

# MEMBRANE HARDWARE

Microfiltration





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CHMLAB Group offers over 25 years of global expertise in membrane technology for various applications. As a leading international provider, we deliver cutting-edge products, affordable solutions, certified quality, and prompt technical support. Our dedication to quality and innovation allows us to meet and exceed our customers' expectations.

In collaboration with our customers, we develop products that meet market needs. This enables our R&D team to create innovative solutions that satisfy the most demanding expectations. Partnering with accredited institutions and organizations worldwide, we develop the technological standards of the future.

In this catalog, we present a wide range of membrane hardware designed, among other things, for microbiology applications. Our products are engineered to meet the highest standards of quality and reliability, ensuring precise and consistent results in your research and industrial processes.

# Applications

Main areas of applications Microbiology and Quality control labs in :

01. Beverage industry:

- Soft drinks
- Water
- Wine
- Beer
- Juices
- Milk

02. Environmental water analysis

03. Pharma & Biotech Industry

04. Chemical Industry

05. R & D Laboratories

06. Cosmetics Industry



01  
Stainless steel  
manifolds



CHM®FR manifolds allow independent usage of any port with a stopcock. They have been designed specifically for applications in which the particles or microorganisms retained on the membrane filter surface area of interest. The manifolds are made of high quality AISI 316 stainless steel and are available with 1, 3 and 6 filtration funnels, and in 100 ml and 500 ml capacity funnels.

500 ml funnels are also marked at 250 ml., according to International Standards for natural mineral water analysis. In the 3 or 6 branch units, due to the stainless-steel taps on the manifold ports, the vacuum for each holder can be turned on and off individually. The stainless-steel frit ensures a homogenous distribution of the particles on the membrane filter surface. Highly polished surface facilitates easy and efficient cleaning and rinsing.

Technical Specifications

Max. Filtration Area	12.5 cm²
Materials	AISI 316 Stainless steel manifold, funnels, lids, clamps, PTFE bearing balls and filter supports Vitton® flat gaskets Vitton® sealing rings for lid, cap and hose nipple connector
Membrane filter	47 / 50 mm diameter
Sterilization	By autoclaving at (121 °C or 134 °C) or dry heat (180 °C) Sanitization with flaming



Order Information

Order Number	Description
FR1X100MC	1 Branch, Funnel Capacity 100 ml, Stainless Steel
FR1X500MC	1 Branch, Funnel Capacity 500 ml, Stainless Steel
FR3X100MC	3 Branch, Funnel Capacity 100 ml, Stainless Steel
FR3X500MC	3 Branch, Funnel Capacity 500 ml, Stainless Steel
FR6X100MC	6 Branch, Funnel Capacity 100 ml, Stainless Steel
FR6X500MC	6 Branch, Funnel Capacity 500 ml, Stainless Steel
Funnel and filter support can be autoclavable and flame sterilisable. FR1020	Connector to join 2 manifolds



02  
Stainless steel vacuum  
filtration support

Individual filter holder, stand-alone, to be assembled on vacuum flasks. This stainless-steel support ensures homogeneous distribution of the residues on the membrane filter surface. It is supplied in 2 versions: 100 or 500 ml stainless steel funnels. Easy to use. Indicated for 47 or 50 mm membrane filters.

Technical Specifications

Membrane Filter Diameter	47/50 mm
Filtration Area	12.5 cm²
Chemical Compatibility	According to Stainless steel and Viton®
Sterilization	By autoclaving at (121 °C or 134 °C) or dry heat (180 °C) Sanitization with flaming
Outlet Spout	10 mm
Funnel capacity	100 ml, 500 ml
Materials	Stainless steel and Viton® gaskets
Parts included	Lid, funnel, base part, filter support, clamp and tap made of stainless steel; Viton® flat gasket, Viton® lid seal
Number of filter support	1

Order Information

Ref.	Description
FR1X100IN	Stainless steel vacuum filtration system, Funnel capacity 100 ml
FR1X500IN	Stainless steel vacuum filtration system, Funnel capacity 500 ml



03  
Vacuum Pumps

The CHMLAB vacuum pumps designed for laboratory use, are piston-driven oil free vacuum pumps to be used with stainless-steel manifolds as well as glass filtration units. With innovative electronic and mechanical designs, the vacuum pump is noiseless, lower vibration, compact in size and easy to maintain.

Technical Specifications

	VP300IP25	VP400FL34
Filtration area	220 V / 50 Hz	
Max. Power	60 W	80 W
Max. current	0.3 A	0.4 A
Max. vacuum	99 mbar abs.	
Max. flow rate	20 l/min	34 l/min
Vacuum regulator	Yes	
Overflow protection	Yes	

Order Information

Ref.	Description
VP300IP25	For manifolds of 1- and 3- branches, max flow rate 20 l/min
VP400FL34	For manifolds of 6- branches, max flow rate 34 l/min

Features

Compact and light
Oil-mist-free
Equipped with vacuum gauge and regulator for vacuum monitoring and adjustment.
Overheat protection
Air inlet protection with a filter cartridge
CE certification
RoHS certification
IP 30 certification

Applications

Vacuum filtration
Suspended solid test
Microbiological test
Air sampling





04

# Membrane dispenser



The membrane filter dispenser meets all requirements placed on advanced laboratory equipment. This membrane dispenser is designed for individually sterile packaged cellulose nitrate membranes packed in pleated boned. Each membrane box contains 300 membrane filters individually sealed on a special pleated band, and its design makes it easy to open and seal for storage. Thanks to the special pack, the dispenser makes each membrane quickly and reliably accessible; avoids filter band slippage or even damaged membranes.

## Features

- Compact and robust design
- Easy insertion of the membrane bonds, even without having a complete membrane package
- The control system prevents unwanted dispensing of several membranes at the same time
- The design allows quick and easy cleaning
- Low weight for easy transport
- Option to power and battery connection

## Order Information

Order Number	Description	Quantity/Box
MD001	Membrane dispenser with power supply	1
MD002	Membrane dispenser with integrated battery and power supply	1
MNW020047R-SG	Cellulose nitrate white membrane. Black grid. Pore size 0.2 µm Diameter 47 mm	300
MNW045047R-SG	Cellulose nitrate white membrane. Black grid. Pore size 0.45 µm Diameter 47 mm	300
MNW080047R-SG	Cellulose nitrate white membrane. Black grid. Pore size 0.80 µm Diameter 47 mm	300
MNB020047R-SW	Black cellulose nitrate membrane. White grid. Pore size 0.20 µm Diameter 47 mm	300
MNB045047R-SW	Black cellulose nitrate membrane. White grid. Pore size 0.45 µm Diameter 47 mm	300
MNB065047R-SW	Black cellulose nitrate membrane. White grid. Pore size 0.65 µm Diameter 47 mm	300
MNB080047R-SW	Black cellulose nitrate membrane. White grid. Pore size 0.8 µm Diameter 47 mm	300
MPE020047R-S	PES Membrane. White. Pore size 0.2 µm Diameter 47 mm	300



# 05 Microbiological monitors

CHM® Biofun sterile microbiological monitors are designed to be used in the membrane filtration technique to recover microorganisms from aqueous samples. Each monitor is a single-use, pre-sterilized filtering unit consisting of a measured filter funnel, base, pad, membrane, removable lid and plug. The all-in-one sterile construction of these microbiological filter funnels makes them ideal for microbiological analysis. These ready-to-use 100 ml units are suited for monitoring contaminants in all types of aqueous samples and they are specifically designed for the detection and enumeration of microorganisms in pharmaceuticals, cosmetics, food, beverages, water and other liquids. Filtration unit easily converts to a Petri dish, which can be labelled and incubated for culturing. No flaming required and with no need to sterilize funnels or filter base between samples, testing time can be reduced by up to 70%. Reduced contamination thanks to the single-use materials that virtually eliminate cross-

contamination between funnel and membrane. All-in-one filtration units reduce the chance of external error and make reproducible results due to this reduction. Biofun® M100 Monitors are ready to use filter units designed to be placed onto the bases of a vacuum manifold. Funnel adaptors onto bases are provided in each box. All units are supplied sterile and individually wrapped

### Features

All-in-one system
Rapid testing
Testing time can be reduced by up to 70%
No flaming required minimizes the risk of cross-contamination.
Reduced contamination
Reproducible results
Easy handling

### Order Information

Ref.	Description
M100-MNW020047K-SG	White MCE gridded membrane with pad (*), Capacity 100 ml, Pore size 0.2 µm, ø 47 mm, Sterile
M100-MNW045047K-SG	White MCE gridded membrane with pad (*), Capacity 100 ml, Pore size 0.45 µm, ø 47 mm, Sterile
M100-MNB020047K-SW	Black MCE gridded membrane with pad (*), Capacity 100 ml, Pore size 0.2 µm, ø 47 mm, Sterile
M100-MNB045047K-SW	Black MCE gridded membrane with pad (*), Capacity 100 ml, Pore size 0.45 µm, ø 47 mm, Sterile
M100-ADAP	Adaptor to connect 47 mm Microbiological monitors to CHM® Stainless steel Manifolds

(\*) Absorbent cardboard



# 06 Polycarbonate filtration system

The Polycarbonate filtration system is composed with a top part of 250 ml which allows to make vacuum and optionally with a receiver flask of 250 ml. It is all together a practical system for the filtration, in and outside the laboratory. It is generally used for the clarification or sterile filtration of up to about 200 ml volumes of aqueous solutions. Type FS047250P is complete with top part and receiver flask, and type FS047250W does not include the 250 ml receiver flask. Suitable for membrane filter diameter 47 mm (prefilter 37 mm).



### Technical Specifications

Filtration Area	12.5 cm²
Max. Operating Pressure	7 bar
Chemical compatibility	As for polycarbonate, polypropylene and silicone
Sterilization	By autoclaving at 121°C
Top part capacity	250 ml
Receiver flask capacity	250 ml

### Order Information

Ref.	Description
FS047250P	Polycarbonate holder for 47 mm membrane filter with 250 ml top part and receiver flask, for vacuum or pressure filtration (Complete system)
FS047250W	Polycarbonate holder for 47 mm membrane filter with 250 ml top part, for vacuum or pressure filtration (Receiver flask not included)



# 07 Polycarbonate filter holder

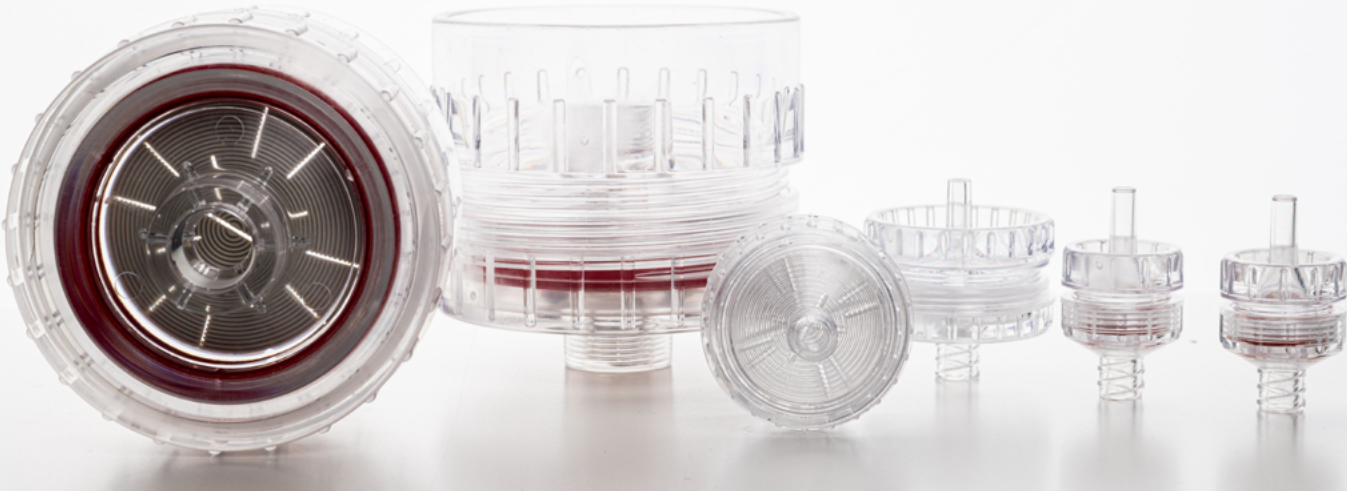
CHM® HPC Polycarbonate holder for aqueous solutions. This CHM® HPC filter holder is made of stable polycarbonate and contains a silicone gasket for leak-proof sealing. The polycarbonate material withstands numerous working and washing cycles. It can be sterilized by autoclaving (max. 121°C). The filter supports in the top and bottom parts allow filtration in either direction. The holder has excellent resistance to pressure; up to 7 bar of operating pressure. The transparent top part allows the visual control of the correct fit.

## Technical Specifications

Membrane Filter Diameter	13 mm	25 mm	47 mm (in line)
Filtration area	0.5 cm²	3 cm²	12.5 cm²
Max. operating pressure	5 bar		
Materials	Polycarbonate top and bottom parts Silicone gasket		
Chemical compatibility	The same as Polycarbonate and Silicone		
Sterilization	By autoclaving (max 121 °C)		
Connectors	Male Luer Lock inlet, Luer slip outlet		Inlet and outlet M12 tube connection

## Order Information

Order Number	Description	Quantity/Box
HPC013002	Polycarbonate, ø 13 mm	2
HPC013010	Polycarbonate, ø 13 mm	10
HPC025002	Polycarbonate, ø 25 mm	2
HPC025010	Polycarbonate, ø 25 mm	10
HPC047001	Polycarbonate, ø 47 mm	1
HPC047005	Polycarbonate, ø 47 mm	5



# 08 PTFE filter holder

CHM® HTF filter holder for organic solvents and aggressive chemicals. Made completely of PTFE, this holder has broad chemical compatibility and contains no trace elements which could be released into the liquid being filtered. Easy cleaning. Autoclavable by dry heat at 180°C. It is indicated for particle removal from samples and reagents for analytical methods. The construction of the holder ensures leak-proof sealing without a sealing ring and avoids twisting of the membrane filter when the top is tightened onto the base.

## Technical Specifications

Membrane Filter Diameter	13 mm
Filtration area	0.5 cm²
Max. operating pressure	5 bar
Materials	PTFE top and bottom parts
Chemical compatibility	The same as PTFE
Sterilization	By autoclaving (max 134 °C) or by dry heat (max 180 °C)
Connectors	Male Luer Lock inlet, Luer slip outlet

## Order Information

Order Number	Description	Quantity/Box
HTF013001	PTFE, Ø 13 mm	1



09

# Stainless steel filter holder

CHM® HIN inox holder for solvents and chemicals. The PTFE-coated surface on the top part is an important property of the filter holder and ensures leak-proof sealing without a sealing ring. The temperature resistance is extremely good, and the chemical compatibility depends only on the used membrane filter type. Sterilization: by autoclaving (max. 134 °C) or by dry heat (max. 180 °C). The top part can easily be mounted on the bottom part using the tightening tool supplied. The filter supports in the top and bottom parts allow filtration in either direction.

Technical Specifications

Membrane Filter Diameter	25 mm	47 mm (in line)
Filtration area	3 cm²	13 cm²
Max. operating pressure	7 bar	20 bar
Chemical compatibility	The same as stainless steel and PTFE	
Sterilization	By autoclaving (max 134 °C) or by dry heat (max 180 °C)	
Connectors	Male Luer Lock inlet, Luer slip outlet	Hose nipples DN10

Order Information

Order Number	Description
HIN025001	INOX Filter holder, ø 25 mm
HIN047001	INOX Filter holder, ø 47 mm



Technical Specifications

Membrane Filter Diameter	90 mm	142 mm
Filtration area	50 cm²	132 cm²
Max. operating pressure	6 bar	
Chemical compatibility	The same as Stainless Stel, Viton FPM 75 and Silicone	
Sterilization	By autoclaving (max 121 °C, 30 min) or dry heat (max 180°C, 30 min) Sanitization by flaming (only SS parts)	
Connectors	Hose nipples DN10	
Powering	Vacuum / Pressure	
Flow rate (clear water at 1 bar)	1.32 l/min Cellulose Acetate membrane filters, 0.2 µm	3.43 l/min Cellulose Acetate membrane filters, 0.2 µm
	3.79 l/min Cellulose Acetate membrane filters, 0.45 µm	9.86 l/min Cellulose Acetate membrane filters, 0.45 µm
Materials	Structure plate	Stainless steel AISI 316L
	Flow diffusers	Stainless steel AISI 316L
	Legs	Stainless steel AISI 316L
	Closing screws	Stainless steel AISI 316L
	Tubing connectors	Stainless steel AISI 316L
	Plate gasket	Viton FPM 75
	Connector gaskets	Silicone

Order Information

Order Number	Description
HIN090001	INOX Filter holder, ø 90 mm
HIN142001	INOX Filter holder, ø 142 mm



# 10

## Glass filtration system

These versatile all-glass filter holders are supplied with a glass frit filter support. It ensures the uniform distribution of retained particles on the filter surface. Recommended for colony counting and collection of suspended solids. The system composed of glass funnel and base with vacuum connector and receiving flask is supplied with ground glass outer and inner joints to connect to the receiving glass or with silicon stopper connector.

### Order Information

Ref.	Description
FS047300T	Glass filtration system for 47 mm (or 50 mm) membranes with stopper
FS047300S	Glass filtration system for 47 mm (or 50 mm) membranes without stopper



# 11

## Filtration equipment for SDI analysis

The Silt Density Index (SDI) is a measure for the fouling capacity of water in reverse osmosis systems. The test measures the rate at which a small diameter (47 mm) and 0.45 µm filter is plugged when subjected to a constant water pressure of 206.8 kPa (30 psi). The time required to pass 500 ml at the end of 5, 10, and 15 minutes is taken and used to calculate the unit-less SDI value. Cellulose Acetate membranes, 0.45 µm and 47 mm (MCA045047H), are recommended to use with the device.

### Order Information

Ref.	Description
SDI001	Filtration equipment for SDI analysis
MCA045047H	Cellulose acetate membrane, 0.45 µm, 47 mm Ø. Non-sterile





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