PALL

Ultipor N_{66} N_{66} Posidyne and Bio-Inert

Nylon 66 membrane filter cartridges in Sealkleen and Junior style

Ultipor N_{66}

This inherently hydrophilic membrane forms the basis for Nylon 66 filter cartridges. It produces high removal efficiencies while still achieving excellent flow rate/ pressure drop characteristics - features which are a result of the high voids volume and the narrowly controlled pore-size of the membrane structure.

The high durability and flexibility of the basic Nylon 66 membrane also mean that numerous designs can be offered including single layer prefilters, composite and double layer configurations.

Good chemical compatibility, very low extractables - (no additives are used in construction) and long steam life are among the other significant features of these filters.

N_{66} Posidyne

'Posidyne' membrane has all the characteristics and inherent performance of 'Ultipor' 'N_{66}' with another important factor, positive zeta potential. The positive charge is functional over a pH range of 3 - 10 in aqueous solutions, and enables **Posidyne** filters to retain negatively charged contaminants much smaller than the rated pore size.

Bio-Inert

'Bio-Inert' membrane combines the features of **Ultipor N_{66}** with the additional benefit of low protein affinity. This unique hydrophilic membrane filter provides absolute bacteria and particle removal plus minimal protein adsorption, for maximum product yield from dilute solutions.

Pharmaceutical grade quality

The 'Pall' 'P' grade is an assurance that the following conditions also apply:-

- Every single filter cartridge is integrity tested by the Forward Flow method during manufacture. Results from Forward Flow testing for sterilising grade filters are continually validated against bacterial challenge.
- Each filter is identified with a unique serial number by which every production stage can be traced. Batch traceability is likewise fully ensured.
- Filtrate quality meets required standards for the following parameters:-
  - Oxidisable materials per USP.
  - Bacterial endotoxins per USP.
  - particulates.
  - pH shift.
- Routine steam autoclave testing of sterilising grades.
- Manufactured according to GMP.

Materials of construction

All materials used meet the specification for Biological Safety per USP.

Membrane layers	- **Ultipor N_{66}**	-	Nylon 66 + polyester support
	- **N_{66} Posidyne**	-	modified Nylon 66 + polyester support
	- **Bio-Inert**	-	hydroxyl modified Nylon 66 + polyester support
Support and drainage layers		-	Polyester
End-cap/Adaptors		-	Polyester
Internal core		-	Polypropylene
External cage		-	Polypropylene
Elastomeric O-ring seals*		-	Silicone as standard Other materials on request

*Applies to Junior cartridges only. 'Sealkleen' style cartridges contain an integral flange on the outlet adaptor. Seals supplied with the housing. See Pall publicaton SD1298.

Technical Information

Maximum differential pressure

The limits for **Sealkleen** and Junior style Nylon 66 cartridges are given opposite. Please note that the maximum differential pressure of the filter housing or system must not be exceeded. At temperatures above 100°C (i.e during steam sterilisation) the maximum differential pressure should not exceed 0.3 bar. Refer to Pall publication SD805 and see below.

Temperature	Maximum differential pressure
Up to 50°C	5.3 bar
50-80°C	4.0 bar

Sterilisation

Ultipor N_{66}, N_{66} Posidyne and **Bio-Inert** filters can all be sterilised by steaming *in situ* or by steam autoclave. Full details are given in Pall publication SD805 including special procedures for SBF1 filter elements.. For ethylene oxide or alternative chemicals and for extended service in hot water please consult Pall.

Temperature	Maximum recommended cumulative steam life
125°C	16 hours
140°C	4 hours

Other technical information and part numbers[1]

Cartridge type	Nominal length	Standard available grades	Pharmaceutical grade	Silicone seal	Flow* rate Multiplying Factor
Sealkleen SLK7002	130 mm	All listed in table below	P		1.00
Sealkleen SLK7001	70 mm	All listed except NNXZ	P		0.50
Junior MCY4440	106 mm	NF, NFZ, NRL	P	H4	0.83
Junior MCY3330	82 mm	NF, NFZ, NRL	P	H4	0.44
Junior MCY2220	57 mm	NF, NFZ, NRL	P	H4	0.27
Junior MCY1110	32 mm	NF, NFZ, NRL	P	H4	0.16
Junior SBF1	51 mm**	NF, NFZ, NRL	P	H4	0.08

Other materials available on request

Absolute rating	Construction	Ultipor N_{66}	N_{66} Posidyne	Bio-Inert	Filter area per Sealkleen 7002 cartridge*	Typical clean water flow rate Sealkleen 7002 cartridge* per 100 mbar
0.1 µm	Double Layer Grades	NT	NTZ	NTL	0.26m²	0.6 L/min
0.2 µm		NR		NRL	0.17m²	1.2 L/min
0.2 µm		NF	NFZ		0.29m²	1.8 L/min
0.45 µm				NXL	0.17 m²	2.3 L/min
0.45 µm		NL	NLZ		0.30 m²	3.3 L/min
0.45 µm	Integral prefilter		NNXZ		0.17 m²	2.7 L/min
0.2 µm	Single layer grades	NA	NAZ		0.29 m²	3.2 L/min
0.45 µm		NB	NBZ		0.29 m²	5.2 L/min
0.65µm		NK	NKZ		0.29 m²	8.8 L/min
1.2µm		NN	NNZ		0.29 m²	21.0 L/min

[1]*This information is a guide to the part number structure and possible options. For availability of specific options - please contact Pall.*

Example Part Numbers

SLK 7002 NF P

- SLK7002NFP

Sealkleen style nominal length 130mm cartridge with **Ultipor** N66 NF grade membrane and "P' grade pharmaceutical specifications.

MCY 2220 NRL P H4

- MCY2220NRLPH4

Junior style nominal length 57mm cartridge with **Bio-Inert** NRL grade membrane 'P' grade pharmaceutical quality and silicone O-rings.

SBF1 NFZ P H4

- SBF1NFZPH4

Junior style nominal length 51mm cartridge, with **N_{66} Posidyne** NFZ grade membrane 'P' grade Pharmaceutical quality and silicone O-rings.

* To obtain the approximate clean water flow rate for cartridges other than **Sealkleen** SLK7002, multiply figures given in the table by the appropriate factor.

Eg. Approx, clean water flow rate MCY4440NRLPH4 = 1.2 L/min x 0.83 = 1.0 L/min per 100 mbar

** The SBF1 cartridge is dimensionally different from other Junior filter cartridges.

For further information please refer to:-

SD1158 - The **Pall** Nylon range of filters.

STR1029 - Validation Guide for Pall 0.2µm Nylon 66 membrane cartridges.

Other publications relating to Pall Nylon 66 products include:-

SD905, SD906, STR1027, SD1044, STR1198, STR1199, STR1210, STR1211, SD1248, SD1265.

Pall Ultrafine Group
Europa House, Havant Street, Portsmouth, PO1 3PD, United Kingdom.
Telephone: (023) 9230 3303 • Fax (023) 9230 2506
e-mail: UltrafineUK@pall.com • World Wide Web site: http://www.pall.com
A division of Pall Europe Limited

International offices and plants

Pall Australia, Melbourne, Australia
Pall Austria Filter Ges. m.b.H., Vienna, Austria
Pall (Canada) Ltd., Ontario, Canada
Pall Corporation, New York, USA
Pall Española s.a., Madrid, Spain
Pall Europe Ltd., Portsmouth, England
Pall Filter (Beijing) Co., Ltd., Beijing, China
Pall Filtration Pte Ltd., Wanchai, Hong Kong
Pall Filtration Pte Ltd., Singapore
Pall France s.a., Paris, France
Pall GmbH Filtrationstechnik, Frankfurt, Germany
Pall GmbH Filtrationstechnik, Moscow, Russia
Pall Industrial do Brazil Ltda., São Paulo, Brazil
Pall Italia s.r.l., Milan, Italy
Pall Korea Ltd., Seoul, Korea
Pall Poland Ltd., Warsaw, Poland
Pall (Schweiz) AG, Muttenz, Switzerland
Nihon Pall Ltd., Tokyo, Japan

Because of developments in technology these data or procedures may be subject to change. Consequently we advise users to review their continuing validity annually.
®, Pall, Ultipor, N66, Posidyne, Bio-Inert and Sealkleen are trade marks of Pall Corporation. Part Numbers quoted above are protected by the Copyright of Pall Europe Limited. © 2000. Pall Europe Limited.

GSD2521/1M/DAP/1000