

# 3M™ 500 Series High Performance Liquid Filter Bags



The 3M™ 500 series multi-layer, high efficiency filter bags are designed for use in fluid applications with high contaminant removal requirements. The bags utilize 3M polypropylene microfiber media. In addition to providing for high particle removal efficiency, the media also has a high capacity for trace oil removal. 3M 500 Series bags are offered in a Size #2 configuration in four micron grades; 2.5, 5.0, 15, and 48µm (at 99% Particle Removal Efficiency).

3M 500 series bags feature a bypass & transport construction design which provides for efficient contaminant loading throughout the various bag media layers. In the design (refer to Figure 1), bypass holes are cut into the initial filter media layers (“A”) to help prevent premature blinding. In conjunction, transport media layers (“B”) are used to distribute fluid flow evenly through the filter. The final filter media layers (“C”) provide a uniform barrier for final particle filtration.

This unique filter construction results in optimum contaminant loading capacity while maintaining design particle removal efficiencies. 3M 500 Series bags contain up to 38 square feet of usable filter media compared with 4 to 5 square feet for most standard single layer filter bags.

Using a unique wrapped design and a stainless steel bottom clamp, the need for sewn seams is eliminated. The bags incorporate the use of a stainless steel ring collar for sealing in the filter housing. No adhesives, binders or silicone are used in the manufacturing process. All media grades use materials that are listed for food contact per 21 CFR. The quality management system associated with the manufacturing of the 3M 500 Series bags is ISO 9001:2012 certified.

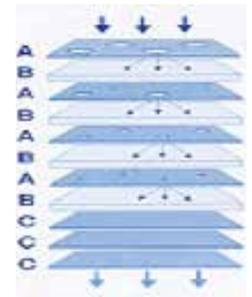


Figure 1. 3M™ 500 Series Design

Table 1: Loading Capacity

	Product Model Number			
	522A/ 522D	525A/ 525D	527A/ 527D	529A/ 529D
Dirt — grams at 25 gpm (5.6 cu m/hr)	308	489	755	860
Mineral Oil — grams at saturation	6600	5800	5800	3200

Table 2: Particle Removal Efficiency (micron)

	Product Model Number			
	522A/ 522D	525A/ 525D	527A/ 527D	529A/ 529D
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

**Dirt Loading:** 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 is the dry weight gain of the bag.

**Oil Loading:** The mineral oil loading capacities represent weight gains after 24 hours of soaking in a mineral oil solution, removing the bags, and draining (by hanging) for 15 minutes.

**Efficiency:** The 3M 500 series high performance filter bags are rated using a silica test challenge in water at 25 gpm (5.7m<sup>3</sup>/hour). The results reported are typical initial efficiencies taken within ten minutes of the start of the test and are cumulative data.

## Features & Benefits

### Higher Contaminant Capacity (vs. conventional single layer bags)

- Reduced bag change-out frequency

### Unique bypass and transport design in a wrapped construction

- Efficient contaminant loading throughout filter layers
- No sewn seams

### Use of 3M microfiber polypropylene filter media

- High particle removal efficiencies throughout filter life
- Ability to remove trace oils
- Broad chemical compatibility

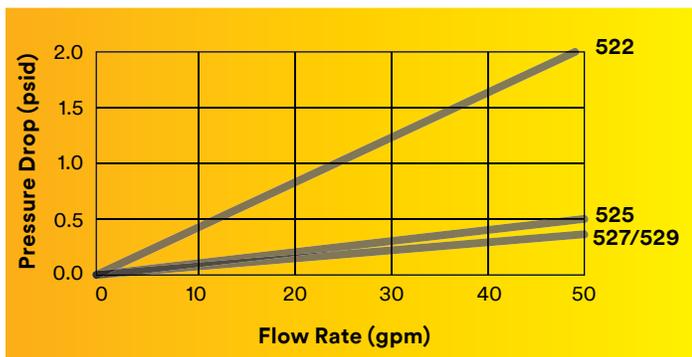
### FDA Compliant

- Compatible in applications requiring direct food contact in food and beverage processing per 21 CFR

## Applications

Process Waters	Ground/Reclaimed/ Storm/Waste Waters
Oil Production (Injection & Produced Waters, Completion Fluids)	Refining (Amine, Final Product)
Machining (Coolants, Plating Solutions)	Food & Beverage

Figure 2. Clean Pressure Drop Versus Flow Rate (psid)



**Pressure Drop:** 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 filter system sizing.

Operating Conditions	
Maximum Operating Temperature	180°F (82°C)
Recommended Flow (in water)	25 gpm (5.7cu m/hour)
Suggested Maximum Flow (in water)	50 gpm (11cu m/hour)
Suggested Maximum Differential Pressure	35 psid (2.4 bar)

**Product Specifications**

Model Number	Micron Rating Initial Efficiency @ 99%	Part Number	Length	Outer Diameter	Bags per Case
522A	2.5 micron	70-0203-0342-9	#2 size: 32 in. (81cm)	7 in. (18cm)	4
522D		70-0202-8656-6			
525A	5.0 micron	70-0202-8655-8			
525D		70-0202-8654-1			
527A	15 micron	70-0203-0341-1			
527D		70-0202-8652-5			
529A	48 micron	70-0202-8651-7			
529D		70-0202-8650-9			

Notes: "A" versions use 7.03" diameter stainless steel ring. "D" versions use 7.00" diameter stainless steel ring (European version).

**PLEASE NOTE: The Ordering Guide above is for reference only. Not all combinations are available. Please consult with your 3M Representative to determine the appropriate part number for your application.**

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