

3M™ Series 500 Liquid Filter Bags

High Performance Liquid Filter Bags

3M Series 500 High Performance Liquid Filter Bag incorporates the bypass and transport layer design that maximises the amount of surface area in each bag. The result is a unique filter designed to improve performance and reduce operating costs. The filter contains up to 3.5 m² of usable filter media. Compare this with only 0.4 m² for most competitive filter bags and 0.06 m² for most competitive cartridges.

To make use of this entire surface area, the Series 500 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.

Materials of Construction

Filter Media

Melt blown polypropylene microfibre 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

Stainless Steel.

Performance Data

Loading

Table 1: Loading Capacity

Product Model Number	522	525	527	529
Dirt - grams at 5.6 m ³ /hr	308	489	755	980
Dirt - grams at 11.2 m ³ /hr	215	430	645	925
Mineral Oil - grams at saturation	4725	5025	6675	3595

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 2.4 bar. The loading capacity reported is the dry weight gain of the bag.

Efficiency

Table 2: Particle Removal Efficiency (microns)

Product Model Number	522	525	527	529
Efficiency @ 99%	2.5	5.0	1.5	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

The Series 500 High Performance Filter Bags are rated using a silica test challenge in water at 5.7 m³/hr. The results reported are typical initial efficiencies taken within ten minutes of the start of the test and are cumulative data.



Advantages

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

- Change-out time – easier and faster, less labour required
- Bag compressibility – easier and less costly disposal
- Contaminant captured inside the bag – easier handling

Applications

Prefilters or Final Filters for:

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



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3M™ Series 500 Ordering Guide

Pressure Drop

The Series 500 High Performance Filter Bags have low initial pressure drop (Δp) 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.

Graph 1: Clean pressure Drop vs. Flow Rate (bar)

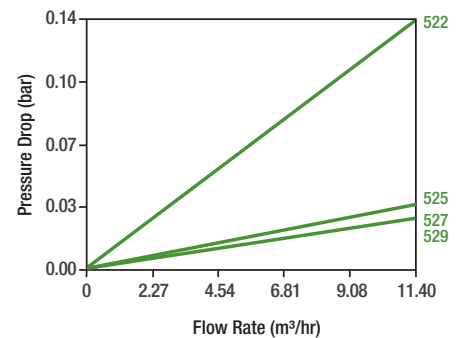


Table 3: Operating Conditions

Maximum Operating Temperature	82 °C
Recommended Flow (in water)	5.7 m³/hr
Suggested Maximum Flow (in water)	11 m³/hr
Suggested Maximum Differential Pressure	2.4 bar

Disposal

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

Product Specifications

Product Model Number	Micron Rating Initial Efficiency	Part Number	Length	Outer Diameter	Bags per Case
522	2.5 micron @ 99%	70-0708-1218-8	#2 size: 81 cm	18 cm	4
525	5.0 micron @ 99%	70-0702-3335-1			
527	15 micron @ 99%	70-0702-3168-6			
529	48 micron @ 99%	70-0702-3338-5			

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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