

# 3M

## High Performance Liquid Filter Bags

### Series 500

**LENNTECH**

info@lennotech.com Tel. +31-152-610-900

www.lennotech.com Fax. +31-152-616-289



*Creative Answers Shaping Cleaner Environments*

## Technical Data



## Features, Advantages and Benefits

The 3M™ Series 500 High Performance Liquid Filter Bag incorporates the patented bypass and transport layer design that maximizes the amount of surface area in each bag. The result is a unique filter designed to improve performance and reduce operating costs. The 3M 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, the Series 500 Liquid Filter Bag is constructed using the patented Bypass/Transport concept invented by 3M researchers. 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 3M 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:

Meltblown 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:

Stainless Steel

## Applications

### Prefilters or final filters for:

- |                        |                     |
|------------------------|---------------------|
| • Acids and bases      | • Machine coolants  |
| • Amines               | • Magnetic media    |
| • Carbon beds          | • Makeup water      |
| • Completion fluids    | • Organic solvents  |
| • Deep wells           | • Photo chemicals   |
| • Desalination         | • Plating solutions |
| • DI resins            | • RO membranes      |
| • EDM fluids           | • Storm water       |
| • Glycol               | • UF membranes      |
| • Groundwater clean-up | • Wastewater        |
| • Laundry water        | • Waterflood        |
|                        | • Workover fluids   |

## Performance Data

### Loading Capacity

| Product Number                           | 522  | 525  | 527  | 529  |
|------------------------------------------|------|------|------|------|
| Dirt – Grams at 25 gpm<br>(5.6 cu.m/hr)  | 308  | 489  | 755  | 980  |
| Dirt – Grams at 50 gpm<br>(11.2 cu.m/hr) | 215  | 430  | 645  | 925  |
| Oil* – Grams at saturation               | 4725 | 5025 | 6675 | 3595 |

\*mineral oil

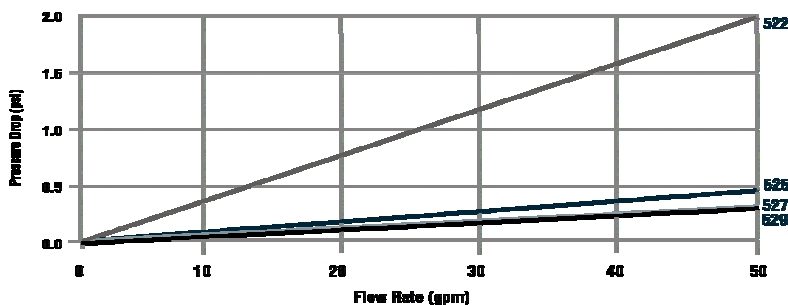
**Loading:** The data above shows typical loading capacities of the different micron rated filters. Loading capacity is determined by challenging a filter with a dispersion of silica test dust in water at the recommended flow rate. Pressure drop is monitored and testing is terminated at 35 psid (2.4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

### Particle Removal Efficiency (microns)

| Product 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 3M™ 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. For more information on how 3M conducts its filter efficiency testing, please contact Filtration Products Technical Service at 1-800-648-3550.

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



**Pressure Drop:** The 3M High Performance Filter Bags have low initial pressure drop ( $\Delta p$ ) in water as the chart indicates. The chart does include the pressure drop of a typical single vessel to assist you in sizing your filter system.

## Product Specifications

### Micron Ratings:

| Product Number | Initial Efficiency |
|----------------|--------------------|
| 522            | 2.5 micron @ 99%   |
| 525            | 5.0 micron @ 99%   |
| 527            | 15 micron @ 99%    |
| 529            | 48 micron @ 99%    |

### Dimensions (Nominal):

#### Outer Diameter:

7 inches 18 cm

#### Length:

32 inches 81 cm  
(#2 size)

### A & D Sealing Ring:

Available in "A" ring and "D" ring sizes. Check with your local distributor for proper size to fit your vessel.

### Operating Conditions:

#### Maximum Operating Temperature:

180F 82C

#### Recommended Flow: (in water)

25 gpm 5.7 cu m/hr

#### Suggested Maximum Flow: (in water)

50 gpm 11 cu m/hr

#### Suggested Maximum Differential Pressure:

35 psid 2.4 bar

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

### Order Information

To order contact your local 3M Filtration Products

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