Industrial filtration

High performance liquid filter bags

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

Featuring a bypass and transport construction design, the 500 series filter bags provide 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. 500 series filter bags contain up to 38 ft^2 (3.5 m^2) of usable filter media compared with 4.0 to 4.9 ft^2 (0.37 to 0.46 m^2) 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. The quality management system associated with the manufacturing of the 500 series filter bags is ISO 9001:2015 certified.

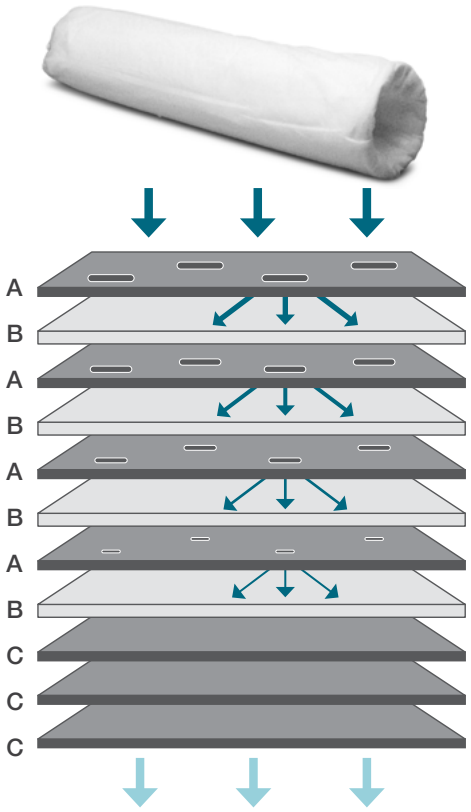


Figure 1. Thermo Scientific™ 500 Series Filter Bag design

Features and benefits

Higher contaminant capacity (vs. conventional single layer bags)

- Reduced bag change-out frequency

Bypass and transport design in a wrapped construction

- Efficient contaminant loading throughout filter layers
- No sewn seams

Use of microfiber polypropylene filter media

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

Food contact compliance

- Certain 500 series filter bag products are compliant with US FDA 21 CFR. Contact your Thermo Fisher Scientific representative for detailed declaration of compliance information for food contact applications.

Applications

- Process waters
- Ground, storm, reclaimed, waste waters
- Oil production (injection and produced waters, completion fluids)
- Refining (amine, final product)
- Machining (coolants, plating solutions)
- Food and beverage (fresh fruits and vegetables, beverages)
- Chemical

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.

Mineral 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 high performance filter bags are rated using a silica test challenge in water at 25 gpm (5.7 m^3/h). The results reported are typical initial efficiencies taken within ten minutes of the start of the test and are cumulative data.

Table 1. Thermo Scientific™ 500 Series Filter Bag operating conditions

Maximum operating temperature	180°F (82°C)
Recommended flow (in water)	25 gpm (5.7 m^3/h)
Suggested maximum flow (in water)	50 gpm (11 m^3/h)
Suggested maximum differential pressure	35 psid (2.4 bar)

Figure 2. Thermo Scientific™ 500 Series Filter Bag clean pressure drop vs. flow rate

Typical single vessel shown to assist filter system sizing.

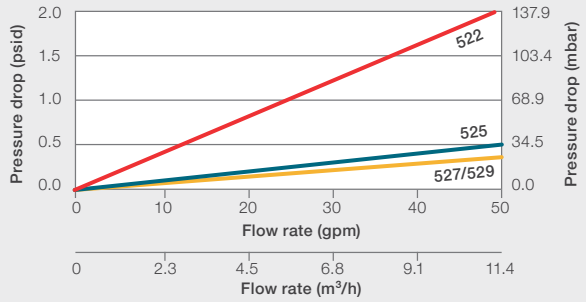


Table 2. Thermo Scientific™ 500 Series Filter Bag performance

		522	525	527	529
Loading capacity lb(g)	Dirt @ 25 gpm (5.7 m^3/h)	0.679 (308)	1.08 (489)	1.66 (755)	1.90 (860)
	Mineral oil @ saturation	10.42 (4,725)	11.08 (5,025)	14.71 (6,675)	7.926 (3,595)
Particle removal efficiency (µm)	@ 99%	2.5	5.0	15	48
	@ 95%	1.5	3.0	9	35
	@ 90%	0.9	1.5	8	30
	@ 75%	<0.7	1.0	7	22
	@ 50%	<0.7	<1.0	4	8

Thermo Scientific™ 500 Series Filter Bag ordering guide

Model	Stainless steel sealing ring diameter	Particle removal efficiency @ 99%	Part number	Length	Outer diameter	Bags/ Case
522A	7.03 in (178.5 mm)	2.5 µm	70-0203-0342-9	#2 size: 32 in. (813 mm)	7 in. (177.8 mm)	4
522D	7.00 in (177.8 mm)*		70-0202-8656-6			
525A	7.03 in (178.5 mm)	5.0 µm	70-0202-8655-8			
525D	7.00 in (177.8 mm)*		70-0202-8654-1			
527A	7.03 in (178.5 mm)	15 µm	70-0203-0341-1			
527D	7.00 in (177.8 mm)*		70-0202-8652-5			
529A	7.03 in (178.5 mm)	48 µm	70-0202-8651-7			
529D	7.00 in (177.8 mm)*		70-0202-8650-9			

* European version.

Intended Use: 500 series filter bag products are intended for use in industrial, chemical, and food and beverage filtration applications of aqueous and non-aqueous fluids in accordance with the product instructions, specifications and where materials of construction are compatible. Certain 500 series filter bag products are compliant for use in Food and Beverage applications. For specific details related to the use or limitations for food contact applications please contact your Thermo Fisher Scientific representative for more information.

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