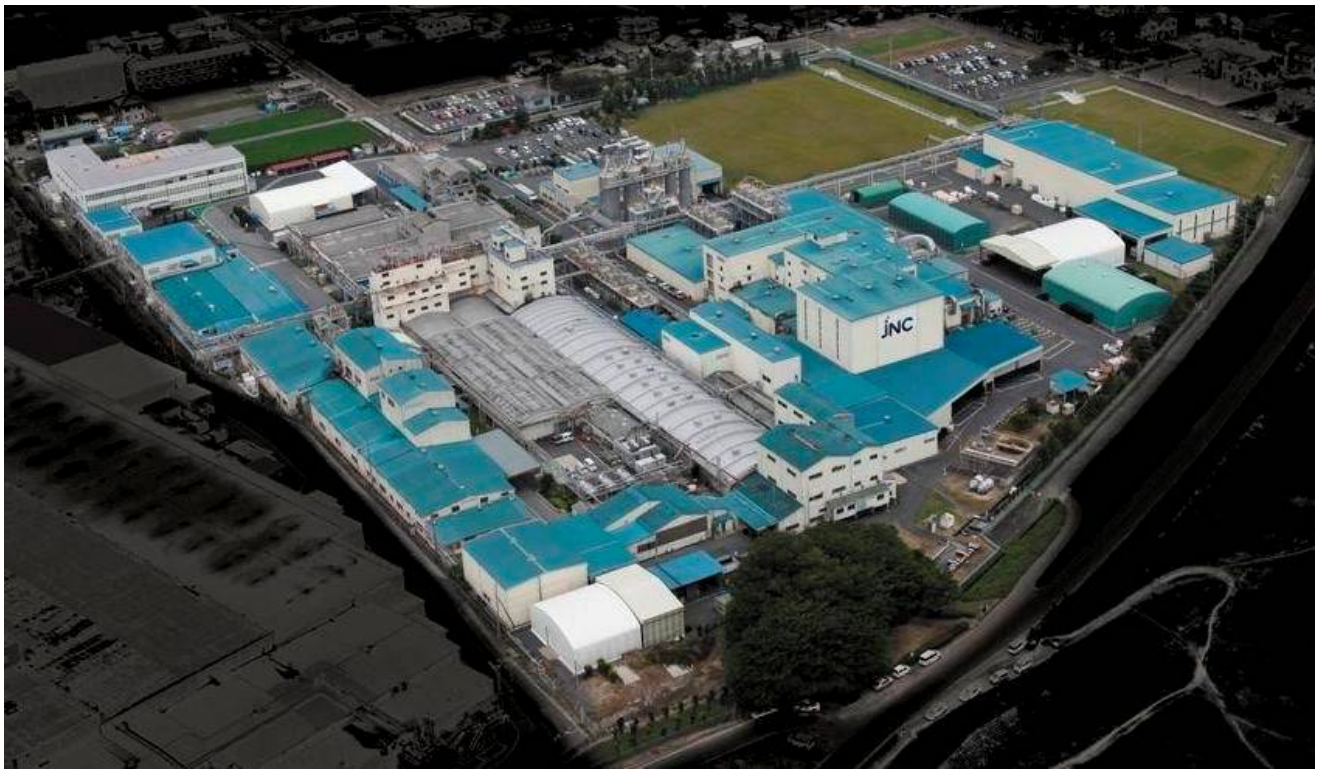
Filtration Products

JNC Filter

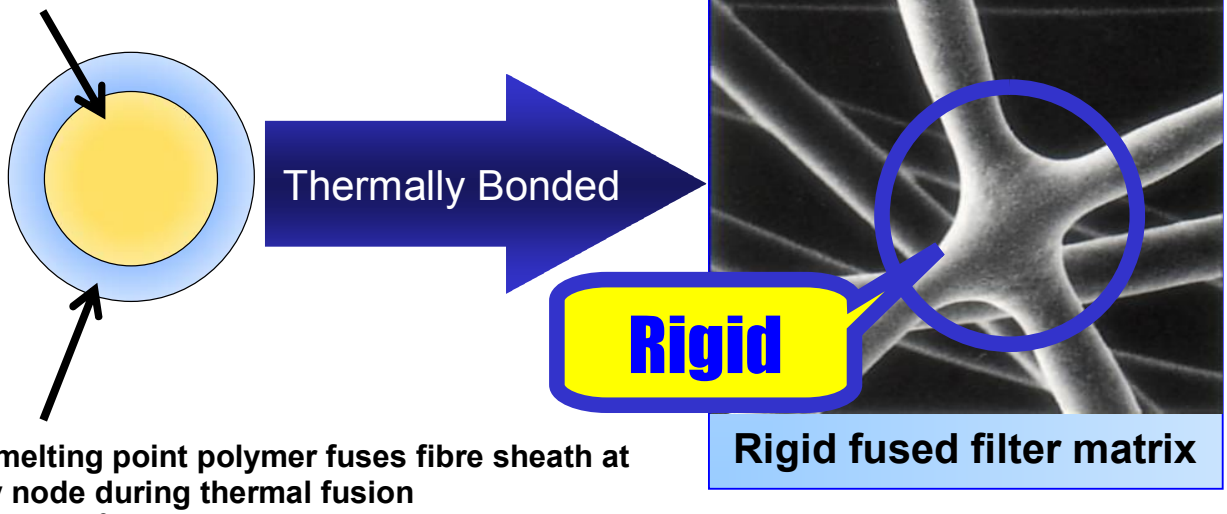
JNC Filter Overview



JNC Moriyama site - R&D center and plant for filters, fibres and non-woven media

JNC Filter Core Technology - Bicomponent Fibres

High melting point polymer core stays solid and keeps matrix from collapsing during thermal fusion (e.g. PP 160°C)



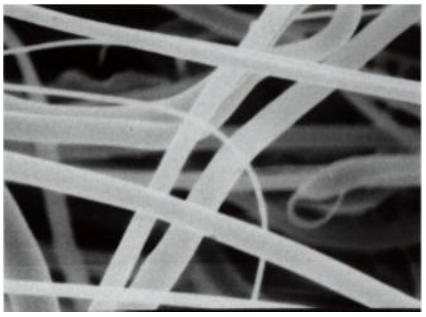
Low melting point polymer fuses fibre sheath at every node during thermal fusion (e.g. PE 130°C)

JNC Filter Innovation Delivers Stability and Consistency

Filtration is essential to many modern products and processes and becomes ever more critical as quality expectations and technology requirements for finer and more consistent results develop and increase. Where filtration is necessary for a process, it needs to be consistent and reliable throughout the life of the filter and from filter to filter. Variable filter performance is extremely common so filters often need to be overspecified in order to meet product or process specification continually. As this is often not done, this filter performance variability can be serious, leading to inconsistent product quality, additional costs from rework, rejections, product recalls and business risk.

JNC Filter innovations with bicomponent fibre fused matrix rigid technology ensure consistent performance throughout filter life **without** particle unloading, media channelling, fibre release or media compression under differential pressure. These and other media innovations are also developed in many JNC pleated, activated carbon and other innovative products.

The Challenge



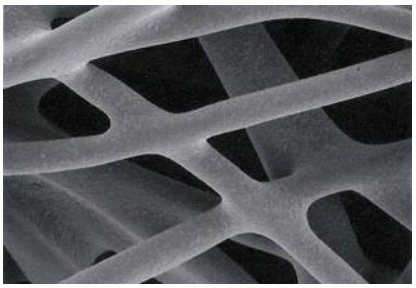
Typical Unbonded Media Structure

Poor End Sealing & Bypass

Media distortion or collapse

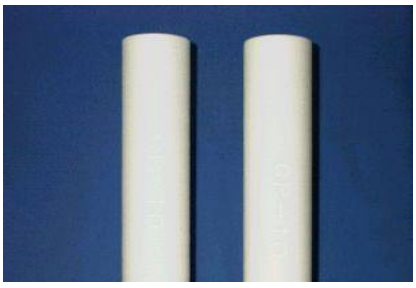
Typical depth filters with unbonded nodes, as shown in the photos above, form an unstable structure which can distort under the dynamic forces of viscous fluid flow and differential pressure causing “push through” of deformable and previously trapped particles as well as fibre release. The unbonded nodes between the fibres allow the fibres to move, resulting in enlarged flow paths within the media and later media compaction under differential pressure, known as “channelling” and “rating creep”, causing inconsistent filtration performance. This can cause pass-through of undesired particles and oversize agglomerates. Media compression can again change ratings, push through gels, reduce capacity and cause stripping of desired components (e.g. paint or slurry). Media distortion, softness or delamination at the end caps can also lead to bypass. All this means typical filter performance can change dramatically throughout life.

The Solution



Bicomponent Fibres & Fused Nodes

Reliable End Sealing



Rigid Media Retains Structure

JNC fibre expertise and rigid technology as shown above delivers clear benefits due to the bonded nodes, fine fibre diameter and uniform or graded porosity which form a highly porous, rigid structure, capable of removing oversized contaminants, agglomerates and deformable gels whilst allowing non-defect causing particles to pass through without stripping or premature filter blockage. These innovations enable consistent filtration results throughout fiter life. They facilitate critical and challenging processes such as gel removal and classification filtration - removal of large defect causing particles and agglomerates without stripping small, acceptable or desired particles such as pigments or slurries as well as assuring consistency in all filtration applications.

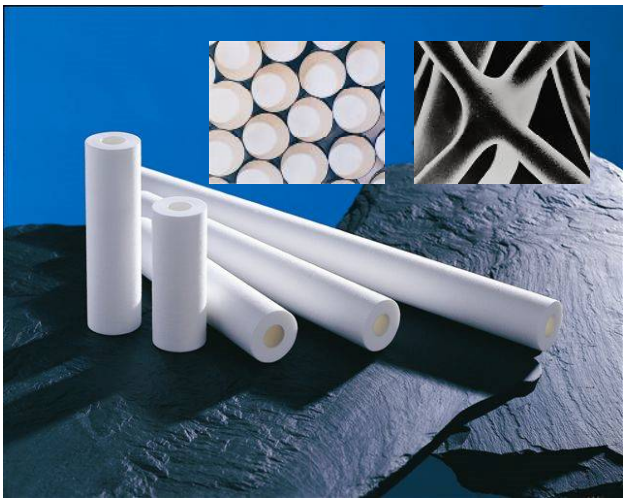
CLEAL® CP FILTER

Features, Advantages and Benefits:

- **Excellent Chemical Compatibility** Polyolefin construction conforming to FDA regulations provides excellent chemical resistance for a large variety of applications.
- **Rigid Depth Filtration Design** Maximises dirt holding pore volume in media & ability to remove challenging gels and deformable contaminants as well as oversized rigid contaminants, eliminating rejection or rework.
- **Absolute and Nominally Rated.** Meet a wide range of requirements with consistency and reliability whilst minimising filter inventory.
- **Bicomponent Fibre Construction** Manufactured with advanced JNC fibres with lower melting point outer sheath to create 3-dimensional bonding wherever the fibres touch without the distortion, high web density and pore collapse that typically occurs with highly fused, fine unicomponent fibres. The porous structure is maintained by the more rigid inner fibres which do not melt during the nodal fusion process producing a highly porous and rigid structure for reliability and consistency.
- **Long Service Life** Extra fine fibre construction results in high media porosity thus low clean pressure drop and large dirt holding capacity, delivering long filter life.
- **No Media Migration or Rating Drift** Rigid nodally fused structure ensures consistent performance throughout filter life without particle unloading, media channelling, end cap bypass, fibre release or media compression and contaminant push through. This ensures consistent performance throughout filter service resulting in less process variability and reliable, consistent processes and products.
- **Withstand High Differential Pressure** Excellent media rigidity enables cartridges to operate reliably under high differential pressure even in challenging applications such as pulsing flow and with high viscosity fluids.
- **Classification Filtration** Removal of larger defect causing particles and agglomerates without stripping small, acceptable or desired particles. This allows coatings and slurries to be processed so that defect causing contaminants are removed but filters are not blocked prematurely by pigment or slurry particles. It also facilitates much longer filter life in applications where a specified particle size must be removed but smaller particles are acceptable as these are allowed through rather than blocking the filter.

CP Filter Retention Ratings & Flow Data

Grade	Absolute µm 99.9%	Nominal µm	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/gpm/ cP/10")
CP-01	15	1	2	0.110
CP-03	20	3	1.6	0.088
CP-05	30	5	1.3	0.071
CP-10	40	10	1	0.055
CP-25	50	25	0.55	0.030
CP-50	70	50	0.4	0.022
CP-75	90	75	0.35	0.019
CP-100	100	100	0.3	0.016
CP-125	125	125	0.2	0.011
CP-150	150	150	0.15	0.008
CP-200	170	200	0.1	0.005



To calculate pressure drop, multiply relevant specific pressure drop by viscosity in centipoise ($g.cm^{-1}.s^{-1}$) by flow rate in litres per minute (lpm) [or US gallons per minute (gpm)] divided by cartridge equivalent single lengths (10" multiples). E.g. Clean pressure drop for 20" CP-25 cartridge with water flow of 20lpm (1cP viscosity) = 0.65x1x20/2 = 6.5mbar.

CP Filter Materials of Construction & Regulatory Compliance:

- Polyolefin
- Silicone Free Construction. Manufactured using carefully controlled materials and processes to ensure silicone or other defect causing contaminants are not present.
- Complies with CFR21 FDA regulations.

CP FILTER Standard Cartridge Specifications

Product	Adaptor	Inside Diameter (mm)	Inside Diameter (in)	Outside Diameter (mm)	Outside Diameter (in)	Maximum Differential Pressure 20°C (68°F)	Maximum Operating Temperature *
CP-01 to 100	DOE	30	1.18”	68	2.68”	5.5bard (80psid)	80°C (175°F)
CP-125 to 200	DOE	30	1.18”	65	2.56”	5.5bard (80psid)	80°C (175°F)

* Limit specifications are for general guidance only and users must check suitability for their own process conditions.

Special Configurations

CP FILTERs are available in special configurations on request. Length, inside and outside diameter can be modified and adaptors added to meet your requirements.

CLEAL® CP FILTER Ordering Guide

e.g. DOE (Double Open Ended) CP-10 30x68x254, DOE for tight PCD spacing (smaller o.d.) CP-10 28x64x254,

Cartridge Code	Nominal Micron Rating (µm)	Adaptor	Seal	Inside Diameter mm (in) □	Outside Diameter mm (in) X	Length mm (in) X
CP-	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100) **125** (125) **150** (150) **200** (200)	**Blank** DOE **G0** Gasket DOE PE Foam SOE **E3** Code 3 **M3** Code 0 **E7** Code 7 **M8** Code 8	DOE only **Blank** No Gasket **Blank** SOE only **1** NBR Rubber **2** Silicone Rubber **3** Fluoro Rubber **4** Fluoro-Polymer **5** EPT Rubber	DOE **30** (1.18”)	1-100µm **68** (2.68”) 125-200µm **65** (2.56”)	**250** (9.8”) **500** (19.7”) **750** (29.5”) **1000** (39.4”)
				DOE **28** (1.1”) For tight spacing	1-200µm **64** (2.52”)	**248** (9¾”) **254** (10”) **496** (19½”) **508** (20”) **743** (29¼”) **762** (30”) **992** (39”) **1016** (40”)
				SOE **25** (0.98”)	SOE **70** (2.76”)	Please refer to SOE Length Table 1 on Page 23

Note: □ = Space, Blank = No character or space

CLEAL® CPH FILTER

Features, Advantages and Benefits: As CP FILTER, except no FDA certification and:

- **Polyester construction** Using bicomponent fibres utilising an inner core of high density polyester and outer sheath of lower density polyester to produce a fused structure delivers the performance benefits of the CP FILTER with the advantages that polyester construction offers.
- **Excellent chemical resistance to aggressive solvents** Compatible with some challenging solvent systems, facilitating filtration without filter softening, expansion or variability in applications with solvents such as benzene, toluene and xylene.
- **High temperature operation** Up to 120°C (250°F) capability enables filter use in demanding applications even with aggressive solvents.

CPH Retention Ratings & Flow Data

Grade	Absolute µm 99.9%	Nominal µm	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/gpm/ cP/10")
CPH-01	10	1	1.40	0.077
CPH-03	25	3	1.20	0.066
CPH-05	30	5	0.70	0.038
CPH-10	40	10	0.47	0.026
CPH-25	50	25	0.28	0.016
CPH-50	70	50	0.17	0.010

Maximum Differential Pressure at 20°C (68°F): 5.5bard (80psid) **Maximum Operating Temperature**: 120°C (250°F) *

* Limit specifications are for general guidance only and users must check suitability for their own process conditions.

CLEAL® CPH FILTER Ordering Guide

e.g. DOE CPH-10 28x62x254, SOE (Single Open Ended) CPH-10E74 25x70x319

Cartridge Code	Nominal Micron Rating (µm)	Adaptor	Seal □	Inside Diameter mm (in) X	Outside Diameter mm (in) X	Length mm (in)
CPH-	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50)	**Blank** DOE **E3** Code 3 **M3** Code 0 **E7** Code 7 **M8** Code 8	DOE only **Blank** No Gasket SOE only **1** NBR Rubber **2** Silicone Rubber **3** Fluoro Rubber **4** Fluoro-Polymer **5** EPT Rubber	DOE **28** (1.1")	DOE **62** (2.44")	**248** 9¾" **250** (9.8") **254** 10" **496** 19½" **500** (19.7") **508** 20" **743** 29¼" **750** (29.5") **762** 30" **992** 39" **1000** (39.4") **1016** 40"
				SOE **25** (0.98")	SOE **70** (2.76")	Please refer to SOE Length Table 1 on Page 23

CLEAL® CP2 FILTER

Features, Advantages and Benefits: As CP FILTER except no FDA certification (certified to Japan standard):

- **Materials of Construction:** Polypropylene
- **Composed of thermally bonded special bicomponent polypropylene fibres** developed by JNC providing rigid, dimensionally stable construction and excellent chemical resistance.
- **No spin finish** is adhered to the fibre surface during the fabrication of CP2 cartridges thus ensuring no foaming in the initial filtrate.

CP2 Retention Ratings & Flow Data

Grade	Absolute µm 99.9%	Nominal µm	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/gpm/ cP/10")
CP2-01	15	1	2.50	0.137
CP2-03	25	3	1.88	0.103
CP2-05	30	5	1.50	0.082
CP2-10	35	10	1.05	0.058
CP2-25	45	25	0.63	0.034
CP2-50	70	50	0.38	0.021
CP2-75	90	75	0.28	0.015
CP2-100	125	100	0.23	0.012
CP2-200	170	200	0.1	0.005
CP2-350	200	350	0.07	0.004

Maximum Differential Pressure at 20°C (68°F): 5.5bard (80psid)

Maximum Operating Temperature: 80°C (175°F) *

* Limit specifications are for general guidance only and users must check suitability for their own process conditions.

CLEAL® CP2 FILTER Ordering Guide

e.g. DOE CP2-10 30x62x254, SOE (Single Open Ended) CP2-10E74 25x70x319

Cartridge Code	Nominal Micron Rating (µm)	Adaptor	Seal	Inside Diameter mm (in) □	Outside Diameter mm (in) X	Length mm (in) X
CP2-	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100) **200** (200) **350** (350)	**Blank** DOE **G0** Gasket DOE PE Foam SOE **E3** Code 3 **M3** Code 0 **E7** Code 7 **M8** Code 8	DOE only **Blank** No Gasket **Blank** SOE only **1** NBR Rubber **2** Silicone Rubber **3** Fluoro Rubber **4** Fluoro-Polymer **5** EPT Rubber	DOE **30** (1.18")	DOE **62** (2.44")	**248** 9¾" **250** (9.8") **254** 10" **496** 19½" **500** (19.7") **508** 20" **743** 29¼" **750** (29.5") **762** 30" **992** 39" **1000** (39.4") **1016** 40"
				SOE **25** (0.98")	SOE **70** (2.76")	Please refer to SOE Length Table 1 on Page 23

CLEAL® BM FILTER

Materials of Construction & Regulatory Compliance:

- Polypropylene - Complies with CFR21 FDA regulations.

Features, Advantages and Benefits: As CP FILTER except:

- **Finer micron ratings** Extends CP range to utilising further developments in JNC fibre technology.
- **Continuously varying ultra fine denier polypropylene bicomponent fibres** Produce a graded porosity structure to reduce blinding by spreading different particle sizes throughout the media depth and thus extend service life.
- **No spin finish** is adhered to the fibre surface during the fabrication of BM cartridges thus ensuring no foaming.
- **Eliminates media inserts & delamination** Finer micron ratings can be achieved using glass fibre or other media inserts or layers to reduce the pore rating. This can cause delamination and failure under differential pressure or aggressive solvents and short life and blockage of the insert material but not with BM FILTERs.

BM Retention Ratings & Flow Data

Grade	Absolute µm 99.9%	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/gpm/ cP/10")
BM-01	1	36.67	2.012
BM-03	3	16.00	0.878
BM-05	5	10.67	0.585
BM-07	7	6.67	0.366
BM-10	10	5.00	0.274
BM-15	15	3.33	0.183

Maximum Differential Pressure at 20°C (68°F): 5.5bard (80psid) **Maximum Operating Temperature**: 80°C (175°F) *

- Limit specifications are for general guidance only and users must check suitability for their own process conditions.

CLEAL® BM FILTER Ordering Guide

e.g. DOE BM-10G0 29x67x254, SOE Single Open Ended BM-10E74 25x70x319

Cartridge Code	Absolute Micron Rating (µm)	Adaptor	Seal	Inside Diameter mm (in) □	Outside Diameter mm (in) X	Length mm (in) X
BM-	**01** (1) **03** (3) **05** (5) **07** (7) **10** (10) **15** (15)	**G0** Gasket DOE PE Foam SOE **E3** Code 3 **M3** Code 0 **E7** Code 7 **M8** Code 8	**Blank** SOE only **1** NBR Rubber **2** Silicone Rubber **3** Fluoro Rubber **4** Fluoro-Polymer **5** EPT Rubber	DOE **29** (1.14")	DOE **67** (2.64")	**248** 9¾" **250** (9.8") **254** 10" **496** 19½" **500** (19.7") **508** 20" **743** 29¼" **750** (29.5") **762** 30" **992** 39" **1000** (39.4") **1016** 40"
				SOE **25** (0.98")	SOE **70** (2.76")	Please refer to SOE Length Table 1 on Page 23

CLEAL® GF FILTER

Materials of Construction & Regulatory Compliance:

- Polyolefin
- Complies with CFR21 FDA regulations.

Features, Advantages and Benefits: As CP FILTER except:

- **Smaller diameter with grooved surface** for reduced surface blinding.
- **Nominal ratings**

GF Retention Ratings & Flow Data

Grade	Nominal µm	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/gpm/ cP/10")
GF-01	1	2	0.110
GF-03	3	1.6	0.088
GF-05	5	1.3	0.071
GF-10	10	1	0.055
GF-25	25	0.55	0.030
GF-50	50	0.4	0.022
GF-75	75	0.35	0.019
GF-100	100	0.3	0.016

Maximum Differential Pressure at 20°C (68°F): 5.5bard (80psid) **Maximum Operating Temperature**: 80°C (175°F) *

* Limit specifications are for general guidance only and users must check suitability for their own process conditions.

CLEAL® GF FILTER Ordering Guide

e.g. DOE GF-10 30x62x254, SOE Single Open Ended GF-10E74 25x70x319

Cartridge Code	Nominal Micron Rating (µm)	Adaptor	Seal	Inside Diameter mm (in)	Outside Diameter mm (in)	Length mm (in)
			□	X	X	
GF-	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100)	**Blank** DOE SOE **E3** Code 3 **M3** Code 0 **E7** Code 7 **M8** Code 8	DOE only **Blank** No Gasket SOE only **1** NBR Rubber **2** Silicone Rubber **3** Fluoro Rubber **4** Fluoro-Polymer **5** EPT Rubber	DOE **30** (1.18")	DOE **62** (2.44")	**248** 9¾" **250** (9.8") **254** 10" **496** 19½" **500** (19.7") **508** 20" **743** 29¼" **750** (29.5") **762** 30" **992** 39" **1000** (39.4") **1016** 40"
				SOE **25** (0.98")	SOE **70** (2.76")	Please refer to SOE Length Table 1 on Page 23

CLEAL® VW FILTER

Materials of Construction:

- Polypropylene

Features, Advantages and Benefits:

- **Wound filter cartridge with no fibre migration** Due to thermally bonded constituent fibres resulting in exceptional performance and consistency compared to standard wound filters.
- **No spin finish and no foaming** Initial filtrate is foam free in contrast to most wound filters.
- **Broad chemical compatibility** Consistent with polyolefin construction.
- **Consistent particle removal efficiency** Due to JNC fibre technology used in media construction.

VW Retention Ratings & Flow Data

Grade	Nominal µm	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/ gpm/ cP/10")
VW-A5	0.5	7.2	0.395
VW-01	1	3.6	0.198
VW-03	3	3.0	0.165
VW-05	5	2.2	0.121
VW-10	10	1.4	0.077
VW-25	25	0.8	0.044
VW-50	50	0.6	0.033
VW-75	75	0.4	0.022
VW-100	100	0.3	0.016
VW-150	150	0.2	0.011

Maximum Differential Pressure at 20°C (68°F): 5.5bard (80psid) **Maximum Operating Temperature**: 80°C (175°F) *

* Limit specifications are for general guidance only and users must check suitability for their own process conditions.

CLEAL® VW FILTER Ordering Guide

e.g. DOE VW-10 30x60x250

Cartridge Code	Nominal Micron Rating (µm)	Adaptor	Seal	Inside Diameter mm (in) □	Outside Diameter mm (in) X	Length mm (in) X
VW-	**A5** (0.5) **01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100) **150** (150)	**Blank** DOE	**Blank** No Gasket	DOE **30** (1.18")	DOE **60** (2.36")	**250** (9.8") **500** (19.7") **750** (29.5") **762** 30"

CLEAL® CHW FILTER

Materials of Construction:

- Polyester media and core

Features, Advantages and Benefits: As CSW except:

- **Extended chemical and temperature compatibility** Consistent with polyester construction.

CHW Retention Ratings & Flow Data

Grade	Nominal µm	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/ gpm/ cP/10")
CHW-01	1	3.57	0.196
CHW-03	3	1.43	0.078
CHW-05	5	1.14	0.063
CHW-10	10	0.86	0.047
CHW-25	25	0.71	0.039
CHW-50	50	0.57	0.031
CHW-75	75	0.43	0.024
CHW-100	100	0.29	0.016
CHW-150	150	0.21	0.012

Maximum Differential Pressure at 20°C (68°F): 5.5bard (80psid)

Maximum Operating Temperature: 80°C (175°F) *

* Limit specifications are for general guidance only and users must check suitability for their own process conditions.

CLEAL® CHW FILTER Ordering Guide

e.g. DOE CHW-10 30x60x250

Note: □ = Space, Blank = No character or space

Cartridge Code	Nominal Micron Rating (µm)	Adaptor	Seal	Inside Diameter mm (in)	□	Outside Diameter mm (in)	X	Length mm (in)	X
CHW-	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100) **150** (150)	**Blank** DOE	**Blank** No Gasket	DOE **30** (1.18")		DOE **60** (2.36")		**250** (9.8") **500** (19.7")	

CLEAL® POROUSFINE PP, PET, PES, PSU, PTFE & hPTFE Pleated Filters

POROUSFINE Materials of Construction:

- **Medium:** Defined by product designation
- **Irrigation and support:** Polypropylene
- **Core, Cage & End Caps**: Polypropylene
- **Seal material:** NBR, Silicone, Fluoro rubber, Fluoro polymer or EPT Elastomer
- **Adaptor insert**: 316 stainless steel if required for steam sterilization duty

POROUSFINE Features, Advantages and Benefits:

- **Excellent Chemical Compatibility.** Polypropylene construction provides excellent chemical resistance.
- **High quality fusion bonded construction.** Ensures low extractables and high integrity
- **Special polypropylene fibres.** JNC fibre expertise produces highly stable media with uniform pore structure and exceptional stability, eliminating rating drift, fibre release and particle unloading.
- **Integrity testable.** All grades (PP at low pressure) are integrity testable after wetting enabling confirmation of cartridge integrity before and after use if necessary, demonstrating high quality construction and integrity. Note hydrophobic grades require low surface tension wetting fluid (e.g. alcohol or 60/40 IPA/water).for testing and subsequent rinsing before use with aqueous fluids.
- **Low Clean Pressure Drop**. JNC fibre and media technology and design expertise ensures low initial differential pressure and extended filter life.

POROUSFINE Specifications

- **Max Operating Temperature:** 80°C (176°F) all grades *
  * Limit specifications are for general guidance only and users must check suitability for their own process conditions.
- **Steam Sterilisation:** 30 mins at 121°C (250°F) all grades except hydrophilic hPTFE
- **Maximum Differential Pressure**: 3.5 bard (50psid) @ 20°C (68°F) all grades
- **Media Area:** Typically 0.6m² (6.5ft²)depending on grade, PSU & PP 5-150 micron 0.56m² (6ft²) per 250mm, (10") length

CLEAL® POROUSFINE PP and PET Ordering Guide

e.g. SOE PF-010E75 25x70x315

Cartridge Code	Micron Rating 99.9% (µm)	Adaptor	Seal	Inside Diameter mm (in) □	Outside Diameter mm (in) X	Length mm (in) X
PFN- (sub micron PP)	**002** (0.3) **004** (0.5) **006** (0.6) **010** (0.8)	**G0** Gasket DOE **E3** Code 3 **M3** Code 0 **E7** Code 7 **M8** Code 8	**1** NBR Rubber **2** Silicone Rubber **3** Fluoro Rubber **4** Fluoro-Polymer **5** EPT Rubber	DOE **28** (1.1")	DOE **70** (2.76")	**250** 9.9" **496** 19.5" **742** 29.2" **988** 38.9"
PF- (PP - Polypropylene)	**006** (0.6) **010** (1) **030** (3) **050** (5) **070** (7) **100** (10) **150** (15)			SOE **25** (0.98")	SOE **70** (2.76")	Please refer to SOE Length Table 2 on Page 23
EP- (PET - Polyester)	**030** (3) **040** (4)					

POROUSFINE Media Filters

POROUSFINE PP and PET filters incorporate JNC manufactured polypropylene and polyester pleated fibre media respectively. POROUSFINE PFN offers excellent flow rates and needs no prewetting, achieving hydrophilicity through a special production process using JNC polymer and fibre know-how.

POROUSFINE Membrane Filters

POROUSFINE PES (Polyethersulphone), PSU (Polysulphone), PTFE (Polytetrafluoroethylene) and hydrophilic hPTFE (Surface Modified Polytetrafluoroethylene) filters all incorporate pleated microporous membrane.

Media Retention Ratings & Flow Data

Grade	Micron Rating µm 99.9%	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/ gpm/ cP/10")
PFN-002	0.3	6.0	0.33
PFN-004	0.5	4.0	0.22
PFN-006	0.6	2.7	0.15
PFN-010	0.8	1.3	0.07
PF-006	0.6	6.7	0.37
PF-010	1	4.0	0.22
PF-030	3	2.0	0.11
PF-050	5	1.3	0.07
PF-070	7	1.0	0.05
PF-100	10	0.7	0.04
PF-150	15	0.5	0.03
EP30	3	2.8	0.15
EP40	4	1.3	0.07

Membrane Retention Ratings & Flow Data

Grade	Microbial Rating µm	Specific Pressure Drop (mbar/lpm/ cP/250mm)	Specific Pressure Drop (psid/ gpm/ cP/10")
PF-A10	0.1	21	1.15
PF-A20	0.2	7.5	0.41
PF-A45	0.45	6	0.33
PF-S10	0.1	16	0.88
PF-S20	0.2	6	0.33
PF-S45	0.45	3	0.16
PF-T10	0.1	11	0.60
PF-T20	0.2	8	0.44
PF-T45	0.45	4	0.22
PF-01T	1	3	0.16
PF-H10	0.1	14	0.77
PF-H20	0.2	13	0.71
PF-H45	0.45	6	0.33

CLEAL® POROUSFINE Membrane Ordering Guide

e.g. SOE PF-A20E75 25x70x315

Cartridge Code	Microbial Micron Rating (µm)	Adaptor	Seal	Inside Diameter mm (in) □	Outside Diameter mm (in) X	Length mm (in) X
PF-A (PES)	**10** (0.10) **20** (0.20) **45** (0.45)	**G0** Gasket DOE **E3** Code 3 **M3** Code 0 **E7** Code 7 **M8** Code 8	**1** NBR Rubber **2** Silicone Rubber **3** Fluoro Rubber **4** Fluoro-Polymer **5** EPT Rubber	DOE **28** (1.1")	DOE **70** (2.76")	**250** 9.9" **496** 19.5" **742** 29.2" **988** 38.9"
PF-S (PSU)	**10** (0.10) **20** (0.20) **45** (0.45)			SOE **25** (0.98")	SOE **70** (2.76")	Please refer to SOE Length Table 2 on Page 23
PF-T (PTFE) **PF-**	**10** (0.10) **20** (0.20) **45** (0.45) **01T** (1.0)					
PF-H (hPTFE)	**10** (0.10) **20** (0.20) **45** (0.45)					

CAPSULER RP

Available with CP,CPH,GF or CP2.
Capsule body - Rigid polyethylene with PP end cap and no need to wash housing with element incorporated. Clean change capsule system, only to be used inside suitable housings - please refer to JNC.

CAPSULER RP Ordering Guide

e.g. RCP-01R15 25×89×340

Capsuler	Cartridge Code	Micron Rating (μm)	Adaptor	Seal □	Inside Diameter mm (in) X	Outside Diameter mm (in) X	Length mm (in)
R-	**CP-** **CPH-** **CP2-** **GF-** **BM-**	**01** (1) **03** (3) **05** (5) **07** (7) **10** (10) **15** (15) **25** (25) **50** (50) **75** (75) **100** (100) **125** (125) **150** (150) **200** (200) **350** (350) Only as available for Cartridge Code	**R1**	**5** EPT Rubber only	**25** (1”)	**89** (3.5”)	**214** (8.4”) **340** (13.4”) **590** (23.2”)

QUICK-PACK

JNC Filter QUICK-PACK is an innovative, enclosed, safe, economical, environmentally friendly and easy to use filtration system with dedicated existing or new filter housings. It can transform working environments such as paint, resin, ink or chemical factories by reducing or eliminating spillage, protecting the product, protecting employees and improving safety and environmental standards. Used in dedicated housings which are connected to pipework and ports with flexible hoses.

QUICK-PACK Flow Path

Filters are welded to ported head (with inlet & outlet connections) and enclosed in a plastic bag (liner).

Connections are made to filter housing top inlet and outlet with flexible hoses with ring nuts to seal ports.

Feed passes through the inlet port to the chamber inside the liner and outside the cartridges.

Fluid is filtered through the cartridges outside to inside.

Product from inside filter cores flows to the outlet port and out the outlet hose.

Housing stays clean, protected by liner ready for quick filter changeover.

QUICK-PACK RANGE

QUICK-PACK Applications

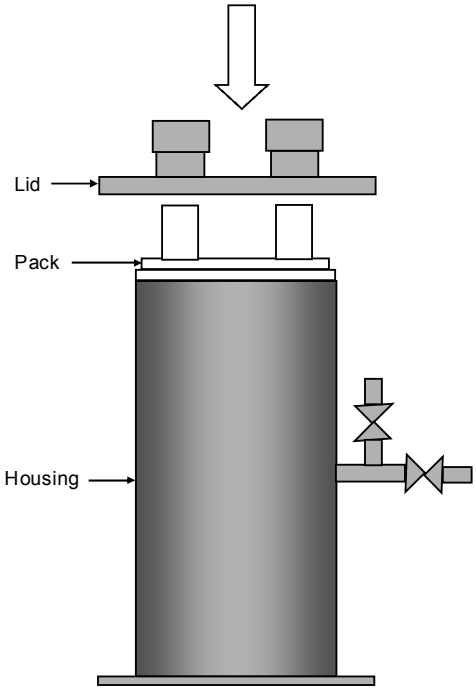
- **Coatings:** Auto Paint, Paint Makers & Appliers, High Quality Paints, Mag Media, Can Coatings, Coil Coatings, Mirror Coatings, Adhesives, Photo Solutions / Emulsions, Resins, Lens Coatings, Inks.
- **Chemicals & Petrochemicals:** Hazardous Chemicals, Fine Chemicals, Agrochem, Lubricants, Oils, Process Water.
- **Electronics:** Photoresist, Ceramic Slurries, Plating, Circuit Board Coatings, Waste management, Hazardous Solutions.
- **Industrial:** Can Manufacturers, Waste Water, Plating, Pulp, Paper, Powergen, Radioactive Fluids.

QUICK-PACK Advantages and Benefits

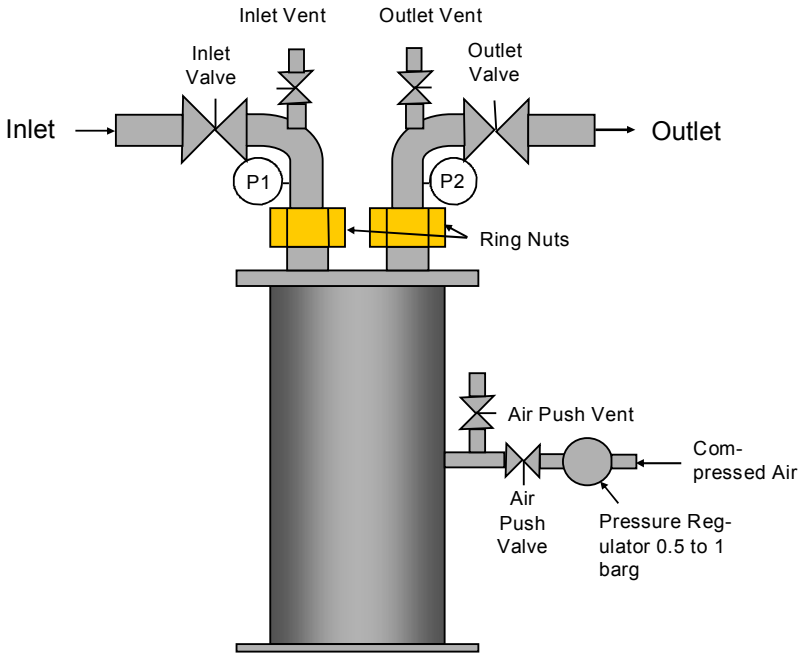
- Less cleaning required (housing stays clean—only pipework using flushing elbow).
- Limited operator exposure.
- Reduced labour for faster process turnaround with rapid change-out design.
- Overall reduction in total filtration and associated costs—– cappable & reusable filter packs.
- Eliminates cross contamination of products.
- No internal components to clean, lose, damage or stock.
- No gaskets or o-rings to damage, swell, or replace.
- Elimination of filter bypass as cartridges sealed in pack at factory.
- Electrostatic earthing, ATEX compliant with appropriate housing.
- Reduction in disposal materials compared to other clean change systems due to use of thin flexible liner instead of thick moulding or extrusion.
- Stainless steel housing contains system pressure and flexible liner allows air push to recover much of the product from the pack.
- No valves required due to top entry connections.

QUICK-PACK Operation

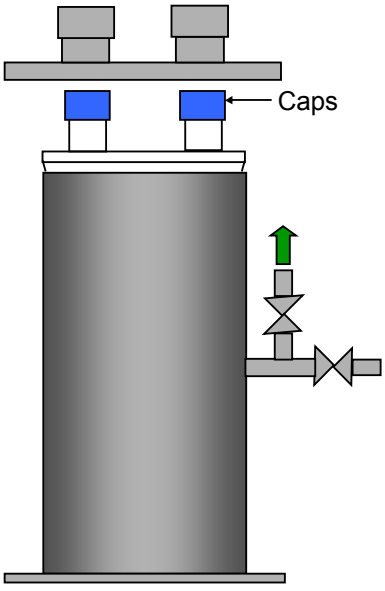
1. Install
Install QUICK-PACK into housing, close lid & tighten, connect inlet and outlet hoses, connect air push air supply & close all valves



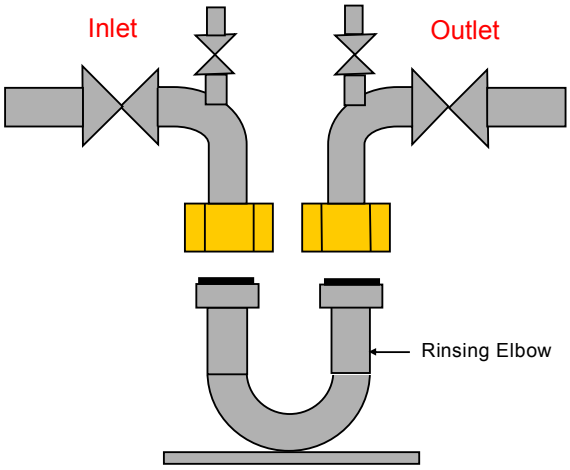
2. Operate
Open air push vent, open inlet to pressurise system, open outlet vent until product comes out then close. Open outlet & close air push vent. Filter product through QUICK-PACK, monitor ΔP (=P1-P2) & change pack if recommended maximum for filters or process is reached.



3. Shut-down, Air Push & Remove Pack
Close inlet valve. If required to recover product in housing, set compressed air regulator to 0.5-1barg & open air push valve to compress pack around filters and recover product inside liner. Open air push, inlet and outlet vents to depressurise system, undo ring nuts, remove hoses & remove housing lid. Fit caps and remove pack from housing.



4. Rinse Pipework
Connect hoses to rinsing elbow, open inlet and outlet valves and rinse pipework.
Housing stays clean as pack liner prevents product from contacting housing. System is now ready for next product to be filtered.



QUICK-PACK Ordering Guide

e.g. QCP-10Q7A20

QUICK-PACK	Cartridge Code	Micron Rating (µm)*	Number of Cartridges in Pack	Liner Type (PE = Polyethylene PA = Nylon)	Length (in)
Q	**CP-**	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100) **125** (125) **150** (150) **200** (200)	**Q1** (1 round) **Q3** (3 round) **Q7** (7 round)	**A** (PE/PE) **C** (PA/PE) **D** (PA/PE/PE) **E** (PE/PE/PE)	**5** (5")* **10** (10") **20** (20") **30** (30")** * 1 round only ** 3 & 7 round only
	CPH-	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50)			
	BM-	**01** (1) **03** (3) **05** (5) **07** (7) **10** (10) **15** (15)			
	CP2-	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100) **200** (200) **350** (350)			
	GF-	**01** (1) **03** (3) **05** (5) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100)			

CLEAL® GFR Large Diameter Filter Ranges

All the proven performance advantages and benefits of JNC rigid bi-component structure, depth cartridge technology are now available in large diameter configurations to deliver solutions in additional system formats.

CLEAL® GFR-PM Bag Filter Retrofit Cartridge

Improving the removal efficiency of Bag Filter Systems

- Upgrade for bag filter systems.
- All polypropylene fusion bonded construction
- Note: Some bag-filter housings may require modification or change of the internal basket
- Dimensions 107mm (4.2”) diameter x 149mm (5.9”) or 673 (26.5”) lengths.

CLEAL® GFR-PU High Flow Plug-in Cartridge

High flow type for Electronics and FPD industry

- All polypropylene fusion bonded construction with elastomeric O-ring seal
- Dimensions 57mm (2.2”) internal diameter x 130mm (5.1”) outside diameter x 270mm (10.6”) length

CLEAL® GFR-PH High Flow Cartridge

Large Diameter High flow Filter

- Application: Water & Chemicals
- All polypropylene fusion bonded construction with elastomeric O-ring external seal
- Dimensions 107mm (4.2”) internal diameter x 155mm (6.1”) outside diameter x 522mm (20.6”) or 1031mm (40.6”) length

CLEAL® GFR Filter Ordering Guide

e.g. Bag retrofit PM: GFR-PM10B 107x149x673 or High Flow PH GFR-PH10H5 107x160x1031

Cartridge Code	Nominal (Absolute) Rating (µm)	Adaptor	Seal	Inside Diameter mm (in) □	Outside Diameter mm (in) X	Length mm (in) X
GFR-PM Bag Filter Retrofit	**01** (15) **05** (25) **10** (35) **25** (45) **50** (70) **100** (125)	**B** (Bag Retrofit)	**Blank** **5** EPT Rubber	**107** (4.2”)	**149** (5.9”)	**673** (26.5”)
GFR-PU High Flow Plug-in Cartridge		**P** (High Flow Plug-in)		**57** (2.2”)	**130** (5.1”)	**270** (10.6”)
GFR-PH Large Diameter High Flow Filter		**H** (High Flow - External o-ring)		**107** (4.2”)	**155** (6.1”)	**522** (20.6”) **1031** (40.6”)

JNC Filter All Fluoropolymer Mini Cartridge and Housing System

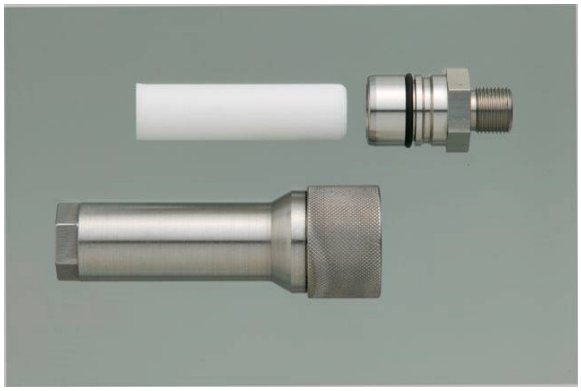
- 0.1 micron rated PTFE membrane
- All PFA hardware
- Fluoropolymer encapsulated seals
- 1” Tri-clover housing connections
- Ultrapure construction
- 18megohm rinsed with ultrapure water for electronics applications option is available (R suffix)

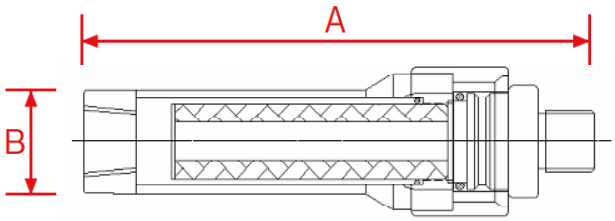
JNC Filter Mini Point-of-Use Filter System

JNC rigid media is also available in small diameter, mini configurations to deliver low flow, last chance filtration solutions.

- For use in spray guns and for last chance, point-of-use filtration at low flow rates
- Applications in paint, ink, chemical, plating, food and water treatment industries

Mini-Filter Coupled Closure Housing JM





JNC Filter Mini Point-of-Use Housing Specifications

Housing	JM
Dimension A mm (in)	137 (5.39")
Dimension B mm (in)	28 (1.10")
Weight kg (lbs)	0.6 (1.32)
Body Material	304 S/Stl
Sealing Material	Perfluoro polyether
Nozzle Inlet	Rc 3/8" Female
Nozzle Outlet	G 3/8" Male

Mini Point-of-Use Cartridge Ordering Guide

Cartridge Code	Nominal Micron Rating	□	Inside Diameter mm (in)	X	Outside Diameter mm (in)	X	Length mm (in)
CPS-BR-10 (for JM)	**05** (05) **10** (10) **25** (25) **50** (50) **75** (75) **100** (100) **150** (150) **185** (185)		**10** (0.39")		**20** (0.79")		**74** (2.91") (CPS-BR)

E.g. CPS-BR-1050 10x20x74

Note: □ = Space, Blank = No character or space

STEM Activated Carbon Cartridge

Materials of construction

- Primary filtration layer – Polyolefin bicomponent ES fibre
- Adsorption layer – moulded activated carbon using thermal bonding of ES fibre
- End caps DOE only – polypropylene fusion bonded
- Flat gasket seals - Nitrile, Silicone, Fluro or EPR Elastomer

Applications

- Chlorine removal
- Taste and odour removal in potable water
- Odour removal in air

Options

STEM 1 Activated Carbon Filter (low dP)

STEM 2 Activated Carbon Filter (High yield)

STEM 3 Activated Carbon Filter (Food, beverage & pharmaceutical)

STEM Activated Carbon Cartridge Ordering Guide

E.g. STEM11 28.5x70x250

Cartridge Code	Adaptor	Seal	□	Inside Diameter mm (in)	X	Outside Diameter mm (in)	X	Length mm (in)
STEM1 **STEM2** **STEM3**	**Blank** (DOE only)	**1** NBR Rubber **2** Silicone Rubber		**28.5** (1.12")		**70** (2.76")		**250** 9.8" **500** 19.7" **750** 29.5"

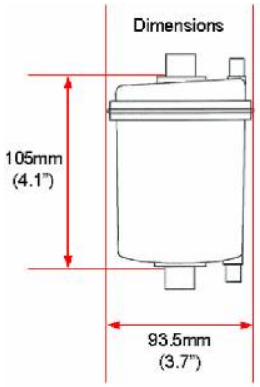
JNC Filter PP Capsule Filter

- Available with CP, CP2, BM or POROUSFINE PP or PTFE media
- Capsule body – polypropylene with PP vent and drain connections and helical flow path helps reduce bubbles and reduces hold up time

Ordering Guide

E.g. CAP-CP-10-1/4

Capsule	Cartridge Code	Micron Rating	Connection Type
CAP-	**CP-** **CP2-** **BM-** **PP-** **PTFE-**	Refer to Cartridge Ranges for Rating Codes available	**-1/4** (1/4" PT) **-1/2** (1/2" PT) **-3/4** (3/4" PT) PT = JIS Taper Pipe Threads (PT threads are functionally in-terchangeable with BSPT threads).



JNC Filter Housings

- JNC offers a full range of housings to suit all applications
- Polymeric and stainless steel materials
- Industrial and sanitary grade construction and surface finish
- Innovative designs for coatings and slurry applications

Housing Code	Number of Filters	Height (EQSL)	Number of EQSLs	Connection Size (in)	Total Height (mm)	Flange to Flange (mm)	Vessel OD (mm)	Weight (kg)
NFC-3W-S	3	2	6	1 1/2"	895	300	165.2	42
NFC-5W-S	5	2	10	2"	900	420	216.3	65
NFC-6W-S	6	2	12	2 1/2"	925	460	267.4	73
NFC-10W-S	10	2	20	2 1/2"	990	500	318.5	124
NFC-15W-S	15	2	30	3"	1040	620	406.4	156
NFC-20W-S	20	2	40	3"	1045	660	457.2	195
NFC-30W-S	30	2	60	4"	1100	760	558.8	290
NFC-40W-S	40	2	80	5"	1160	800	609.6	354
NFC-50W-S	50	2	100	6"	1190	860	660.4	510
NFC-60W-S	60	2	120	6"	1237	960	762	610

JNC Filter Chemical Compatibility Chart

Chemical Product	Cartridges							Chemical Product	Cartridges						
Filter chemical compatibility is influenced by formulation and user conditions in practice. Please test filter chemical compatibility in application before use. C = Compatible LC = Limited Compatibility NC = Not Compatible RF = Refer to JNC Filter	Polyolefin 20°C CP,CP2,BM,GF,VW,PP	Polyolefin 60°C CP,CP2,BM,GF,VW	Polyester 20°C CPH, CHW	Polyester 60°C CPH, CHW	Polyester 100°C CPH, CHW	Porousfine PSU, PES	Porousfine PTFE	Filter chemical compatibility is influenced by formulation and user conditions in practice. Please test filter chemical compatibility in application before use. C = Compatible LC = Limited Compatibility NC = Not Compatible RF = Refer to JNC Filter	Polyolefin 20°C CP,CP2,BM,GF,VW,PP	Polyolefin 60°C CP,CP2,BM,GF,VW	Polyester 20°C CPH, CHW	Polyester 60°C CPH, CHW	Polyester 100°C CPH, CHW	Porousfine PSU, PES	Porousfine PTFE
Acetic acid (conc.)	C	C	C	C	LC	C	C	Hydrochloric acid (conc.)	C	C	C	LC	NC	C	C
Acetone	C	LC	C	LC	RF	NC	C	Hydrofluoric acid (40%)	C	LC	NC	NC	NC	RF	C
Acetonitrile	C	LC	RF	RF	RF	LC	C	Hydrogen peroxide 30%	C	RF	C	C	C	C	C
Ammonium hydroxide 8N	C	C	C	C	RF	C	C	Iron Chloride	C	C	C	NC	NC	C	C
Aniline	C	LC	RF	RF	RF	NC	C	Kerosene (Lamp Oil)	C	LC	C	C	RF	RF	C
Aqueous ammonia 15.5N	C	C	LC	RF	NC	C	C	Methanol	C	C	C	C	RF	C	C
Benzene	LC	NC	C	C	C	NC	LC	Methyl acetate	LC	NC	RF	RF	RF	NC	C
Benzoic acid	C	LC	RF	RF	RF	RF	C	Methyl ethyl ketone	C	LC	C	RF	RF	NC	C
Benzyl alcohol	C	LC	RF	RF	RF	NC	C	Methyl iso-butyl ketone	C	LC	RF	RF	RF	NC	LC
Boric acid (saturated)	C	C	RF	RF	RF	C	C	Naphtha	LC	NC	C	RF	RF	RF	LC
Butyl acetate	LC	NC	RF	RF	RF	LC	LC	Nitric acid (conc) 15.8N	RF	NC	RF	RF	RF	NC	LC
Butyl alcohol	C	C	C	C	RF	C	C	Nitric acid 2N	C	LC	C	LC	RF	NC	C
Carbon tetrachloride	NC	NC	C	C	RF	LC	LC	Ozone 3mg/l	C	RF	RF	RF	RF	C	C
Carbonic acid	C	RF	RF	RF	RF	C	C	Paraffin	C	C	RF	RF	RF	RF	C
Cellosolve acetate	C	C	RF	RF	RF	RF	C	Phenol	LC	LC	RF	RF	RF	NC	RF
Chloroform	LC	NC	C	C	RF	NC	LC	Phosphoric acid (70%)	C	LC	C	C	C	NC	C
Chromic acid (10%)	C	LC	LC	RF	NC	NC	C	Potassium dichromate	C	LC	C	C	LC	RF	C
Copper Sulphate	C	LC	C	RF	RF	C	C	Potassium hydroxide 3M	C	C	RF	RF	RF	C	C
Ctiric acid (10%)	C	C	C	C	C	RF	C	Potassium permanganate	C	LC	RF	RF	RF	RF	C
Cyclohexane	LC	NC	C	RF	RF	RF	LC	Propan-2-ol, 60:40 H20	C	C	C	C	RF	C	C
Cyclohexanone	LC	NC	C	RF	RF	NC	LC	Pyridine	C	LC	C	LC	RF	NC	C
Deionised Water	C	C	C	C	C	C	C	Sodium carbonate 0.5N	C	C	C	C	LC	C	C
Dichlorobenzene	LC	LC	C	NC	NC	RF	LC	Sodium chloride	C	C	C	RF	RF	RF	C
Dimethyl formamide	C	LC	C	NC	NC	LC	C	Sodium bicarbonate 0.1M	C	C	C	RF	RF	C	C
Dioxane	LC	NC	NC	NC	NC	RF	LC	Sodium hydroxide 7N	C	C	RF	RF	RF	C	C
Distilled Spirits	C	C	C	C	C	C	C	Sodium hypochlorite	C	LC	C	LC	NC	LC	C
Ethanol	C	C	C	RF	RF	C	C	Sulphuric acid (conc) 35N	RF	RF	C	LC	RF	NC	RF
Ethyl acetate	LC	NC	C	LC	RF	NC	C	Sulphuric acid 20%	C	C	C	C	LC	NC	C
Ethylene glycol	C	C	C	RF	RF	C	C	Tetrahydrofuran	LC	RF	NC	NC	NC	NC	LC
Ethylene oxide	LC	LC	RF	RF	RF	LC	C	Toluene	LC	NC	C	C	RF	NC	LC
Formaldehyde 37%	C	C	C	LC	RF	C	C	Trichloroacetic acid 5N	C	LC	RF	RF	RF	RF	C
Formic acid (conc.)	C	RF	C	C	LC	RF	C	Trichloroethylene	LC	NC	C	LC	RF	RF	RF
Glycerol	C	C	C	RF	RF	C	C	Turpentine	C	LC	RF	RF	RF	C	C
Heptane	LC	NC	RF	RF	RF	RF	LC	Xylene	LC	NC	C	C	C	LC	LC
Hexane	LC	NC	C	LC	NC	LC	LC								

SOE Length Tables 1 & 2 —Cartridge Lengths with Adaptors

Number of 10" Modules	Table 1—Depth Filter -CP, CPH, CP2, BM & GF				Table 2—Pleated Filters-Porousfine		
	E3 Adaptor	M3 Adaptor	E7 Adaptor	M8 Adaptor	M3 Adaptor	E7 Adaptor	M8 Adaptor
	Length (mm)	Length (mm)	Length (mm)	Length (mm)	Length (mm)	Length (mm)	Length (mm)
1	282	265	319	319	265	315	309
2	532	513	568	568	511	561	555
3	777	762	814	814	758	807	801
4	—	1030	—	1070	—	—	1047

JNC Filter Applications

Adhesives and Coatings	Resin production	Organic & Inorganic Chemicals
Paint & Lacquer	Polymer production	Food & Beverage production
Pulp & paper	Adsorbtion processes	Pharmaceutical production
Lens Washing, Coating & Polishing	Sanitisation and Sterilisation	Bioprocessing
Power Generation - Fossil fuel & Nuclear	Fuels production and refining	Biologicals
Magnetic media & Slurry filtration	Electronics chemicals and processing	Can manufacture & coating
Parts washing	CD/DVD mastering and replication	Optical fibre production
Desalination	Electrolytic capacitor production	Mining
Vehicle coatings	Fibre production	Plating, etching and galvanisation
Ink & Jet ink	Water Treatment	Metal rolling

Fibre Technology Centre - R&D centre for fibres & filters

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Tan Quang Commune, Van Lam District,
Hung Yen Province, Vietnam

JNC Filter Quality Accreditations:

JCQA QS Registered Firm - Moriyama Plant
JCQA-0129 ISO-9001
JCQA-E-0129 ISO-14001
JQA QS Registered Firm - Vietnam Plant
JQA-QMA15637 ISO-9001
JQA-EM7359 ISO-14001

Japan Quality

Please note specifications may change without prior notice.
Ratings and efficiency data are based on JNC in-house test protocols.
Results may differ according to test conditions and methodology so
filter selection may require application based trials.

 Ref: CAT0019E