

3M™ Series 740B Cartridges

High Flow Filter Cartridges

Features, Advantages and Benefits

The 3M High Flow Filter Cartridge, 740B which incorporates a radial pleat, puts an extraordinary amount of surface area into a single cartridge. This results in the following:

- High loading capacity for long life and lower cost filtration
- Fewer cartridges for fewer change-outs, thus less labour cost
- Fewer seals, reduced risk of by-pass, thus high quality
- Extremely low disposal costs, less than a tenth of some cartridges

Designed to fit in a range of vessels that holds from one to over 37 filters for a wide range of flow rates in competitively priced hardware.

Double O-ring seals in a variety of material options means:

- Extremely low risk of by-pass for high quality fluids
- No loose parts to assemble for easy installation, thus less labour cost
- Also, no springs and caps to lose reduces the risk of by-pass
- Broad chemical compatibility for many applications

Meltblown FDA compliant polypropylene microfibre filter media provides high particle removal efficiency for high quality filtration with broad chemical compatibility.

Convenient handle for easy manual or mechanical removal.



Applications

Prefilters or Final Filters for:

- | | |
|------------------------|---------------------|
| • Acids and bases | • Liquor |
| • Amines | • Machine coolants |
| • Beer and wine | • Magnetic media |
| • Bottled water | • Makeup water |
| • Carbon beds | • Organic solvents |
| • Completion fluids | • Photo chemicals |
| • Deep wells | • Plating solutions |
| • Desalination | • RO membranes |
| • DI resins | • Storm water |
| • Edible oils | • UF membranes |
| • EDM fluids | • Ultrapure water |
| • Fructose | • Wastewater |
| • Glycol | • Waterflood |
| • Groundwater clean-up | • Workover fluids |
| | • Laundry water |

Materials of Construction

Filter media	FDA compliant polypropylene meltblown microfibres										
Inner Core, Outer Sleeve and End Caps	FDA compliant polypropylene										
O-rings	<table border="0"> <tr> <td>Product Number 7010</td> <td>FDA Buna N (standard)</td> </tr> <tr> <td>Product Number 7011</td> <td>Ethylene Propylene Rubber</td> </tr> <tr> <td>Product Number 7012</td> <td>PTFE encapsulated Silicone</td> </tr> <tr> <td>Product Number 7013</td> <td>FDA Silicone</td> </tr> <tr> <td>Product Number 7014</td> <td>Fluoroelastomer</td> </tr> </table>	Product Number 7010	FDA Buna N (standard)	Product Number 7011	Ethylene Propylene Rubber	Product Number 7012	PTFE encapsulated Silicone	Product Number 7013	FDA Silicone	Product Number 7014	Fluoroelastomer
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Performance Data

Loading

Table 1: Loading Capacity

Product Model Number	742B	743B	744B	745B	746B	747B	748B	749B
Kilograms at 9 m ³ /hr	7.3	9.5	10.7	10.8	10.7	11	11	11

Loading capacity is extremely high due to the large amount of surface area available. The data above shows typical loading capacities of the different micron rated filters. Loading capacity is determined by challenging a filter with a dispersion of silica test dust in water at the recommended flow rate. Pressure drop is monitored and testing is terminated at 3.4 bar. 742B is terminated at 2.4 bar. The loading capacity reported is the dry weight gain of the cartridge.



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Efficiency

Table 2: Particle Removal Efficiency (microns)

Product Model Number	742B	743B	744B	745B	746B	747B	748B	749B
Efficiency @ 99%	1	2	5	10	15	25	40	70
Efficiency @ 95%	0.9	1.1	2.5	8	9	13	24	43
Efficiency @ 90%	0.8	0.9	1.7	6	8	10	19	35
Efficiency @ 75%	<0.7	0.7	1.5	3.5	6	8	13	24
Efficiency @ 50%	<0.7	<0.7	1.1	1.5	4.0	4.5	8	14

The 3M High Flow Filter Cartridges are rated using a silica test challenge in water at 9 m³/hr. The results reported are typical initial efficiencies taken within ten minutes of the start of the test.

Disposal

Disposal of used filter bags must comply with applicable federal, state and local laws and regulations.

Pressure Drop

Table 3: Clean Pressure Drop Versus Flow Rate (mbar)

Product Model Number	742B	743B	744B	745B	746B	747B	748B	749B
Δp @ 4.54 m ³ /hr	41.37	27.58	13.79	6.89	6.89	6.89	5.52	4.14
Δp @ 9.08 m ³ /hr	75.84	55.16	27.58	20.68	13.79	13.79	11.03	8.96
Δp @ 13.6 m ³ /hr	151.68	75.84	34.47	27.58	20.68	20.68	17.24	13.79
Δp @ 18.2 m ³ /hr	199.95	103.42	48.26	41.37	27.58	27.58	22.75	18.61

The 3M High Flow Filter Cartridges have low initial pressure drop (Δp) in water as the chart indicates. The chart does not include the pressure drop of the vessel, which must be added in when sizing your filter system.

Table 4: Operating Conditions

Micron Ratings	
Product Number	Initial Efficiency
742B	1 micron @ 99%
743B	2 micron @ 99%
744B	5 micron @ 99%
745B	10 micron @ 99%
746B	15 micron @ 99%
747B	25 micron @ 99%
748B	40 micron @ 99%
749B	70 micron @ 99%
Dimensions (Nominal)	
Outer Diameter	16.5 cm
Inside Diameter	4 cm
Length	100 cm
226 O-ring Inside Diameter	5 cm
226 O-ring Thickness	0.35 cm

Table 5: Product Specifications

Maximum Operating Temperature	70 °C
Recommended Flow (in water)	9 m ³ /hr
Suggested Maximum Flow (in water)	14 m ³ /hr
742B & 743B	18 m ³ /hr
744B to 749B	
Suggested Maximum Differential Pressure	
742B	2.4 bar
743B to 749B	3.4 bar

Product Specifications

Product Model Number	Part Number	Micron Rating	Length	Inner Diameter	Outer Diameter	Cartridges per Case
742B	70070815520	1 μm	100 cm	4 cm	16.5 cm	1
743B	70070231249	2 μm				
744B	70070231256	5 μm				
745B	70070231264	10 μm				
746B	70070231272	15 μm				
747B	70070623569	25 μm				
748B	70070623577	40 μm				
749B	70070623585	70 μm				

Important Notice

The test results described in this literature are accurate to the best of our knowledge. A variety of factors, however, can affect the performance of this product in a particular application, some of which are uniquely within your knowledge and control. **INFORMATION IS SUPPLIED UPON THE CONDITION THAT THE PERSONS RECEIVING THE SAME WILL MAKE THEIR OWN DETERMINATION AS TO ITS SUITABILITY FOR THEIR USE. IN NO EVENT WILL 3M PURIFICATION BE RESPONSIBLE FOR DAMAGES OF ANY NATURE WHATSOEVER RESULTING FROM THE USE OF OR RELIANCE UPON INFORMATION.**

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