

Spring 2005

“The filter bag that performs like an expensive cartridge!™”

New Product:

Ultrafit Welded 700 Series High Performance Liquid Filter Bag

Absolute-Rated, Graded Density with *HCT- Hybrid Composite Technology*® developed and manufactured by *Filtration Systems*. Model Number: **700-P001-P2-IP**

Features:

This “Super Bag” is the first to integrate four different textile formats, ultrasonically laminated and constructed. Excellent for replacement of cartridges, pre-filtration of membranes or Reverse Osmosis, where performance ratings need to be assured. *Ultrafit 700* is designed to outperform the most expensive cartridges in the marketplace for literally pennies on the dollar, when comparing cost-per-gallon filtered.

Uses:

Manufacturing and Process Applications of Water, Beverages, Soft Drinks, Juices, Liquor, Beer, Wine, Pharmaceutical, and all liquids where purity is critical.

Specifications:

99.99% (Beta 10000) @ 2µm, and 99.9% (Beta 1000) @ 1µm – efficiency tested using two types of testing methodologies. Meets and exceeds current and proposed EPA Rules and Requirements for *Cryptosporidium parvum* and *Giardia lamblia* cyst reduction, from Surface Water and Groundwater.

All micron ratings offered throughout the various *Ultrafit* Welded product lines, Series 100, 500, 700 and 800, are manufactured with Food and Drug Administration (FDA) registered and approved virgin polypropylene and other components of construction, relative to materials used. Our filter bags are ultrasonically welded; no additives, adhesives, or silicone are used in their manufacture.

Components of the *Ultrafit* Welded filter bags meet the requirements of the FDA, as specified in 21 CFR 177.1520(a)(1) and (c) 1.1. All other ingredients used in the formulation meet their respective FDA regulations and 21CFR 177.1520(b). In summary, all materials used meet the FDA criteria covering the safe use of polyolefin articles and components intended for food contact use, including cooking applications.

Conceptual:

Ultrafit Welded 700 Series, HCT is the result of two years of development and manufacturing innovation, and was granted multiple patents and trademarks, including Graded-density, Composite Layer Design®, HCT – Hybrid Composite Technology™, PERMEA™, IP- Integrated Polymeric Support™, Zero-Bypass™ Collar, and Bullet™ Basket. Mechanical Mfg. Corporation, *Filtration Systems* division owns the product, the name *Ultrafit* Welded, as well as the following patents 4,921,606; 5,246,581; 5,306,108; 5,770,077; 6,511,606B2. Other patents are pending.

Technical Note:

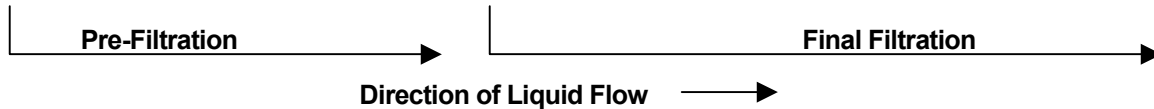
To assure proper sealing and optimum performance, *Ultrafit* Welded 700 Series HCT must be used in our *Over-The-Top*™ design housings and systems with a *Bullet*™ basket.

Ultrafit® Welded 700 Series High Performance Liquid Filter Bags HCT-HYBRID COMPOSITE TECHNOLOGY™, Absolute Rated, Graded-Density

Ideal for high-purity and critical liquid process applications, Ultrafit Welded 700 Filter Bags achieve 99.9% efficiency (Beta 1000) at 1 micron and 99.99% efficiency (Beta 10000) at 2 micron. Specifically developed for the Water and Beverage Market, it is designed to outperform all other types of absolute-rated filter products.

ULTRAFIT WELDED 700 SERIES FILTER BAG COMPOSITION Featuring HCT- HYBRID COMPOSITE TECHNOLOGY™

Micron Rating	100µm	25µm	10µm	3.2µm	PERMEA™ Technology	0.7µm	PMO	Support Jacket
Material	NMO Nylon Monofilament	Polypropylene Micro-fiber	Polypropylene Micro-fiber	Polypropylene Micro-fiber	NMO - Nylon Monofilament	Polypropylene Micro-fiber	PMO Polypropylene Monofilament	Polypropylene Non-Woven Spunbond



Product Applications

- ❑ Water & Beverage Applications: Wine, Beer, Spirits, Cider & Bottled Water
- ❑ Pharmaceutical, Biological, Electronic, Nuclear, and Critical Liquid Process Applications
- ❑ Pre-filtration for Reverse Osmosis Membranes and Expensive Cartridges
- ❑ Micro-filtration for Industrial and Process Liquids
- ❑ Filtration of Surface Water and Groundwater
- ❑ Recycling of Wastewater and Reclaimed Water

Product Features

- ❑ Absolute Rated Performance...99.9% efficient (Beta 1000), down to 1 micron
- ❑ Absolute Rated Performance...99.99% efficient (Beta 10000), down to 2 micron
- ❑ **Hybrid Composite Technology™** ...multiple textiles laminated to combine performance benefits of each
- ❑ **Integrated Polymeric Support™** ...provides superior mechanical strength
- ❑ **PERMEA™ Technology**...optimizes fluid distribution and radically increases solids loading
- ❑ Fully Welded Ultrasonic Construction...eliminates solids bypass
- ❑ **Zero-Bypass®** Collar...assures an optimum compression seal with Over-The-Top® Design Housings
- ❑ 100% FDA Compliant materials of construction

Materials of Construction (100% FDA Compliant) - Hybrid Composite Technology

Filter Media: Polypropylene Microfiber, ANSI/NSF Standard 61 Certified
IP – *Integrated Polymeric Support*: Polypropylene Monofilament
Upstream Pre-filter: NMO- Nylon Monofilament
Support Jacket: Polypropylene, Non-Woven, Spunbond, Non-fiber shedding
Zero-Bypass Collar: Polypropylene

Specifications

Maximum Operating Temperature: 180°F
Maximum Recommended Flow Rate (water): 40gpm
Recommended Change-Out: Initial Pressure plus: 40psig
Size: #2 (7" dia. x 33" long), Individually Wrapped, packed 20 pieces per case

Test Methods

Initial Efficiency per ASTM F795-88 & PMI Capillary Flow Porometer (Wet Flow & Dry Flow)

Grade Name

700-P001-P2-IP - One micron absolute rated liquid filter bag, manufactured by Filtration Systems, Sunrise, FL, USA

Description

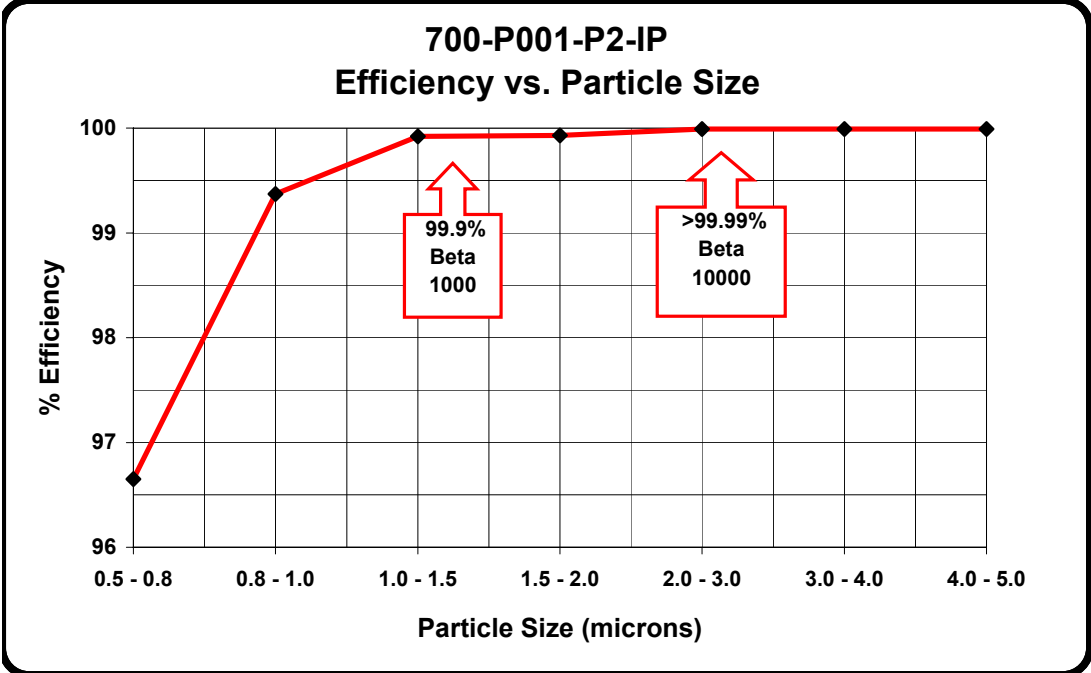
Graded-Density, Composite Layer Design liquid filter bag. Proprietary configuration exhibiting superior filtration efficiency, flow rate and performance at Beta 1000 (99.9%) initial efficiency and Beta 10000 (99.99%) after initial pass.

Physical Properties

Microns	Average	
0.5 - 0.8	96.65	
0.8 - 1.0	99.37	
1.0 - 1.5	99.92	Beta 1000
1.5 - 2.0	99.93	
2.0 - 3.0	>99.99	Beta 10000
3.0 - 4.0	>99.99	
4.0 - 5.0	>99.99	

Test Parameters

Test Method: Initial Efficiency per ASTM F795-88
Face Velocity: 1 gpm/ft²
Contaminant: ISO A2 (Fine)
Test Sample: 90 mm flat sheet disc supplied by Filtration Systems.



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Physical Properties

Mean Pore Diameter (microns)

Flow Direction →

	Layer 1	Layer 2	Layer 3	Layer 4	Composite Measurement
Design	25.0	10.0	3.2	0.7	1.0 μ
Actual	16.8	10.9	2.5	1.2	0.9 μ

Test Parameters

Test House: Hollingsworth & Vose Company, Floyd, VA
 Test Method: PMI Capillary Flow Porometer
 Fluid: Galwick at 15.9 dynes/cm Surface Tension
 Filter Flow: Wet Flow / Dry Flow
 Test Sample: Single and multiple ply flat sheet meltblown samples.

