

Microfluor® FA 0.20 Micron Industrial Grade Filter Cartridges



MICROFLUOR FA 0.20 micron industrial grade filter cartridges are durable and effective filters designed for industrial filtration applications. The Microfluor FA is constructed from the same quality components as the FP (pharmaceutical) and FG (general) but is designed to provide higher flow rates at a lower pressure drop and is not integrity testable. The Microfluor FA is a 0.20 micron hydrophobic cartridge constructed with a single layer of polypropylene reinforced Gore-Tex® patented PTFE membrane. Polypropylene cartridge components, including Delnet® up and downstream support, ensure both the membrane rigidity and compatibility required for severe operating conditions. For further information, contact CUNO or your local distributor.

APPLICATIONS

Microfluor cartridges are designed for removal of contaminants from aggressive solvents, corrosive liquids, and gases. The 020 FA cartridge is also suitable for non-sterile vent applications.

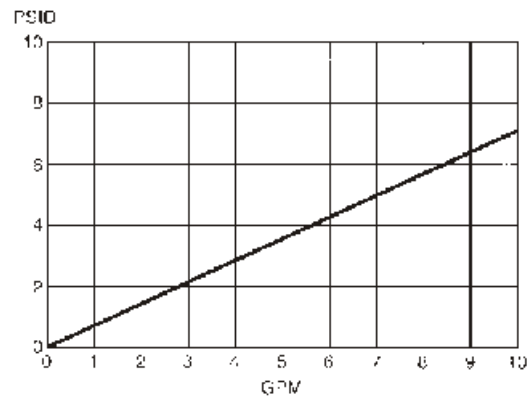
- Chemicals - Fine Chemicals, Reagents, Solvents.
- Industrial - Solvents, Vent Filtration, Solvent Recovery Systems, and Process Gases.
- Photographic - Photo Emulsions and Chemicals.
- Semiconductor - Process Solvents, Acids, Etchants, Photoresists, Strippers, and Tank Venting.

PERFORMANCE

Water Flow Rate

The Microfluor FA has been designed to allow high flow with low differential pressure. Graph 1 presents the average water flow rate for the tested cartridges. The flow rate is for a single 10" element at 25°C with housing losses deducted.

GRAPH 1 - WATER FLOW RATE AT 25° C



FEATURES

- Durable polypropylene construction
- Broad chemical compatibility
- Various cartridge styles

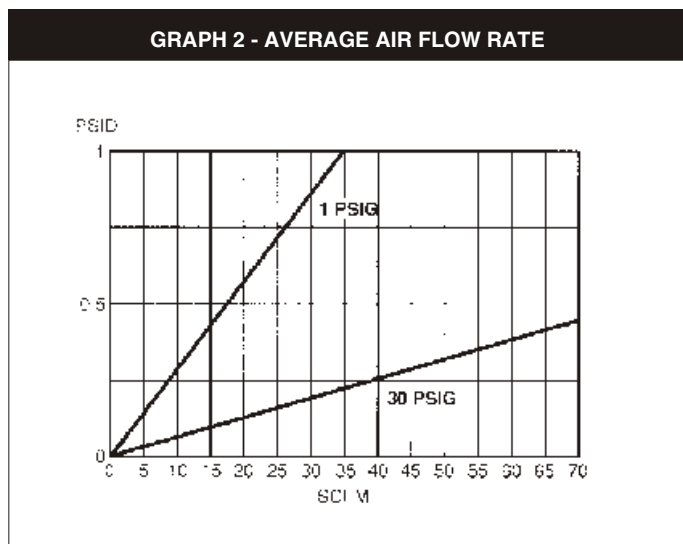
BENEFITS

- Withstands severe operating conditions
- Suitable for aggressive solvents, corrosive liquids, and gases.
- Easy installation

PERFORMANCE

Air Flow Rate

Graph 2 presents the average air flow rate for the tested cartridges at both 1 and 30 psig.



CHEMICAL COMPATIBILITY

The Microfluor FA cartridge is compatible with a wide range of solvents. Microfluor 020 FA cartridges were tested for compatibility by a four hour exposure to 29 different chemicals including aggressive acids, bases and solvents. The test sequence demonstrates that Microfluor cartridges are resistant to a wide range of process chemicals and can be safely used for the filtration of non-aqueous preparations and other applications involving aggressive solutions. The compatibility listing (Table 1) is intended as a guide. It is recommended that compatibility of these chemicals be established under actual filtration temperatures and conditions since operating parameters will affect compatibility. Consideration must also be given in selection of suitable gasket materials to assure complete compatibility. All data is shown at 20° C.

TABLE 1 - CHEMICAL COMPATIBILITY

Solution	Compatibility
Acetic Acid	G
Acetone	G
Acetonitrile	G
Ammonium Hydroxide 28%	G
n-Butyl Alcohol	G
tert-Butyl Alcohol	G
Carbon Tetrachloride	G
Chloroform	G
Diethyl Formamide	G
Dimethyl Sulfoxide	G
Ethanol	G
Ether	G
Ethyl Acetate	G
Formaldehyde	G
Formic Acid	G
Hydrochloric Acid	G
Hydrogen Peroxide 30%	G
Isopropyl Alcohol	G
Methanol	G
Methylene Chloride	G
Methyl Isobutyl Ketone	G
Nitric Acid	G
Pyridine	N
Sodium Hydroxide	G
Sulfuric Acid	G
Toluene	G
Water	G
Xylene	L

Explanation of Ratings

G = Good Compatibility to the Temperature Indicated

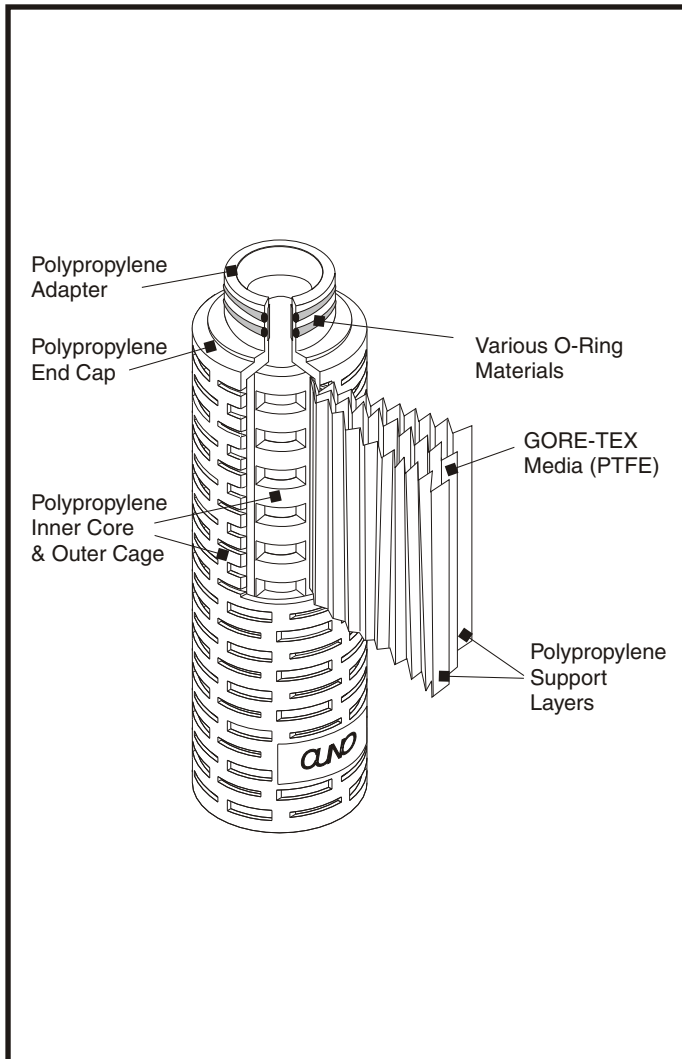
L = Limited Compatibility - Consult Applications Lab

N = Not Recommended

CARTRIDGE CONSTRUCTION

Microfluor FA cartridges contain a single layer of reinforced PTFE membrane supported by polypropylene. The cartridge cage, core, end caps, and adapters are polypropylene. Multiple cartridge lengths are produced by thermally bonding individual 10" elements. No adhesives are used in the cartridge.

FIGURE 1 - CARTRIDGE COMPONENTS



CARTRIDGE SPECIFICATIONS

When referring to Table 2, all specifications are per 10" cartridge and the extractables were completed in 100% IPA at ambient temperature.

TABLE 2 - 020 FA CARTRIDGE SPECIFICATIONS

Removal Rating:	0.20 micron nominal
Nominal Extractables:	< 60 mg
Filter Area:	6.5 ft ²
Dimensions (Nominal):	2.8" OD, length to 40"

OPERATING PARAMETERS

Maximum Operating Temperature:

140° F (60° C)

Maximum Forward Differential Pressure:

60 psid (4.1 bar) @ 77° F (25° C)

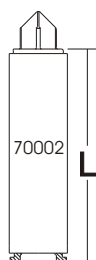

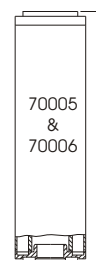
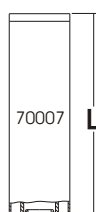
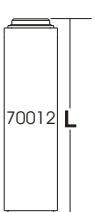
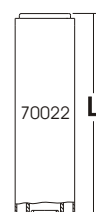
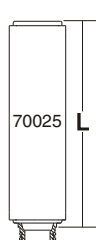
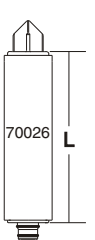
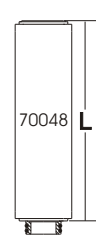
Maximum Reverse Differential Pressure:

60 psid (4.1 bar) @ 77° F (25° C)

MICROFLUOR FA 0.20 MICRON ORDERING GUIDE

BASIC CARTRIDGE DESIGN		NOMINAL CARTRIDGE LENGTH*		GASKET OR O-RING MATERIAL	MICRON RATING	FORMULATION	CONTROL GRADE
70002	70012	01	03	A - Silicone	020 (0.20 micron)	F	A - Industrial
70003	70022	02	04	B - Fluorocarbon			
70005	70025			C - EPR			
70006	70026			D - Nitrile			
70007	70048						

*See specific lengths below

 <p>Single Open End Code 7 (226) O-Ring Bayonet Lock</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70002 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>10 3/16</td></tr> <tr><td>02</td><td>19 15/16</td></tr> <tr><td>03</td><td>29 11/16</td></tr> <tr><td>04</td><td>39 7/16</td></tr> </tbody> </table>	Nominal Ctg. Length	70002 L	01	10 3/16	02	19 15/16	03	29 11/16	04	39 7/16	 <p>Single Open End Code 8 (222) O-Ring</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70002 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>10 7/32</td></tr> <tr><td>02</td><td>19 31/32</td></tr> <tr><td>03</td><td>29 23/32</td></tr> <tr><td>04</td><td>39 15/32</td></tr> </tbody> </table>	Nominal Ctg. Length	70002 L	01	10 7/32	02	19 31/32	03	29 23/32	04	39 15/32	 <p>Double Open End Flat Gasket</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70005 L</th> <th>70006 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>10</td><td>9 3/4</td></tr> <tr><td>02</td><td>20</td><td>19 1/2</td></tr> <tr><td>03</td><td>30</td><td>29 1/4</td></tr> <tr><td>04</td><td>40</td><td>39</td></tr> </tbody> </table>	Nominal Ctg. Length	70005 L	70006 L	01	10	9 3/4	02	20	19 1/2	03	30	29 1/4	04	40	39
Nominal Ctg. Length	70002 L																																				
01	10 3/16																																				
02	19 15/16																																				
03	29 11/16																																				
04	39 7/16																																				
Nominal Ctg. Length	70002 L																																				
01	10 7/32																																				
02	19 31/32																																				
03	29 23/32																																				
04	39 15/32																																				
Nominal Ctg. Length	70005 L	70006 L																																			
01	10	9 3/4																																			
02	20	19 1/2																																			
03	30	29 1/4																																			
04	40	39																																			
 <p>Double Open End Internal (120) O-Ring</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70007 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>9 5/8</td></tr> <tr><td>02</td><td>19 5/8</td></tr> <tr><td>03</td><td>29 5/8</td></tr> <tr><td>04</td><td>39 5/8</td></tr> </tbody> </table>	Nominal Ctg. Length	70007 L	01	9 5/8	02	19 5/8	03	29 5/8	04	39 5/8	 <p>Single Open End (222) O-Ring</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70012 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>10 1/4</td></tr> <tr><td>02</td><td>22</td></tr> <tr><td>03</td><td>31</td></tr> <tr><td>04</td><td>n/a</td></tr> </tbody> </table>	Nominal Ctg. Length	70012 L	01	10 1/4	02	22	03	31	04	n/a	 <p>Single Open End Internal O-Ring Seal</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70022 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>9 27/32</td></tr> <tr><td>02</td><td>19 19/32</td></tr> <tr><td>03</td><td>29 11/32</td></tr> <tr><td>04</td><td>39 3/32</td></tr> </tbody> </table>	Nominal Ctg. Length	70022 L	01	9 27/32	02	19 19/32	03	29 11/32	04	39 3/32					
Nominal Ctg. Length	70007 L																																				
01	9 5/8																																				
02	19 5/8																																				
03	29 5/8																																				
04	39 5/8																																				
Nominal Ctg. Length	70012 L																																				
01	10 1/4																																				
02	22																																				
03	31																																				
04	n/a																																				
Nominal Ctg. Length	70022 L																																				
01	9 27/32																																				
02	19 19/32																																				
03	29 11/32																																				
04	39 3/32																																				
 <p>Single Open End Code 3 (222) O-Ring</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70025 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>10 7/32</td></tr> <tr><td>02</td><td>19 31/32</td></tr> <tr><td>03</td><td>29 23/32</td></tr> <tr><td>04</td><td>39 15/32</td></tr> </tbody> </table>	Nominal Ctg. Length	70025 L	01	10 7/32	02	19 31/32	03	29 23/32	04	39 15/32	 <p>Single Open End (226) & (218) O-Ring</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70026 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>9 15/16</td></tr> <tr><td>02</td><td>19 11/16</td></tr> <tr><td>03</td><td>29 7/16</td></tr> <tr><td>04</td><td>39 3/16</td></tr> </tbody> </table>	Nominal Ctg. Length	70026 L	01	9 15/16	02	19 11/16	03	29 7/16	04	39 3/16	 <p>Single Open End (222) O-Ring</p> <table border="1"> <thead> <tr> <th>Nominal Ctg. Length</th> <th>70048 L</th> </tr> </thead> <tbody> <tr><td>01</td><td>9 31/32</td></tr> <tr><td>02</td><td>19 23/32</td></tr> </tbody> </table>	Nominal Ctg. Length	70048 L	01	9 31/32	02	19 23/32									
Nominal Ctg. Length	70025 L																																				
01	10 7/32																																				
02	19 31/32																																				
03	29 23/32																																				
04	39 15/32																																				
Nominal Ctg. Length	70026 L																																				
01	9 15/16																																				
02	19 11/16																																				
03	29 7/16																																				
04	39 3/16																																				
Nominal Ctg. Length	70048 L																																				
01	9 31/32																																				
02	19 23/32																																				

CAUTION: Care must be exercised in applying equivalent cartridges to competitive housings. While every effort has been made to assure compatibility, exceptions may exist. A dimensional check of competitive product in the field is recommended.

WARRANTY

Seller warrants its equipment against defects in workmanship and material for a period of 12 months from date of shipment from the factory under normal use and service and otherwise when such equipment is used in accordance with instructions furnished by Seller and for purposes disclosed in writing at the time of purchase, if any. Any unauthorized alteration or modification of the equipment by Buyer will void this warranty. Seller's liability under this warranty shall be limited to the replacement or repair, F.O.B. point of manufacture, of any defective equipment or part which, having been returned to the factory, transportation charges prepaid, has been inspected and determined by the Seller to be

defective. THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR USE, OR ANY OTHER MATTER. Under no circumstances shall Seller be liable to Buyer or any third party for any loss of profits or other direct or indirect costs, expenses, losses or consequential damages arising out of or as a result of any defects in or failure of its products or any part or parts thereof or arising out of or as a result of parts or components incorporated in Seller's equipment but not supplied by the Seller.



a 3M company

CUNO Filtration Asia Pte Ltd
18 Tuas Link 1 (3rd Floor)
Singapore 638599

CUNO Pacific Pty Ltd
140 Sunnyholt Road
Blacktown, NSW 2148
Australia

CUNO Latina Ltda
Rua Amf Do Brasil 251
18120 Mairinque-Sp
Brazil

Cuno Incorporated

400 Research Parkway
Meriden, CT 06450, U.S.A.

Cuno Filtration Shanghai Co, Ltd
No. 2 Xin Miao San Rd,
Xin Miao Town,
Song Jiang District,
Shanghai, China. 201612

CUNO K.K.
Hodogaya Station
Building 6F
1-7 Iwai-cho, Hodogaya-ku
Yokohama 240 Japan

CUNO Ltd
21 Woking Business Park
Albert Drive
Woking, Surrey GU215JY
United Kingdom

Tel: (800) 243-6894
(203) 237-5541
Fax: (203) 630-4530
www.cuno.com