

Filter Bags



Powering Business Worldwide

In September 2005 Eaton Corporation acquired the industrial filtration business of Hayward Industries, Inc. The Hayward filtration business has been integrated into Eaton's Fluid Power Group as the Filtration Division. In addition Eaton Corporation purchased in September 2006 the Ronningen-Petter industrial fine filtration business from Dover Resources.

Eaton's Filtration Division is a global leader in products that include pipeline strainers, bag filtration systems, and gas/liquid separators for industrial and commercial customers worldwide. Primary markets include general industrial, petro-chemical, pharmaceutical, food and beverage, power utilities, marine, and water.

BAG FILTRATION SYSTEMS

Eaton's Bag Filter Housings and Filter Bags are used by industries around the world and are manufactured worldwide to global standards. Customers can choose from a complete line of single and multi-bag filter housings designed to meet the needs of the most demanding applications. The choice of single bag filter housings range from those suitable for exacting absolute filtration applications to high quality housings designed especially for cost sensitive applications... and everything in between. Multi-bag housings that accommodate up to 36 individual filter bags for flow rates of up to 1000 m³/h are available in a number of different designs. Eaton offers a full range of Filter Bags...more than 1500 choices in all. From economical sewn filter bags for standard applications to welded, multilayered bags for demanding applications.

CARTRIDGE FILTRATION SYSTEMS

Eaton's broad range of filter cartridges gives customers wide flexibility in choosing filtration solutions. Available are nominal and absolute rated melt blown, string wound, resin bonded and activated carbon cartridges, filter modules, stainless steel and plastic filter housings.

PIPELINE STRAINERS

Eaton's Pipeline Strainers are used by industrial and commercial customers to protect their process piping equipment by removing debris from the liquid that flows through pipelines. Products include automatic self-cleaning strainers as well as manual, duplex, simplex, and Y strainers. Both cast and fabricated type strainers are made in standard configurations to meet the needs of

most applications. For unique, complex, or specialized applications, a Pipeline Strainer can be designed and manufactured to meet the exact requirements of the application with no compromises.

GAS/LIQUID SEPARATORS

Eaton's Gas/Liquid Separators protect expensive system components, such as turbines, by removing potentially damaging moisture and particulate matter from air, gas, and steam lines.

AUTOMATIC FILTER SYSTEMS

The wide Ronningen-Petter range consists of automatic self-cleaning filtration systems. Solutions can be offered from backwashing systems for the filtration of aqueous media to mechanically cleaned filters systems for high viscous liquids. The filters are always sized to the customer's individual applications and needs.

COMMITMENT TO GLOBAL MARKETS

Eaton's Bag Filtration Systems, Cartridge Filtration Systems, Pipeline Strainers, and Gas/Liquid Separators have each been developed into a global product line which is manufactured worldwide in multiple locations to a common design standard yet in compliance with local code requirements. This lets Eaton customers worldwide choose the pipeline strainer, bag filter, or gas/liquid separator that meets their exact requirements without compromise. Local sales and technical support specialists are always available to review the needs of an application with the customer and recommend specific solutions.

EATON CORPORATION

Eaton is a diversified power management company with 2008 sales of \$ 15.4 billion. Eaton is a global technology leader in electrical systems and components for power quality, distribution, and control; fluid power systems and services for industrial, mobile, and aircraft equipment; intelligent truck drivetrain systems for safety and fuel economy; and automotive engine air management systems, powertrain solutions, and specialty controls for performance, fuel economy, and safety. Eaton has 75,000 employees and sells products to customers in more than 150 countries. For more information, visit www.filtration.eaton.com.

INTRODUCTION

Eaton Precision in Filtration. A Whole New Way to Think About Bag Filtration Systems

Setting New Technology Boundaries

Demanding or critical liquid filtration applications require high performance filtration media. This media may have to be more efficient, stronger, longer lasting or conform to specific standards. Sometimes, a unique combination of these qualities can be required.

Eaton has developed a range of filter bags that meet these stringent media requirements. The convenience and economy of liquid bag filtration is now feasible for filtration applications that previously required other, more expensive systems.

Change the way you've been thinking about filter bags...and explore the range of filter bags described in this catalog. You may find solutions to your most difficult filtration challenges here. Today's bags are capable of performing in applications that, in the past, required more complex and expensive filtration systems.

After you have finished reading about these special filter bags, contact us. Because demanding or critical applications can be complex, an Eaton Applications Specialist is available to perform a no-obligation analysis of your process. Learn how one of these high performance filter bags can work in your system, whether your system already exists or is in the design stage, and the improvements you can expect...before you make any commitment.



PROGAF™, ACCUGAF™, LOFCLEAR™, DURAGAF™, HAYFLOW™
CLEARGAF™, SENTINEL®, SNAP-RING® and BANDSEAL™

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A quick look at what makes an Eaton high performance filter bag and the technology behind it.



8 Applications

An overview of some of the thousands of filtration processes that can be improved and made more efficient or cost effective with Eaton High Performance Filter Bags.

10 PROGAF™ Filter Bags

A revolution in filter bags. PROGAF™ combines a high-efficiency media with a high capacity pre-filter for effective particulate removal down to the submicron level.



14 ACCUGAF™ Filter Bags

Highly efficient filter bags that have an extremely high particle retention efficiency. Applications that require this high filtration efficiency can now take advantage of bag filtration with Eaton's ACCUGAF™.

16 LOFCLEAR™ Filter Bags

Highly efficient filter bags with a special multi-layer construction that results in a better than nominal efficiency in demanding applications.





18 DURAGAF™ Filter Bags

Features increased media thickness with finer fibers for high pore volume. Reduced time between bag changings improves operating efficiencies and reduces operating costs. Discover how DURAGAF™ can work better in your application.

20 CLEARGAF™ Filter Bags

For food, beverage and pharmaceutical applications, most Eaton filter bags can be manufactured, packaged and stored to meet EC and FDA requirements.



21 BANDSEAL™

Tie-on filter bags for filtration without a vessel.



22 SENTINEL®

All-welded construction bags for higher filtration efficiency. Special ring seal for worry-free sealing-assurance.

23 SNAP-RING®

Sewn construction filter bag for less demanding applications.



24 HAYFLOW™

Eaton's revolutionary new filter element.



FILTER BAG FEATURES

What Makes an Eaton Filter Bag Better?

State-of-the-art media ... advanced construction ... quality control ... customer service ... application specialists ... in short, the entire Eaton organization teams up to bring you the most advanced bag filtration solutions available. Eaton has applications specialists available around the world to help first-hand with difficult, demanding applications. On-site trials demonstrate the best filter bag for any new application. Expert system software makes system sizing and optimisation simple and effective. In short, commitment to our customers packs value-added quality into every product we sell.

Advanced Filter Design

Starting with unique element design and ending with a unique sealing technology, Eaton products deliver performance in simple or complex applications. Multi-layer constructions, pleated extended surfaces, fully-welded constructions and pressure-activated seals are only some of the features which make Eaton filter bags the most advanced in the world. This range of design and construction offers filtration solutions over the full spectrum of fine filtration applications.

Advanced Filtration Media

No other range of filtration products can bring the wide range of filtration media and construction to either simple or demanding applications. Progressive structure media deliver efficiency and media life not available in any other technology. High-purity media styles permit filtration without contamination of the fluid. Heat-stabilized monofilament meshes deliver absolute filtration ratings in almost any fluid. High-quality felts deliver the most cost-effective filtration available today for straightforward applications. In short, full-spectrum performance.

Proprietary Fabrication Technology

Whether sewn or welded, simple or complex, Eaton filter bags are fabricated using the most advanced techniques and equipment in the world. Highly automated welding systems produce consistent, dependable

bag construction. Eaton's proprietary UNIWELD™ system produces bag seals which are, at the same time, strong and flexible to conform to restrainer baskets. Food-grade products are fabricated in facilities where both the environment and materials are controlled to assure cleanliness. Repeatable, robust, cost-effective... technology working for our customers.

Rigorous Quality Standards

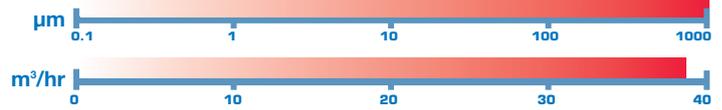
Every Eaton filter bag carries its own promise of quality to our customers. The QC tag permits full traceability of both materials and processes throughout fabrication and into service. Eaton ISO 9001 facilities produce filter bags and vessels to standards demanded by demanding industries. From the simplest sewn filter bag to the most complex multi-layer construction, the quality is the same. No compromise ... the Eaton promise to its customers.

COMPASS™ Expert System Software

Select a filter ... size and optimise a system ... search for your application. COMPASS brings over 30 years of application success to the fingertips of each Eaton Filtration Specialist. This breadth of experience is available in a customer's facility or over the phone, to provide rapid accurate estimates of system performance.



NOMINAL ABSOLUTE



In this brochure, an application key appears for each bag style. You can use this key to select a bag based on particle size range and flow rate, for size 02 bags made of standard filter bag material.

Worldwide Customer Support

Eaton has manufacturing facilities and customer support personnel located in North America, South America, Europe, Asia, Africa and Australia. There are 26 Regional Sales Offices and an independent, professional distribution network to serve the needs of our customers in 45 countries. Throughout the purchase, installation, and start-up of your Eaton Filtration System, an Eaton representative is always available to ensure its performance.

THE CONTAMINANT SPECTRUM OF BAG DESIGN

Contaminant Particle Size				
Micro Filtration	Fine Filtration	Coarse Filtration		
0.1 micron	1 micron	10 micron	100 micron	1000 micron
		SNAP-RING® Bags		
		SENTINEL® Felt Bags DURAGAF™ Felt Bags CLEARGAF™ Felt Filter Bags HAYFLOW™		
	ACCUGAF™ Filter Bags LOFCLEAR™ Filter Bags			
PROGAF™ Filter Bags				

THE CONTAMINANT SPECTRUM OF MEDIA

Contaminant Particle Size				
Micro Filtration	Fine Filtration	Coarse Filtration		
0.1 micron	1 micron	10 micron	100 micron	1000 micron
		Monofilament Mesh • Accurate, absolute • High precision		
		EATON Precision Felts • Standard Needlefelt • DURAGAF™ extended life • CLEARGAF™ for purity • HAYFLOW™		
Meltblown Precision Media • LOFCLEAR™ for purity and performance • ACCUGAF™ for absolute filtration • PROGAF™ for long life & unequalled filtration				



THE CONTAMINANT SPECTRUM OF FILTER SEALS

Contaminant Particle Size				
Micro Filtration	Fine Filtration	Coarse Filtration		
0.1 micron	1 micron	10 micron	100 micron	1000 micron
			BANDSEAL™ • Simple, effective	
		SNAP-RING® • Versatile, low-cost • Wide range of media		
SENTINEL® Seal • "The Best in the Business" • Seal improves with higher differential pressure • Wide fluid and temperature compatibility				



APPLICATIONS

Typical Applications for Eaton High Performance Filter Bags

Automotive

Filtration of pretreatment bath, filtration of E-coat, topcoat and clearcoat, primer, paint ring line filters, parts cleaning fluids, drawing compounds, lubricants, metal working fluids and pump intake filters.



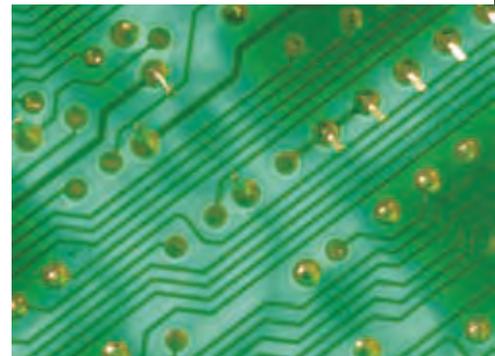
Chemical

Catalyst recovery, removal of pipe scale, polishing of aqueous process fluids, alkalis, acids and solvents, filtration of emulsions and dispersions, gel removal from resins. Activated carbon or catalyst removal in the fine chemicals industry is a typical example of a demanding application in chemical processing. Eaton Filter Bags meet these application requirements for high filtration efficiency coupled with long service life and reliability.



Electronics

Wafer and chip processing, electronic etching baths, photo-chemical polishing and high-purity water filtration and prefiltration of various membrane filtration processes to improve their cost effectiveness. Eaton Filter Bags demonstrate the required purity, efficiency and consistent performance.



Food and Beverage

Polishing filtration of wine, spirits and beer, removal of particles from edible oils, removal of carbon black from cellulose, slime removal in gelatins, liquid sugar, thick juice, corn syrup polishing, starch processing, milk processing and soft drinks. Many Eaton Filter Bags conform to FDA and even EC food processing directives and can meet the unique and varied demands of these applications.



Metal Working

Filtration of hydraulic oil, pretreatment system filtration, precious metal recovery, metal working fluids, and drawing compounds. Parts cleaning machines use our filter bags for minimizing residual dirt on parts.



Petrochemicals

Filtration of lube oils, fuel additives, enhanced oil recovery, filtration of amine solutions, filtration of glycol fluids, gas purification processes, distillation and cracking processes, amine washers, off-shore filter stations, oil drilling and injection fluids.



Paint and Lacquer

Removal of agglomerates, removal of paint coagulates, solvent filtration, removal of storage contaminants, filling lines, and paint mixing lines, monomer purification.

Pharmaceutical

Recovery of expensive active ingredients, catalyst recovery, active carbon purification and removal, filtration of gelatins, hormones, vitamin extracts, polishing of herbal mixtures, protein removal from plasma, filtration of saline solutions.



Resins, Plastics, Inks and Coatings

Oil and polymer filtration, dispersions, polymerization batches, resins for can coatings, plastics compounding, printing ink, plastics processing, paper coatings, high purity ink-jet fluid filtration.



Water Treatment

Well water filtration, water treatment plants, silt removal, pipe scale removal, sand and algae removal from sea water, ion exchange resin recovery, calcium deposit removal, filtration of chemicals used for water treatment, dust removal from cooling tower installations. Surface water filtration is an area traditionally dominated by cartridge filtration. Now, the high efficiency and long life of Eaton High Performance Filter Bags are a cost-effective alternative to expensive cartridges.



PROGAF™

The Filter Bag that Works Better Than a Filter Cartridge



The SENTINEL plastic step-ring provides a seal between the filter vessel and the PROGAF Filter Bag. As the pressure differential rises inside the vessel, the seal becomes more efficient.

PROGAF filter bags bring a new, high-performance alternative to applications requiring absolute filtration. PROGAF's progressive density depth filtration delivers high efficiency (>99.98%) and long life with all the convenient features of a bag filter. In comparison with other filtration technologies, PROGAF delivers lower operating costs while retaining the ease of change-out typical of a bag filter.

Welded Construction for Superior Performance

All PROGAF High Performance Filter Bags feature 100% welded construction for better filtration performance. This construction ensures that nothing bypasses the process media through holes in the fabric created from sewing the material. Eatons's proprietary welding technology produces a super-strong seam that stands up to the most demanding applications.

PROGAF™ Filter Bags Seal Better in Critical Applications

The SENTINEL provides a flexible, chemically-resistant seal which adapts to any filter vessel. This unique design employs a pressure-activated sealing lip which responds to increases in differential pressure. As the pressure increases, the seal of the ring improves, guaranteeing bypass-free performance over all ranges of pressure, temperature and micron rating. The elevated bag handles make removal quick and easy.

Unique Progressive Density Media Structure

PROGAF filter bags utilize an advanced media structure developed specifically to deliver both long life and absolute filtration. PROGAF's progressive density design uses up to 12 layers of media which become finer and finer as fluid passes through. The result is a gradual removal of contaminant without any single layer blinding prematurely. Application

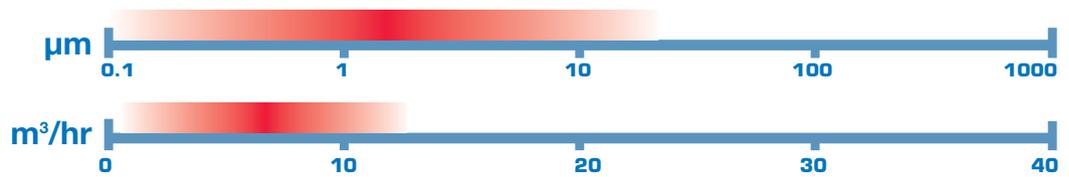


PROGAF™ Filtration Ratings

Conditions: see note 2) on page 31

Filter Model	Particle Size at Common Removal Efficiencies (µm)					ΔP (bar) Size 02 @10m³/h
	>60%	>90%	>95%	>99%	>99.9%	
PGF50	-	-	0.15	0.45	1	0.25
PGF51	>80@0.15	0.3	0.45	0.5	2	0.17
PGF55	1	3	6	10	12	0.06

ABSOLUTE



and laboratory tests confirm that PROGAF bag filters deliver longer service life and lower operating costs than any other renewable filter element. The 100% polypropylene construction provides pure, silicone-free materials³⁾ in an economic, self-contained, easily disposable filter bag.

Filtration Efficiencies Of Up To +99.98%

PROGAF High Performance Filter Bags from Eaton have performance efficiencies of over +99.98%...true absolute filtration. In many filtration applications of 1 micron and above, PROGAF Filter Bags can replace expensive cartridge filtration systems and provide better performance while saving time and money. Ask your Eaton Filtration Specialist for “real world” documented case histories, illustrating how PROGAF Filter Bags have performed in applications similar to yours.

The PROGAF™ Difference

Ordinary standard filter bags are made from needled felt media that has a fiber structure that is not as fine and precise as the filtration grade melt blown media used for PROGAF Filter Bags. The needled fibers are much larger in size and spaced much further apart, yielding a lower efficiency. PROGAF Filter Bags have been designed to deliver calibrated fractional efficiency on very small particles,

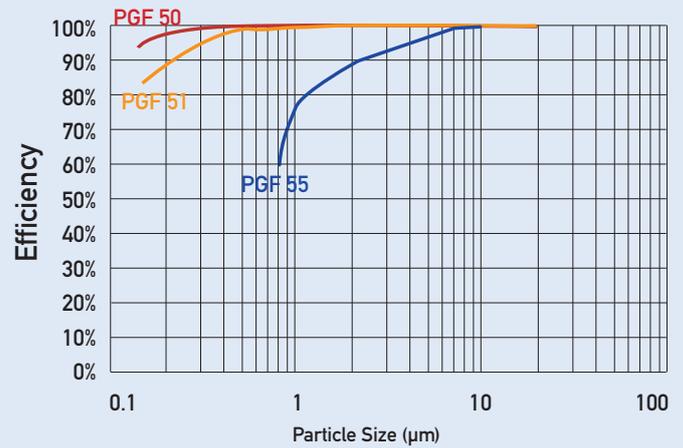
down to less than one micron. The bags feature a completely welded construction and the unique SENTINEL Sealing Ring. And all PROGAF Filter Bags have a round bottom shape for increased pressure stability.



Unique layered construction structure

Fractional Efficiency

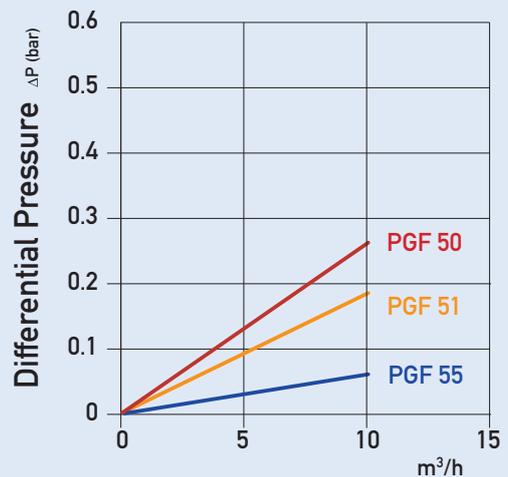
Conditions: see note 2) on page 31

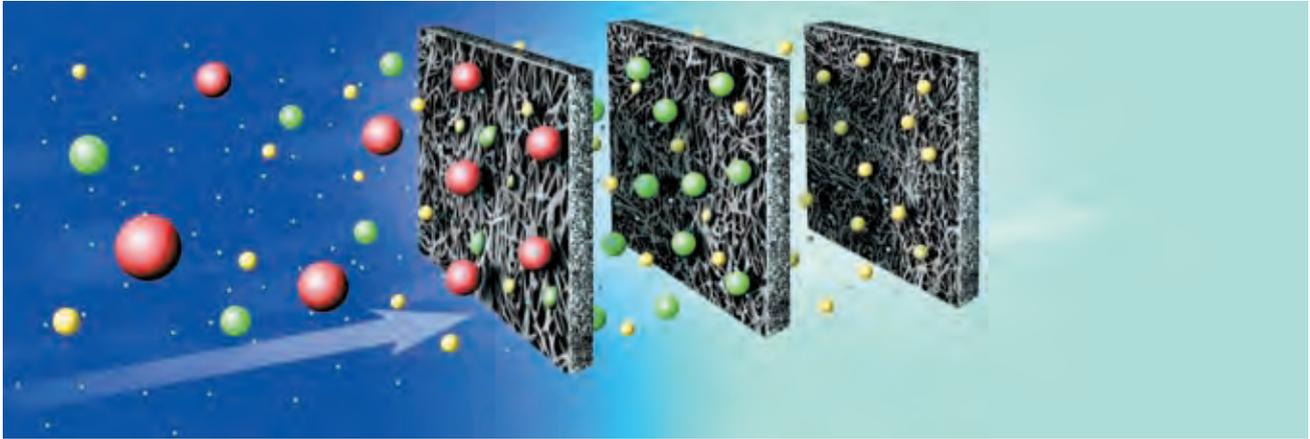


PROGAF Filter Bags are available in efficiency codes of 50, 51 and 55. To select the perfect PROGAF Filter Bag for your application, choose the micron retention efficiency level you need on the left side of the chart at particle size in microns at the bottom. Next, locate the bag efficiency code (identified by the coloured lines) that is closest to that point. There you have it: the most cost effective filter bag for your critical filtration application.

Clean ΔP

(Water at ambient conditions)





Filtration media made-up of many different layers of graded density melt-blown polypropylene. Dirt is removed progressively throughout the media, resulting in a more efficient removal mechanism.

Some Typical PROGAF™ Applications

All materials used in the construction of PROGAF Filter Bags, including the multilayer melt-blown polypropylene media, are FDA/EC listed materials that meet their requirements for food contact applications. But food or beverages are not the only applications that can take advantage of PROGAF's high filtration efficiencies and capacity retention. The pharmaceutical, micro-electronics, chemical, food, ink and paint, and water treatment industries can also use PROGAF High Performance Filter Bags.

Chemical and Pharmaceutical Industries

Demanding filtration in high-purity industries are the applications PROGAF was made for. Media capable of removal to 2 µm absolute with long service life is essential for activated carbon removal or catalyst recovery. Gel removal requires a deep matrix of fine fibers. A PROGAF bag is ideally suited for each of these applications. Available in three filtration ratings, one of the PROGAF bags will deliver just the needed performance.

Water Filtration

Water filtration applications have traditionally been dominated by cartridge filtration. Following extensive worldwide trials, PROGAF 51 has demonstrated a log 3.5 reduction of impurities in these demanding applications.

Micro-Electronics

These applications typically require chemicals that are constantly filtered to extremely low levels of particle contaminant. PROGAF's special profile, with its high efficiency media and graded density structure, provides performance characteristics superior to that of traditional cartridge type filtration. PROGAF out-performs cartridges in terms of dirt-holding capacity, service life, and cost. Membrane prefiltration significantly reduces the SDI values in water filtration.

Compare PROGAF™ to Filter Cartridges and See the Difference

The two charts on the next page graphically illustrate the advantages of PROGAF High Performance Filter Bags over different types of filter cartridges. PROGAF Filter Bags and filter cartridges come in many shapes and sizes. Compare PROGAF Filter Bags with their cartridge equivalent in material, micron rating and industry qualifications. Progressive structure of PROGAF filter bags delivers operating differential pressure which starts and remains lower during filter life than other comparable filters. The chart shown here illustrates the results of actual comparison tests made against two common styles of cartridge filters: depth-loading and pleated polypropylene. During laboratory loading tests, the PROGAF filters remained at the lowest differential pressure of any of the three over

the life, illustrating the effectiveness of the progressively structured media.

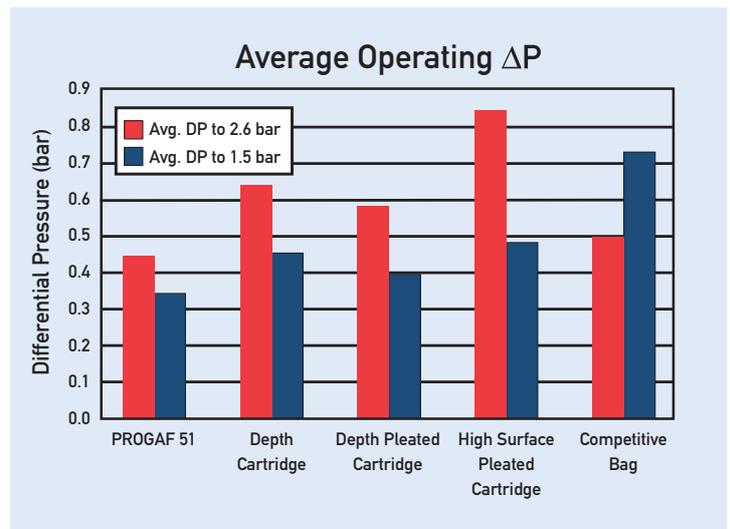
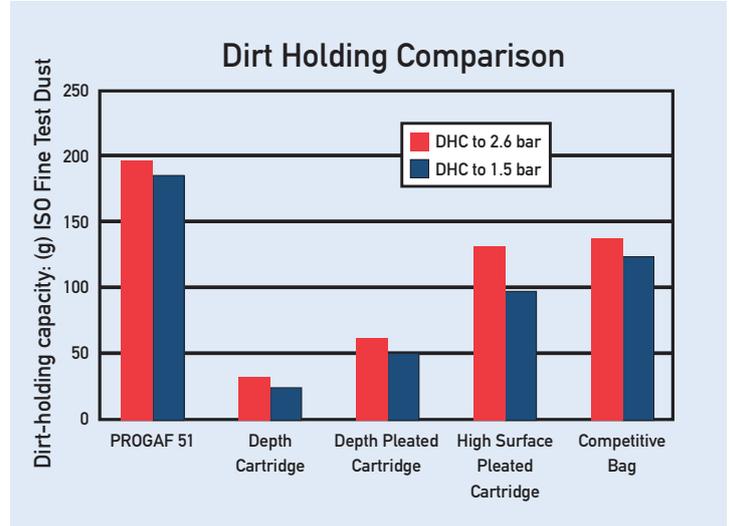
OPERATIONAL CONSIDERATIONS

Bag Positioner

To ensure proper performance, PROGAF Filter Bags must be used with the Eaton Bag Positioner. Using them together aids bag insertion into the filter vessel and assures correct alignment of the bag inside the restrainer basket, prevents the bag from being pushed out of the restrainer basket in case of reverse flow, and makes bag removal easier.

Pre-Wetting in Aqueous Solutions

PROGAF filter bags are fabricated from fine polypropylene filtration media. This material is hydrophobic, which means that water will not wet the surface of the fibers. Therefore, a fluid with lower surface tension must first be used to wet the fibers, as well as cartridge filters made from this material. Prior to installation, you must first immerse the bags for a few minutes in a wetting solution compatible with the process fluid. After the fibers are wet, water is drawn in by capillary action. Full details about how to install and pre-wet PROGAF Filter Bags are provided in the installation instructions.



PRODUCT CODES



ACCUGAF™



ACCUGAF™, Filter Bags for Applications Demanding Efficiency >99%

The ACCUGAF filter bag from Eaton pushes the boundaries of bag filtration technology far beyond traditional designs. With efficiencies >99%, each ACCUGAF model provides cost-effective filtration solutions for demanding applications. The five models assure users that particles from the range of 1-25 microns can be removed effectively while delivering long service life.

High-Efficiency Performance

ACCUGAF filter bags feature:

- 100% welded seams
- Eaton unique SENTINEL seal ring
- Meltblown filtration media in polypropylene or polyester
- No additives, such as resins, binders or surface treatments

FDA/EC-Compliant Materials*

ACCUGAF Polypropylene filter bags are constructed entirely of materials compliant to FDA requirements for materials in contact with food. All materials conform to US Code of Federal Regulations 21 CFR Part 177 as well as to the EC Regulation 1935/2004 and Directive 2002/72/EC.

*Polypropylene only (AGF)

Applications

Although ideally suited for food and beverages, ACCUGAF filter bags will deliver equal performance in a wide range of demanding applications such as:

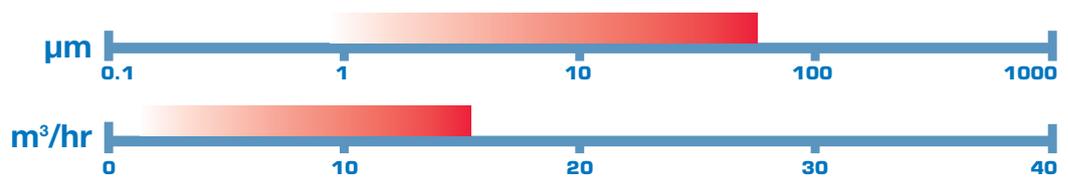
- Beer, wine, spirits and beverage filtration
- Fine particle removal in parts cleaning
- Final filtration of lacquers
- Final filtration of vinegar
- Activated carbon removal in process systems
- Final filtration of hydraulic oils and lubricants

ACCUGAF Filtration Ratings

Conditions: see note 2) on page 31

Material	Filter Model	Particle Size at Common Removal Efficiencies (µm)					ΔP (bar) Size 02 @10m ³ /hr	Max Op. Temp (°C)
		>60%	>90%	>95%	>99%	>99.9%		
Polypropylene	AGF 51	0.2	0.6	0.8	1.5	5	0.09	90
	AGF 53	0.8	1	2	3	5	0.22	90
	AGF 55	1	2	3	5	15	0.05	90
	AGF 57	2	4	5	10	25	0.04	90
	AGF 59	10	20	22	25	35	0.03	90
Polyester	AGFE 51	0.2	0.6	0.8	1.5	5	0.09	150
	AGFE 55	1	2	3	5	15	0.05	150
	AGFE 57	2	4	5	10	25	0.04	150

ABSOLUTE



OPERATIONAL CONSIDERATIONS

Bag Positioner

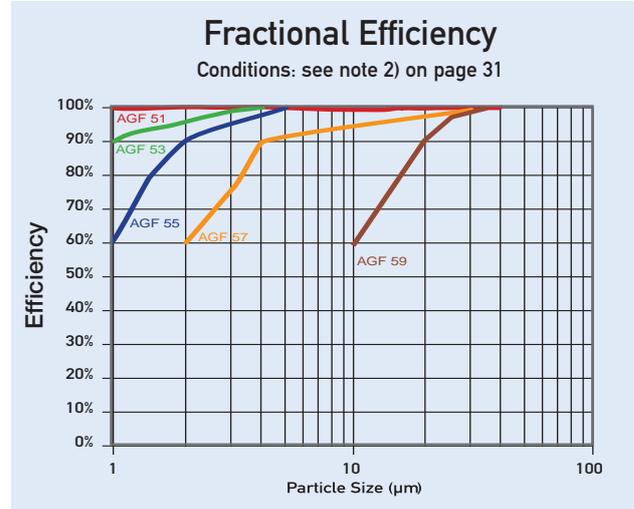
ACCUGAF filter bags must be used with the Eaton bag positioner. This eases insertion and assures correct alignment of the filter bag inside the restrainer basket. In addition, the filter bag will be protected against damage to inadvertent back-flow.

Pre-Wetting in Aqueous Solutions

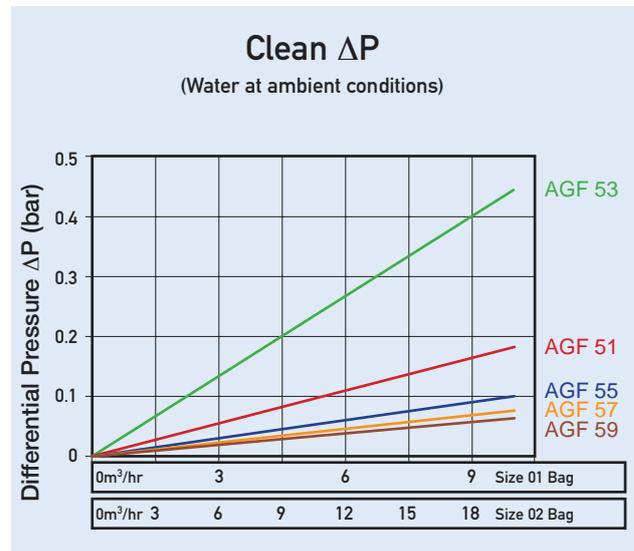
ACCUGAF polypropylene filter bags are fabricated from microfiber filtration media. These materials are hydrophobic, indicating that water will not wet the fiber surfaces. As with all other fine polypropylene filters, a lower surface tension fluid (wetting agent) must be used to wet the media prior to introducing water. Prior to service, the filter bags must be immersed in a wetting solution compatible with the process fluid. After wetting, an aqueous fluid will be drawn into the media through capillary action. Full details about installation and wetting are provided with every box of ACCUGAF filter bags.

AGFE polyester version

- for use in higher temperature application
- no need for pre-wetting in aqueous solutions



ACCUGAF Filter Bags, are available in retention codes of 51, 53, 55, 57, and 59. To select the perfect ACCUGAF Filter Bag for your application use the chart and choose the retention efficiency level you need on the left side of the chart at particle size in microns at the bottom. Next find which bag efficiency code (identified by the coloured lines) is closest to that point. There you have it, the most cost effective filter bag for your critical filtration application.



PRODUCT CODES

ACCUGAF™ AGF: Polypropylene melt-blown AGFE: Polyester melt-blown		E: Polypropylene Mesh R: Polyester Mesh	E: PP SENTINEL® Ring H: Polyester SENTINEL® Ring	Bags/Box 10/15	Box Size M/L																					
AGF Bag Material	53 Micron Rating	E Bag Cover Layer	02 Bag Size	E Collar/Ring Type	O Bottom Shape																					
	<table border="1"> <tr><td>AGF</td><td>AGFE</td></tr> <tr><td>51</td><td>51</td></tr> <tr><td>53</td><td>-</td></tr> <tr><td>55</td><td>55</td></tr> <tr><td>57</td><td>57</td></tr> <tr><td>59</td><td>-</td></tr> </table>	AGF	AGFE	51	51	53	-	55	55	57	57	59	-		<table border="1"> <tr><th>Code</th><th>Size</th><th>Area</th></tr> <tr><td>01</td><td>ø 180 mm x 435 mm L</td><td>0.24 m²</td></tr> <tr><td>02</td><td>ø 180 mm x 810 mm L</td><td>0.48 m²</td></tr> </table>	Code	Size	Area	01	ø 180 mm x 435 mm L	0.24 m²	02	ø 180 mm x 810 mm L	0.48 m²		10M Packaging
AGF	AGFE																									
51	51																									
53	-																									
55	55																									
57	57																									
59	-																									
Code	Size	Area																								
01	ø 180 mm x 435 mm L	0.24 m²																								
02	ø 180 mm x 810 mm L	0.48 m²																								
					round bottom																					

LOFCLEAR™

Cost Effective Filter Bags for Absolute Filtration Applications

LOFCLEAR filter bags now make absolute filtration viable in many applications where only standard bags could be used due to cost constraints. Made from 100% pure polypropylene materials, LOFCLEAR filter bags contain no lubricants. In addition, their excellent oil adsorbancy makes LOFCLEAR filter bags ideally suited to the oil removal needs of the paint and coatings industries.

Two Series to Match Filters to Applications

LOFCLEAR filter bags are available in two styles, Series 100 and Series 500. These two styles make it possible to match the requirements of a wide range of applications, depending on the needs for efficiency and long life. The Series 100 filters use a multi-layer construction for applications where high efficiency is of prime importance. The Series 500 filters utilize a unique pleated construction to increase surface area for applications requiring high dirt capacities and long life.

Perfect for Removal of Gelatinous Materials

LOFCLEAR filter bags have proven to be highly effective in the removal of gelatinous contaminants. The combination of deep microfiber filtration media breaks up gels and

LOFCLEAR™ Filtration Ratings

Conditions: see note 2) on page 31

Filter Model	Particle Size at Common Removal Efficiencies (µm)				ΔP (bar) Size O2 @10m³/hr
	>60%	>90%	>95%	>99%	
113/123	0.5	1	2	4	0.025
114/124	0.75	2	3	5	0.02
115/125	1.5	3.5	8	10	0.01
116/126	2	6	13	15	<0.01
118/128	25	35	37	40	<0.01
119/129	15	25	27	30	<0.01
130	6	14	15	20	0.05
135	1	6	8	10	0.02
522	0.5	1	1.5	2.6	0.13
525	1	2	3.5	6	0.08
527	2	5	9	13	0.008
529	10	20	23	32	<0.005



retains them within the media depth. These features prevent surface blockage and breakthrough typical of standard filter bag materials.

LOFCLEAR™ Series 100 Filter Bags

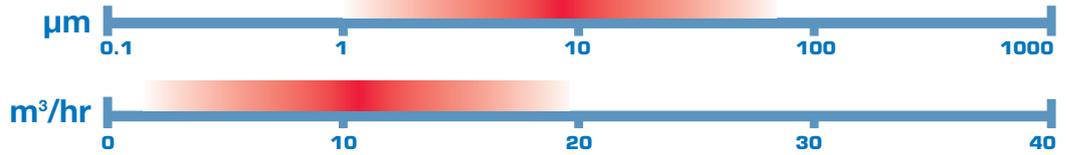
LOFCLEAR Series 100 Filter Bags feature a proven three-layer construction with a sewn filter welded to the Eaton SENTINEL seal. They feature efficiencies >99% over a wide range of particle sizes, with dirt capacities up to 250 g. The eight models feature:

- Polypropylene prefilter
- Meltblown polypropylene microfiber final filter
- Polypropylene outer migration barrier

LOFCLEAR Series 100 filter bags are an excellent choice for application such as high-purity fluids with low particulate concentration, first-pass guard filtration, oil adsorption and activated carbon removal.

The LOFCLEAR 128 and 129 were especially developed for the filtration of electro-coatings in the automotive industry. The filtration design allows pigments to pass through the filtration layers, while retaining impurities and removing silicones and other crater-forming substances. The LOFCLEAR 130 filter bag adds extra adsorption capacity for retaining high amounts of oils or other crater-forming substances. The LOFCLEAR 135 delivers high removal of particulate and oils for clearcoat applications where pigment removal is not an issue.

ABSOLUTE



LOFCLEAR™ Series 500 Filter Bags

LOFCLEAR Series 500 Filter Bags have an all-welded multi-pleated construction for high efficiency and long life. This series of bags has a pleated prefiltration layer and a complex design of final filtration layers, allowing the removal of difficult-to-filter gels and deformable particles with a high capacity of solids loading. The outer web covering eliminates any downstream fiber migration.



A pleated prefilter provides a very large surface (about 3m²) to collect gels and solids before it reaches the final filter layers.



LOFCLEAR Series 500 Filter Bags are available in four different efficiency ratings so you can choose your exact required filtration efficiency. LOFCLEAR Filter Bags have filtration efficiencies from 95 to 99%, with a dirt-holding capacity of over 1000g.

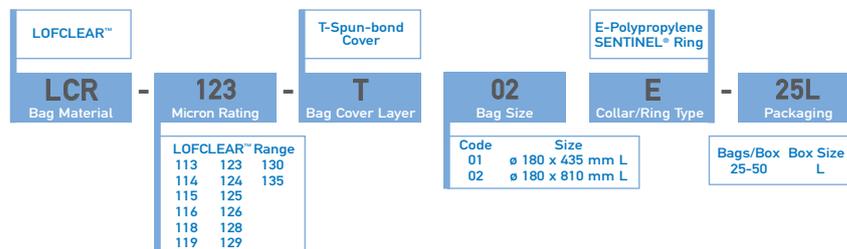
Among the many applications for LOFCLEAR Series 500 Filter Bags are oils, slurries, dilute oil removal, re-circulating batch systems, and systems with heavy contamination.

OPERATIONAL CONSIDERATIONS

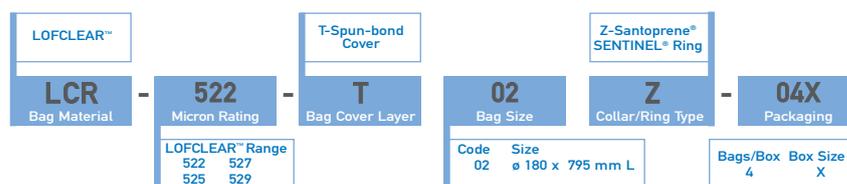
Bag Positioner

LOFCLEAR Series 500 filter bags must be used with the Eaton bag positioner. This eases insertion and assures correct alignment of the filter bag inside the restrainer basket. In addition, the filter bag will be protected against damage to inadvertent back-flow.

PRODUCT CODES 100 series



PRODUCT CODES 500 series



DURAGAF™

Extended Life Filter Bags Can Improve Your Filtration Process and Save You Money

DURAGAF™ for High Performance

Extended Life Filter Bags Designed to Save You Money
DURAGAF filter bags represent the state-of-the-art in needed felt bag filter media. Their unique structure delivers equal filtration performance with lifetimes 2-5 times longer than ordinary felt media. The result is reduced operating costs due lower bag consumption, downtime, change-out labor, storage and disposal.



Why DURAGAF Filter Bags Last Longer

DURAGAF filter bags are available in two extended life materials: polypropylene (code POXL) or polyester (code PEXL). These two materials utilize a fiber blend with a finer fiber diameter and a higher weight than ordinary media. The result is a dramatically higher dirt holding capacity at the same efficiency and differential pressure. Processes run longer and need fewer bag changes with DURAGAF filter bags.

All-Welded Construction for Superior Performance

All DURAGAF filter bags feature 100% welded fabrication and the Eaton SENTINEL seal. This construction eliminates the bypass which can occur in standard sewn filter bags. Eaton proprietary welding technology produces a super-strong seam that will stand up to even the most demanding applications without failure.

DURAGAF Filter Bags Seal Better in Critical Applications

The unique SENTINEL seal is standard on all DURAGAF filter bags. The unique, pressure-actuated ring actually improves its seal as differential pressure increases.

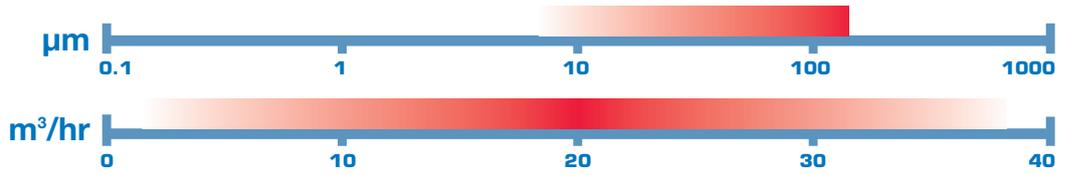
No Downstream Fiber Contamination

All DURAGAF filter bags are manufactured with a proprietary downstream surface treatment to prevent fiber migration. A special finish is obtained by glazing the surface, melting fibers together to form a tight, secure downstream matrix. In addition, the weld seams are heat bonded to eliminate loose fibers which might result during fabrication.

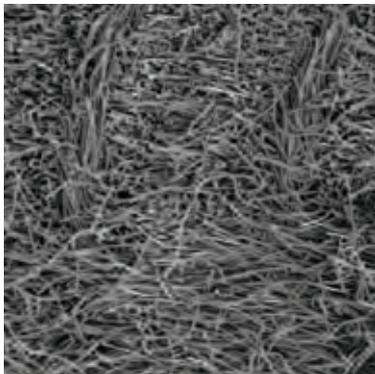
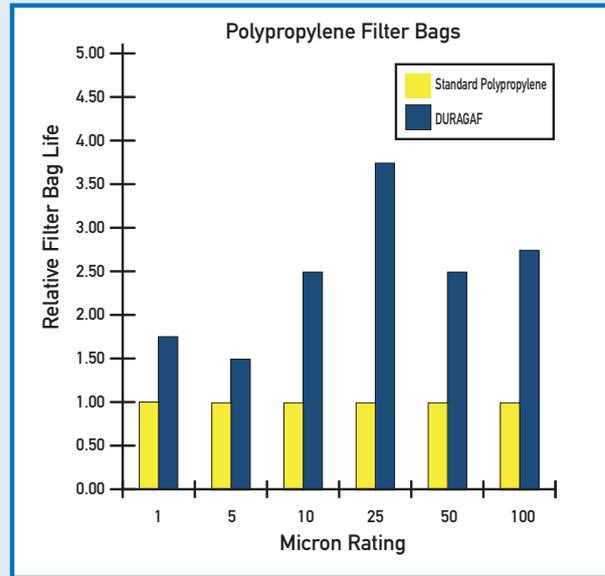
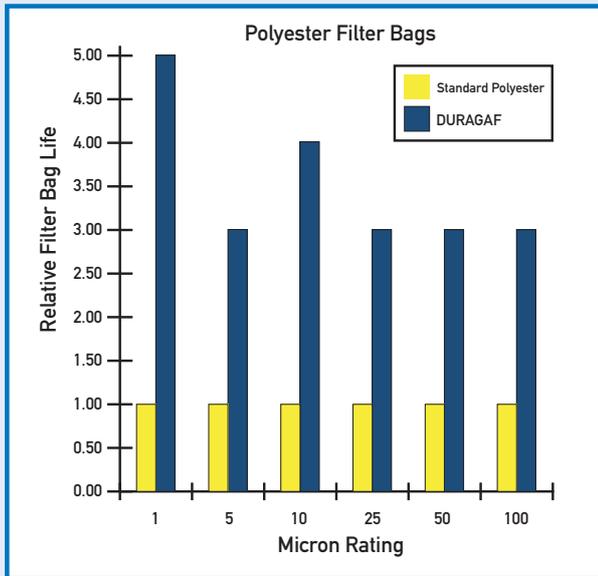
Food and Beverage Applications

DURAGAF filter bags are available in models (POXLF, PEXLF) which are compliant with FDA and EC requirements for food contact.

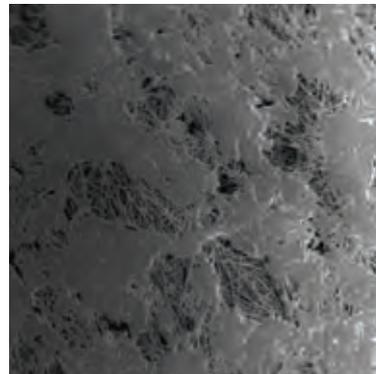
NOMINAL



How much longer will a DURAGAF™ Filter Bag last in your application?



Extended Life Felt
finer fibers
more pores
thicker media



Surface of Extended Life Felt
no fiber release
full flow through surface channels

PRODUCT CODES

DURAGAF™
POXL: Polypropylene
PEXL: Polyester
POXLF: Polypropylene Food Grade
PEXLF: Polyester Food Grade

P: Plain

E: Polypropylene SENTINEL Ring, Welded (POXL)/(POXLF)
H: Polyester SENTINEL Ring, Welded (PEXL)/(PEXLF)

POXL

50

P

01

E

30L

Bag Material

Micron Rating µm

Bag Cover Layer

Bag Size

Collar/Ring Type

Packaging

POXL/PEXL	PEXLF	POXLF
1 5	1 5	
10 25	5 10	
50 100	10 25	50

Code	Size
01	ø 180 x 430 mm
02	ø 180 x 810 mm

Bags/Box	Box Size (mm)
30	L

CLEARGAF™



CLEARGAF™ Fully Compliant and Approved for Food and Beverage Service

CLEARGAF™ Features Deliver Advanced Benefits

- Compliant materials assure compatibility with all food applications. Sewn bags use special lubricant-free thread
- Independent verification guarantees conformity to EC and FDA requirements
- Low-migration media minimizes substances introduced to fluids
- SENTINEL® Ring Bag Seals eliminate fluid bypass
- All-welded construction eliminates fluid bypass through needle holes on felt and multi-layer filter bags
- Controlled production eliminates contamination from handling and environmental conditions
- Single packaging keeps bags free from contamination during shipping, storage and installation
- Special handling & storage ensures that there is no contamination after packaging

CLEARGAF is the series of filter bags specifically designed for the requirements of the food, beverage and pharmaceutical industries. Comprised of several filter styles, CLEARGAF delivers:

- FDA compliant materials per 21CFR177
- EC compliant per 1935/2004
- EC compliant per 2002/72/EC
- Independent testing and certification
- Special single packaging and warehouse control

CLEARGAF™ Filter Bags for Direct Contact with Foodstuffs

Filter Bags are widely used for the filtration of fluids that are directly or indirectly used as foodstuffs. In most applications, these types of filters must be carefully selected to ensure that foodstuffs are not contaminated from their use. Most materials used to manufacture disposable filters, including bag filters and cartridge filters, are polymers, which are generally selected for their purity in the application. Many of these materials, however, contain materials that can diffuse out of the plastic into the process fluid. This effect, known as migration, can lead to foodstuff contamination. For this reason, the use of polymers is often limited to products such as CLEARGAF Filter Bags, which are made from materials that have been documented as safe in food applications. CLEARGAF Filter Bags conform to both US FDA and European EC regulations. The difference between the FDA and EC regulations is one of degree. FDA regulation

limits on migration are proportional to weight. EC limits, however, are based on area, and must be demonstrated in tests on finished articles. For heavy material, the EC limits can be up to 50 times more restrictive than the FDA ones.

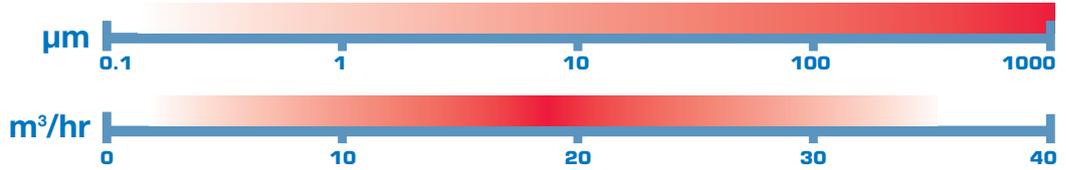
Independent Verification

You can be sure all CLEARGAF Filter Bags meet these requirements, because they have been evaluated, tested and certified for EC migration performance by an independent food research institute. CLEARGAF Filter Bags are also made from materials listed in the US Code of Federal Regulations Title 21 Part 177. No other materials are added during fabrication.

Special Manufacturing and Packaging

CLEARGAF Filter Bags are manufactured under special conditions to ensure that they contain no contamination. Immediately after manufacture, each bag is individually sealed in protective plastic packaging to keep them contamination-free. Eaton has special warehousing facilities for CLEARGAF Filter Bags to further protect them during storage. No other manufacturer goes to these lengths to ensure the quality of their food grade filter bags.

ABSOLUTE/ NOMINAL



Selection Chart

	Max.Temp (°C)	Sizes		Available Grades											Ring Style			
		01	02	1	5	10	25	50	80	100	150	200	250	400		600	800	
PEF*	140	█	█	█	█	█	█	█										H
PEXLF*	140	█	█	█	█	█	█	█										H
POF*	90	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	E
POXLF*	90	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	E
NMOF	140	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	H
AGF*	90	█	█															E
PGF*	90	█	█															E

*Products subject to MPQ in Europe applications. See Technical Bulletin TB990801 for full details.

PRODUCT CODES

- PEF: polyester needlefelt
- PEXLF: extended life polyester needlefelt
- POF: polypropylene needlefelt
- POXLF: extended life polypropylene needlefelt
- NMOF: nylon monofilament
- AGF: polypropylene meltblown
- PGF: polypropylene meltblown

CLEARGAF™

PEF

Bag Material

25

Micron Rating µm

CLEARGAF Range
1, 5, 10,
25, 50, etc.

P

Bag Cover Layer

E: Extruded mesh (for AGF, PGF)
P: Plain (no cover)

01

Bag Size

Code Size
01 ø 180 mm x 430 mm L
02 ø 180 mm x 810 mm L

H

Collar/Ring Type

E: PO SENTINEL® Ring
H: PE SENTINEL® Ring

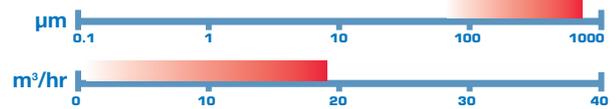
40L

Packaging

Bags/Box Box Size
10-50 S, M, L

BANDSEAL™

NOMINAL



For simple, minimal-pressure non-critical open filtration applications (that is, filtration without a vessel), Eaton's line of BANDSEAL Filter Bags offers many

cost-effective choices. These filter bags are available with a drawstring that permits them to be installed directly on the end of a pipe, without the need of an adapter.



PRODUCT CODES

BANDSEAL™
NMO: Nylon Monofilament

NMO

Bag Material

100

Micron Rating µm

BANDSEAL Range
25-800

P

Bag Cover Layer

P: Plain

01

Bag Size

Code Size
01 ø 180 mm x 430 mm L
43 width 140 mm x 300 mm L
45 width 140 mm x 500 mm L

R

Collar/Ring Type

R: without ring

R

Options

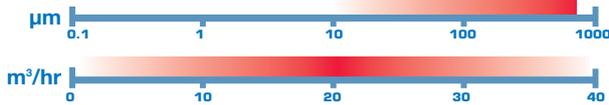
R: tie on band
none: without band

50S

Packaging

Bags/Box Size
50 S

NOMINAL



SENTINEL®

Welded Construction Filter Bags



Welded Construction Filter Bags

SENTINEL filter bags from Eaton represent the industry standard in bypass-free filter construction. Available in polyester and polypropylene materials, all SENTINEL filter bags feature:

- SENTINEL Pressure Actuated Seal Ring
- Super Strong Welded Construction
- Special surface finish strongly reduces fiber release

Proprietary Construction

Eaton's proprietary construction processes produce a reliable, durable filter bag. All seams are fully welded, producing strong, reliable joints with no by-pass or loose sewing thread. Seams are both strong and flexible, allowing the filter bag to form to the restrainer basket. The seam edges are heat sealed, eliminating possible loose fibers. This results in a filter bag with durable performance for the most demanding applications.

SENTINEL® Seal Ring

All Eaton SENTINEL filter bags utilize the unique SENTINEL seal. Its all-plastic construction provides a flexible, chemically resistant seal which adapts to any filter vessel. This unique design employs a pressure activated sealing lip which responds to increases in differential pressure. As the pressure increases, the seal of the ring improves, insuring by-pass free performance over all ranges of pressure, temperature and micron rating. The elevated bag handles make removal of the bag from the vessel quick and easy. When a SENTINEL filter bag is installed into a Eaton filter vessel, the ring snaps into place, holding its position until the vessel is closed.

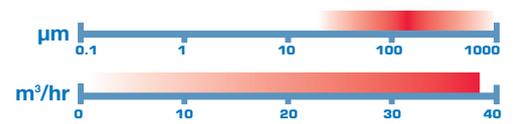
Now, applications requiring polypropylene or polyester felt filter bags can take advantage of the all-welded construction afforded by Eaton SENTINEL® Filter Bags. These bags feature super-strong welded construction rather than sewn seams. This construction ensures that nothing bypasses the process media through holes in sewn fabric.

PRODUCT CODES



SNAP-RING®

NOMINAL



Sewn Construction Filter Bags

For over 30 years, Eaton SNAP-RING® filter bags have been critical components of filtration systems world-wide. The wide range of media materials, affordable price, and reliability of construction have made them the ideal choice for applications in nearly all process industries.

Superior, Consistent Quality

SNAP-RING filter bags are manufactured to the highest standards of fabrication available. Materials must satisfy stringent specifications for filtration performance and media purity. Production under ISO 9001 quality systems results in order to order, year to year, reliability and repeatability.

Adaptable to All Vessels

SNAP-RING filter bags are designed and constructed to fit the widest range of filter vessels, whether from Eaton or from another supplier. Special geometries are available to fit most non-standard vessels. No matter what the vessel, there is an Eaton SNAP-RING bag to fit it.



Application Versatility

SNAP-RING filter bags are available with several ring materials, six different media materials and eleven micron ratings. SNAP-RING filter bags can handle corrosive chemicals, aggressive solvents and even elevated temperatures. With this many choices, the right Eaton filter bag is available for every application.

PRODUCT CODES

Needlefelt
 PE: Polyester HT: Meta-Aramid
 PO: Polypropylene PT: PTFE
 NY: Nylon W: Wool

Monofilament Mesh
 NMO: Nylon PEMO: Polyester
 PMO: Polypropylene PTMO: ETFE
 PVMO: PVDF

Multifilament Mesh
 PEMU: Polyester



HAYFLOW™

Eaton's Revolutionary New Filter Element



The handles on the SENTINEL ring and the centre sleeve allow for easy extraction of the HAYFLOW element.

HAYFLOW™ – The Next Generation of Filtration Systems

With this new, unique pending filter element Eaton technology has combined the best of both bag and cartridge filters into one single filtration element for outstanding filtration performance. Because HAYFLOW's surface area is up to 65% greater than a similar size filter bag, existing systems that use HAYFLOW experience longer filter element life and less changing, resulting in reduced running costs. With HAYFLOW, designers of new bag filtration systems can opt for reduced running costs or, because of the high flow rates possible with HAYFLOW, reduce filter vessel size by up to 50% thus lowering the initial cost of the system.

What Makes the HAYFLOW™ Element Better

The heart of Eaton's HAYFLOW filter element is two concentric cylinders of high-quality extended life Eaton filter media. These cylinders are formed using unique welding technology to create a no by-pass seam. The diameter of the cylinder is the same size as a standard filter bag, so retrofitting into existing systems is easy. The HAYFLOW element is fitted with Eaton's unique SENTINEL® sealing ring, ensuring a positive seal with the filter vessel to protect against bypass of the process media.

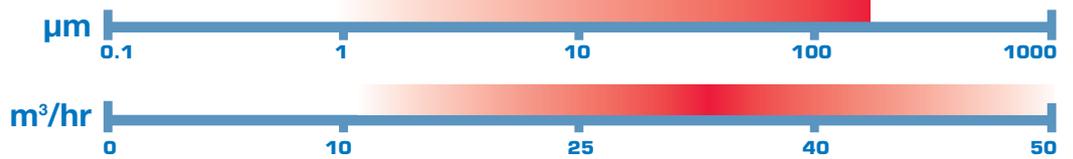
How the HAYFLOW™ Element Works

The process fluid enters the inside of the element, passes through it, and exits through the vessel outlet. Like a filter bag, the filtered-out material stays inside the HAYFLOW element. The HAYFLOW element is unlike a filter cartridge, where the residue of the filtered material remains on the outside of the cartridge, complicating the changing process.

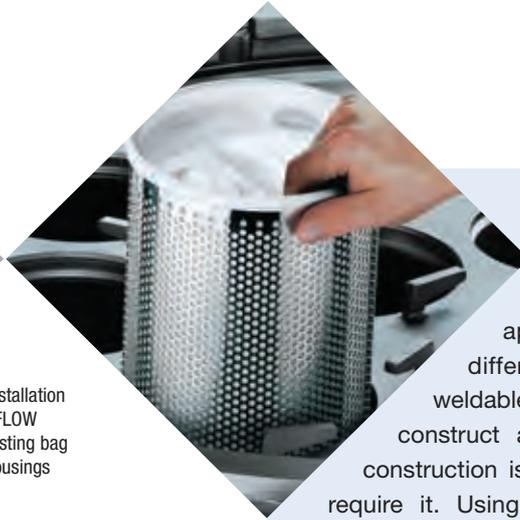
An All-Around Better Choice

Changing a HAYFLOW filter element can actually be easier than changing a filter bag, because HAYFLOW's revolutionary design only retains 25% of the residual liquid volume of a similarly sized filter bag. When you need to change the element, it weighs up to 75% less than a filter bag. A full bag can weigh up to 15 kg, so weight is an important

NOMINAL RATED



Easy installation of HAYFLOW into existing bag filter housings



The Choice is Yours

Eaton's HAYFLOW filter element can be adapted to a wide range of applications through the use of different filter media. Basically, any weldable filtration media can be used to construct a HAYFLOW element. Multilayered construction is also possible for applications that require it. Using melt-blown polypropylene media, HAYFLOW elements are available with high micron retention ratings, and with selective absorption characteristics as well. Standard HAYFLOW filter elements are available in both polypropylene and polyester construction. These two materials are very versatile and will perform in a majority of applications over a wide range of temperatures. Eaton uses a high-quality, extended life DURAGAF™ needlefelt media with extremely fine fibers and higher pore volumes for superior performance. Both feature either polypropylene or polyester SENTINEL sealing rings.

consideration for the system operator. HAYFLOW's cylindrical construction offers strength unrivaled in other similar products. The all welded filter element is fit to a matching restrainer basket, allowing the filtration media to be replaced easily and quickly. The close-tolerance fit of the filter and the restrainer basket provide ease of installation and worry-free performance. This combination of fully-welded seams and a rigid, cylindrical geometry provides strength over a full range of operating differential pressure. The HAYFLOW element is always smooth and fits to the basket walls without crimps or pleats, guaranteeing a quick and easy installation. Batch system operators often do not want to stop a batch process and change a filter bag. Using HAYFLOW, system operators have found up to 5 times the life over a similar size filter bag and experienced reduced operating costs.

Usually, bag filters are bigger than cartridge filters but are easier to handle and more cost effective. HAYFLOW brings the best of both systems together...high flow rates in compact vessels, or a longer lifetime and extended changing cycles. HAYFLOW combines highly efficient filter media, enlarged surface area, better dirt-holding capabilities and a reduction of the residual liquid volume retained in the element. All of these advantages result in superior filtration performance.

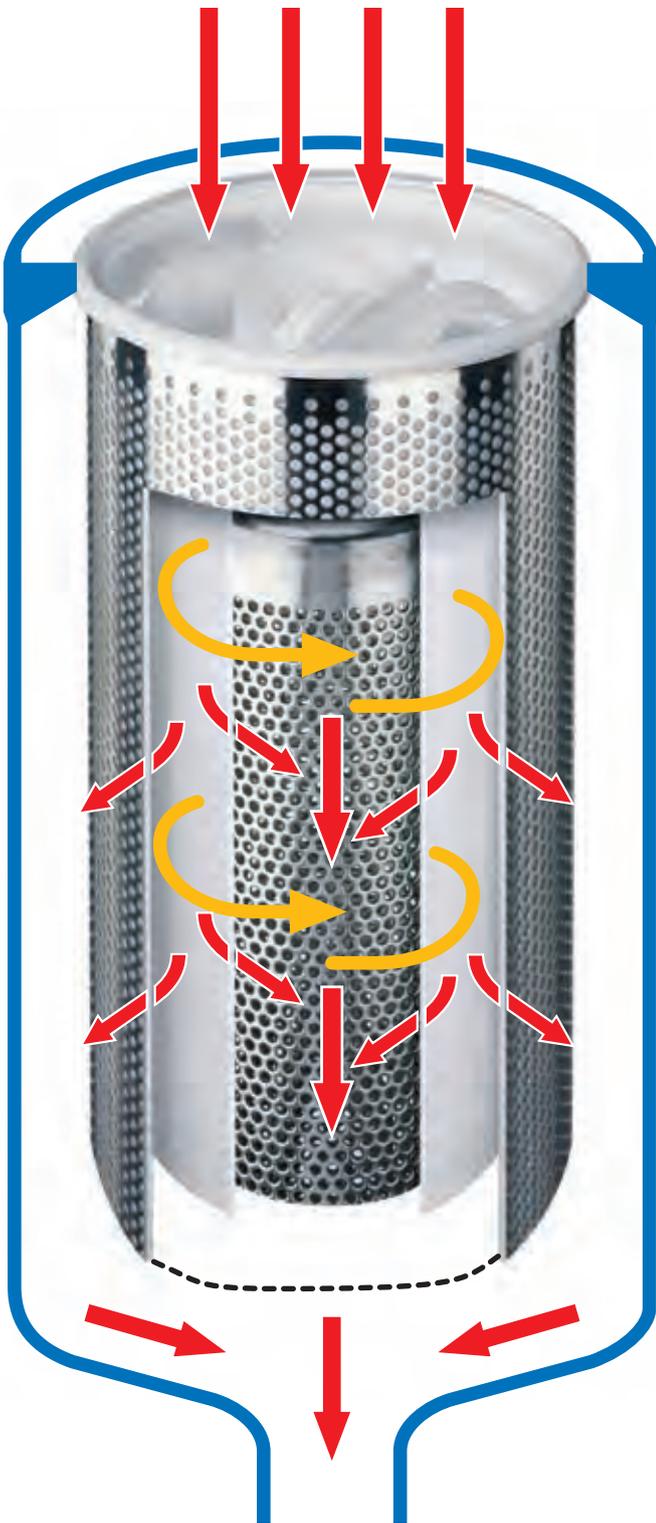
Cut open element from an E-coat tank filtration after being in service for eleven weeks



Metal fines collected from parts washer



The HAYFLOW Effect



Features:

- Higher flow rates - smaller, less costly vessels can be used
- Up to five times greater life over filter bags
- Liquid losses are 25% of similar size filter bag
- SENTINEL sealing ring and 100% welded construction for no by-pass
- Up to 35 times more effective than standard filter cartridges
- Low differential pressure results in less energy consumption of pumps
- Very cost-effective in comparison to similar systems
- Rugged cylindrical construction
- Easier maintenance with reduced costs
- Easy retro fit to existing filter vessels

And....Eaton's superior support, before, during and after system installation.

Take Advantage of HAYFLOW™ Now

You can easily change over from ordinary bag filtration to the revolutionary new HAYFLOW filter element. Existing bag filter vessels need only to be fitted with a new HAYFLOW restrainer basket for instant compatibility with the HAYFLOW element. No modification to the vessel is required. Just drop in the new basket, and you are ready to take advantage of all the benefits offered by a HAYFLOW filtration system.

Still Not Sure if HAYFLOW™ is Right for You?

Contact us. We can show you how you can save money and improve your filtration process using HAYFLOW filter elements.

Application:

- ✓ Automotive
- ✓ Sugar Processing
- ✓ Paints, Coatings, Inks, Dispersions
- ✓ Resins
- ✓ Water and Waste Water Treatment
- ✓ Solvents
- ✓ Lubricants and Metalworking Fluids
- ✓ Aqueous and Solvent Based Cleaners in Parts Washing Equipment
- ✓ Pulp and Paper
- ✓ Oil and Gas Exploration and Processing
- ✓ Pharmaceutical
- ✓ Food Processing
- ✓ Chemical Process Industries
- ✓ Potable Water, Beer and Wine
- ✓ Edible Oils

Remember “Filter Cost” and “Filtration Cost” are Not the Same Thing

We can explain the difference and demonstrate the HAYFLOW advantage in your application.



PRODUCT CODES

HAYFLOW™



VESSELS

Eaton is the leading manufacturer of bag filter housings. Creative innovations have been the logic for a highly diversified range of vessels to meet the most demanding as well as standard applications. From single to multibag housings, from stainless steel to engineered plastic vessels.

SIDELINE™ ▶

Mid-priced, heavy duty construction, side entry filter vessel for most industrial and commercial filtration applications. Choice of DN 50 or DN 80 flanged connections for application versatility. CE/ASME code stamped version available with the exclusive Eaton Five-Year Warranty.



◀ TOPLINE™

The best filter vessel for the most demanding applications. Cast construction. Over the top entry, low pressure drop design for optimum filtration results. Quick and easy bag changing make TOPLINE ideal for batch filtration applications. CE/ASME code stamped version available with the exclusive Eaton Five-Year Warranty.

MAXILINE™ ▼

Multi-bag filters for high flow rate applications for over 900 m³/h in sizes for up to 24 bags. CE/ASME code stamped version available. Five cover designs for all applications—economical davit, easy-opening spring hinge and quick opening (the quickest opening cover of any multi-bag vessel)—only 15 seconds for reduced downtime between bag changes.



◀ ECOLINE™

High quality, low cost fabricated filter vessels for applications to 6 bar. V-clamp cover closure makes bag changing fast and easy. Lightweight for simple installation, ECOLINE is your best choice for cost-sensitive applications without sacrificing quality.



FLOWLINE™ ▲

Lightweight, cost effective fabricated filter vessel. Hinged cover with swing bolt closures for easy bag access. Ideal for heavy duty industrial and OEM applications.

Eaton offers the right vessel for any application and budget.

Manufacturing plants in five different locations around the globe allow for adaptations to local specifications in a standard design.

MINILINE™ ▶

Small, side entry vessels in two sizes. Fabricated construction for light weight, self-supported installation. Perfect for trap/polish filters to protect spray nozzles, pumps and flow meters, or as a filter prior to filling operations such as tanks, bottling or canning lines.



POLYLINE™ ▲

All-plastic glass fibre-reinforced polypropylene or pure PVDF construction for corrosive and contamination-sensitive applications. One-piece, seamless plastic body rated up to 10 bar. Hand-removable, spin off cover. Integral mounting flange for easy, rock-solid installation.

Log On to the Eaton Web Site

Get expanded product information, dimensional drawings, chemical resistance tables and other useful calculators for determining pressure loss and water hammer figures.

Look for new and useful features updated monthly.

www.filtration.eaton.com



BAGS

Available Size / Maximum Flow (m³/h)							Rings			Weld/Sewn			Media			Max op. Temp (°C) ¹⁾
01	02	03	04	43	45	SENTINEL	SNAP-RING	Band	Ring	Side	Bottom	Material	Type	Surface Finish		
	10					E			W	W	W	Polypropylene	Meltblown		90	
8	15					E			W	W	W	Polypropylene	Meltblown		90	
8	15					H			W	S	S	Polyester	Meltblown		150	
8	15					E			W	S	S	Polypropylene	Meltblown		90	
8	15					E			W	S	S	Polypropylene	Meltblown		90	
	12					Z			W	W	W	Polypropylene	Meltblown		90	
20	40					E			W	W	W	Polypropylene	Felt	singed	90	
20	40					H			W	W	W	Polyester	Felt	singed	140	
20	40					E			W	W	W	Polypropylene	Felt	glazed	90	
20	40					H			W	W	W	Polyester	Felt	glazed	140	
20	40					H			W	S	S	Nylon	Mesh		140	
15	30					E			W	W	W	Polypropylene	Felt	glazed	90	
15	30					H			W	W	W	Polyester	Felt	glazed	150	
20	40	6	12			E			W	W	W	Polypropylene	Felt	singed	90	
20	40	6	12			H			W	W	W	Polyester	Felt	singed	150	
20	40	6	12			Z			S	S	S	Nylon	Mesh		125	
20	40						S		S	W	S	Polypropylene	Felt	singed	110	
		6	12				S		S	S	S	Polypropylene	Felt	singed	110	
20	40	6	12				S		S	W	S	Polyester	Felt	singed	190	
20	40	6	12				S		S	S	S	Nylon	Felt		190	
20	40						A		S	S	S	Meta-Aramid	Felt	singed	205	
20	40						A		S	S	S	PTFE	Felt		260	
20	40						S		S	S	S	Wool	Felt		135	
20	40	6	12				S		S	S	S	Nylon	Mesh		190	
20	40						A		S	S	S	Polypropylene	Mesh		110	
20	40						S		S	S	S	Polyester	Mesh		190	
20	40						A		S	S	S	ETFE	Mesh		150	
20	40						A		S	S	S	PVOF	Mesh		150	
20	40						S		S	S	S	Polyester	Mesh		145	
20				6	12			R	S	S	S	Nylon	Mesh		190	
									S	S	S	Nylon	Mesh		190	
	40					E			W	W	W	Polypropylene	Felt	glazed	90	
	40					H			W	W	W	Polyester	Felt	glazed	150	
	25					E			W	S	W	Polypropylene	Meltblown		90	

- 1) Values for general information only. Customers are urged to make their actual use or soak tests.
- 2) Reference values based on single pass tests in ambient lab conditions with ISO test dust in water at 10 m³/h / size 02
- 3) Based on an accepted paint-compatibility test (see document QUC-STA-10)

North America - HQ

44 Apple Street,
Tinton Falls, NJ 07724
Toll Free: 800 656-3344
(North America only)
Voice: +1 732 212-4700

Brazil

Av. Julia Gaioli, 474 - Bonsucesso
07251-500 - Guarulhos
Brazil
Voice: +55 11 2465 8822

For more information, please e-mail us at filtration@eaton.com

Visit us online at eaton.com/filtration for a complete list of Eaton's filtration products

Europe/Africa/Middle East

Auf der Heide 2
53947 Nettersheim, Germany
Voice: +49 2486 809-0

Internormen Product Line
Friedensstraße 41
68804 Altiusheim, Germany
Voice: +49 6205 2094-0

Begerow Product Line
An den Nahwiesen 24
55450 Langenlonsheim, Germany
Voice: +49 6704 204-0

China

No. 7 Lane 280 Linhong Road,
Changning District,
Shanghai 200335, China
Voice: +86 21 5200 0422

Singapore

4 Loyang Lane #04-01/02
Singapore 508914
Voice: +65 6825 1668

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