Incoming Inspection, In-Process and Final Quality Control (Fig.)



Your Requirements
Drive Our Performance

Methods
Usually, precise instructions are given for performing a specific laboratory test. At Sartorius Stedim Biotech, we distinguish between the direct method and the membrane filter method. The direct method involves inoculation of the sample directly into liquid nutrient media. Instead Sartorius Stedim Biotech recommends the membrane filtration method in which microorganisms and particles are concentrated on the surface of a membrane filter and thus separated from the other constituents of a sample, such as inhibitors and liquids. Subsequently, the filter is quantitatively evaluated. This provides the following advantages:

Accurate Detection of Microorganisms
- Quantitative determination of low bioburden in large sample volumes
- Inhibitors, such as antibiotics and preservatives, can be rinsed away
- Samples containing a high particle load can be prefiltered

Economy
- No major equipment investment is needed
- Eliminates time-consuming, laborintensive preparation
- Long-lasting
- Easy to store
- Cost-effective

Results on File For Future Reference
The results can be documented by attaching the dried membrane filters onto a test report for easy reference later.

Low Space Requirements
- Space-saving working area
- Space-saving storing area
- Small-volume autoclaves are suitable

Sartorius Stedim Biotech can help you select the appropriate membrane filtration products to provide this full range of benefits while meeting your regulatory i.g., membrane pore size, nutrient media requirements, etc.

Water*
International Pharmacopoeias such as EP, USP and JP, including their supplements, EG98/83, DIN/ISO, APHA-STM.

Cosmetics*
Based on the pharmacopoeias for pharmaceuticals.

Pharmaceuticals*
International Pharmacopoeias such as EP, USP and JP, including their supplements.

Juice*
International Federation of Fruit Juice Producers.

Soft Drinks

Water*
Mineral water guidelines such as MNO.

Beer*
Brewery guidelines such as EBC, JI Brew, MEBAK and VLB

Wine

* Reference Guide on page 30

Certificates

For your quality assurance Sartorius Stedim Biotech exclusively offers certified products. A lot certificate is included in the package of each consumable product, indicating that the product meets the specifications for release. Our stainless steel filter holders are individually serial numbered. Moreover, Sartorius Stedim Biotech provides Validation Guides with detailed information on testing, results, and specifications on request.

Over the years, the vacuum membrane filtration technique has established itself as the method of choice for microbial enumeration and particulate analysis. Systems used for quality assurance testing by industry, at government testing laboratories and required by government regulatory authorities must meet the most stringent conditions, yet be economical at the same time. This table demonstrates, feature by feature, the range of performance standards met by innovative Sartorius Stedim Biotech products.

		Microsart® @filter & Microsart® Funnel	Biosart® 100 Monitors	Biosart® 100 Media	Biosart® 250 Funnels	Nutrient Pad Sets	Membrane Filter	Combisart® Stainless Steel Devices	Glass	Polycarbonate
Reliable Results										
Sterility of parts which are in contact with the sample	Sterile upon delivery	•	•	•	•	•	•			
	Autoclavable (121°C or 134°C)				•		•	•	•	•
	Sterilisable by dry heat (180°C)							•	•	
Defined pore size and quantitative recovery rates acc. to international standards	Validation Guides available					•	•			
Certified quality builds confidence and assures clarity	Enclosed certificate confirms all specifications	•	•	•	•	•	•			
	In compliance with international standards such as EP, USP and ISO8199	•	•	•	•	•	•	•		
	Individual serial number							•		
Writing a SOP	Easy to validate	•	•	•	•	•	•			
No growth inhibition caused by glues or binders on the membrane filter	Bio-inert materials	•	•	•	•	•	•	•	•	•
No false-negative results caused by secondary contamination of the culture media	The underside of the membrane filter is sterile-vented and|or the added media must pass through the membrane filters first	•	•	•	•	•	•	•	•	•
No false-positive results caused by secondary contamination of the sample	Lid for funnel is available	•	•					•	•	•
Membrane filter can be filed: The original filters are available for auditing at any time later	The filter with the incubated colonies can be removed, dried and glued onto a report for future reference	•	•	•	•	•	•	•	•	•
Colonies or particles are easy to see	Different filter colors offer contrasting backgrounds for each colony color	•	•	•	•	•	•	•	•	•
Parts which are in contact with the sample are particle free	Particles can be rinsed out				•		•	•	•	•
Easy disposal	Melt down by autoclaving	•	•							
Time-Saving Procedure										
Short filtration times	High flow rate	•	•		•	•	•	•	•	
	Large filtration area	•	•		•	•	•	•	•	
No filter changing in a sample	High throughput	•	•		•	•	•	•	•	
Few steps involved	Easy to use	•	•	•	•	•	•	•		

• Product completely satisfies all requirements

Not necessary to meet this requirement

Current data not available at present

Product does not meet requirements or satisfies only part of them

Combisart® Multi-Branch Systems – Total Reliability Based on a Proven Concept

You can rely on Sartorius Stedim Biotech' experience to help you make a sound decision.

The Right Equipment for Your Application

The Sartorius Stedim Biotech Combisart® system enables you to select the optimal hardware and consumables for your needs in quality assurance. Combisart® features a modular design and field-proven standard accessories to make your choice easier.

At the heart of the Combisart® system is a stainless steel manifold designed to accommodate all types of filter holders and funnels such as:

- Ready-to-use units, including Microsart® @filter and Microsart® funnel 100 & 250
- Flamable units such as stainless steel funnels for colony counting
- Autoclavable polycarbonate and glass filter holders

A special feature of the Combisart® manifold is that each filter unit can be individually vented. This rules out secondary contamination of the underside of the filter.

Since the most reliable sterilization method is autoclaving, the Combisart® design offers a unique advantage for this method. After inserting the membrane filters in the filter holders, you can simply unscrew them as an entire unit from each workstation and autoclave them. You can even pour out a non-filterable sample from each unit. Moreover Combisart® makes filtration equally easy for left- or right-handed users in your laboratory, since the funnels can be positioned to suit the individual user.

Maximum Economy

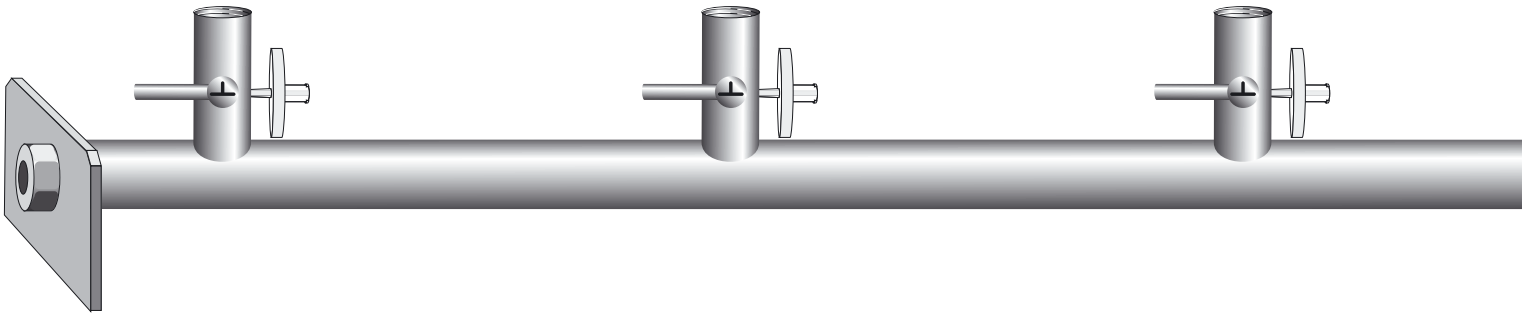
Requirements and applications may change over time. With Combisart®, you can quickly adapt your current equipment configuration to meet new requirements. This means that you can switch from a reuseable filter holder to a disposable unit without requiring a new equipment investment.

Whatever requirements you place on our products today, the choice of filter holders that best meet your needs is yours. Our field sales representatives will be happy to advise you concerning your specific requirements. Just ask us for an appointment.

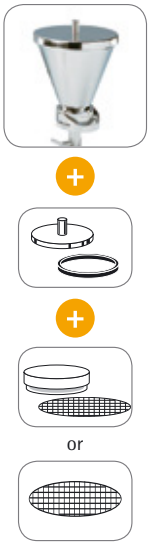
To help you choose the Sartorius Stedim Biotech filter holders that best meet your needs, we have listed all systems on the following pages. You will find not only our product specifications and ordering information, but also an easy guide to loca-ting the features you need.

One glance at the pictograms will tell you how a particular product will meet your requirements.

You will find a detailed overview of our individual systems on page 29.



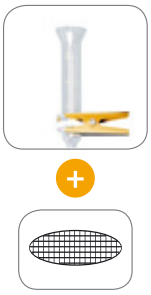
Stainless Steel Funnels 40, 100, 500 ml
For Colony or Particle Counting



- Safe & reliable: Autoclavable; filter can be used for documentation; individual serial number
- Saves time: Sanitizable by flaming, easy to use
- Saves money: Low con-sumable costs
- Disposal: None, since funnels are reusable

Ordering Information	Order No.
40 ml capacity	6981004
100 ml capacity	6981065
500 ml capacity	6981002

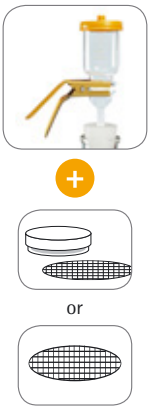
Glass Filter Holder 30 ml
For Particle Counting and Hybridization Tests



- Safe & reliable: Autoclavable; filter can be used for documentation
- Saves time: Easy to use
- Saves money: Low consumable costs
- Disposal: None, since filter holder is reusable

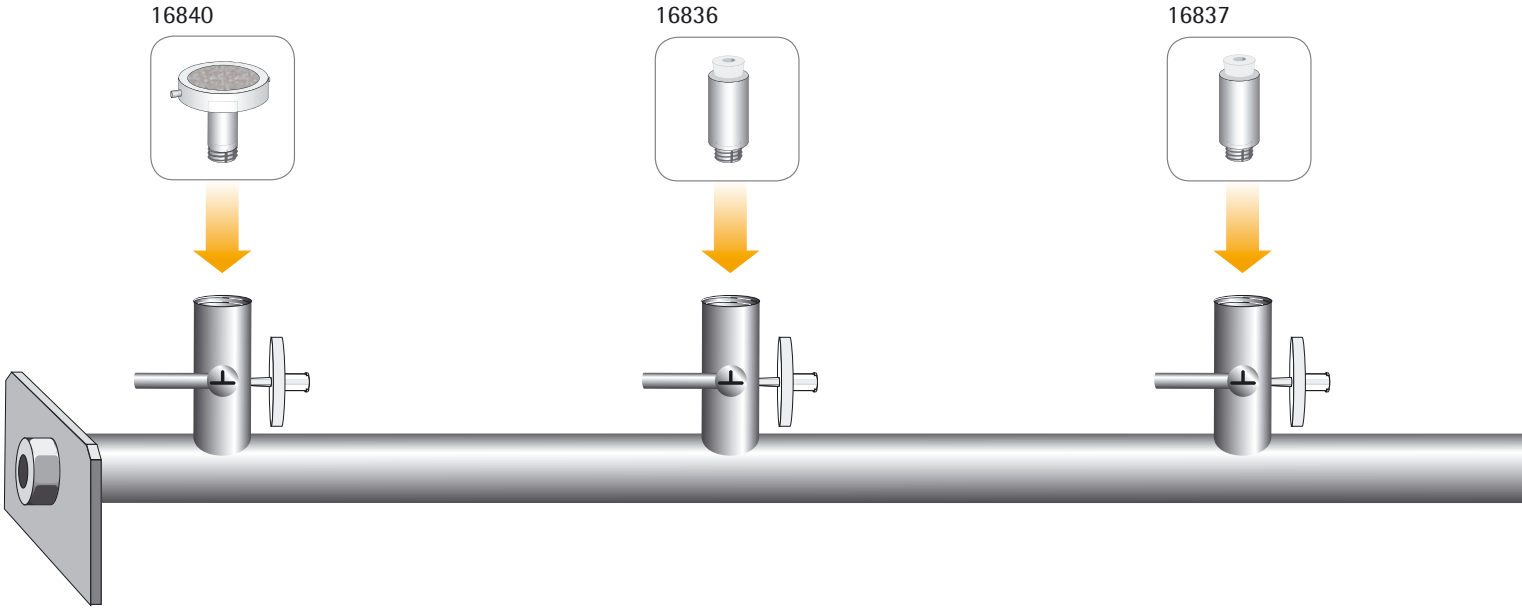
Ordering Information	Order No.
30 ml capacity	16306

Glass Filter Holder 250 ml
For Colony and Particle Counting

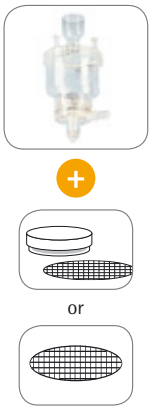


- Safe & reliable: Autoclavable, filter can be used for documentation
- Saves time: Easy to use
- Saves money: Low consumable costs
- Disposal: None, since filter holder is reusable

Ordering Information	Order No.
250 ml capacity	16307



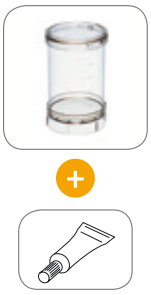
Polycarbonate Filter Holder 250 ml
For Colony and Particle Counting



- Safe & reliable: Autoclavable; filter can be used for documentation
- Saves money: Low purchase price and cost of investment and consumables
- Disposal: None, since filter holder is reusable

Ordering Information	Order No.
250 ml capacity	16511

Biosart® 100 Monitors 100 ml
For Colony Counting

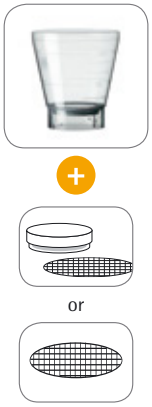


- Safe & reliable: Individually packaged, sterile, validated, certified. Membrane filters: Meet ISO 7740; available in various colors; can be used for documentation; without any hydrophobic adhesive areas
- Saves time: Ready to use; practical design that is easy to use; magnifying glass on the lid; ensures high flow rates, high throughputs; no preparation time necessary
- Saves money: No additional equipment needed
- Disposable: Easy; can be melted down by autoclaving

Ordering Information	Order No.
0.2 µm, white|black, 47 mm	16401-47-07-ACK
0.45 µm, white|black, 47 mm	16401-47-06-ACK
0.45 µm, green|dark green, 47 mm	16402-47-06-ACK
0.45 µm, gray|white, 47 mm	16403-47-06-ACK

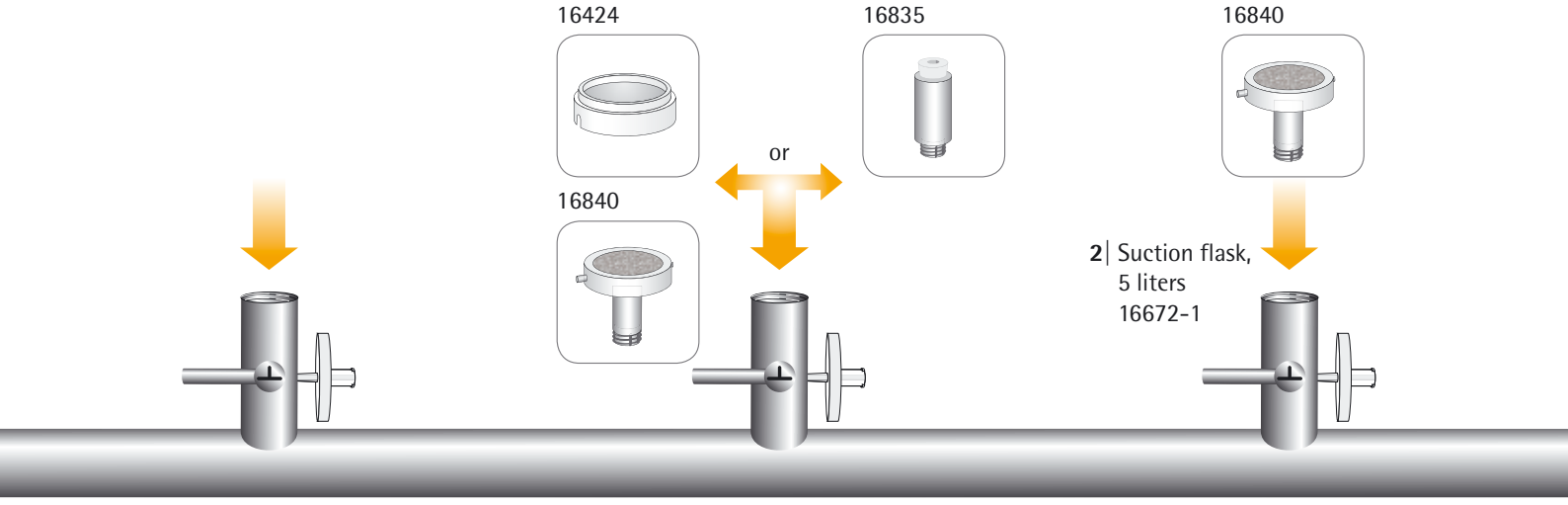
More types available! Please see page 14!

Biosart® 250 Funnel 250 ml
For Colony and Particle Counting



- Safe & reliable: Sterile, certified, filter can be used as documentation, can be autoclaved to a limited extent
- Saves time: Ready to use; practical design that is easy to use; ensures high flow rates, high throughputs; no preparation time necessary
- Saves money: No additional equipment needed

Ordering Information	Order No.
250 ml, 50 units, sterile	16407-25-ALK
250 ml, 50 units, individually sterile	16407-25-ACK



Microsart® funnel 100 | 250
For Colony Counting

- Reliable results – Use a new, sterile funnel for each test for certain avoidance of cross contamination
- Time-saving – Just change the funnel, rather than spending time sanitizing it
- Simpler handling – The transparent material faciliates the visualization of the liquid level and avoids loss of time

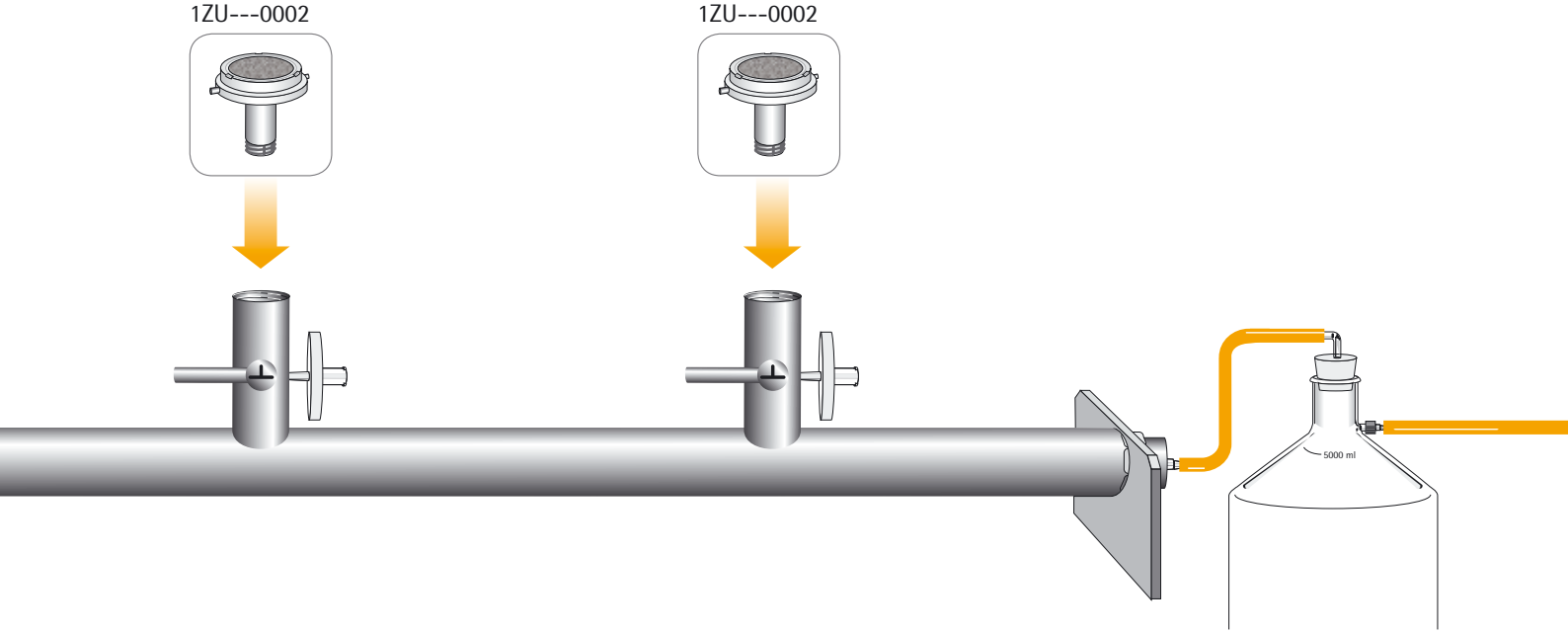
Microsart® @filter 100 | 250
For Colony Counting

- Safe and reliable: Sterile packaged Sterilization at the point of use is not required
- Fully disposable base and funnel: Preparation- and sterilization-free procedure reduces the risk of secondary contamination
- Optimized design and materials: No liquid remains after filtration, eliminates the need of rinsing
- Easy handling: Click-Fit closure Fast in routine analysis, eliminates the risk of leakage

Ordering Information	Order No.
Microsart® 100 Funnel 100 funnels, sterile in 5 sealed bags	16A07--10------N
Microsart® 96 funnels Funnel 250, sterile in 6 sealed bags	16A07--25------N

Ordering Information

Microsart® @filter 100 | 250, sterile disposable filter units, 47 mm, 100 ml or 250 ml, stacked and packaged in bags. Different pore sizes and colors available.
Microsart® @filter 100 | 250, sterile disposable filter units with lid, 47 mm, 100 ml or 250 ml, packaged on trays. Different pore sizes and colors available (see page 20).



Combisart®

Combisart® Manifolds, 1-, 3- and 6-Branch

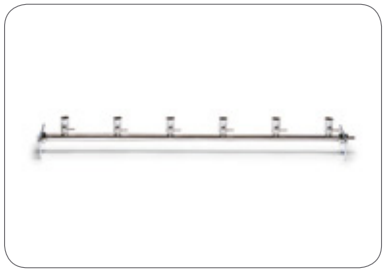
Made of high-grade stainless steel (B.S. 304S31 | AISI 304); accommodates any type of vacuum funnel. Stainless steel three-way valves (taps) allow the vacuum for each filter holder to be individually controlled and each holder to be sterilely vented. The low height of the manifold ports is particularly advantageous for working on a clean bench.

Specifications	
Dimensions (L | H | D)	3-branch manifold: 435 | 103 | 120 6-branch manifold: 910 | 103 | 120
Max. operating pressure	Vacuum or max. 2 bar (29 psi) pressure
Inlets	TR 20 × 2 female threads
Outlet	Hose nipple, DN 10
Sterilization	By autoclaving (134°C max.) By dry heat (180°C max.)

Ordering Information	Order No.
Combisart® 1-branch manifold	16844
Combisart® 3-branch manifold	16842
Combisart® 6-branch manifold	16843

Combisart® Sets*	Capacity	Order No.
1-branch	1×100 ml	16844-CS
1-branch	1×500 ml	16845-CS
3-branch	3×100 ml	16824-CS
3-branch	3×500 ml	16828-CS
6-branch	6×100 ml	16832-CS
6-branch	6×500 ml	16831-CS

In each set stainless steel funnels with lids are preassembled.



* stainless steel

Accessories and Replacement Parts

Description	Pack Size	Order No.
Minisart® SRP25, sterile filter for venting, 0.2 µm, individually sterile packaged, could be autoclaved 5 times	50	17575--------ACK
Plug Luer Lock, to close the Minisart® inlet, if sterile venting is not required	12	17012----------E
Plug, conical, to close the venting hole beside the 3-way-valve, if sterile venting is not required	10	6980225
Silicone O-ring for manifold female threads	3	6980235

Stainless Steel Funnels; 40, 100, 500 ml

For Colony and Particle Counting

Stainless Steel Funnel

Specially designed for the use in microbiological quality assurance, these three filter holders made of high-grade stainless steel differ only in their capacity. Their special locking clamp simplifies positioning and removal of the membrane filter, ensuring secure lock-down. For traceability, each funnel has an individual serial number.

Specifications	
Material	Stainless steel, AISI 304 (B.S. 304S31)
Capacity	40 ml, 100 ml or 500 ml
Filter diameter	47 mm (or 50 mm)
Filtration area	12.5 cm^2
Max. operating pressure	Vacuum only
Sanitization	By flaming
Sterilization	By autoclaving (134°C max.) By dry heat (180°C max.)

Order No.	Description
6981004	Stainless steel funnel capacity 40 ml
6981065	Stainless steel funnel capacity 100 ml
6981002	Stainless steel funnel capacity 500 ml

Lids and Gaskets

To avoid secondary contamination, the lid has a small central air port into which a cotton plug can be inserted. The appropriate seal ensures that the lids are positioned perfectly, minimizing the risk of secondary contamination.

Order No.	Description
6981063	Lid for 100 ml funnel AISI 304 stainless steel
6981064	Silicone lid seal (77.2 × 85.8 mm) for 100 ml funnel
6981001	Lid for 500 ml funnel AISI 304 stainless steel
6981003	Silicone lid seal (122 × 131 mm) for 500 ml funnel

Single Base 16840

For adapting i.e. a stainless steel funnel for use on the manifold. The stainless steel frit used as the filter support is designed to ensure uniform distribution of microorganisms and particles on the membrane filter surface. The pins on both sides of the base for holding the funnel clamp can be positioned as required.

Specifications	
Material	AISI 304 stainless steel Gasket: Silicone flat gasket (41 × 50 × 1 mm)
Filter diameter	47 mm (or 50 mm)
Filtration area	12.5 cm^2
Max. operating pressure	Vacuum only
Sanitization	By flaming
Sterilization	By autoclaving (134°C max.) | By dry heat (180°C max.)
Outlet	TR 20 × 2 mm male thread with DN 24 (~ 24 mm) hexagonal nut

Order No.	Description
16840	Single base for stainless steel manifold, with frit (50 mm)
Replacements	
6980102	Stainless steel frit for 50 mm ∅ membrane filters
6980103	Stainless steel frit for 47 mm ∅ membrane filters
6980124	Silicone flat gasket underneath the frit
6980104	PTFE flat gasket underneath the frit
6980274	Silicone O-ring for 16840 male thread

Glass Filter Holders; 30, 250 ml

For Colony and Particle Counting and for Hybridization Tests

Glass Filter Holders

Two compact vacuum filter holders for easy particulate analysis and colony counting (30 ml holder also suitable for hybridization tests). Both the top and bottom part of the filter holders are easily and securely fastened together using the metal clamp.
The centering rim on the filter support ensures correct positioning of the membrane filter. The glass frit filter support guarantees uniform distribution of retained microorganisms and particles on the filter surface.

Specifications		
Material	Funnel and base	Borosilicate glass, 3.3
	Clamp	Anodized aluminum
	Filter support	PTFE|Borosilicate glass, 3.3
	Lid	Silicone (250 ml filter holder only)
	Gasket	Silicone O-ring, 25 + 3 mm (30 ml filter holder) 45 + 3 mm (250 ml filter holder)
Max. operating pressure	Vacuum only	
Sterilization	By autoclaving 134°C max	
	By dry heat 180°C max.	

Order No.	Description	
16306	Glass filter holder	30 ml
	Filter diameter	25 mm (or 24 mm) Prefilter, 20 mm
	Filtration area	3 cm^2
	Capacity	30 ml
	Outlet	12 mm outer diameter
16307	Glass filter holder	250 ml
	Filter diameter	47 mm (or 50 mm) Prefilter, 40 mm
	Filtration area	12.5 cm^2
	Capacity	250 ml
	Outlet	15 mm outer diameter

Adapter, 16836
Adapter, 16837

For use of a glass filter holder, 16306 or 16307, on a Combisart® stainless steel manifold.

Specifications		
Material	Base	AISI 304 stainless steel
	Stopper	Silicone
Max. operating pressure	Vacuum only	
Sterilization	By autoclaving	134°C max.
	By dry heat	180°C max.
Outlet	TR 20 + 2 mm male thread	

Order No.	Description
16836	Adapter with 11 mm opening in stopper; for using filter holder 16306 on a Combisart® manifold
00280	Replacement stopper for 16836
16837	Adapter with 14 mm opening in stopper; for using filter holder 16307 on a Combisart® manifold
00281	Replacement stopper for 16837

Polycarbonate Filter Holders

For Colony and Particle Counting

Polycarbonate Filter Holder, 250 ml

This reusable, practical filter holder made of autoclavable plastic is ideal for microbiological and analytical testing outside the laboratory.

Specifications		
Material	Housing	Polycarbonate
	Filter support	Polypropylene
	Gaskets	Silicone O-rings, 40 5 mm; 80 3 mm; 14 2 mm
Capacity	250 ml	
Filter diameter	47 mm, prefilter 37 mm	
Filtration area	11.5 cm^2	
Max. operating pressure	Vacuum or 2 bar (29 psi) pressure max.	
Sterilization	By autoclaving (121°C max.)	
Outlet	TR 20 2 mm male thread	

Order No.	Description
16511	Polycarbonate filter holder, 250 ml

Ready-to-Use Biosart® 100 Monitors

For Colony Counting

Biosart® 100 Monitors

Biosart® 100 Monitors have been specially designed for microbiological testing of pharmaceuticals and cosmetics, beverages and foods, water and other liquids. These sterile disposables with an incorporated membrane filter and cellulose pad are ready to use. After filtration, just remove the 100 ml funnel to convert the Monitor into a petri dish.

Biosart® 100 Monitors are also available with the new 0.45 µm HighFlow membranes. The special pore structure allows shorter filtration times due to 30% higher flow rates.

Culture media for wetting the pad are available in individually sterilized, convenient plastic ampoules. Each box contains 50 ampoules, each with 2.5 ml and a lot certificate. If stored under the proper conditions (+4°C), the culture media have a shelf life up to one year.
For more information, see the chart on pages 16 to 17.

Specifications		
Material	Housing	Polystyrene
	Membrane filter	Cellulose nitrate; choice of white, green or gray, with grid; Regenerate Cellulose, white; can be used as documentation
	Pad	Cellulose
	Plug adapter	Polyethylene
Capacity	100 ml, 10 ml graduations	
Pore size	0.2 µm, 0.45 µm, 0.8 µm	
Filter diameter	47 mm	
Filtration area	14.5 cm^2	
Max. operating pressure	Vacuum only	
Outlet	6.5 × 1.5 mm	
Lot certificates	Recovery rate, sterility and specifications	

Biosart® 100 Monitors, 100 ml, 47 mm, Individually Packaged, Sterile, 48 Units

Order No.	Pore Size	Membranefilter* Filter Color | Grid
16401-47-07-ACK	0.2 µm	Cellulose nitrate white | black
16401-47-06-ACK	0.45 µm	Cellulose nitrate white | black
16402-47-06-ACK	0.45 µm	Cellulose nitrate green | dark green
16403-47-06-ACK	0.45 µm	Cellulose nitrate gray | white*

Biosart® 100 Monitors, 100 ml, 47 mm, Sterile Packaged, 48 Units

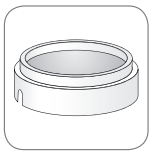
Order No.	Pore Size	Membranefilter* Filter Color | Grid
16401-47-07----K	0.2 µm	Cellulose nitrate white | black
16401-47-H6----K	0.45 µm High Flow	Cellulose nitrate white | black
16401-47-06----K	0.45 µm	Cellulose nitrate white | black
16402-47-06----K	0.45 µm	Cellulose nitrate green | dark green
16403-47-06----K	0.45 µm	Cellulose nitrate gray | white*
16403-47-04----K	0.8 µm	Cellulose nitrate gray | white*
16404-47-06----K	0.45 µm	Regenerated cellulose white

Biosart® 100 Monitors, 100 ml, 47 mm, Sterile, 48 Units

Order No.	Pore Size	Membranefilter* Filter Color | Grid
16401-47-H6-V--K	0.45 µm High Flow	Cellulose nitrate white | black
16401-47-06-V--K	0.45 µm	Cellulose nitrate white | black
16403-47-06-V--K	0.45 µm	Cellulose nitrate gray | white*
16403-47-04-V--K	0.8 µm	Cellulose nitrate gray | white*

*) Gray membranes after wetting black

Adapters for Biosart® 100 Monitors

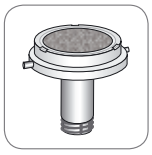


Biosart® 100 Monitor Adapters

For adapting Biosart® 100 monitors onto the filter support of a Combisart® stainless steel system.
The adapters ensure that the Monitors are positioned perfectly level minimizing the risk of contamination during filtration.

Specifications	
Material	Polypropylene, silicone
Max. operating pressure	Vacuum only
Sterilization	By autoclaving (134°C max.)

Order No.	Description
16424	Adapter for Biosart® 100 Monitors for use on single base, 1ZU---0002, 16840 (or 16841)
16417	Biosart® 100 Lifter for an easy removal of the membrane filter and transfer onto agar



Microsart® Base Support 47 mm, 1ZU---0002

For holding the Biosart® 100 adapter, 16424

Order No.	Description
1ZU---0002	Stainless steel filter support with frit for Combisart® stainless steel manifold.

Adapter, 16835

For adapting Biosart® 100 Monitors for use on a Combisart® stainless steel manifold. This adapter is attached to the polyethylene adapter – included in the Monitor packaging – which is connected to the outlet of the Monitor. The bottom thread of the 16835 adapter is then attached directly to the manifold.

Specifications		
Material	Base	AISI 304 stainless steel
	Stopper	Silicone
Max. operating pressure	Vacuum only	
Sterilization	By autoclaving (134°C max.) By dry heat (180°C max.)	
Outlet	TR 20 × 2 male thread	

Order No.	Description
16835	Adapter with 10 mm opening in stopper; for using Biosart® 100 Monitors on a Combisart® manifold
00279	Replacement stopper for 16835

Biosart® 100 Monitor Adapters

For adapting the Biosart® 100 Monitor onto other vacuum filter holder supports. The adapters ensure that the Monitors are positioned perfectly level minimizing the risk of contamination during filtration.

Specifications	
Material	Polypropylene
Max. operating pressure	Vacuum only
Sterilization	By autoclaving (134°C max.)

Order No.	Description
16415	Adapter, for using the Biosart® 100 Monitors on a vacuum filter holder support with a 50 mm ∅ (WM)
16416	Adapter, for using the Biosart® 100 Monitors on a vacuum filter holder support with a 59 mm ∅ (MP)

Detection Target and Reference[1)]	Test Sample Materials	Media Type (pH) Order No. (Monitor Type)[2)]	Recom. Incubtion Conditions[3)]	Typical Results
Counting of Total Colony Forming Units				
Total count APHA (dairy), APHA (food), APHA (water), AOAC, DAB, EG 98/83, EP, FDA, IDF, ISO 8199, ISO 9308-1 [1990], ISO 9308-1 [2001], USDA, USP.	Pharmaceuticals, cosmetics, raw materials, water (general quality), waste water, foods, other products.	**Caso** (pH 7.3) 16400-02----CA-K (2)	Bacteria: ≤ 3 d at 30–35°C; Yeasts and molds: ≤5 d at 30–35°C	Predominantly bacteria of different sizes, shapes and colors.
Total count APHA (water), EP.	Water for pharma purpose, water (general quality), waste water, other products.	**R2A** (pH 7.2) 16400-02----RA-K (2)	≥ 5 d at 30–35°C	Predominantly bacteria of different sizes and shapes. Most of them are white or colorless.
Total count APHA (dairy), APHA (food), APHA (water), API.	Raw materials, water (general quality), natural water, waste water, beverages, soft drinks, concentrates, foods, other products.	**Total Count | TGE** (pH 7.0) 16400-02----TC-K (2)	≤ 5 d at 30–35°C	Predominantly bacteria of different sizes, shapes and colors.
Total count APHA (water), VLB.	Raw materials, water (general quality), natural water, waste water, beverages, beer, foods, other products.	**Total Count | TTC** (pH 7.0) 16400-02----TZ-K (2)	≤ 5 d at 30–35°C	Predominantly bacteria grow on this medium. The majority of their colonies are stained red by TTC reduction.
E. coli and Coliforms, Enterobacteria				
E. coli and coliforms APHA (dairy), APHA (food), APHA (water), DGHM, ISO 9308-1 [1990], MNO, USDA.	Raw materials, water (general quality), natural water, waste water, beverages, soft drinks, concentrates, fruit juice, sugar, sugar products, foods, other products.	**m Endo** (pH 7.2) 16400-02----EN-K (1)	18–24 h at 36 ± 2°C	E. coli form red colonies with a metallic sheen, other coliforms grow as dark to light red colonies without metallic sheen.
E. coli and coliforms APHA (food), APHA (water), AOAC, EPA, FDA, ISO 9308-1 [1990], USDA.	Raw materials, water (general quality), waste water, beverages, foods, other products.	**m FC** (pH 7.4) 16400-02----MF-K (1)	18–24 h at 36 ± 2°C	E. coli and coliform bacteria form blue colonies with a blue surrounding.
E. coli and coliforms AFNOR, APHA (water), BS, FDA, ISO 9308-1 [1990], USDA.	Water (general quality), waste water, beverages, foods, other products.	**Teepol|Lauryl Sulphate** (pH 6.8) 16400-02----LS-K (1)	18–24 h at 36 ± 2°C	E. coli and coliform bacteria form 1–2 mm diameter yellow colonies surrounded by a yellow zone.
E. coli and coliforms APHA (food), EG 98/83, ISO 8199, ISO 9308-1 [1990], ISO 9308-1 [2001].	Raw materials, water (general quality), waste water, beverages, foods, other products.	**Tergitol TTC** (pH 7.2) 16400-02----TT-K (1)	18–24 h at 36 ± 2°C	E. coli forms yellow-orange colonies with a yellow surrounding, Coliform colonies are red, some with yellow zones, others are red.
Other Faecal Bacteria				
Enterococci APHA (food), APHA (water), EG 98/83, HMSO, ISO 7899-2, ISO 8199, LMBG, MNO.	Raw materials, water (general quality), natural water, waste water, beverages, foods, other products.	**Azide|KF Strep** (pH 7.2) 16400-02----KF-K (2)	40–48 h at 36 ± 2°C	Enterococci form red, pink or reddish brown colonies with a diameter of 0.5–2 mm.

Detection Target and Reference[1]	Test Sample Materials	Media Type (pH) Order No. (Monitor Type)[2]	Recom. Incubtion Conditions[3]	Typical Results
Non-Faecal, Pathogenic Bacteria				
Pseudomonas aeruginosa APHA (water), AOAC, ASM, DAB, DIN 38411, EG 98/83, EP, FDA, ISO 8199, ISO 16266, USP.	Pharmaceuticals, cosmetics, raw materials, water (general quality), waste water, foods, other products.	**Cetrimide** (pH 7.2) 16400-02----CE-K (1)	18–72 h at 30–35°C	Pseudomonas aeruginosa forms blue, blue-green or yellow-green colonies with blue zones. The colonies show fluorescence in UV-light.
Yeasts and Molds				
Yeasts and molds	Wine, soft drinks, concentrates, sugar, sugar products, other products.	**m Green yeast and mold| Schaufus Pottinger** (pH 4.6) 16400-02----MG-K (1)	2–5 d at 20–25°C or at 30–35°C depending on the target of the investigation	Yeasts develop smooth white, rarely colored colonies. Molds generally form velvety or fluffy, cotton-like colonies.
Yeasts and molds	Wine, soft drinks, concentrates, sugar, sugar products, other products.	**m Green yeast and mold Selective** (pH 4.6) 16400-02----GS-K (3)	2–5 d at 20–25°C or at 30–35°C depending on the target of the investigation	Yeasts develop smooth white, rarely colored colonies. Molds generally form velvety or fluffy, cotton-like colonies.
Yeasts and molds APHA (food), AOAC, EP, USP.	Pharmaceuticals, cosmetics, raw materials, water (general quality), waste water, other products.	**Sabouraud** (pH 5.6) 16400-02----SB-K (3)	≤5 d at 20-25°C	Yeasts develop smooth white, rarely colored colonies. Molds generally form velvety or fluffy, cotton-like colonies.
Yeasts and molds and bacteria	Beverages, beer, wine, soft drinks, concentrates, fruit juice, other products.	**Wallerstein| WL Nutrient** (pH 5.5) 16400-02----WN-K (1)	2–5 d at 30–35°C aerobic or anaerobic depending on the target of the investigation	Yeasts grow as yellowish green colonies. Molds generally form velvety or fluffy cotton-like colonies.
Yeasts and molds VLB.	Raw materials, beverages, beer, wine, soft drinks, concentrates, foods, other products.	**Wort** (pH 4.4) 16400-02----WZ-K (3)	3–5 d at 20–25°C or at 30–35°C depending on the target of the investigation	Yeasts develop smooth white or colored colonies. Molds form velvety or fluffy cotton-like colonies.
Product-Spoiling Microorganisms				
Acid-tolerant microorganisms APHA (water), IFU, MPP (packaging staff).	Raw materials, water (general quality), waste water, wine, soft drinks, concentrates, fruit juice, foods, other products.	**Orange Serum** (pH 5.5) 16400-02----OS-K (2)	3–5 d at 30–35°C aerobic or anaerobic depending on the target of the investigation	Only acid-tolerant microorganisms can grow on this medium such as lactic acid bacteria, acetic acid bacteria, yeasts and molds.
Bacteria in fermentation processes	Beverages, beer, wine, soft drinks, concentrates, fruit juice, other products.	**Wallerstein Differential** (pH 5.5) 16400-02----WL-K (1)	2–5 d at 30–35°C aerobic or anaerobic depending on the target of the investigation	Lactic acid bacteria colonies vary in size and color.

[1] Reference Guide on page 30

[2] A box contains 50 ampoules with nutrient media. The recommended Biosart® 100 Monitor Types are selected for optimum recovery of microorganisms on the corresponding nutrient media:

(1) 16401: white membrane filter with black grid
(2) 16402: green membrane filter with dark green grid
(3) 16403: gray membrane filter with white grid

[3] The incubation conditions are recommended by Sartorius Stedim Biotech. They may be varied according to the type of samples in compliance with the reference standard or customer's requirements.

Ready-to-Use Biosart® 250 Funnels

For Colony and Particle Counting

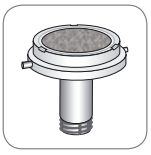
Biosart® 250 Funnel

The Biosart® 250 Funnel has been specially designed for microbiological and analytical quality assurance in industry.

The sterile 250 ml plastic funnel guarantees fast filtration and high sample throughputs during routine testing. Its large inner diameter allows high flow rates, and the tapered inner walls permit thorough flushing of the funnel, after filtration.

Specifications	
Material	Polypropylene
Capacity	250 ml, 50 ml graduations
Filter diameter	47 mm (or 50 mm), prefilter 40 mm
Filtration area	12.5 cm^2
Max. operating pressure	Vacuum only
Sterilization	Ethylene oxide
Lot certificates	Sterility and Performance Tests

Order No.	Description
16407-25-ALK	Biosart® 250 Funnel, 50 units, sterile-packaged
16407-25-ACK	Biosart® 250 Funnel, 50 units, individually sterile-packaged

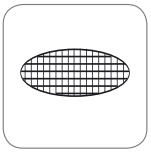


Microsart® Base Support 47 mm, 1ZU---0002

For adapting a Biosart® 250 Funnel for use on a Combisart® stainless steel manifold.

Order No.	Description
1ZU---0002	Stainless steel filter support with frit for Combisart® stainless steel manifold.

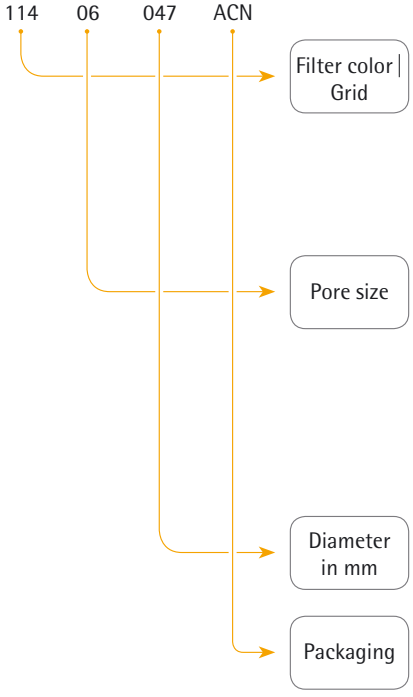
Gridded Membrane Filters



Gridded Membrane Filters

Sartorius Stedim Biotech cellulose nitrate (cellulose mixed ester) membrane filters are offered in a choice of three different colors to suit your specific test application, and provide a high-contrast background. For simple evaluation of the results, the grid divides the filtration area into 130 squares, each measuring 3.1 × 3.1 mm. The membrane filters are individually packaged and sterilized, and undergo stringent quality assurance testing. The certificate included in every package documents the quality assurance tests as well as the compliance of the 0.45 µm membrane filter with ISO 7704.

The special pore structure of the new 0.45 µm HighFlow membrane filters allow shorter filtration times due to higher flow rates and throughputs. Especially E. coli shows best growth promotion on HighFlow membranes. As every Sartorius Stedim Biotech 0.45 µm membrane filter lot these membranes are also tested and released according to ISO 7704.



113	White
114	White|black
130	Gray|white
131	White|black and hydrophobic edge
138	Green|dark green
139	White|green

07	0.2 µm
06	0.45 µm
H6	0.45 µm High Flow
05	0.65 µm
04	0.8 µm
03	1.2 µm
02	3 µm
01	8 µm

ACN	100 filters, individually, sterile packaged
ACR	1,000 filters, individually, sterile packaged
SCM	3x100 filters, Individually, sterile packaged for filter dispensers
N	100 filters, non-sterile
R	1,000 filters, non-sterile

Microsart®

Microsart® Funnel 100 | 250 are sterile 100 ml and 250 ml respetively plastic funnels. They allow quick performance of the filtrations required in the routine testing of water, food and beverages, pharmaceutical and cosmetic products. The optimal sealing is guaranteed by a click-fit closure. The large inner diameter ensures a high flow rate and the optimized shape allows a thorough rinsing of the system subsequent to filtration. No liquid is retained in the filter funnel.

Order No.	Description
16A07--10------N	Microsart® 100 Funnel 100, sterile in 5 sealed bags
16A07--25------N	Microsart® 96 Funnel 250, sterile in 6 sealed bags

Specifications	
Material	Polypropylene
Capacity	100 and 250 ml
Filter diameter	47 mm
Filtration area	13,2 cm^2
Max. operating pressure	Vacuum only
Sterilization	Ehtylene oxide
Lot certificates	Sterility and Performance Tests

Microsart® Funnel Dispenser
Funnel dispenser for secure removal of single, sterile Microsart® Funnel.

Order No.	Description
16A08	Microsart® Funnel Dispenser, stainless steel. For dispensing Microsart® funnels as well as Microsart® @filter units (bag version).

1ZU---0002 Microsart® Base Support 47 mm
with frit, stainless steel, to accommodate Microsart® Funnels and Microsart® @filter units onto Combisart® and Microsart® Combi.jet manifolds.

Order No.	Description
1ZU---0002	Stainless steel filter support with frit for Combisart® stainless steel manifold.

Microsart® @vance | Microsart® @filter

Microsart® @vance

The Microsart® @filter unit kicks off the new product family Microsart® @vance. Microsart® @vance stands for innovative products for microbiological analyses based on colony count determination. Only a few steps from taking the sample until incubation by eliminating the risk of secondary contamination excel this product line. All Microsart® products meet the most stringent quality assurance standards and also impress users with reliable results and simple, time-saving handling. Microsart® @vance – this is advanced colony counting by Sartorius Stedim Biotech GmbH.

Microsart® @filter 100 | 250

Ready-to-use, sterile Microsart® @filter units combine a funnel and a gridded membrane filter in one unit. They have been specifically developed for the detection and enumeration of microorganisms in pharmaceuticals, cosmetics, food, beverages, water and otherliquids. Marked graduations allow accurate sample volumes. The optimized design permits thorough rinsing of the system-subsequent to filtration. No liquid is retained in the filter funnel. Optimal sealing to the Microsart® Base 47 mm is guaranteed by the bayonett closure.

Specifications	
Materials	
Funnel	Polypropylene
Base	Polypropylene
Membrane filter	Cellulose, Nitrate (Cellulose mixed Ester), Regenerated Cellulose; choice of various colors and grids
Capacity	100 ml, graduations at 20, 50 and 100 ml, 250 ml, graduations at 50, 100, 200 and 250 ml
Filter diameter	47 mm, prefilter 40 mm (particle testing only)
Filtration area	13.2 cm^2
Max. operating pressure	Vacuum only
Sterilization	Ethylene oxide
Lot certificate	Recovery rate, sterility and performance test

Microsart® @filter 100, Sterile Disposable Filter Units, 47 mm, 100 ml, Stacked and Packaged in Bags, Ideal for the Use with Microsart® Funnel Dispenser, 60 Units

Order No.	Pore Size	Membrane Filter* Color | Grid
16D01--10-07--BL	0.2 µm	Cellulose nitrate white | black
16D01--10-H6--BL	0.45 µm High Flow	Cellulose nitrate white | black
16D03--10-H6--BL	0.45 µm High Flow	Cellulose nitrate gray | white
16D02--10-06--BL	0.45 µm	Cellulose nitrate green | dark green
16D05--10-06--BL	0.45 µm	Regenerated cellulose white (w/o grid)
16D01--10-06--BL	0.45 µm	Cellulose nitrate white | black

Microsart® @filter 250, Sterile Disposable Filter Units, 47 mm, 250 ml, Stacked and Packaged in Bags, Ideal for the Use with Microsart® Funnel Dispenser, 48 Units

Order No.	Pore Size	Membrane Filter* Color | Grid
16D01--25-07--BK	0.2 µm	Cellulose nitrate white | black
16D01--25-H6--BK	0.45 µm High Flow	Cellulose nitrate white | black
16D03--25-H6--BK	0.45 µm High Flow	Cellulose nitrate gray | white
16D02--25-06--BK	0.45 µm	Cellulose nitrate green | dark green
16D03--25-05--BK	0.65 µm	Cellulose nitrate gray | white
16D01--25-06--BK	0.45 µm	Cellulose nitrate white | black

Microsart® @filter 250, Sterile Disposable Filter Units with Lid, 47 mm, 250 ml, Packaged on Trays, Ideal for the Use in Clean Benches, 16 Units

Order No.	Pore Size	Membrane Filter* Color | Grid
16D01--25-07--TF	0.2 µm	Cellulose nitrate white | black
16D01--25-H6--TF	0.45 µm High Flow	Cellulose nitrate white | black
16D03--25-H6--TF	0.45 µm High Flow	Cellulose nitrate gray | white
16D02--25-06--TF	0.45 µm	Cellulose nitrate green | dark green
16D03--25-05--TF	0.65 µm	Cellulose nitrate gray | white
16D01--25-06--TF	0.45 µm	Cellulose nitrate white | black

Nutrient Pad Sets (NPS)
For Microbial Enumeration

Microorganisms require the appropriate culture media for optimal reproduction. Ready-to-use Nutrient Pad Sets (NPS) consist of a pad with culture medium in a petri dish and a gridded membrane filter. Made of inert cellulose, the nutrient pad is already impregnated with a culture medium of a specific formula and dehydrated. Each nutrient pad is individually "plated" in a petri dish and sterilized. Just moisten the nutrient pad with 3.5 ml of sterile, deionized water to reactivate the medium. NPS are continuously enhanced as part of our development program to adapt our products to changing application requirements.

The standard NPS box contains 100 sterile Nutrient Pads, each of which is individually inserted in a petri dish and sterilized. Ten of these petri dishes are sealed in an aluminum bag. This special packaging in bags protects the sensitive formula constituents of the Nutrient Pad during transport and storage from fluctuations in humidity and temperature. As a result, it guarantees the high quality of our NPS throughout their entire shelf of 24 months.

This makes the Sartorius Stedim Biotech Nutrient Pads Sets unique: No other ready-to-use culture media around the globe assures such consistently high quality and reproducible results for 24 months.

All Nutrient Pad Sets are conveniently supplied with the appropriate membrane filters, which are also individually packaged and sterilized.

These products undergo traceable quality assurance tests on the basis of which a lot certificate is issued and included in every package.

Microsart® @filter 100, Sterile Disposable Filter Units with Lid, 47 mm, 100 ml, Packaged on Trays, Ideal for the Use in Clean Benches, 24 Units

Order No.	Pore Size	Membrane Filter* Color | Grid
16D01--10-07--TG	0.2 µm	Cellulose nitrate white | black
16D01--10-H6--TG	0.45 µm High Flow	Cellulose nitrate white | black
16D03--10-H6--TG	0.45 µm High Flow	Cellulose nitrate gray | white
16D02--10-06--TG	0.45 µm	Cellulose nitrate green | dark green
16D05--10-06--TG	0.45 µm	Regenerated cellulose white (w/o grid)
16D01--10-06--TG	0.45 µm	Cellulose nitrate white | black

*) Gray membranes after wetting black

Technical Data and Application Guide Nutrient Pad Sets

Detection Target and Reference[1)]	Test Sample Materials	Media Type (pH) Order No. (Filter Type)[2), 3)]
Counting of Total Colony Forming Units		
Total count APHA (dairy), APHA (food), APHA (water), AOAC, DAB, EG 98/83, EP, FDA, IDF, ISO 7704, ISO 8199, ISO 9308-1 [1990], ISO 9308-1 [2001], USDA, USP.	Pharmaceuticals, cosmetics, raw materials, water (general quality), waste water, foods, other products.	**Caso** (pH 7.3) 14063--47------N (1)
Total count APHA (water), EP, ISO 7704.	Water for pharma purpose, water (general quality), waste water, other products.	**R2A** (pH 7.2) 14084--47------N (1)
Total count APHA (water), ISO 7704, VLB.	Raw materials, water (general quality), waste water, beverages, beer, foods, other products.	**Standard** (pH 7.2) 14064--47------N (1)
Total count APHA (water), ISO 7704, VLB.	Raw materials, water (general quality), natural water, waste water, beverages, beer, foods, other products.	**Standard TTC** (pH 7.2) 14055--47------N (1)
Total count APHA (water), ISO 7704, VLB.	Raw materials, water (general quality), natural water, waste water, beverages, beer, foods, other products.	**Standard TTC I mod.** (pH 7.2) 14085--47------N (1)
Total count APHA (dairy), APHA (food), APHA (water), API, ISO 7704.	Raw materials, water (general quality), natural water, waste water, beverages, soft drinks, concentrates, foods, other products.	**TGE|Tryptone Glucose Extract** (pH 7.0) 14076--47------N (1)
Total count EG 98/83, HMSO, ISO 6222, ISO 7704, ISO 8199.	Water (general quality), natural water, other products.	**Yeast Extract** (pH 7.2) 14090--47------N (1)
E. coli and Coliforms, Enterobacteria		
E. coli and coliforms ISO 7704, Journal Food Protection, ZenHyg (journal of hygiene).	Raw materials, water (general quality), waste water, beverages, foods, other products.	**Chromocult** (pH 7.0) 14087--47------N (7)
E. coli APHA (water), DIN 10110, EG 98/83, ISO 7704, ISO 8199, ISO 9308-1 [2001], LMBG, USDA.	Raw materials, water (general quality), waste water, beverages, foods, other products.	**ECD** (pH 7.0) 14082--47------N (2)
E. coli and coliforms APHA (dairy), APHA (food), APHA (water), DGHM, ISO 7704, ISO 9308-1 [1990], MNO, USDA.	Raw materials, water (general quality), natural water, waste water, beverages, soft drinks, concentrates, fruit juice, sugar, sugar products, foods, other products.	**Endo** (pH 7.4) 14053--47------N (9)
E. coli and coliforms APHA (food), APHA (water), AOAC, EPA, FDA, ISO 7704, ISO 9308-1 [1990], USDA.	Raw materials, water (general quality), waste water, beverages, foods, other products.	**m FC** (pH 7.4) 14068--47------N (2) 14068--50----PDN (closed petri dishes) (2)
Enterobacteria, E. coli APHA (dairy), APHA (food), APHA (water), AOAC, DAB, DIN 38411, DGHM, EP, ISO 7704, LMBG, MNO, USDA, USP.	Pharmaceuticals, cosmetics, raw materials, water (general quality), natural water, waste water, beverages, soft drinks, concentrates, fruit juice, foods, other products.	**MacConkey** (pH 7.1) 14097--47------N (2)

Recom. Incubtion Conditions[4]	Typical Results
Bacteria: ≤ 3 d at 30–35°C; Yeasts and molds: ≤ 5 d at 30–35°C	Predominantly bacteria of different sizes, shapes and colors
≥ 5 d at 30–35°C	Predominantly bacteria of different sizes and shapes. Most of them are white or colorless
≤ 5 d at 30–35°C	Predominantly bacteria grow on this medium. The morphology and color of their colonies vary
≤ 5 d at 30–35°C	Predominantly bacteria grow on this medium. The majority of their colonies are stained red by TTC reduction
≤ 5 d at 30–35°C	Predominantly bacteria grow on this medium. The majority of their colonies are stained red by TTC reduction
≤ 5 d at 30–35°C	Predominantly bacteria of different sizes, shapes and colors
44 ±4 h at 36 ±2°C; 68 ±4 h at 22 ±2°C	Predominantly bacteria grow on this medium. The majority of all colonies are colorless
20–28 h at 36 ±2°C	E. coli develops dark-blue to violet colonies, other coliforms red to pink colonies
16–18 h at 44 ±2°C	Colonies that show light blue fluorescence under UV light (360 nm) indicate E. coli
18–24 h at 36 ±2°C	E. coli form red colonies with a metallic sheen, other coliforms grow as dark to light red colonies without metallic sheen
18–24 h at 36 ±2°C	E. coli and coliform bacteria form blue colonies with a blue surrounding
18–72 h at 30–35°C	E. coli forms large red, coliform microbes form large pink, lactose-negative enterobacteria form colorless colonies Gram-positive microbes are inhibited

[1] Reference Guide on page 30.

[2] A Set contains 100 Nutrient Pads and 100 membrane filters, both individually, sterile packaged. The membrane filters are selected for optimum growth together with the corresponding nutrient media. The supplied membrane filter type is listed within brackets:

(1) = green with dark green grid, 0.45 µm pore size
(2) = white with green grid, 0.45 µm pore size
(3) = gray (after wetting black) with white grid, 0.65 µm pore size
(4) = white with green grid, 0.65 µm pore size
(5) = white with green grid, 1.2 µm pore size
(6) = gray (after wetting black) with white grid, 0.8 µm pore size
(7) = white with black grid, 0.45 µm pore size
(8) = gray (after wetting black) with white grid, 0.45 µm pore size
(9) = white with green grid, 0.45 µm pore size, High Flow (ideal for E. coli)
(10) = gray (after wetting black) with white grid, 0.45 µm pore size, High Flow

[3] Diameter of the membrane filter, 47 mm. Order number for Nutrient Pad Sets with 50 mm membrane filter as above, but --47------N replaced by --50------N.

Most of the NPS types are also available with Microsart® e.motion Membrane Filters: Order number as above, but ---N replaced by -RDN.

Other NPS types on request.

[4] The incubation conditions are recommended by Sartorius Stedim Biotech. They may be varied according to the type of samples in compliance with the reference standard or customer's requirements.

Detection Target and Reference[1)]	Test Sample Materials	Media Type (pH) Order No. (Filter Type)[2), 3)]
E. coli and coliforms AFNOR, APHA (water), BS, FDA, ISO 7704, ISO 9308-1 [1990], USDA.	Water (general quality), waste water, beverages, foods, other products.	**Teepol** | **Lauryl Sulphate** (pH 7.2) 14067--47------N (2)
E. coli and coliforms APHA (food), EG 98/83, ISO 7704, ISO 8199, ISO 9308-1 [1990], ISO 9308-1 [2001].	Raw materials, water (general quality), waste water, beverages, foods, other products.	**Tergitol TTC** (pH 8.0) 14056--47------N (2)
Other Faecal Bacteria		
Enterococci APHA (food), APHA (water), EG 98/83, HMSO, ISO 7704, ISO 7899-2, ISO 8199, LMBG, MNO, Internal SOPs.	Raw materials, water (general quality), natural water, waste water, beverages, foods, other products.	**Azide** | **KF Strep** (pH 7.2 ±0.1) 14051--47------N (1)
Salmonellae AFNOR, APHA (dairy), APHA (food), AOAC, DGHM, FDA, HMSO, IDF, ISO 6579 [1981], ISO 7704, USDA.	Pharmaceuticals, cosmetics, raw materials, water (general quality), waste water, foods, other products.	**Bismuth Sulfite** (pH 7.6) 14057--47------N (1)
Non-Faecal, Pathogenic Bacteria		
Pseudomonas aeruginosa APHA (water), AOAC, ASM, DIN 38411, EG 98/83, FDA, ISO 7704, ISO 8199, ISO 16266.	Cosmetics, raw materials, water (general quality), waste water, foods, other products.	**Cetrimide** (pH 7.1) 14075--47------N (2)
Staphylococci, Staph. aureus APHA (food), AOAC, DGHM, FDA, HMSO, ISO 7704, USP.	Pharmaceuticals, cosmetics, raw materials, water (general quality), waste water, foods, other products.	**Chapman** (pH 7.4) 14074--47------N (2)
Yeasts and Molds		
Wild yeasts Journal Institute of Brewing, VLB.	Beer, other products.	**Lysine** (pH 5.0) 14061--47------N (3)
Yeasts and molds APHA (food), AOAC, IFU.	Beverages, wine, soft drinks, concentrates, fruit juice, foods, other products.	**Malt Extract** (pH 4.5) 14086--47------N (6) 14086--47----CCN (8)
Yeasts and molds APHA (food), AOAC, EP, USP.	Pharmaceuticals, cosmetics, raw materials, water (general quality), waste water, other products.	**Sabouraud** (pH 5.6) 14069--47------N (10)
Yeasts and molds	Wine, soft drinks, concentrates, sugar, sugar products, other products.	**Schaufus Pottinger** | **m Green yeast and mold** (pH 4.3) 14070--47------N (4) 14072--47------N (5) 14080--47------N (6) 14083--47------N (3) 14091--47------N (8)
Yeasts and molds and bacteria ISO 7704.	Beverages, beer, wine, soft drinks, concentrates, fruit juice, other products.	**Wallerstein** | **WL Nutrient** (pH 5.5) 14089--47------N (2)
Yeasts and molds VLB.	Raw materials, beverages, beer, wine, soft drinks, concentrates, foods, other products.	**Wort** (pH 4.4) 14058--47------N (3) 14092--47----RDN (8)

Recom. Incubtion Conditions[4]	Typical Results
18–24 h at 36 ±2°C	E. coli and coliform bacteria form 1–2 mm diameter yellow colonies surrounded by a yellow zone
18–24 h at 36 ±2°C	E. coli forms yellow colonies with a yellow surrounding, Enterobacter orange colonies with a small yellow surrounding, Coliform colonies are red
40–48 h at 36 ±2°C	Enterococci form red, pink or reddish brown colonies with a diameter of 0.5–2 mm
40–48 h at 36 ±2°C	Most salmonellae form light colored colonies with brown to black centers surrounded by a black zone with a metallic sheen ("fish eye")
40–48 h at 36 ±2°C	Pseudomonas aeruginosa forms blue, blue-green or yellow-green colonies with blue zones. The colonies show fluorescence in UV-light
18–72 h at 30–35°C	Staphylococcus aureus forms yellow colonies with a yellow surrounding (mannitol-positive)
3–5 d at 30–35°C	Only "wild yeasts" (not belonging to the genus Saccharomyces) grow on this medium, they form white or cream colored colonies
3–5 d at 20–25°C or at 30–35°C depending on the target of the investigation	Yeasts develop smooth white, rarely colored colonies. Molds generally form velvety or fluffy, cotton-like colonies
≤ 5 d at 20–25°C	Yeasts develop smooth white, rarely colored colonies. Molds generally form velvety or fluffy, cotton-like colonies
2–5 d at 20–25°C or at 30–35°C depending on the target of the investigation	Yeasts develop smooth white, rarely colored colonies. Molds generally form velvety or fluffy, cotton-like colonies
2–5 d at 30–35°C aerobic or anaerobic depending on the target of the investigation	Yeasts grow as yellowish green colonies. Molds generally form velvety or fluffy cotton-like colonies
3–5 d at 20–25°C or at 30–35°C depending on the target of the investigation	Yeasts develop smooth white or colored colonies. Molds form velvety or fluffy cotton-like colonies

[1] Reference Guide on page 30.

[2] A Set contains 100 Nutrient Pads and 100 membrane filters, both individually, sterile packaged. The membrane filters are selected for optimum growth together with the corresponding nutrient media. The supplied membrane filter type is listed within brackets:

(1) = green with dark green grid, 0.45 µm pore size
(2) = white with green grid, 0.45 µm pore size
(3) = gray (after wetting black) with white grid, 0.65 µm pore size
(4) = white with green grid, 0.65 µm pore size
(5) = white with green grid, 1.2 µm pore size
(6) = gray (after wetting black) with white grid, 0.8 µm pore size
(7) = white with black grid, 0.45 µm pore size
(8) = gray (after wetting black) with white grid, 0.45 µm pore size
(9) = white with green grid, 0.45 µm pore size, High Flow (ideal for E. coli)
(10) = gray (after wetting black) with white grid, 0.45 µm pore size, High Flow

[3] Diameter of the membrane filter, 47 mm. Order number for Nutrient Pad Sets with 50 mm membrane filter as above, but --47------N replaced by --50------N.

Most of the NPS types are also available with Microsart® e.motion Membrane Filters: Order number as above, but ---N replaced by -RDN.

Other NPS types on request.

[4] The incubation conditions are recommended by Sartorius Stedim Biotech. They may be varied according to the type of samples in compliance with the reference standard or customer's requirements.

Detection Target and Reference[1)]	Test Sample Materials	Media Type (pH) Order No. (Filter Type)[2), 3)]
Product-Spoiling Microorganisms		
Thermophilic spore formers and mesophilic bacteria APHA (dairy), APHA (food), AOAC, ICUMSA, IFU, ISO 7704, NCA.	Fruit juice, sugar, sugar products, foods, other products.	**Glucose Tryptone** (pH 6.8) 14066--47------N (2)
Leuconostoc oenos and other wine spoiling organ ISO 7704, Lanaridris & Lafon-Lafourcade.	Wine, fruit juice, other products.	**Jus de Tomate** | **Tomato Juice** (pH 5.0) 14079--47------N (1)
Acid-tolerant microorganisms APHA (water), IFU, ISO 7704, MPP (packaging staff).	Raw materials, water (general quality), waste water, wine, soft drinks, concentrates, fruit juice, foods, other products.	**Orange Serum** (pH 5.5) 14062--47------N (1)
Acid-tolerant microorganisms APHA (water), IFU, ISO 7704, MPP (packaging staff).	Raw materials, water (general quality), waste water, wine, soft drinks, concentrates, fruit juice, foods, other products.	**Orange Serum** (pH 3.2) 14096--47------N (6)
Lactobacilli and Pediococci and other beer spoiling organisms EBC, ISO 7704, MEBAC, VLB.	Beer, other products.	**VLB-S7-S** (pH 5.5) 14059--47------N (2)
Mesophilic slime-forming bacteria esp. Leu. Mesenteroides ICUMSA, ISO 7704.	Soft drinks, concentrates, sugar, sugar products, other products.	**Weman** (pH 5.5) 14065--47------N (1)

Remarks for Nutrient Media for Microbiological Analysis

The description of the typical results or any pictures show the typical appearance of the mentioned microorganisms. In particular cases, color and shape of the colonies could vary from the expected habitus. Further tests may be necessary to validate the result.

Sartorius Stedim Biotech shall not be liable for consequential and | or incidental damage sustained by any customer from the use of its products.

Nutrient Media are subject to continuous product improvement as part of our product development program to align our products with changing application requirements.

For current specifications and lot release criteria please visit our homepage under:

www.sartorius.com/nps-search
or
www.sartorius.com/biosart-media-search

Recom. Incubtion Conditions[4)]	Typical Results
18–72 h at 30–35°C for mesophilic bacteria; 48–72 h at 55 ±2°C for thermophilic sporulating microorganisms	Microorganisms that ferment glucose and produce acid grow as yellowish green colonies
5–7 d at 30–35°C anaerobic (microaerophil); control for slowly growing microorganisms after 10 d is recommended	Lactobacilli: whitish to slightly yellowish Pediococci: whitish to slightly brownish Oenococcus oeni: colorless to whitish colonies
3–5 d at 30–35°C aerobic or anaerobic depending on the target of the investigation	Only acid-tolerant microorganisms can grow on this medium such as lactic acid bacteria, acetic acid bacteria, yeasts and molds
3–5 d at 30–35°C aerobic or anaerobic depending on the target of the investigation	Only acid-tolerant microorganisms can grow on this medium such as lactic acid bacteria, acetic acid bacteria, yeasts and molds
3–5 d at 30–35°C anaerobic (microaerophil)	Pediococci ("Sarcina") develop pale green and Lactobacilli slightly rounded, irregularly lobed colonies which are initially light green and later dark green
3–5 d at 30–35°C	The colonies of slime-forming mesophilic bacteria are smooth, round, usually colorless and transparent or translucent. Some have a diameter greater than 5 mm

[1)] Reference Guide on page 30.

[2)] A Set contains 100 Nutrient Pads and 100 membrane filters, both individually, sterile packaged. The membrane filters are selected for optimum growth together with the corresponding nutrient media. The supplied membrane filter type is listed within brackets:

(1) = green with dark green grid, 0.45 µm pore size
(2) = white with green grid, 0.45 µm pore size
(3) = gray (after wetting black) with white grid, 0.65 µm pore size
(4) = white with green grid, 0.65 µm pore size
(5) = white with green grid, 1.2 µm pore size
(6) = gray (after wetting black) with white grid, 0.8 µm pore size
(7) = white with black grid, 0.45 µm pore size
(8) = gray (after wetting black) with white grid, 0.45 µm pore size
(9) = white with green grid, 0.45 µm pore size, High Flow (ideal for E. coli)
(10) = gray (after wetting black) with white grid, 0.45 µm pore size, High Flow

[3)] Diameter of the membrane filter, 47 mm. Order number for Nutrient Pad Sets with 50 mm membrane filter as above, but --47------N replaced by --50------N.

Most of the NPS types are also available with Microsart® e.motion Membrane Filters: Order number as above, but ---N replaced by -RDN.

Other NPS types on request.

[4)] The incubation conditions are recommended by Sartorius Stedim Biotech. They may be varied according to the type of samples in compliance with the reference standard or customer's requirements.

Typical Application Examples

Product	Detection and Enumeration of	Nutrient Pad or Biosart® 100 Media Type
Beer	Lactobacilli and Pediococci and other beer spoiling organisms	VLB-S7-S, Wallerstein Differential
	Total colony count	Standard, Standard TTC, Total Count TTC
	Wild yeasts	Lysine
	Yeasts and molds	Malt Extract*, Wallerstein Nutrient, Wort
Foods	Acid-tolerant microorganisms	Orange Serum
	Enterobacteria, E. coli and coliforms	Chromocult, ECD, Endo, (MacConkey), m FC, Teepol | Lauryl Sulphate, Tergitol TTC
	Enterococci, Enterococcus faecalis	Azide | KF Strep
	Pseudomonas aeruginosa	Cetrimide
	Staphylococci, Staphylococcus aureus	Chapman
	Thermophilic spore formers and mesophilic bacteria	Glucose Tryptone
	Total colony count	Caso, Standard, Standard TTC, TGE | Tryptone Glucose Extract
	Yeasts and molds	Malt Extract, Wort
Fruit juice	Enterobacteria, E. coli and coliforms	Endo, (MacConkey), Tergitol TTC*
	Oenococcus and other product spoiling organisms	Jus de Tomate | Tomato Juice, Orange Serum, Wallerstein Differential
	Yeasts and molds	Malt Extract, Schaufus Pottinger | m Green yeast and mold, Wallerstein Nutrient, Wort
Milk	E. coli and coliforms	Endo
	Enterococci, Enterococcus faecalis	Azide | KF Strep
	Salmonellae	Bismuth Sulfite
Pharmaceuticals, WFI, raw materials and cosmetics	Enterobacteria, E. coli	MacConkey
	Enterococci, Enterococcus faecalis	Azide | KF Strep
	Pseudomonas aeruginosa	Cetrimide (NPS for cosmetics only)
	Staphylococci, Staphylococcus aureus	Chapman
	Total colony count	Caso, R2A
	Yeasts and molds, Candida albicans	Sabouraud
Soft drinks, concentrates	Acid-tolerant microorganisms, Lactic-acid bacteria	Orange Serum, VLB-S-7-S, Wallerstein Differential
	Enterobacteria, E. coli and coliforms	Endo, MacConkey
	Mesophilic slime-forming bacteria, Leuconostoc	Weman
	Total colony count	Standard*, Standard TTC*, TGE | Tryptone Glucose Extract, Total Count TTC
	Yeasts and molds	Malt Extract, Schaufus Pottinger | m Green yeast and mold, m Green selective, Wallerstein Nutrient, Wort

* These media types are suitable for the determination of the mentioned microorganisms, although the media are not explicitly declared in the references described in this publication.

Product	Detection and Enumeration of	Nutrient Pad or Biosart® 100 Media Type
Sugar, sugar products	E. coli and coliforms	Endo
	Mesophilic slime-forming bacteria, Leuconostoc	Weman
	Thermophilic spore formers and mesophilic bacteria	Glucose Tryptone
	Total colony count	Total Count TTC
	Yeasts and molds	Malt Extract*, Schaufus Pottinger | m Green yeast and mold, m Green selective, Wort*
Water (general quality), mineral water, natural water, waste water	Acid-tolerant microorganisms, Lactic-acid bacteria	Orange Serum
	Enterobacteria, E. coli and coliforms	Chromocult, ECD, Endo, (MacConkey), m FC, Teepol | Lauryl Sulphate, Tergitol TTC
	Enterococci, Enterococcus faecalis	Azide | KF Strep
	Pseudomonas aeruginosa	Cetrimide
	Salmonellae	Bismuth Sulfite
	Staphylococci, Staphylococcus aureus	Chapman
	Total colony count	Caso, R2A, Standard, Standard TTC, TGE | Tryptone Glucose Extract, Yeast Extract
	Yeasts and molds, Candida albicans	Sabouraud
Wine	Acetobacter	Orange Serum, Wort (both wetted with 5-8% ethanol)
	Acid-tolerant microorganisms, Lactic-acid bacteria	Orange Serum, Wallerstein Differential
	Oenococcus and other wine spoiling microorganisms	Jus de Tomate | Tomato Juice
	Yeasts and molds	Malt Extract, Schaufus Pottinger | m Green yeast and mold, Wallerstein Nutrient, Wort

* These media types are suitable for the determination of the mentioned microorganisms, although the media are not explicitly declared in the references described in this publication.

Reference Guide

The compositions of the media are based on the recommendations of numerous different standards and regulations.

Abbreviation	Title
AFNOR	Association Franchaise de Normalisation
APHA (dairy)	American Public Health Association: Standard Methods for the examination of dairy products
APHA (food)	American Public Health Association: Compendium of methods for the microbiological examination of foods
APHA (water)	American Public Health Association, American Water Works Association (AWWA) and Water Environment Federation (WEF): Standard Methods for the Examination of Water and Waste Water
AOAC	Association of Official Analytical Chemists
API	American Petroleum Institute: Recommended practice for biological Analysis of Subsurface Injection waters
ASM	American Society for Microbiology
BS	British Standards
DAB	Deutsches Arzneimittelbuch (German Pharmacopoeia, replaced by EP)
DIN 10110	Deutsches Institut für Normung: Mikrobiologische Fleischuntersuchung. Bestimmung der E. coli. (Microbial detection of E. coli on meat)
DIN 38411	Deutsches Institut für Normung: Deutsche Einheitsverfahren zur Wasser-, Abwasser- und Schlammuntersuchung (German standard for water, waste water and sludge analysis)
DGHM	Deutsche Gesellschaft für Hygiene und Mikrobiologie (German Association of Hygiene and Microbiology)
EBC	European Brewery Convention
EG 98/83	European Guideline 98/83: Water Quality for human purpose
EP	European Pharmacopoeia
EPA	U.S. Environmental Protection Agency: Laboratory standards for equipment and materials
FDA	U.S. Federal Drug Administration
HMSO	Her Majesty's Stationery Office: Department of Health and Social Security (1982) "The Bacteriological Examination of Drinking Water Supplies". Report 71, HMSO, London
ICUMSA	International Commission for Uniform Methods of Sugar Analysis
IDF	International Dairy Federation
IFU	International Federation of Fruit Juice Producers
ISO 6222	International Organization for Standardization: Water Quality - Enumeration of culturable micro-organisms
ISO 6579-1981	International Organization for Standardization: Microbiology. General guidance on methods for the detection of Salmonella. Reference method
ISO 7704	International Organization for Standardization: Water Quality, Evaluation of membrane filters used for microbiological analysis
ISO 7899-2	International Organization for Standardization: Water Quality – Detection and enumeration of intestinal enterococci
ISO 8199	International Organization for Standardization: Water Quality – General Guide to the enumeration of microorganisms by culture
ISO 9308-1	International Organization for Standardization: Water Quality – Detection and enumeration of E. coli and coliform bacteria
ISO 16266	International Organization for Standardization: Water Quality – Detection and enumeration of Ps. aeruginosa
JFoodP	Journal of Food Protection
JIBrew	The Journal of the Institute of Brewing
LLL	Method described by Lanaridris& Lafon-Lafourcade
LMBG	Amtliche Sammlung von Untersuchungsverfahren nach dem §35 des Lebensmittel- und Bedarfsgegenständegesetzes des BGA (testing procedures for food stuffs and articles of daily use)
MEBAK	Methodensammlung der Mitteleuropäischen Brauereitechnischen Analysenkommission (methods of the Central European brewery commission)
MNO	Verordnung über natürliches Mineralwasser, Quellwasser und Tafelwasser (Mineral/Table Water Guideline)
MPP	Merkblätter für die Prüfung von Packmitteln (Testing procedures for packaging stuff)
NCA	National Canners Association: A Laboratory manual of the canning industry
USDA	U.S. Department of Agriculture
USP	United States Pharmacopoeia
VLB	Versuchs- und Lehranstalt für Brauerei in Berlin (institute of brewery)
ZenHyg	Zentralblatt für Hygiene (Journal of Hygiene)

DIN standards and the "Amtliche Sammlung von Untersuchungsverfahren nach dem §35 des Lebensmittel- und Bedarfsgegenständegesetzes des BGA" are available through the German publisher Beuth-Verlag, Burggrafenstr. 6, 10787 Berlin, Germany.

Microsart® e.jet

The Microsart® e.jet is a laboratory vacuum pump which creates vacuum and concomitantly transfers the filtered liquid to waste. No need for vacuum containers, protection filters, Woulff's bottles. Ideal for sample preparation in microbiological analysis. Constant flow rates and a defined maximum vacuum guarantees a smooth and reliable filtration.

Please contact your local Sartorius Stedim Biotech office or representative for more information.

Specifications	
Flow rate	> 4.0 Nl/min
Max. Vacuum	0.4 bar
Max. Pressure	1.0 bar
Materials	PTFE, ETFE, (contact with Polypropylene, EPDM, filtrate) POM, PSU
Mains	100 – 240 V | 47 – 63 Hz
Weight	Pump: 1,425.3 g Power supply: 242.6 g
Dimensions (W × L × H)	12 × 17 × 19 cm
Protection type	IP 64 Protection class III
Inlet | Outlet	Quick Connection on hose nipples for DN 10 tubings

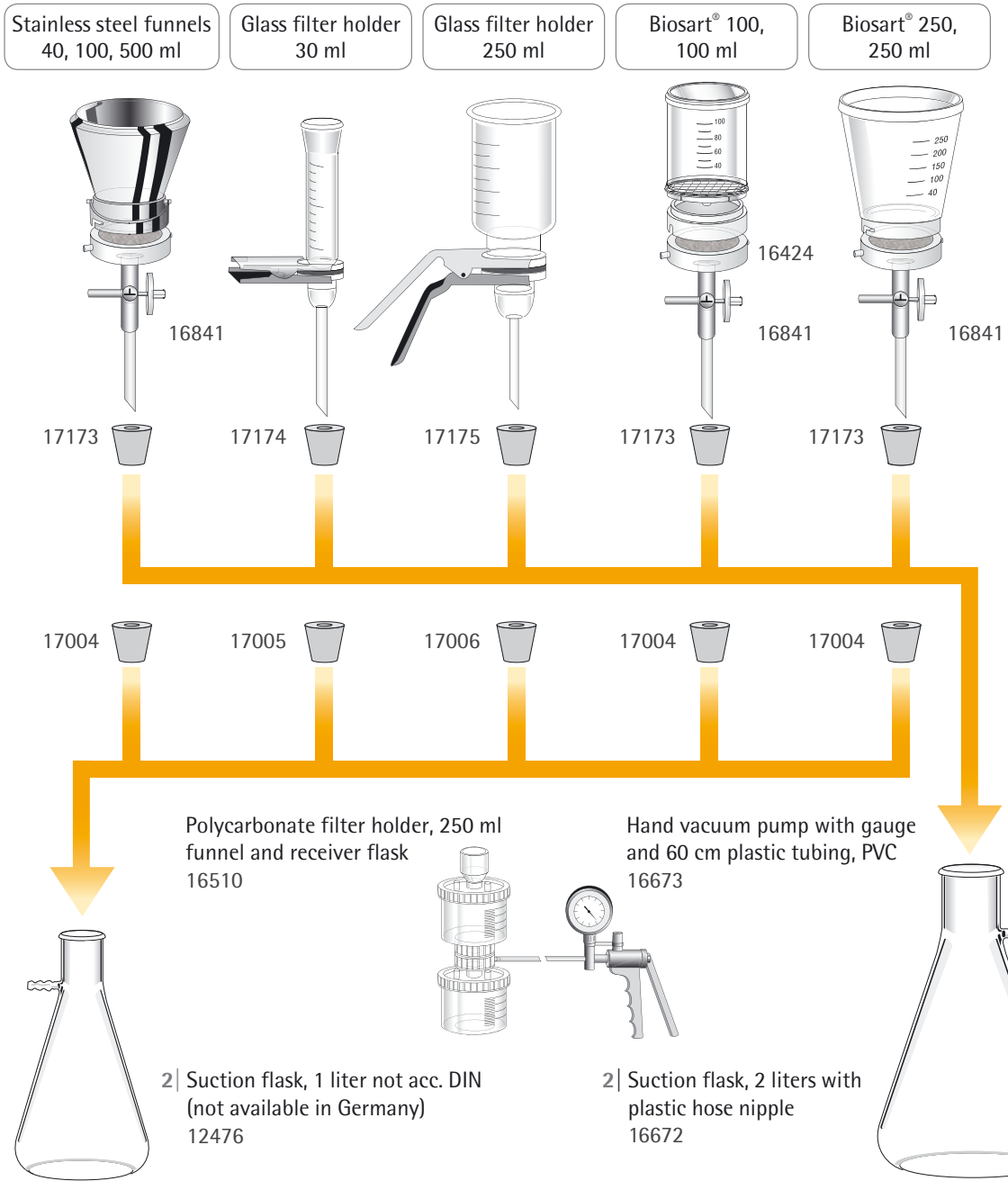
Order No.	Description
166MP-4	Microsart® e.jet Transfer Pump

Combisart® Individual Systems

Order No.	Base	Stainless Steel Funnels
16219-CS	1-base	1 × 100 ml
16201-CS	1-base	1 × 500 ml

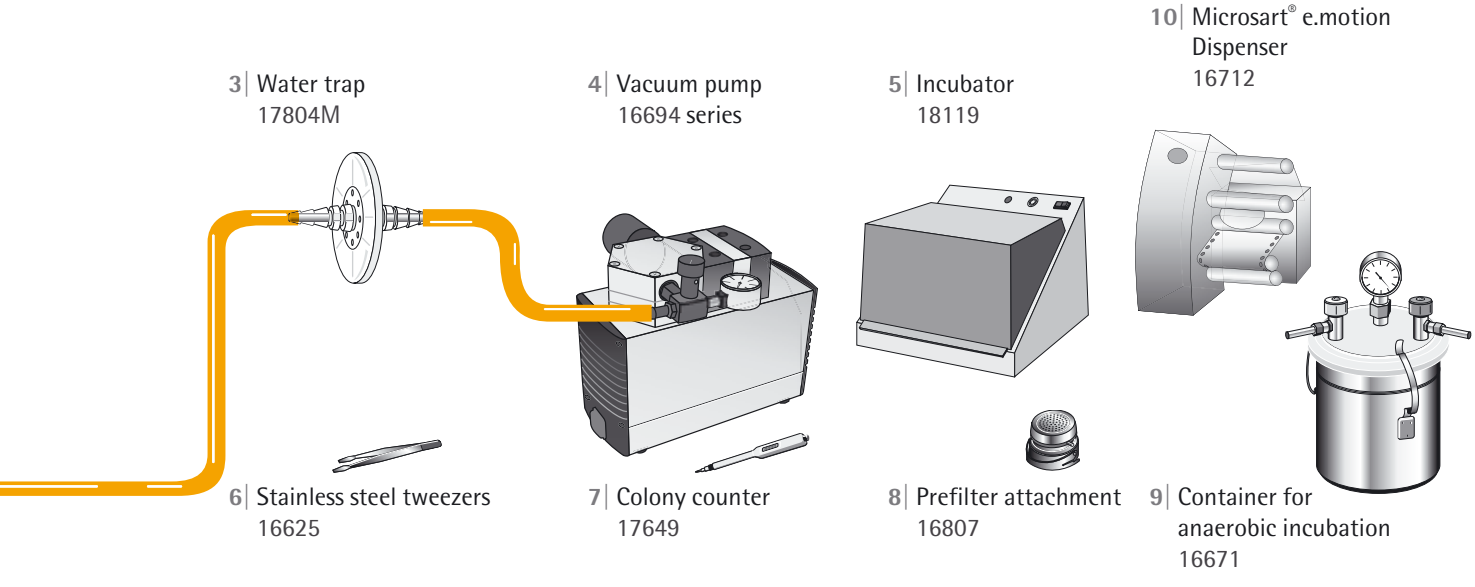
Combisart® Sets for Individual Systems, Stainless Steel

If you have a low number of samples to test, we recommend that you use our individual systems. In this equipment set-up, you simply use a silicone stopper to fit your choice of glass funnel (described on the previous pages) on a suction flask. To use all other types funnels with a suction flask, Sartorius Stedim Biotech has specially developed the individual base, 16841. The stainless steel frit (50 mm) and silicone gasket are supplied with the individual base. In each set the funnels with lids are preassembled, ready to use on the single base.



Accessories

	Description	Pack Size	Order No.
1	**Rubber vacuum hose** for connecting system components	1 m	16623
2	**Suction flasks** for collecting the filtrate, vacuum-resistant borosilicate glass, 3.3		
	Suction flask, 5 liters, to DIN 12476, incl. stopper and glass tube	1	16672-1
	Suction flask, 2 liters, to DIN 12476, without stopper	1	16672
	Stopper for 2-liter suction flask	1	17173
	Tube connector for connecting a Combisart® stainless steel manifold	1	17204
	Suction flask, 1 liter (not available in Germany)	1	16606
3	**Water traps** for preventing overflow of filtrate into a vacuum pump Vacusart, ready-to-connect filtration unit with a water-repellent, but air-permeable PTFE membrane	3	17804----------M
	Woulff's bottle, 500 ml, with stop cock	1	16610
4	**Vacuum pumps**, neoprene membrane pumps with low noise level, oil- and maintenance-free; reliable sources of vacuum, 100 mbar final vacuum		
	Microsart® maxi.vac for multiple filtration runs, 230 V, 50 HZ	1	16694-2-50-22
	Microsart® maxi.vac for multiple filtration runs, 115 V, 60 HZ	1	16694-1-60-22
	Microsart® mini.vac, up to 3 filtration runs in parallel, 230 V, 50 HZ	1	16694-2-50-06
	Microsart® mini.vac, up to 3 filtration runs in parallel, 115 V, 60 HZ	1	16694-1-60-06
	Microsart® e.jet Transfer Pump: Easy-to-assemble without suction flask (2) and water trap (3)	1	166MP-4
5	**Incubator,** temperature range 17 – 40°C, 18 l capacity; Dimensions (W | H | D) 470 | 260 | 415 mm	1	18119
6	**Stainless steel tweezers** with blunt-edged tips for protection of the membrane filter, can be flamed and autoclaved	1	16625
7	**Colony counter,** handy, battery-operated	1	17649
8	**Stainless steel prefilter attachment** for removal of coarse particulate substances from samples	1	16807
	Bacteriological prefilters for the 16807 prefilter attachment, cellulose nitrate, pore size 8 µm, sterile and individually packaged, diameter 50 mm	100	11301--47----ACN
9	**Container for anaerobic incubation,** Stainless steel, for holding up to 14 × 60 mm or 6 × 90 mm petri dishes; DN 6 (approx. 6 mm) hose nipple on the inlet and outlet, with two taps and a vacuum gauge	1	16671
10	**Microsart® e.motion Dispenser,** the membrane filters are released from their sterile packaging fully automatically at the touch of a button or hands-free – a dispensing operation is triggered when the optical sensor detects approaching tweezers	1	16712



Additional Product Information

Microsart® e.motion Dispenser – Membrane Filters on Demand
The membrane filter dispenser meets all requirements placed on advanced laboratory equipment. The membrane filters are released from their sterile packaging fully automatically at the touch of a button or hands-free – a dispensing operation is triggered when the optical sensor detects approaching tweezers.

- Fully automated membrane filter dispenser
- Works hands-free by an optical sensor
- Works by touch button
- Compact design
- Rapid and reliable transport due to sprocket feed roll technology
- Easy insertion of the filter band
- Easy-to-clean
- Low weight

Order No. 16712

Microsart® e.motion Membrane Filters
The cellulose nitrate (cellulose mixed ester) membranes suitable for the use in dispensers are sterile-sealed, without protective paper on top of each filter, in a specially designed indivi-dual package on a band.
The special pleating of the band of membrane filter units ensures that they are perfectly flat when dispensed. The shape of the sealed band guarantees uniform dispensing of the individual membrane filters:

- Outstanding recovery rates for microorganisms
- 0.45 µm are acc. to ISO 7704
- Multi-fit: Fits into various dispensers
- Protective paper-free
- Packaged on a special pleated band
- Product data are printed on
- High Flow membranes available
- Gamma irradiated, 25 kGray

Order No.	Color | Grid	Pore Size
11407Z-47----SCM	white | black	0.2 µm
114H6Z-47----SCM	white | black	0.45 µm High Flow
11406Z-47----SCM	white | black	0.45 µm
139H6Z-47----SCM	white | green	0.45 µm High Flow
13906Z-47----SCM	white | green	0.45 µm
13806Z-47----SCM	green | dark green	0.45 µm
13006Z-47----SCM	gray | white	0.45 µm
130H6Z-47----SCM	gray | white	0.45 µm High Flow
13005Z-47----SCM	gray | white	0.65 µm
13004Z-47----SCM	gray | white	0.8 µm
11404Z-47----SCM	white | black	0.8 µm
11403Z-47----SCM	white | black	1.2 µm
11402Z-47----SCM	white | black	3 µm
15407Z-47----SCM	green | dark green	0.2 µm

Microsart® e.motion Membrane Filters, Individually, Sterile Packaged, 47 mm, 3 ×100 Filters per Box, without Protective Paper.

Order No. for 50 mm membrane filters as above, but -47----SCM replaced by -50----SCM. Other types on request.

Please contact your local Sartorius Stedim Biotech office or representative for more information.

Airmonitoring

Together with Gelatin Membrane Filters, the MD8 airscan® Air Sampling System is ideal for detection of airborne microorganisms and viruses in conventionally ventilated rooms, in clean rooms with or without laminar flow, air-conditioning systems and in isolators.

The MD8 airscan® delivers precise and valida-table results.The advantages of the MD8 airscan® used together with the Gelatin Membrane Filter method are as follows:

- "Absolute", reliable recovery of microorganisms
- The filter maintains the viability of collected microorganisms for a relevant and meaningful sampling time
- One CFU can be detected in one m^3 of air
- Isokinetic sampling
- The MD8 airscan® can be calibrated onsite
- Suitable for use in class A|B cleanrooms, isolators and BFS machines

Sterility Testing

Pharmaceutical products, such as parenterals, ophthalmic preparations, veterinary and other products, that come in contact with the blood stream or otherwise enter the body below the skin surface, must be sterile. Sterilization procedures and measures designed to maintain sterility are therefore essential technological process steps. The manufacturer is responsible for demonstrating and verifying the safety and sterility of these individual steps. The current worldwide pharmacopoeias require proof of the sterility of pharmaceuticals as a condition for the release of a production lot. Sterility testing with Sterisart® NF units using the membrane filtration method has advantages over the direct method of incubation:

- It allows growth inhibitors to be flushed out
- Low CFU counts can be detected in large sample volumes

Sales and Service Contacts

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