

POLY-PLEAT™

ABSOLUTE RATED FILTER CARTRIDGES

Harmsco® Filter Cartridges for Safe, Cyst-free Drinking Water



Certified to
ANSI-NSF 61

POLY-PLEAT™ Filter Cartridges Substantially Remove:

- ✓ Cryptosporidium
- ✓ Giardia cysts
- ✓ Harmful organisms
- ✓ Sediment
- ✓ Silt
- ✓ Turbidity
- ✓ And more!



It's the Law!

When the U.S. Congress approved legislation toughening regulations designed to protect our nation's drinking water, the President subsequently signed a bill authorizing funds to improve deteriorating municipal and rural water systems.

Part of this comprehensive legislation calls for the EPA to establish more stringent standards to control cryptosporidium, giardia cysts, turbidity and other common drinking water contaminants that pose significant risks.

To date, the best known method to control contamination in water is through the use of microfiltration, or employment of absolute rated filter cartridges fine enough to remove cyst-sized particles. Surface waters are most susceptible because animals live nearby, contributing to the cyst population found in water. For this reason, water treatment rules have been established to regulate drinking water taken from or under the influence of reservoirs, lakes, rivers, ponds and streams.

CERTIFIED: NSF/ANSI STANDARD 61 Drinking Water System Components - Health Effects

Independent Lab Validated

To verify the performance of POLY-PLEAT™ cartridges and Harmsco filter housings, Pace Analytical*, a highly respected independent testing facility, was selected to conduct challenge tests to the NSF 53-2007 protocol for cysts reduction.

The NSF 53-2007 protocol consists of two side-by-side systems operating on a 10 minute on/ 10 minute off cycle. Polystyrene 3-micron beads were injected after the 8th cycle and at 25%, 50% and 75% reduction in flow rate. Results are listed below:

| Results of Challenge Tests | | |
|----------------------------|-------------------------|--------------------|
| Sample Point | Particle Size (microns) | Per Cent Reduction |
| 8th cycle | 3 | 99.92 |
| 25% Reduction | 3 | 99.95 |
| 50% Reduction | 3 | 99.96 |
| 75% Reduction | 3 | 99.95 |

* Pace Analytical is State Certified (CA, IA, MA, WI); results are accepted by Water Quality Association (WQA), Underwriters Laboratory (UL), and the Canadian Standards Association (CSA) for product label or seal programs.

Substantially removes Cryptosporidium, Giardia Cysts, harmful organisms, sediment, silt, turbidity and more!

Features & Benefits

- ✓ Absolute rated one micron filter media removes cyst-sized particles for safe, cyst-free drinking water.
- ✓ Pleated polypropylene filter media provides more surface area for longer filter life and increased particle removal.
- ✓ FDA listed materials for use in potable water and liquid food applications.
- ✓ End caps, center tubes and media are thermally bonded as one integral component for added strength and to provide superior end sealing.
- ✓ Full product line for standard, Big-Blue** and Hurricane® filter housings.
- ✓ Economical cartridges from the value leader in the industry!

** Big-Blue is a registered trademark of Plymouth Products, Inc.



Cartridge Types & Product Codes

POLY-PLEAT™ cartridges are available in Standard, Calypso Blue™ and Hurricane® models for a variety of filter housings.

| | Product Code | Micron Rating | Media (sq. ft.) | Type | Length x | O.D. | No./ Case |
|--------------------------------------|--------------|---------------|-----------------|------------|----------|--------|-----------|
| Standard (2-3/4" O.D.) | PP-S-1 | 1 absolute | 3.7 | Standard | 9-3/4" | 2-3/4" | 24 |
| | PP-D-1 | 1 absolute | 7.5 | Standard | 19-1/2" | 2-3/4" | 24 |
| | PP-T-1 | 1 absolute | 11 | Standard | 29-1/4" | 2-3/4" | 24 |
| | PP-20E-1 | 1 absolute | 7.5 | Standard | 20" | 2-3/4" | 24 |
| Calypso Blue™ (10" & 20") | PP-BB-10-1 | 1 absolute | 8 | Big Blue** | 9-3/4" | 4-1/2" | 8 |
| | PP-BB-20-1 | 1 absolute | 16.5 | Big Blue** | 20" | 4-1/2" | 4 |
| Hurricane® (40, 90, 170) | PP-HC/40-1 | 1 absolute | 27 | Hurricane | 9-5/8" | 7-3/4" | 1 |
| | PP-HC/90-1 | 1 absolute | 58 | Hurricane | 19-1/2" | 7-3/4" | 1 |
| | PP-HC/170-1 | 1 absolute | 100 | Hurricane | 30-3/4" | 7-3/4" | 1 |

Specifications

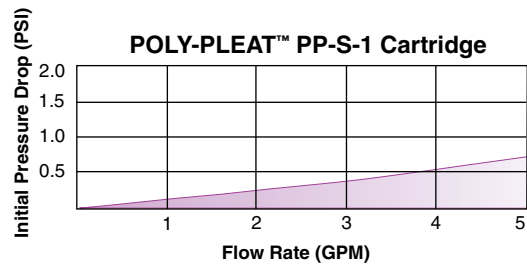
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|-----------------|--|
| Micron ratings: | One micron absolute for cryptosporidium and giardia cysts. |
| Filter media: | Meltblown polypropylene inner layer with outer layers of polypropylene scrim material for support. |
| Center tubes: | Rigid PVC with perforations, or molded polypropylene. |
| End caps: | Pliable PVC with sealing surface built-in. |
| Temperature: | 140°F / 60°C temperature limit.* |
| Flow rates: | Up to .5 gpm/ft ² media. |
| Netting: | Polypropylene netting standard for 2-3/4" O.D.; 10" & 20" cartridges use polyethylene netting. |
| Shrink wrap: | Standard for all POLY-PLEAT™ cartridges. |

*Temperature limits vary and depend on pressure and time under load.

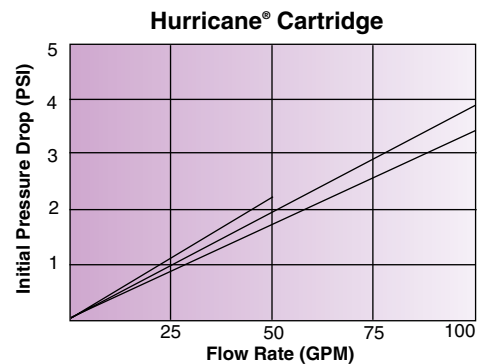
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Low Pressure Drop

Initial pressure drop using POLY-PLEAT™ cartridges is exceptionally low due to our pleated design and increased surface area. Pressure drop data is shown below, calculated for new cartridges in clear water:



Data include cartridge and single-cartridge housing.



Data include cartridge and Hurricane® filter housing.

Long Filter Life

POLY-PLEAT™ cartridges are ideal as final filters for municipal water filtration without pre-filtration. In high turbidity water, pre-filtration is recommended using Harmsco® sediment cartridges with two- or three-step filtration, depending on the source water. POLY-PLEAT™ cartridges provide long filter life due to their pleated design and increased surface area.

Harmsco® Filter Housings for POLY-PLEAT™ Cartridges

Up-Flow

Uses standard cartridges in single, double or triple lengths. Select from ten models, based on flow rate.



Hurricane®

Uses single Hurricane® cartridge for easy cartridge replacement. Select from three models for flow rates to 50 gpm.



Municipal Water Filtration

POLY-PLEAT™ Cartridges are ideal for municipal water filtration using Harmsco's Hurricane® Swing Bolt filter housings.

Harmsco® Hurricane® Swing Bolt Filter Housings deliver high performance, high flow filtration with "Swing Bolt" closure.

Features include:

- ✓ Patented Upflow design.
- ✓ Low carbon stainless steel housing construction. **HUR 5x170FL**
- ✓ Swing bolt closure system.
- ✓ Electro-polished finish.
- ✓ Four sizes for greater media surface area with POLY-PLEAT™ cartridges. (100, 300, 500, 800 sq. ft.)
- ✓ Extensive choice of micron ratings and media, including carbon block.
- ✓ Combination cyclone separator and cartridge filter in a single compact design.



Harmsco® Hurricane® Swing Bolt filters can be installed in **parallel** using multiple housings for higher flow rates. They may also be installed in **series** with different micron cartridges for two- or three-stage filtration in high turbidity applications.

Hurricane® Filters are "User Friendly"

Hurricane Filters with Poly-Pleat™ cartridges are ideal for surface water filtration. The housings are extremely "user friendly" and the cartridges are easily removable for service.

Harmsco Filter Cartridges for Sediment Removal



We make a complete line of pleated polyester filter cartridges to remove sediment and turbidity. These cartridges are ideal for pre-filtration prior to POLY-PLEAT™ cartridges. We also make activated carbon cartridges for taste, odor, chlorine and lead removal.

Check our web site (www.harmsco.com) for our latest new product additions.

Contact Harmsco® for assistance with Pilot Tests as well as results from previous test sites.

Note: This publication is to be used as a guide. The data within has been obtained from many sources and is considered to be accurate. Harmsco does not assume liability for the accuracy and/or completeness of this data. Changes to the data can be made without notification. Temperature, Pressure, Flow Rates, Differential Pressures, Chemical Combinations and other unknown factors can affect performance in unknown ways. **Limited Warranty:** Harmsco warrants their products to be free of material and workmanship defects. Determination of suitability of Harmsco products for uses and applications contemplated by Buyer shall be the sole responsibility of Buyer. The end user/installer/buyer shall be liable for the product's performance and suitability regarding their specific intended applications. End users should perform their own tests to determine suitability for each application.



HARMSCO® Filtration Products

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