

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.

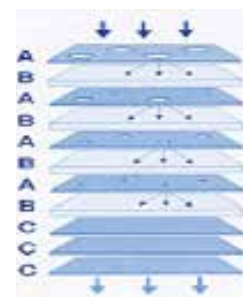


Figure 1. 3M™ 500 Series Design

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 (5.7m³/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

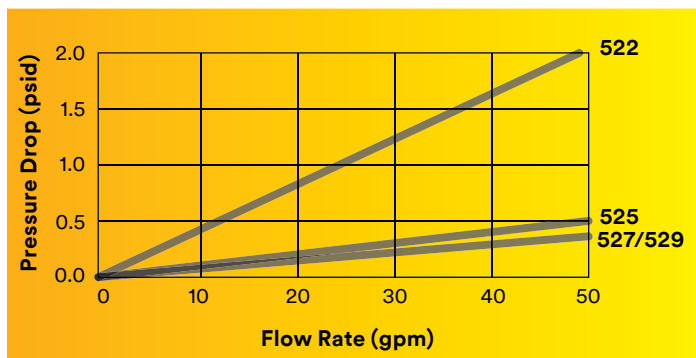
FDA Compliant

- 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 (ΔP) 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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