



CUNO™ Series NB Bags for Liquid Filtration



Customers have relied on CUNO to provide quality filtration solutions for the most demanding applications. Leveraging 3M innovation, CUNO has applied this expertise in developing a product line for those applications where nominal bag filtration provides the most economical solution.

For some applications, liquid bags represent the best filtration option. Attractive features of liquid bag filters include:

- Inside-Outside Flow Configuration – resulting in capture of contaminants on the inside
- Ease of Disposal – bags are collapsible
- Ability to handle viscous fluids
- Low unit cost.

Improved Bag Design from the Leader in Liquid Filtration

CUNO's filter bag offering includes polypropylene and polyester felt and nylon monofilament materials in a wide range of grades (removal ratings).

Not all liquid bag filters are created alike! CUNO, a 3M company, designed and manufactured bag filters offer following important features.

Applications

CUNO™ liquid bag filters are appropriate for use in a wide range of markets and applications, including:

- Industrial
- Coatings
- Chemicals
- Hydrocarbon & Refining
- Food & Beverage
- Electronics
- Pharmaceutical & Healthcare

Predictable Removal Efficiencies

Through controlled media specifications and advanced manufacturing processes.

Media Migration Control (felt materials)

Through thermal treatment of the exterior filter media and the use of state-of-the-art procedures to properly weld the media seams and the media to the collar.

Proper Sealing for Control of Fluid Bypass

Using a specially designed plastic sealing collar (for felt materials), proper seating of the filter bag into the bag housing is obtained controlling fluid bypass and contamination of the downstream fluid with previously removed particles.

CUNO's unmatched filtration media development capabilities and advanced manufacturing processes allows for cost effective manufacturing of high quality filtration products meeting the most demanding customer specifications. The quality management system associated with the manufacturing of the CUNO™ Series NB filter bags is ISO 9001:2000 certified.

CUNO's sales support teams are dedicated to working with you to identify the optimum liquid filter product for your application. With CUNO's complete line of filter product solutions, you can be sure that you are getting the best filter solution for your application. For new installations, CUNO offers a full line of bag filter housings, contact your local 3M sales representative for CUNO for more details.



CUNO™ Series NB Polypropylene & Polyester Felt Filter Bags

For many liquid bag filtration applications, the use of polypropylene or polyester felt materials represents the most economical filtration solution. These materials are compatible with a wide range of fluids and operating conditions (see Tables 2 & 3).

For these applications, CUNO offers a line of Size #1 & #2 felt filter bags in both all polypropylene and all polyester materials (media and collar) in grades ranging from 1 to 200 µm.

Materials/Construction

Each CUNO™ felt bag filter grade is manufactured from high performance fibres selected based on extensive media performance testing. No adhesives, binders, or silicone are used in the media manufacturing process and polypropylene materials are 21 CFR compliant. For control of fibre migration and subsequent downstream contamination, bag filter side seams are welded and the exterior surfaces thermally treated.

Sealing

All CUNO™ felt filter bags come standard with a unique plastic collar, of the same material as the media, for proper sealing into the bag housing. Utilizing the latest technology, the bag filter media is welded to the collar preventing problems associated with stitched collars. The collar includes an ergonomically designed handle to allow for easy removal of the bag filter. For ease of identification and traceability, the handles include an engraved tab providing grade and lot information.

Table 1: Felt Bag Filter Element Specifications

Dimension	Felt Filter Bags	
	#1 Size	#2 Size
Nominal Removal Ratings (microns)	1, 5, 10, 25, 50, 100, and 200	
Filter Diameter (cm/inches)	17.8 / 7	
Filter Length (cm/inches)	43.2 / 17	81.3 / 32

Table 2: Operating Parameters

Operating conditions	Polypropylene		Polyester	
	#1 Size	#2 Size	#1 Size	#2 Size
Maximum Operating Temperature	82°C / 180°F		149°C / 300°F	
Maximum Recommended Flow Rate*	340 l/min 90 g/min	681 l/min 180 g/min	340 l/min 90 g/min	681 l/min 180 g/min
Maximum Forward Differential Pressure	2.4 bar @ 20°C (35 psid @ 68°F)			
Recommended Change-out Differential Pressure	1.4 bar (20 psid)			
CFR Compliant	All polypropylene component materials are listed for food contact per 21 CFR 177.1520			

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

Table 3: 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

*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.

Features	Benefits
■ Controlled media specifications	<ul style="list-style-type: none"> ■ Predictable performance for desired filter effluent quality ■ Manufacturing processes do not use silicone or adhesives
■ Controlled media specifications	<ul style="list-style-type: none"> ■ Control of fluid bypass through proper sealing into most filter bag manufacturer's housings ■ Ergonomically designed handle for ease of bag removal ■ Grade and lot information etched on collar for identification and traceability
■ Welded side seams and thermal treated exterior surfaces	<ul style="list-style-type: none"> ■ Control of fiber migration and subsequent downstream fluid contamination





For some liquid bag applications, the use of nylon monofilament (NMO) materials represents a better option than conventional felt materials. These include applications benefitting from the following features.

- **Consistent Pore Size:** The uniform openings of monofilament bags make their use ideal in applications where it is desired that certain size particles in the incoming fluid pass through the filter (i.e. metallic paints...) while reliably removing larger undesirable particles.
- **High Strength Construction:** Since each thread is a single filament, monofilament bags have excellent strength reducing the possibility of bag rupture and subsequent downstream fluid contamination.
- **High Temperature/Alkali Compatibility:** This makes the filters an appropriate choice for high temperature cleaning applications.

For these applications, CUNO offers a line of Size #1 & #2 nylon monofilament (NMO) bag filters in grades ranging from 25 to 1200 μm .

Materials/Construction

Each CUNO™ NMO bag filter grade is manufactured from industry proven and accepted monofilament fibres. No adhesives or binders are used in the media manufacturing process. NMO bag filters are compatible with a wide range of fluids and operating conditions (see Tables 4 & 5).

Sealing

All NMO bags come standard with a galvanized metal ring for sealing into the bag housing. To address potential fluid bypass, care is taken in the manufacturing process to fasten the filter media to the ring for effective sealing in major manufacturers' bag housings. For ease of removal from the filter bag vessel, a strap is affixed to the filter. For identification and traceability, grade and lot information is included on a perforated tag.

Table 5: NMO Chemical Compatibility*

Chemical	Compatibility Rating
Strong Acids	Poor
Weak Acids	Fair
Strong Alkalis	Excellent
Weak Alkalis	Excellent
Solvents	Good

**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.*

Table 4: NMO Specifications & Operating Conditions

Dimension	Nylon Monofilament Bag Filters	
	#1 Size	#2 Size
Nominal Removal Ratings (microns)	25, 50, 100, 150, 200, 250, 400, 600, 800, and 1200	
Filter Diameter (cm/inches)	17.8 / 7	
Maximum Recommended Flow Rate*	340 l/min 90 g/min	681 l/min 180 g/min
Maximum Operating Temperature	149°C / 300°F	
Maximum Forward Differential Pressure	2.4 bar @ 20°C (35 psid @ 68°F)	
Recommended Change-out Differential Pressure	1.4 bar (20 psid)	

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

Features	Benefits
■ Uniform pore sizing	■ Allows desired undersized particles to pass through (metallic paints...) ■ Effective removal of oversized contaminants
■ Continuous Fiber Construction	■ High fiber strength reducing the likelihood of bag rupture and downstream fluid contamination
■ High Temperature/Alkali Compatibility	■ Appropriate choice for filtration of high temperature cleaning solutions
■ Available in coarser grades ($> 200 \mu\text{m}$)	■ Cost effective filtration solution for those applications requiring removal of coarse particles only

CUNO™ Series
NB Nylon Monofilament
Filter Bags

CUNO™ Series NB Polypropylene & Polyester Felt Filter Bag

Ordering Guide

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

CUNO™ Series NB Nylon Monofilament Filter Bag

Ordering Guide

Filter Designation	Nominal Removal Rating	Material (Media/ Plastic Components)	Bag Size	Collar Type
NB - Nominal Bag	0025 - 25 µm 0050 - 50 µm 0100 - 100 µm 0150 - 150 µm 0200 - 200 µm 0250 - 250 µm 0400 - 400 µm 0600 - 600 µm 0800 - 800 µm 1200 - 1200 µm	NYS - Nylon Monofilament	1 - Size #1 2 - Size #2	R - Metal Ring

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