

3M™ NB Series Filter Bags Polypropylene Felt and Polyester Felt Bags

3M offers a line of Size #1 and #2 polypropylene felt and polyester felt filter bags in grades ranging from 1 to 200 microns, in various collar/media configurations (see ordering guide) with the following important benefits:

- **Inside-Outside Flow Configuration**, resulting in the capture of contaminants on the inside
- **Ease of Handling:** bags are collapsible
- **Ability to handle viscous fluids**
- **Low unit cost**

Meeting demanding customer specifications, the performance characteristics of the 3M™ NB series filter bags provide:

Media Migration Control

Media migration is controlled through thermal treatment of the exterior surface of the filter media and procedures which properly weld the media seams and affix the media to the collar.

Proper Sealing

Proper sealing of the bag in the filter housing is necessary for prevention of fluid bypass and subsequent contamination of the downstream fluid. 3M NB series filter bags are offered in both plastic and metal ring sealing collar versions. The polypropylene felt filter bag is constructed with a plastic collar of polypropylene FDA 21 CFR compliant material, listed for food and beverage contact. The polyester collar (used in the polyester felt filter bags) and metal ring collar are not to be used in food and beverage applications. For plastic collar versions, the filter bag media is welded to a specially designed plastic collar for proper sealing of the 3M NB series filter bags in standard bag housings. The plastic collar incorporates an ergonomically designed handle allowing for easy removal of the filter bag from the filter housing. For ease of identification and traceability, the handles include an engraving with micron grade and manufacturing lot information. Metal ring collar versions use a galvanized steel ring for sealing the 3M NB series filter bag in the housing. These versions can be used in most filter bag housings that will not accept the plastic collar version.

Materials/Construction

Each felt filter bag grade is manufactured from high performance fibers selected based on extensive media performance testing. No adhesives, binders or silicone are used in the media manufacturing process. All polypropylene grades use FDA 21 CFR compliant materials that are listed for food contact.

Features & Benefits

Controlled Media Specifications

- Filtration to desired filter effluent quality
- Manufacturing processes do not include the use of silicone or adhesives

Specially Designed Sealing Collars

- Handle designs allow for insertion of bag accessories (displacement balloons, magnets, etc.)
- Grade and lot information included for identification and traceability

Welded Side Seams And Thermal Treated Exterior Surfaces

- Control of fiber migration and subsequent downstream fluid contamination



Markets Served
Industrial
Chemicals
Coatings
Hydrocarbon & Refining
Electronics
Food & Beverage*

*Polypropylene felt filter bag with polypropylene collar is the only option for Food & Beverage applications.

Table 1. Filter Bag Specifications		
Dimension	#1 Size	#2 Size
Filter Diameter	7 in / 17.8 cm	
Filter Length	17 in / 43.2 cm	32 in / 81.3 cm

Table 2. Felt Filter Media Chemical Compatibility*		
Chemical	Compatibility Rating	
	Polypropylene	Polyester
Strong Acids	Excellent	Good
Weak Acids	Excellent	Excellent
Strong Alkalis	Excellent	Poor
Weak Alkalis	Excellent	Fair
Solvents	Fair	Good

Table 3. Filter Bag Operating Parameters		
Operating Conditions	Media	
	Polypropylene	Polyester
Maximum Operating Temperature	180 °F (82 °C)	300 °F (149 °C)
Maximum Recommended Flow Rate (gpm/lpm)**	#1 Size 90 gpm (340 lpm)	
	#2 Size 180 gpm (681 lpm)	
Maximum Forward Differential Pressure	35 psid @ 68 °F (2.4 bar @ 20 °C)	
Recommended Change-out Differential Pressure	20 psid (1.4 bar)	
21 CFR Compliant Materials	All polypropylene component materials are listed for food contact per 21 CFR 177.1630	

*Thermal and chemical resistance data presented in this brochure is for guidance only. Factors such as duration, degree of concentration of a substance in a fluid and temperature should also be considered. For each application, the chemical compatibility of the galvanized steel ring should be tested under application conditions such as time, temperature, and environment.

**For aqueous solutions (1 cps) based on maintaining clean pressure drop (media only) of <2 psid (0.14 bar).

3M™ NB Series Polypropylene Felt & Polyester Felt Filter Bag Ordering Guide

Filter Designation	Nominal Removal Rating	Material (Media)	Bag Size	Collar Type
Nominal Bag	0001 - 1 µm ¹ 0005 - 5 µm 0010 - 10 µm 0025 - 25 µm 0050 - 50 µm 0100 - 100 µm 0200 - 200 µm	PPS - Polypropylene Felt EES - Polyester Felt	1 - Size #1 2 - Size #2	C - Plastic Collar ² R - Galvanized Steel Ring

¹ Only available in plastic collar version.

² Polypropylene collar used for PPS bags. Polyester collar used for EES & FES bags.

Product Selection and Use:
Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.
Warranty, Limited Remedy, and Disclaimer:
Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.
Limitation of Liability:
Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.



Your local distributor:

3M Separation and Purification Sciences Division

400 Research Parkway
Meriden, CT 06450 USA
Phone 1-800-243-6894
1-203-237-5541
Fax 1-203-630-4530
Web www.3M.com

3M is a trademark of 3M Company.
© 2017 3M Company. All rights reserved.
70-0202-1135-8 REV 0317