

CAPSULES AND CARTRIDGES

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Capsules – Introduction

- All-polypropylene housing is sturdy and chemically compatible
- Three membrane-type media and two depth-type media
- Wide range of retentive pore sizes
- All types available in three different lengths
- Diameter is a standard 78 mm
- Selected media available presterilized (EtO)

APPLICATIONS

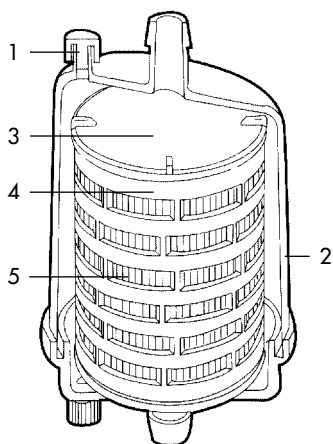
- Filter tissue culture media, fermentation broths, ground water
- Can be set in serial mode to maximize throughput volumes
- Point-of-use sterile filtration
- Use capsules for pilot/prototype studies, scale up to the same media in the cartridge format



Five different filter media are available in the capsule format.

Media	Code	Characteristic	Media type	Pore Size or Nominal Rating (µm)	Membrane layers	Filtration area per capsule (cm ²)
PES	CCS	hydrophilic	membrane	0.20 – 0.45	double	up to 1800
PTFE	CCF	hydrophobic	membrane	0.05 – 1.0	single/double	up to 3600
PTFE	CCFH	hydrophilic	membrane	0.20	single	up to 3600
Polypropylene	CCP	hydrophobic	depth-type	0.8 – 30	N/A	up to 2600
Glass	CCG	-	depth-type	0.45 – 1.0	N/A	up to 1200

For detailed chemical compatibility information, see page 116



1. Vent/drain
2. Housing
3. End cap
4. Outer sleeve
5. Pleated filter media



B
1/4" NPTM



D
1/2" NPTM



H
3/8" hose barb



N
1-1/2" sanitary fitting

PES Capsule Filter (CCS)

- Can be sterilized by autoclaving (121°C) or treatment with ethylene oxide (EtO)
- Available presterilized (EtO) or rinsed (recommended when filtering high purity water)

APPLICATIONS

- Filter pure water, high purity chemicals, pharmaceuticals, cosmetics, tissue culture media
- Remove bacteria or sub-micron particulates

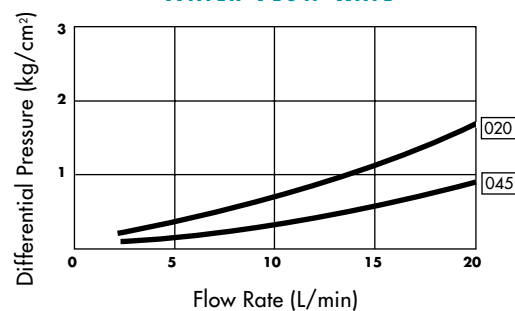
SPECIFICATIONS

Maximum Inlet Pressure	4 kg/cm ² (57 psi)
Maximum Operating Temperature	60°C (140°F)

		CCS-020	CCS-045
Layers		Double	Double
Pore Size (µm)		0.20	0.45
Minimum bubble point (water)		≥4.0 kg/cm ² (57 psi)	≥3.0 kg/cm ² (43 psi)
LRV / Organism		≥7 B. diminuta	≥7 S. marcescens
Length Code	Length (mm)*	Filtration Area (cm ²)	
C	102	450	
D	129	900	
E	201	1800	

*Length given is for capsule with end fixture H.

WATER FLOW RATE



Typical water flow rate for CCS-____-D1B at 25°C.

ORDERING INFORMATION

CCS - [] - [] 1 [] (S) or (R)

Pore size (µm)	Pore Size Code	Length (mm)	Length Code	End fixture	End Fixture Code
0.20	020	102	C	1/4" NPTM	B
0.45	045	129	D	1/2" NPTM	D
		201	E	3/8" hose barb	H
				1 1/2" sanitary fitting	N

When ordering sterile units, specify "S" in the last position of the catalog number.

When ordering Pre-rinsed units, specify "R" in the last position of the catalog number.

PTFE Capsule Filters – Hydrophobic (CCF) and Hydrophilic (CCFH)

- Compatible: solvent and pH-resistant
- Hydrophobic:
 - Supported membrane except CCF-A10 and CCF-005
 - Single layer except CCF-A10 and CCF-005 which has double layer
 - 5 pore sizes
- Hydrophilic:
 - Polyester membrane support
 - Single layer
 - 0.2 µm pore size

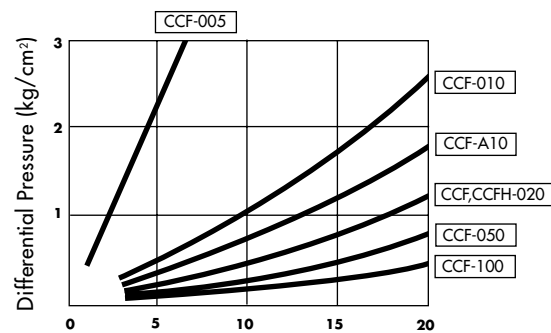
APPLICATIONS

- Use serially as prefilter and final filter
- Corrosive fluids and gases, photoresists, and both alkalis and acids
- Hydrophobic:
 - Solvent filtration
- Hydrophilic:
 - Solvents with higher surface tension
 - Heterogeneous fluid mixtures

SPECIFICATIONS

Maximum Inlet Pressure	4 kg/cm ² (57 psi)
Maximum Operating Temperature	60°C (140°F)

WATER FLOW RATE

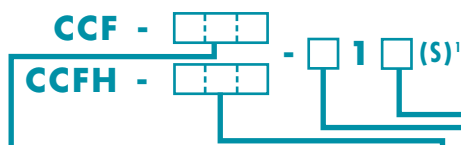


Typical water flow rate for CCF-____-D1B at 25°C. (H₂O)

	CCF-005	CCF-A10	CCF-010	CCF-020	CCF-050	CCF-100	CCFH-020
	Hydrophobic						Hydrophilic
Layers	Double	Double	Single	Single	Single	Single	Single
Pore size (µm)	0.05	0.10	0.10	0.20	0.50	1.0	0.20
Min. bubble point (IPA)							
kg/cm ² (psi)	≥1.65 (23)	≥1.6 (22)	≥1.4 (20)	≥0.9 (13)	≥0.5 (7)	≥0.3 (4)	-
Length Code	Filtration Area (cm ²)						
C	102	900	900	570	570	570	900
D	129	1800	1800	1150	1150	1150	1800
E	201	3600	3600	2300	2300	2300	3600

*Length given is for capsule with end fixture H.

ORDERING INFORMATION



Pore Size (µm)	Pore Size Code
0.05	005
0.10	A10
0.10	010
0.20	020
0.50	050
1.00	100

Pore Size (µm)	Pore Size Code
0.2	020

Length (mm)	Length Code
102	C
129	D
201	E

End Fixtures (Inlet and Outlet)	End Fixture Code
1/4" NPTM	B
1/2" NPTM	D
3/8" hose barb	H
1 1/2" sanitary fitting	N

When ordering sterile units, specify "S" in the last position of the catalog number.

Polypropylene Capsule Filter (CCP)

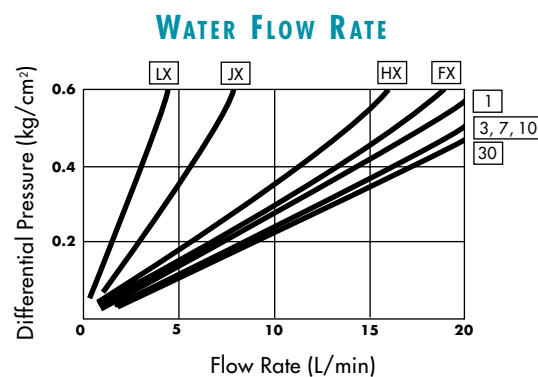
- Depth-type matrix: high dirt holding capacity, superior retention
- Compatible with aqueous solutions and solvents
- Thermally welded to prevent fiber slough-off and minimize changes in pore size during filtration
- Wide range of particle size cut-offs

APPLICATIONS

- High purity water filtration
- Prefiltration to a final membrane filter such as PES or PTFE (CCS, CCF, or CCFH)
- Ultracleaning
- Filtration of process chemicals

SPECIFICATIONS

Maximum Inlet Pressure	4 kg/cm ² (57 psi)
Maximum Operating Temperature	60°C (140°F)



Typical water flow rate for CCP-____-D1B at 25°C.

		CCP-								
		LX	JX	HX	FX	1	3	7	10	30
Particle size (µm)		0.8	1.0	2.0	3.0	2 – 5	5 – 10	10 – 20	10 – 20	20 – 30
% Particle retention		>99	>99	>99	>99	94	98	98	92	97
Length Code	Length* (mm)	Filtration Area (cm ²)								
C	102	400	500	500	550	500	600	500	550	650
D	129	800	1000	1000	1100	1000	1200	1000	1100	1300
E	201	1600	2000	2000	2200	2000	2400	2000	2200	2600

*Length given is for capsule with end fixture H.

ORDERING INFORMATION

CCP - -

Retention Characteristic Code	Length (mm)	Length Code	End Fixtures (Inlet and Outlet)	End Fixture Code
LX	102	C	1/4" NPTM	B
JX	129	D	1/2" NPTM	D
HX	201	E	3/8" hose barb	H
FX			1 1/2" sanitary fitting	N
1				
3				
7				
10				
30				

Glass Microfiber Capsule Filter (CCG)

- Depth-type matrix of borosilicate glass microfiber
- Large dirt holding capacity
- Resistant to most fluids except strong acids
- Contains a small amount of acrylic resin binder to enhance wet strength

APPLICATIONS

- Sea water filtration
- Aquaculture
- Prefiltration to a final membrane filter such as PES or PTFE (CCS, CCF, or CCFH)

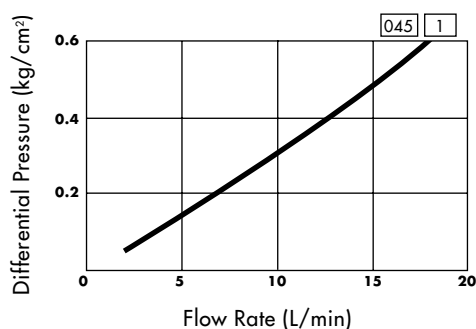
SPECIFICATIONS

Maximum Inlet Pressure	3.0 kg/cm ² (43 psi)
Maximum Operating Temperature	60°C (140°F)

Type Code	045	1
Nominal rating (µm)	0.45 µm	1.0 µm
Length Code	Length* (mm)	Filtration Area (cm ²)
C	102	300
D	129	600
E	201	1200

*Length given is for capsule with end fixture H.

WATER FLOW RATE



Typical water flow rate for CCG-____-D1B at 25°C.

ORDERING INFORMATION

CCG - [] - [] 1 []

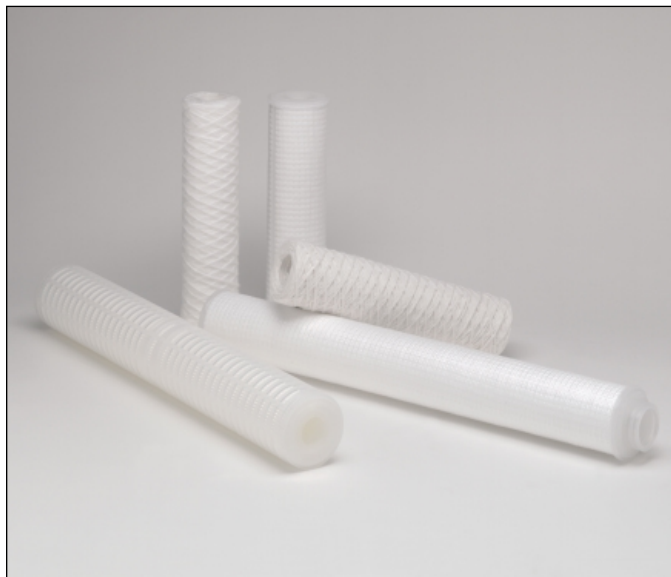
Nominal rating (µm)	Nominal Rating Code	Length (mm)	Length Code	End Fixtures (Inlet and Outlet)	End Fixture Code
0.45	045	105	C	1/4" NPTM	B
1.0	1	125	D	1/2" NPTM	D
		205	E	3/8" hose barb	H
				1 1/2" sanitary fitting	N

Cartridges – Introduction

- Available in a wide variety of media and end fixture configurations
- Media can be mixed and configured in serial format to maximize throughput volumes, flow rates, and cartridge life
- Fit many commercially available filter housings

APPLICATIONS

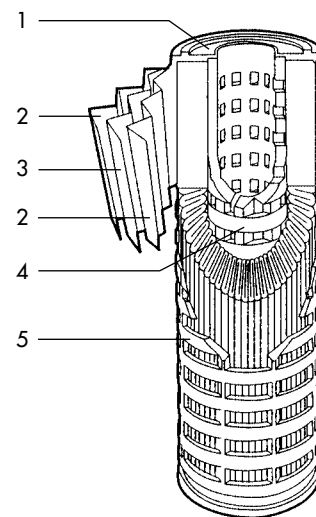
- Large surface area permits large throughput volumes and higher flow rates
- Suitable for both prefiltration and final filtration of fluids in pharmaceutical, food, beverage, and electronics industries
- Wide choice of media and core enables use in many chemical and thermal conditions



Eleven different filter media are available in cartridge format.

SPECIFICATIONS

Media	Code	Media type	Format Nominal	Pore Size or Rating (µm)	Metric/English lengths
Cellulose acetate	TCR	Membrane	Pleated, internal prefilter	0.20 – 0.80	Metric
Polyethersulfone (PES)	TCS	Membrane	Pleated, internal prefilter	0.20 – 0.45	Metric
Hydrophobic PTFE	TCF	Membrane	Pleated	0.05 – 1.0	Metric
Hydrophilic PTFE	TCFH	Membrane	Pleated	0.10 – 1.0	Metric
Coated cellulose acetate	TCY	Membrane	Pleated, dual layer	0.21 – 2.0	Metric
Coated cellulose acetate	TCYE	Membrane	Pleated, single layer	0.21 – 10	Metric
Polypropylene	TCP	Bonded fiber	Pleated, multiple layers	0.8 – 3.0	Metric
Polypropylene	TCP/TCPE	Bonded fiber	Pleated, single layer	1 – 30	Metric
Polypropylene, multigrade	TCPD	Depth-type	Spirally wound	1 – 70	Metric
Epoxy cellulose	TC	Depth-type	Pleated	1 – 30	Metric
Glass fiber	TCG	Depth-type	Pleated, dual layer	0.45 – 1	Metric
All-polypropylene	OH	Bonded fiber	Graded density	1 – 75	English
String (11 types of media)	W	String fiber	String wound	0.5 – 200	English



1. End cap
2. Support media
3. Final membrane
4. Core tube
5. Outer sleeve

For detailed chemical compatibility information, see page 118.
Filter housings are available—call to discuss your particular needs.

End Fixture Configurations

Twelve different end configurations are pictured below; see the individual cartridge listings for availability. All-polypropylene (OH) and string wound (W) cartridges have a compression seal (not pictured), eliminating the need for gaskets or O-rings.



H Size 222 heat-resistant O-ring, flat closed



M Size 222 O-ring, flat closed



L Size 222 O-ring with internal stainless steel support, flat closed



K Size 222 heat-resistant O-ring, spear closed



R Size 222 O-ring, spear closed



S Size 222 O-ring with tabs and internal stainless steel support, spear closed



J Size 226 heat-resistant O-ring with tabs, spear closed



P Size 226 O-ring with tabs, spear closed



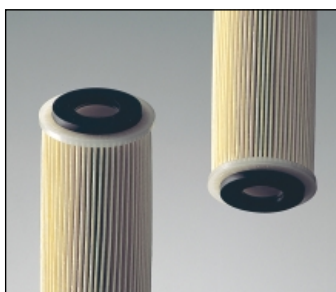
Q Size 226 O-ring with tabs and internal stainless steel support, spear closed



F Flat Gasket



N 120 size O-ring



C Flat Gasket, available for the TC-type only

Cellulose Acetate (TCR)

- Dual cellulose acetate membranes provide internal prefiltration by placing a larger pore size membrane upstream of final rated pore size membrane
- Polyester membrane support is non-fiber releasing
- Low protein binding

APPLICATIONS

- Filter ultra-pure water, rinse waters, cosmetics, pharmaceuticals, and beverages (beer and wine)

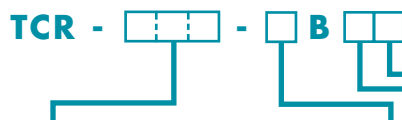
SPECIFICATIONS

	TCR-020	TCR-045	TCR-080
Pore size	0.20 μm	0.45 μm	0.80 μm
Dual membranes:			
Upstream	0.80 μm	1.0 μm	5.0 μm
Downstream	0.20 μm	0.45 μm	0.80 μm
Challenge organism	<i>B. diminuta</i>	<i>S. marcescens</i>	<i>S. cerevisiae</i>
LRV (Log reduction value)	≥ 7	≥ 7	≥ 7
Filtration area per single length	4200 cm^2		
Max. differential pressure (25°C)	4.0 kg/cm^2 (57 psi)		
Max. operating temperature	80°C (176°F)		

Materials:

End cap	Polybutyleneterephthalate (PBT)
Sealing material	Medical grade polyurethane
Support media	Polyester
Prefilter membrane	Cellulose acetate
Final membrane	Cellulose acetate
Core tube	Polypropylene
Outer sleeve	Polypropylene

ORDERING INFORMATION



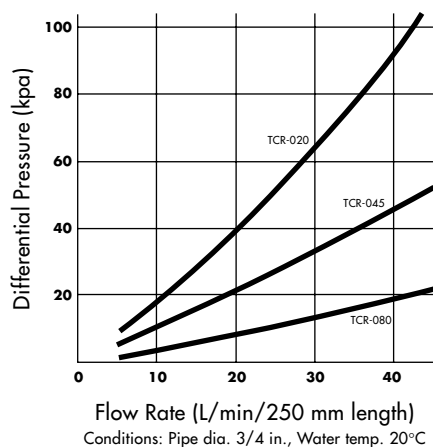
Pore Size (μm)	Pore Size Code
0.20	020
0.45	045
0.80	080

Length (mm)	Length Code
250 (single)	S
500 (double)	D
750 (triple)	T
1000 (quad)	Q

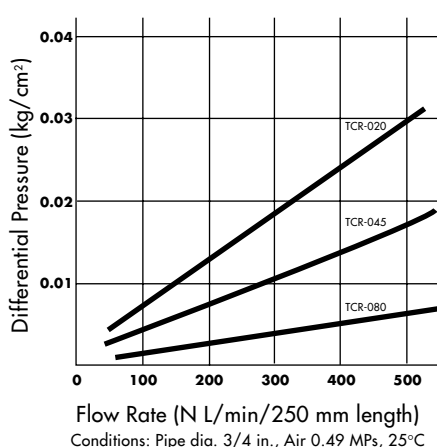
End Fixture Code	
F	R
N	S
M	P
L	Q

Gasket O-ring polymer	Gasket Code
EPR	E
EPDM	D
Chloroprene	N
Silicone	S
FPM	V

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



Polyethersulfone (PES) Membranes (TCS)

- Dual Polyethersulfone (PES) membranes provide internal prefiltration by placing a larger pore size membrane upstream of final rated pore size membrane
- Low extractables
- Enhanced chemical compatibility
- Quick rinse down
- Low protein binding
- 100% integrity tested during manufacturing
- Non-fiber releasing

APPLICATIONS

- Filtration for electronics, cosmetics, pharmaceuticals, beverage industries

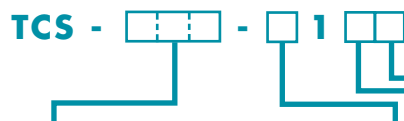
SPECIFICATIONS

	TCS-020	TCS-045
Pore size	0.20 µm	0.45 µm
Dual membranes:		
Upstream	0.45 µm	0.65 µm
Downstream	0.20 µm	0.45 µm
Challenge organism	B. diminuta	S. marcescens
LRV (Log reduction value)	≥7	≥7
Filtration area per single length	4000 cm ²	
Max. differential pressure (25°C)	4.0 kg/cm ² (57 psi)	
Max. operating temperature	80°C (176°F)	

Materials:

End cap	Polypropylene
Support media	Polypropylene
Prefilter membrane	Polyethersulfone (PES)
Final membrane	Polyethersulfone (PES)
Core tube	Polypropylene
Outer sleeve	Polypropylene

ORDERING INFORMATION



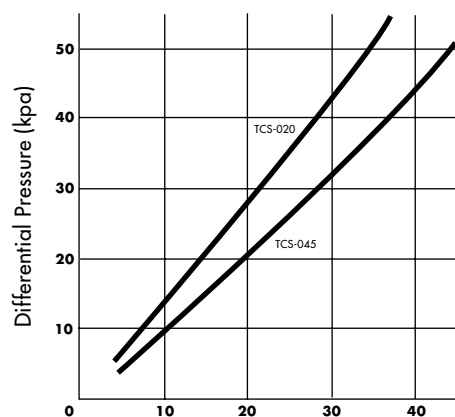
Pore Size (µm)	Pore Size Code
0.20	020
0.45	045

Length (mm)	Length Code
250 (single)	S
500 (double)	D
750 (triple)	T
1000 (quad)	Q

End Fixture Code	
F	R
N	K
M	P
H	J

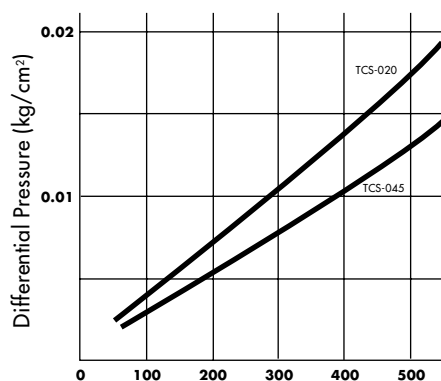
Gasket O-ring polymer	Gasket Code
EPR	E
EPDM	D
Chloroprene	N
Silicone	S
FPM	V

TYPICAL WATER FLOW RATE



Flow Rate (L/min/250 mm length)
Conditions: Pipe dia. 3/4 in., Water temp. 20°C

TYPICAL AIR FLOW RATE



Flow Rate (N L/min/250 mm length)
Conditions: Pipe dia. 3/4 in., Air 0.49 MPa, 25°C

Hydrophobic PTFE (TCF)

- PTFE membrane supported on a non-fiber releasing polypropylene backing
- Enhanced chemical resistance
- Can be in line steam sterilized (126°C, 30 min) or autoclaved (121°C, 30 min)

APPLICATIONS

- Filtration of photo resists and organic solvents
- Uses in the electronics industry and in chemical manufacturing
- Filtering gases and venting tanks

Note: Process fluids must have a surface tension of ≤ 32 dyne/cm to properly wet the filter and to achieve optimized flow rates and performance characteristics. For fluids with a surface tension ≥ 32 dyne/cm, use hydrophilic PTFE (TCFH cartridges).

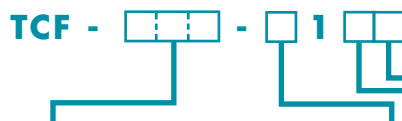
SPECIFICATIONS

	TCF-005	TCF-010	TCF-020	TCF-050	TCF-100
Pore size	0.05 μm	0.10 μm	0.20 μm	0.50 μm	1.00 μm
Filtration area per single length	9200 cm^2	9200 cm^2	7000 cm^2	7000 cm^2	7000 cm^2
Max. differential pressure (25°C)	4.0 kg/cm^2 (57 psi)				
Max. operating temperature	80°C (176°F)				

Materials:

End cap	Polypropylene
Support media	Polypropylene
Membrane	PTFE
Core tube	Polypropylene
Outer sleeve	Polypropylene

ORDERING INFORMATION



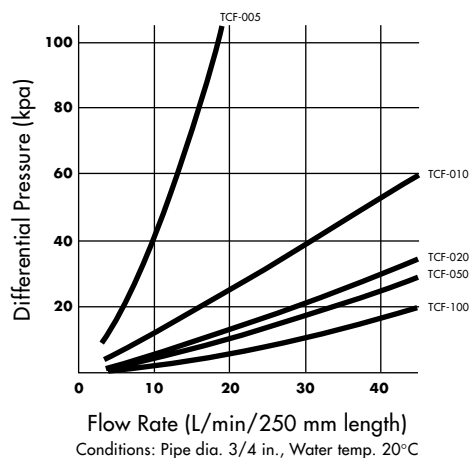
Pore Size (μm)	Pore Size Code
0.05	005
0.10	010
0.20	020
0.50	050
1.0	100

Length (mm)	Length Code
250 (single)	S
500 (double)	D
750 (triple)	T
1000 (quad)	Q

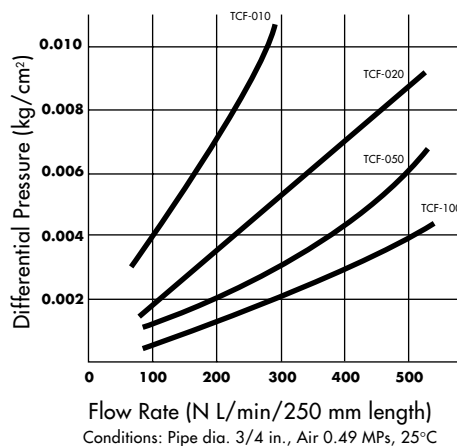
End Fixture Code	
F	R
N	K
M	P
H	J

Gasket O-ring polymer	Gasket Code
EPR	E
EPDM	D
Chloroprene	N
Silicone	S
FPM	V
PTFE	H
FEP encapsulated	F

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



Hydrophilic PTFE (TCFH)

- Unsupported PTFE membrane has been treated to render the matrix hydrophilic
- Polypropylene support is non-fiber releasing

APPLICATIONS

- Strong acid and strong alkali solutions
- Photo resists
- Chemically aggressive liquids with a surface tension ≥ 32

Note: This cartridge is not autoclavable.

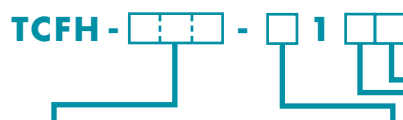
SPECIFICATIONS

	TCFH-010	TCFH-020	TCFH-050	TCFH-100
Pore size	0.10 μm	0.20 μm	0.50 μm	1.00 μm
Filtration area per single length	9800 cm^2			
Max. differential pressure (25°C)	4.0 kg/cm^2 (57 psi)			
Max. operating temperature	80°C (176°F)			

Materials:

End cap	Polypropylene
Support media	Polypropylene
Membrane	Hydrophilic PTFE
Core tube	Polypropylene
Outer sleeve	Polypropylene

ORDERING INFORMATION



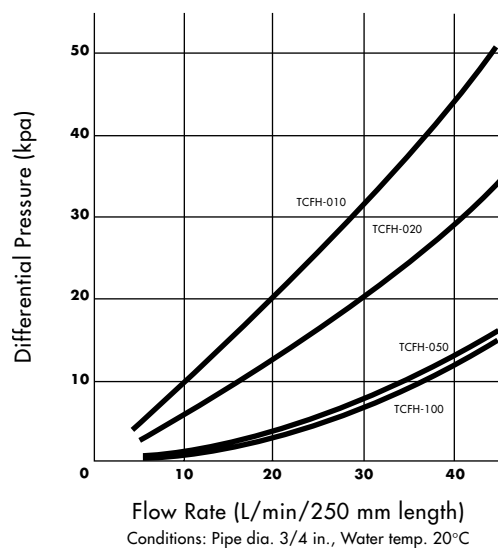
Pore Size (μm)	Pore Size Code
0.10	010
0.20	020
0.50	050
1.0	100

Length (mm)	Length Code
250 (single)	S
500 (double)	D
750 (triple)	T
1000 (quad)	Q

End Fixture Code	
F	R
N	
M	P

Gasket O-ring polymer	Gasket Code
EPR	E
EPDM	D
Chloroprene	N
Silicone	S
FPM	V
PTFE	H
FEP encapsulated	F

TYPICAL WATER FLOW RATE



Coated Cellulose Acetate (TCY)

- Dual layer of coated cellulose acetate membrane
- Low protein binding
- Excellent dirt holding characteristics, superior particle retention
- Excellent water and air flow rates
- Autoclavable (121°C, 30 min)
- Non-fiber releasing

APPLICATIONS

- Use as a prefilter to a final membrane cartridge
- Filter protein-containing solutions for the food, cosmetic and pharmaceutical industries
- Purify process waters

SPECIFICATIONS

	TCY-ND, -LD, -HD
Filtration area per single length	5500 cm ²
Max. differential pressure (25°C)	5.0 kg/cm ² (71 psi)
Max. operating temperature	80°C (176°F)

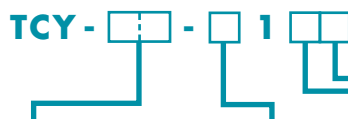
Materials:

End cap	Polypropylene
Support media	Polypropylene
Prefilter membrane	Coated cellulose acetate
Final membrane	Coated cellulose acetate
Core tube	Polypropylene
Outer sleeve	Polypropylene

Retention Characteristic Code	Particle Size						
	0.21 µm	0.3 µm	0.48 µm	0.65 µm	0.8 µm	1.0 µm	2.0 µm
	% Particle Retention						
TCY-ND	99.9	99.9	99.9	>99.9			
TCY-LD		99	99.9	99.9	>99.9		
TCY-HD			99	99.9	99.9	99.9	>99.9

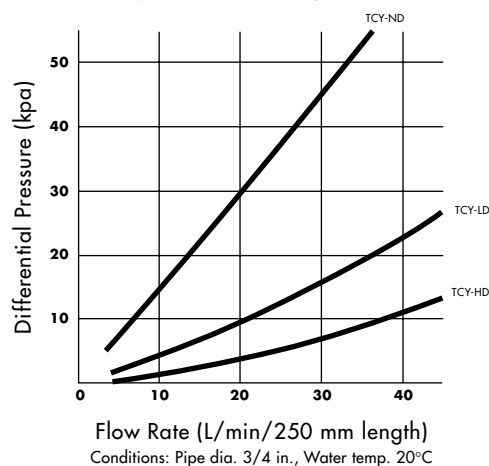
Test Criteria: Single length (250 mm) cartridge, flow rate 10 L/min

ORDERING INFORMATION

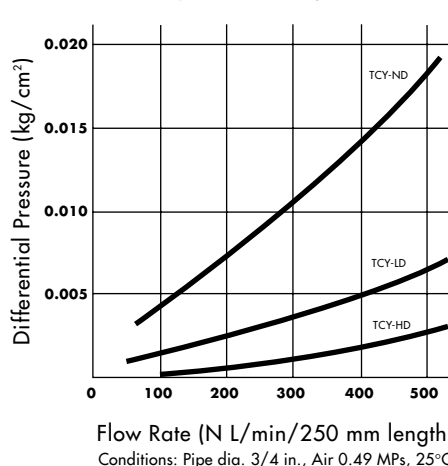


Retention Characteristic Code	Length (mm)	Length (code)	End Fixture Code		Gasket O-ring polymer	Gasket Code
ND	250 (single)	S	F	R	EPR	E
LD	500 (double)	D	N	K	EPDM	D
HD	750 (triple)	T	M	P	Chloroprene	N
	1000 (quad)	Q	H	J	Silicone	S
					FPM	V

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



Coated Cellulose Acetate (single layer) (TCYE)

- High efficiency single layer of coated cellulose acetate
- Economical
- Excellent particle retention
- Low protein binding, non-fiber releasing
- Excellent water and air flow rates
- Autoclavable (121°C, 30 min)

APPLICATIONS

- Filter process waters
- Filter protein-containing solutions for the food, cosmetic and pharmaceutical industries

SPECIFICATIONS

	TCYE-NS, -LS, -HS, -BS
Filtration area per single length	6200 cm ²
Max. differential pressure (25°C)	5.0 kg/cm ² (71 psi)
Max. operating temperature	80°C (176°F)

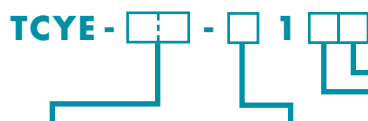
Materials:

End cap	Polypropylene
Support media	Polypropylene
Membrane	Coated cellulose acetate
Core tube	Polypropylene
Outer sleeve	Polypropylene

Retention Characteristic Code	Particle Size									
	0.21 µm	0.3 µm	0.48 µm	0.65 µm	0.8 µm	1.0 µm	2.0 µm	3.0	5.0	10
	% Particle Retention									
TCYE-NS	99	99.9	99.9	>99.9						
TCYE-LS		98	99	99	>99.9					
TCYE-HS			96	99	99	99	>99.9			
TCYE-BS							98	99.9	99.9	>99.9

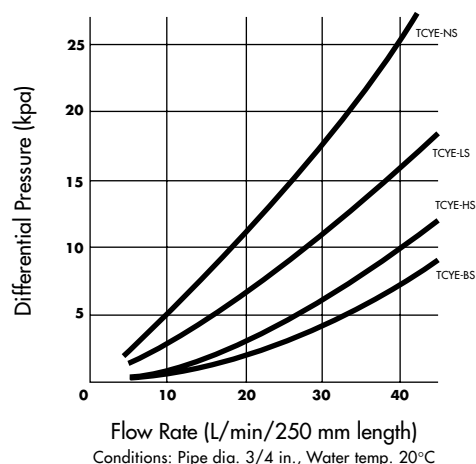
Test Criteria: Single length (250 mm) cartridge, flow rate 10 L/min

ORDERING INFORMATION

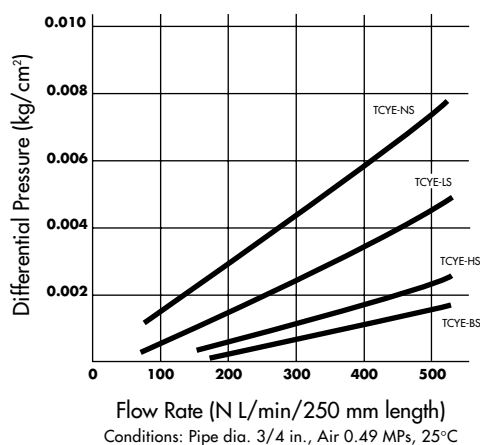


Retention Characteristic Code	Length (mm)	Length (code)	End Fixture Code		Gasket O-ring polymer	Gasket Code
NS	250 (single)	S	F	R	EPR	E
LS	500 (double)	D	N	K	EPDM	D
HS	750 (triple)	T	M	P	Chloroprene	N
BS	1000 (quad)	Q	H	J	Silicone	S
					FPM	V

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



Polypropylene (TCP)

- Multiple layers of nonwoven polypropylene maximize filtration efficiency
- Maximal throughput volumes and retention ratings
- Thermally bonded to prevent fiber slough-off, minimize extractables
- Supported both upstream and downstream (TCP-HX, FX only)

APPLICATIONS

- Filter process waters
- Filter protein-containing solutions for the food, cosmetic and pharmaceutical industries

SPECIFICATIONS

	TCP-LX	TCP-JX	TCP-HX	TCP-FX
Filtration area per single length	3300 cm ²	4500 cm ²	4200 cm ²	5100 cm ²
Max. differential pressure (25°C)	5.0 kg/cm ² (71 psi)			
Max. operating temperature	80°C (176°F)			

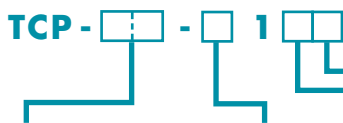
Materials:

End cap	Polypropylene
Support media	Polypropylene
Membrane	Polypropylene
Core tube	Polypropylene
Outer sleeve	Polypropylene

Retention Characteristic Code	Particle Size							% Retention (0.3 µm DOP)
	0.2 µm	0.48 µm	0.65 µm	0.8 µm	1.0 µm	2.0 µm	3.0 µm	
	% Particle Retention							
TCP-LX	45	90	98	>99				99.9999
TCP-JX		60	80	94	>99			99.999
TCP-HX				70	93	>99		99.99
TCP-FX				30	60	95	>99	99.84

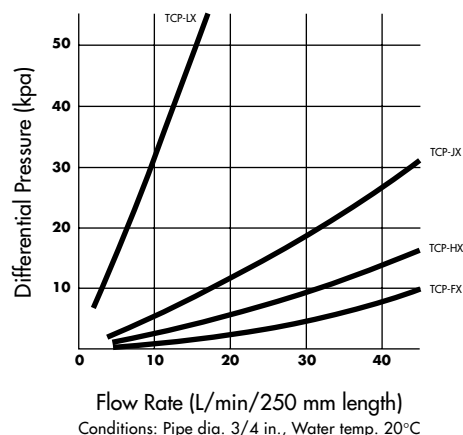
Test Criteria: Single length (250 mm) cartridge, flow rate 10 L/min

ORDERING INFORMATION

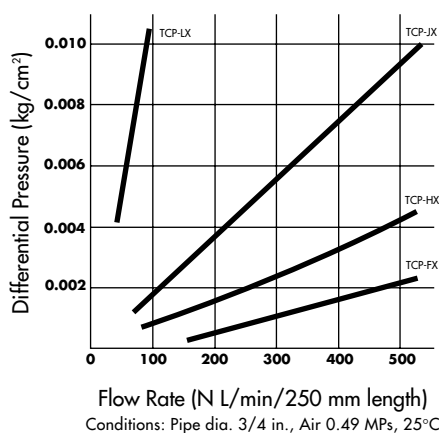


Retention Characteristic Code	Length (mm)	Length (code)	End Fixture Code		Gasket O-ring polymer	Gasket Code
LX	250 (single)	S	F	R	EPR	E
JX	500 (double)	D	N	K	EPDM	D
HX	750 (triple)	T	M	P	Chloroprene	N
FX	1000 (quad)	Q	H	J	Silicone	S
					FPM	V
					PTFE	H
					FEP (encapsulated)	F

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



Single Layer Polypropylene (TCP/TCPE)

- All-polypropylene construction, medium is single layer of thermally bonded polypropylene
- Pore size range 1 – 30 μm
- TCP
 - Upstream and downstream support
 - Larger effective filtration area
- TCPE
 - Thicker grade of polypropylene is stronger and does not require support
 - Less effective filtration area

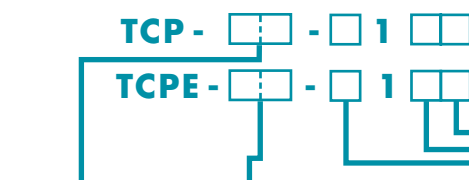
APPLICATIONS

- Use as a prefilter in series upstream of a final membrane to clarify solutions
- Applications that require chemical resistance and chemical cleanliness

SPECIFICATIONS

	TCP-1	TCP-3	TCP-7	TCP-10	TCP-30	TCPE-3	TCPE-10	TCPE-30
Nominal pore size	1 μm	3 μm	7 μm	10 μm	30 μm	3 μm	10 μm	30 μm
Filtration area per single length	4200 cm²	5600 cm²	4200 cm²	5000 cm²	6200 cm²	3700 cm²		
Max. differential pressure (25°C)	5.0 kg/cm² (71 psi)							
Max. operating temperature	80°C (176°F)							

ORDERING INFORMATION

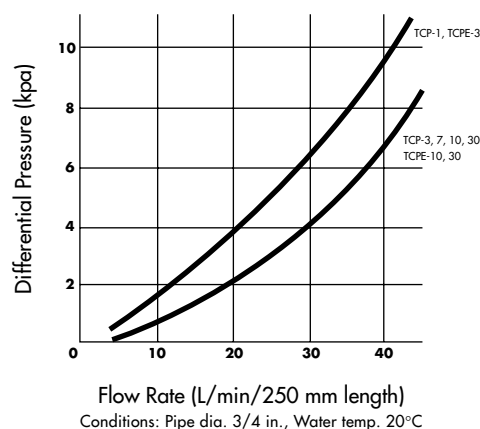


Materials:

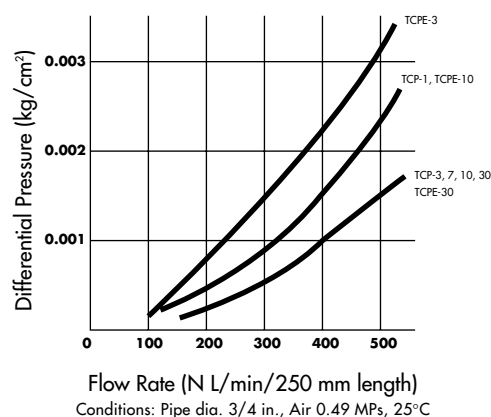
End cap	Polypropylene
Support Media (TCP)	Polypropylene
Membrane	Polypropylene
Core tube	Polypropylene
Outer sleeve	Polypropylene

Nominal Pore Size Code (TCP)	Nominal Size Code (TCPE)	Length (mm)	Length Code	End Fixture Code		Gasket O-ring polymer	Gasket Code
1	-	250 (single)	S	F	R	EPR	E
3	3	500 (double)	D	N	K	EPDM	D
7	-	750 (triple)	T	M	P	Chloroprene	N
10	10	1000 (quad)	Q	H	J	Silicone	S
30	30					FPM	V
						PTFE	H
						FEP (encapsulated)	F

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



Multigrade Polypropylene (TCPD)

- Spirally wound multigrade all-polypropylene construction
- Increasing depth retention gradient: as fluid flows through the cartridge, retention efficiency increases
- Maximal chemical compatibility

APPLICATIONS

- Ideal for viscous fluids and fluids that have a heterogeneous particle population
- Prefilter or clarifying filter
- Filtration of pure or rinse waters, magnetized paint coatings, synthetic resins, high viscosity resins, plating solutions, etching solutions and strong alkali solutions

SPECIFICATIONS

	All TCPD cartridges: 01A, 02A, 03A, 05A, 1, 3, 7, 10, 30
Max. differential pressure (25°C)	5.0 kg/cm ² (71 psi)
Max. operating temperature	80°C (176°F)

Materials:

End cap	Polypropylene
Support media	Polypropylene net
Filter	Polypropylene
Core tube	Polypropylene

Retention Characteristic Code	Particle Size									
	0.6 µm	1.0 µm	2 µm	3 µm	5 µm	10 µm	20 µm	30 µm	40 µm	70 µm
	% Particle Retention									
TCPD-01A	90	>99.9								
TCPD-02A		>99	>99.9							
TCPD-03A		95	>99	>99.9						
TCPD-05A			95	>99	>99.9					
TCPD-1			90	95	>99					
TCPD-3				70	90	>99				
TCPD-7					40	80	>99			
TCPD-10						60	90	95	>99	
TCPD-30							60	90	95	>99

ORDERING INFORMATION

TCPD- - 1

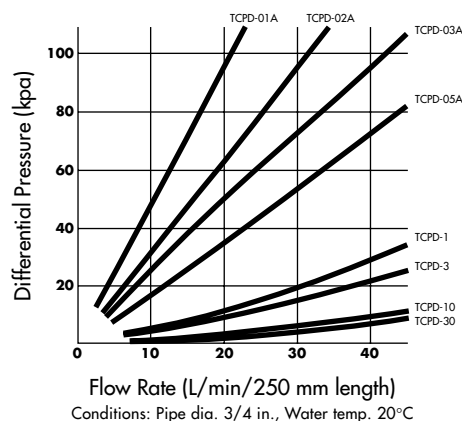
Nominal Pore Size Code	
01A	1
02A	3
03A	7
05A	10
	30

Length (mm)	Length Code
250 (single)	S
500 (double)	D
750 (triple)	T
1000 (quad)	Q

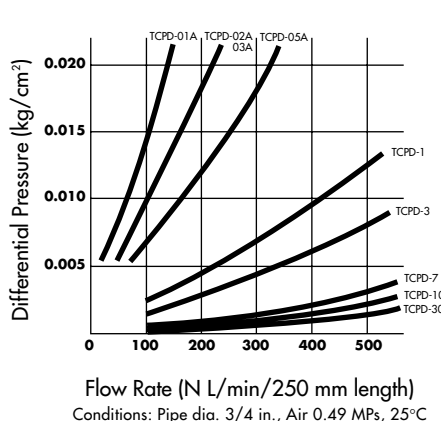
End Fixture Code	
F	R
N	K
M	P
H	J

Gasket O-ring polymer	Gasket Code
EPR	E
EPDM	D
Chloroprene	N
Silicone	S
FPM	V
PTFE	H
FEP (encapsulated)	F

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



Epoxy Cellulose (TC)

- 100% cellulose wet strengthened with epoxy resin to minimize fiber release
- Available with standard polypropylene core or with stainless steel (type 304) core for high temperature applications
- See Glass Fiber (TCG) for smaller nominal pore sizes

APPLICATIONS

- Filter high viscosity liquids such as syrups
- Filter fuels, oils, cutting oils and resins
- Purify industrial and rinse waters
- Other applications in the food, beverage, cosmetic, and other industries

Note: Cartridges with stainless steel core are only available

SPECIFICATIONS

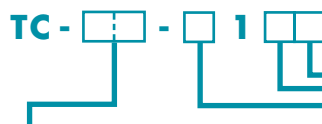
	TC type				TC- _ -S4CB			
Molded Material	Polypropylene				Stainless steel			
	1	3	10	30	1	3	10	30
Nominal pore size	1 µm	3 µm	10 µm	30 µm	1 µm	3 µm	10 µm	30 µm
Filtration area per single length	4000 cm ²				3400 cm ²			
Max. differential pressure (25°C)	5.0 kg/cm ² (71 psi)				5.0 kg/cm ² (71 psi)			
Max temperature	80°C (176°F)				150°C (302°F)			

Materials:

End cap	Polypropylene or stainless steel (seal material: silicone)
Filter	Epoxy Cellulose
Core tube	Polypropylene or stainless steel

ORDERING INFORMATION

Polypropylene molded material

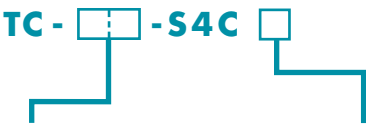


Nominal Pore Size (µm)	Nominal Pore Size Code	Length (mm)	Length Code	End Fixture Code		Gasket O-ring polymer	Gasket Code
1	1	250 (single)	S	F	R	EPR	E
3	3	500 (double)	D	N	P	Chloroprene	N
10	10	750 (triple)	T	M	C	Silicone	S
30	30	1000 (quad)	Q*			FPM	V

*Quad length (1000 mm) not available in end fixture Code C

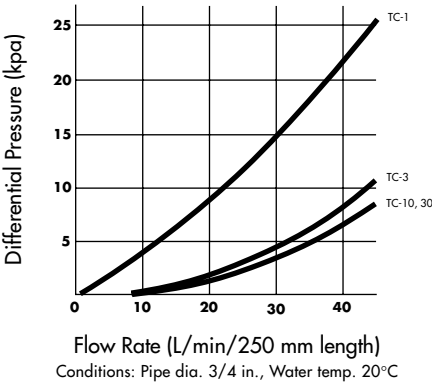
ORDERING INFORMATION

Stainless steel molded material

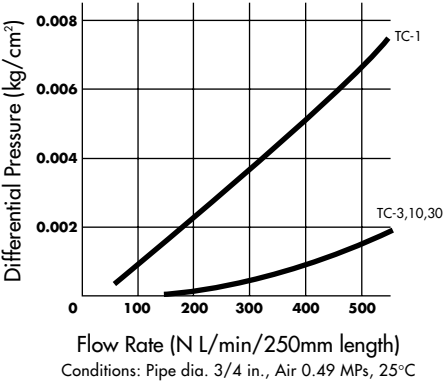


Nominal Pore Size (µm)	Nominal Pore Size Code	Gasket O-ring polymer	Gasket Code
1	1	NBR	B
3	3	EPR	E
10	10	Silicone	S
30	30	FPM	V

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



Glass Fiber (TCG)

- Upstream polypropylene followed by a glass fiber layer that is wet strengthened with acrylic resin
- For larger pore size retention see Epoxy Cellulose (TC)

APPLICATIONS

- Filter high viscosity liquids such as syrups
- Filter fuels, oils, cutting oils and resins
- Purify industrial and rinse waters
- Other applications in the food, beverage, cosmetic and other industries

SPECIFICATIONS

	TCG-045	TCG-1
Nominal pore size	0.45 μm	1.0 μm
Filtration area per single length	3300 cm^2	
Max. differential pressure (25°C)	5.0 kg/cm^2 (71 psi)	
Max. operating temperature	80°C (176°F)	

Materials:

End cap	Polypropylene
Upstream support	Polypropylene
Filter	Glass Fiber
Downstream support	Polypropylene
Core tube	Polypropylene
Outer sleeve	Polypropylene

ORDERING INFORMATION

TCG - [] - [] 1 []

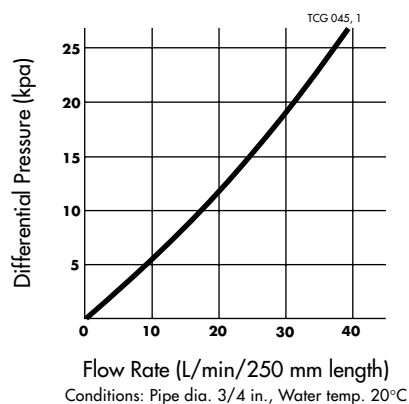
Pore Size (μm)	Pore Size Code
0.45	045
1.0	1

Length (mm)	Length Code
250 (single)	S
500 (double)	D
750 (triple)	T
1000 (quad)	Q

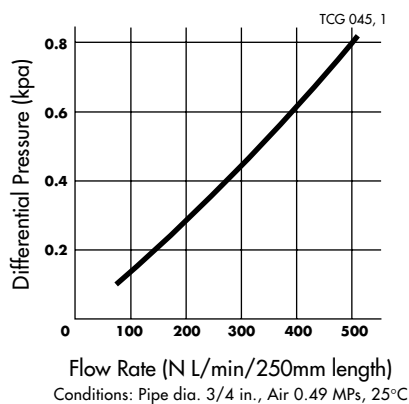
End Fixture Code	
F	R
N	
M	P

Gasket O-ring polymer	Gasket Code
EPR	E
EPDM	D
Chloroprene	N
Silicone	S
FPM	V

TYPICAL WATER FLOW RATE



TYPICAL AIR FLOW RATE



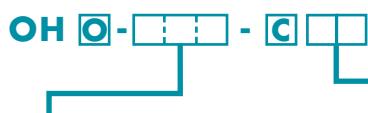
All Polypropylene (OH)

- All-polypropylene construction: melt blown polypropylene filaments are spun into a gradient density
- Graded density media maximizes particle retention
- Excellent flow rates
- Compression seal eliminates the need for O-rings or gaskets

SPECIFICATIONS

	OH
Nominal pore size	1 – 75 μm
Max. operating pressure (25°C)	1.1 kg/cm^2 (15 psi)
Max. temperature	60°C (140°F)

ORDERING INFORMATION



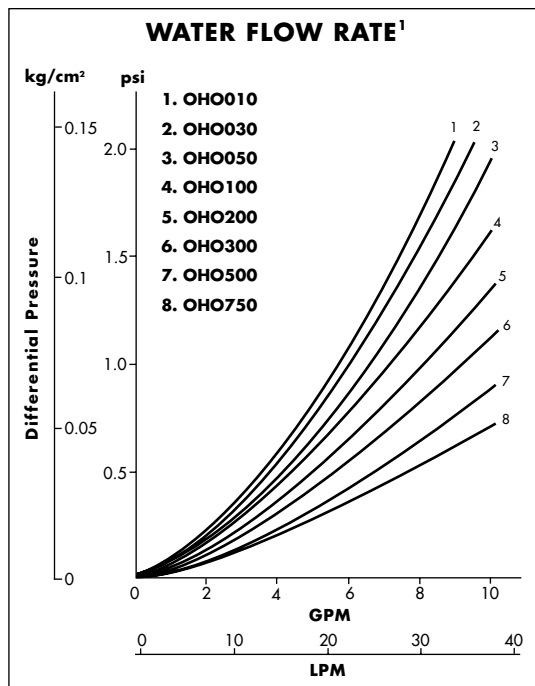
Pore Size (μm)	Pore Size Code
1	010
3	030
5	050
10	100
20	200
30	300
50	500
75	750

Length (inches)	Length Code
10	10
20	20
30	30
40	40

APPLICATIONS

- Prefilter upstream of a final pleated cartridge
- Moderate differential pressures and temperatures

PERFORMANCE DATA



1. Conditions: clean water at 25°C; data are for 10-inch cartridges

String Wound (W)

- Manufactured using “string” of selected materials wound around a core tube
- Core tubes available in polypropylene and three grades of steel
- Continuously wound – no joints that would restrict flow or allow by-pass
- End fixtures are compression fittings
- Selection of materials allows a wide range of chemical and temperature tolerances

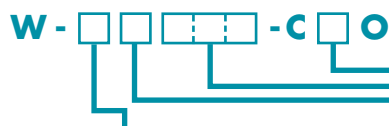
APPLICATIONS

- Coarse filtration upstream of a final pleated filter
- Filtration of industrial water
- Clarification of process fluids

SPECIFICATIONS

	All W cartridges
Nominal pore size	0.5 – 200 µm
Max. inlet pressure (25°C)	1.1 kg/cm ² (15 psi)

ORDERING INFORMATION



String composition	String composition code	Core composition	Core composition code	Pore size (µm)	Pore Size Code	Length (inches)	Length Code
Bleached cotton, industrial	B	Tin plated steel	D	0.5	005	5	B
Bleached cotton, FDA	C	304 stainless	F	1	010	9.75	F
Glass fiber	G	316 stainless	G	3	030	10	1
Glass fiber, baked	H	Polypropylene	P	5	050	20	2
Nylon	N	Special core extender, cover	Z	10	100	30	3
Polypropylene, FDA	P			15	150	40	4
Fibrillated polypropylene	Q			20	200		
Rayon	R			25	250		
Polyester	S			30	300		
Industrial polypropylene	V			40	400		
				50	500		
				75	750		
				100	P10		
				125	P12		
				150	P15		
				200	P20		



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