

# 3M™ 500 Series

High Performance Liquid Filter Bags



3M™ 500 series high performance liquid filter bag incorporates the bypass and transport layer design that maximizes the amount of surface area in each bag. The result is a filter designed to improve performance and reduce operating costs. The filter contains up to 38 square feet of usable filter media. Compare this with only 4.4 square feet for most competitive filter bags and 0.65 square feet for most competitive cartridges.

To make use of this entire surface area, 3M 500 series liquid filter bag is constructed using the Bypass/Transport concept, specially designed bypass holes are cut into certain areas of the filter media to prevent premature blinding of the filter. In conjunction with the bypass design, a second media called a transport layer helps to distribute fluid flow evenly through the filter. The outer layers of the filter provide a highly uniform barrier for final particle filtration. This construction results in very high dirt loading capacity, even at high flow rates. There are no sewn seams used in any of the filtering layers, thus allowing high filtration efficiencies for fine particles.

The Bypass/Transport filter technology is manufactured in a filter bag form to provide additional operational advantages:

- Changeout time – easier and faster, less labor required
- Bag compressibility – easier and less costly disposal
- Contaminant captured inside the bag – easier handling

## Materials of Construction

### Filter Media:

Melt blown polypropylene microfiber filter media provides high particle removal efficiency for high quality filtration with broad chemical compatibility.

No silicone is intentionally used in materials of construction or in manufacturing.

The raw materials composing these filters are FDA compliant according to CFR Title 21.

## Ring and Bottom Clamp:

• Acids and bases	• Groundwater clean-up
• Amines	• Machine coolants
• Carbon beds	• Makeup water
• Completion fluids	• Organic solvents
• Deep wells	• Photo chemicals
• Desalination	• Plating solutions
• DI resins	• RO membranes
• Glycol	• Storm Water

## Applications

### Prefilters or Final Filters for:

### Performance Data

#### Loading Capacity

Product Model Number	522	525	527	529
Dirt - grams at 25 gpm (5.6 cu m/hr)	308	489	755	980
Dirt - grams at 50 gpm (11.2 cu m/hr)	215	430	645	925
Mineral Oil - grams at saturation	4725	5025	6675	3595

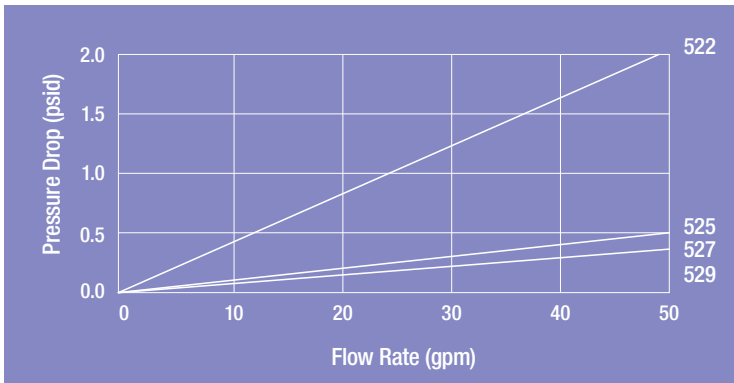
**Loading:** The data above shows typical loading capacities of the different micron rated filters. Loading capacity is determined by challenging a filter with a dispersion of silica test dust in water at the recommended flow rate. Pressure drop is monitored and testing is terminated at 35 psid (2.4 bar). The loading capacity reported is the dry weight gain of the bag.

#### Particle Removal Efficiency (microns)

Model Number	522	525	527	529
Efficiency @99%	2.5	5.0	15	48
Efficiency @95%	1.5	3.0	9	35
Efficiency @90%	0.9	1.5	8	30
Efficiency @75%	<0.7	1.0	7	22
Efficiency @50%	<0.7	<1.0	4	8

**Efficiency:** The Series 500 High Performance Filter Bags are rated using a silica test challenge in water at 25 gpm (5.7 cu m/hr). The results reported are typical initial efficiencies taken within ten minutes of the start of the test and are cumulative data.

### Clean Pressure Drop Versus Flow Rate (psid)



**Pressure Drop:** The 3M™ 500 series high performance filter bags have low initial pressure drop ( $\Delta p$ ) in water as the chart indicates. The chart includes the pressure drop of a typical single vessel to assist you in sizing your filter system.

### Operating Conditions

Maximum Operating Temperature:	180° F (82° C)
Recommended Flow (in water):	25 gpm (5.7 cu m/hr)
Suggested Maximum Flow (in water):	50 gpm (11 cu m/hr)

### Product Specifications

Model Number	Micron Rating Initial Efficiency	Part Number	Length	Outer Diameter	Cartridges per Case
522	1.5 micron @ 95%	70-0708-1218-8	#2 size: 32 in (81 cm)	7 in (18 cm)	4
525	2.5 micron @ 95%	70-0702-3335-1			
527	7.5 micron @ 95%	70-0702-3168-6			
529	10 micron @ 95%	70-0702-3338-5			

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