

## Betafine® -D Series Absolute Rated Pleated Filter Cartridges



### PLEATED MEDIA FOR INCREASED CAPACITY AND LONG SERVICE LIFE

**Betafine-D** series pleated filter cartridges are available with absolute ratings from 0.2 to 70 microns. The all polypropylene filter is used extensively on corrosive and non-corrosive process fluids where broad chemical compatibility is required.

The vast surface area of the pleated filter matrix provides increased flow, high contaminant loading capacity and low initial pressure drop. This construction permits the use of smaller housings and reduced capital expenditure. Betafine-D filter cartridges are available in lengths to 40 inches with a wide variety of end treatments to fit most filter housing designs.

### APPLICATIONS

**Coatings** - Maintaining high quality in feed streams and intermediates is crucial in meeting or exceeding final product quality. Betafine-D filters provide long service life and a cost-effective solution to the problems of batch filtration.

**Electronics** - The Betafine-D cartridge is used extensively in the electronics industry where low initial pressure drop and high dirt loading capacity is necessary to maximize service life and minimize filter change-outs. Typical applications include RO/DI prefiltration, electroplating baths, process/rinse water, solvent, specialty coatings.

**Food and Beverage** - Constructed from materials compliant with CFR 21, Betafine-D cartridges are very low in extractables and free of resins and binders that cause product cloudiness and foaming. Typical applications include potable water, process and blending water, and diatomaceous earth trap filtration in food and beverage applications.

**Pharmaceutical** - Betafine-D cartridges are used in a broad range of applications including prefiltration, final filtration of process water, air and gas prefiltration, chemical intermediates, bulk pharmaceutical chemicals, and solvents.

**Industrial Process** - Betafine-D cartridges are ideal for the filtration of intermediates, fine chemicals, and photographic chemicals. Other applications include reagent grade chemicals, high purity chemicals, oil and gas processing, secondary water filtration, and process gases.

### FEATURES

- Absolute rated, pleated filter cartridge
- Pleated media for greater surface area
- High flow rates with lower pressure drops
- 100% polypropylene construction
- ◆ FDA, CFR 21 listed materials of construction

### BENEFITS

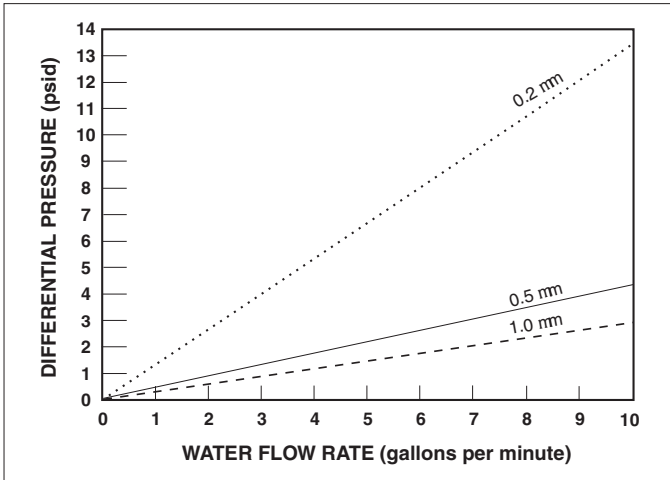
- Consistent, repeatable filtration, improving effluent quality
- Longer service life
- Less down time due to fewer filter change-outs
- Reduce operating costs
- Exceptional throughput, reduced processing time, & reduced processing costs
- Broad chemical and thermal compatibility
- No media migration
- Suitable for a broad range of applications, including food, beverage and pharmaceutical applications

## PERFORMANCE

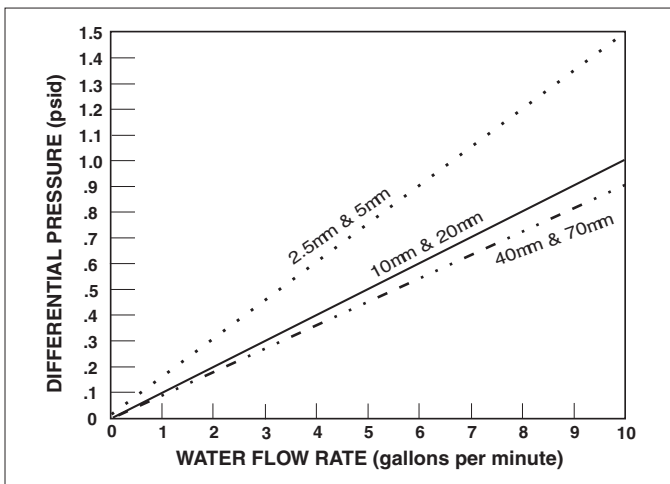
Betafine-D series filter cartridges are ideally suited for high flow, low viscosity fluids.

### Flow Rates

The Betafine-D cartridge construction is optimized to obtain the highest flow rates while maintaining the defined particle removal efficiencies. The following flow rates are for 10- inch cartridges.



GRAPH 1. TYPICAL FLOW RATES FOR 0.2, 0.5, & 1.0 MICRON BETAFINE-D FILTER CARTRIDGES



GRAPH 2. TYPICAL FLOW RATES FOR 2.5, 5, 10, 20, 40, & 70 MICRON BETAFINE-D CARTRIDGES.

## Betafine-D Filter Series Removal Ratings

Consistent filtration performance, throughout the life of the filter, is the key in determining removal efficiency. Absolute ratings for Betafine-D filters are determined using a filter performance test developed by Cuno, an adaptation of the general procedures outlined in ASTM STP 975. Cuno defines absolute ratings as the particle size (x) providing a Beta Ratio ( $\beta_x$ ) = 1000 as measured over the life of the filter. At this Beta Ratio, the removal efficiency is equal to 99.9%.

Betafine-D Filter Grade	Removal Rating ( $\mu\text{m}$ )	
	Absolute*	Nominal
002	0.2	—
005	0.5	—
010	1	0.2
025	2.5	0.45
050	5	1
100	10	3
200	20	5
400	40	10
700	70	25

\*Absolute Removal Rating ( $\mu\text{m}$ ) Beta 1000

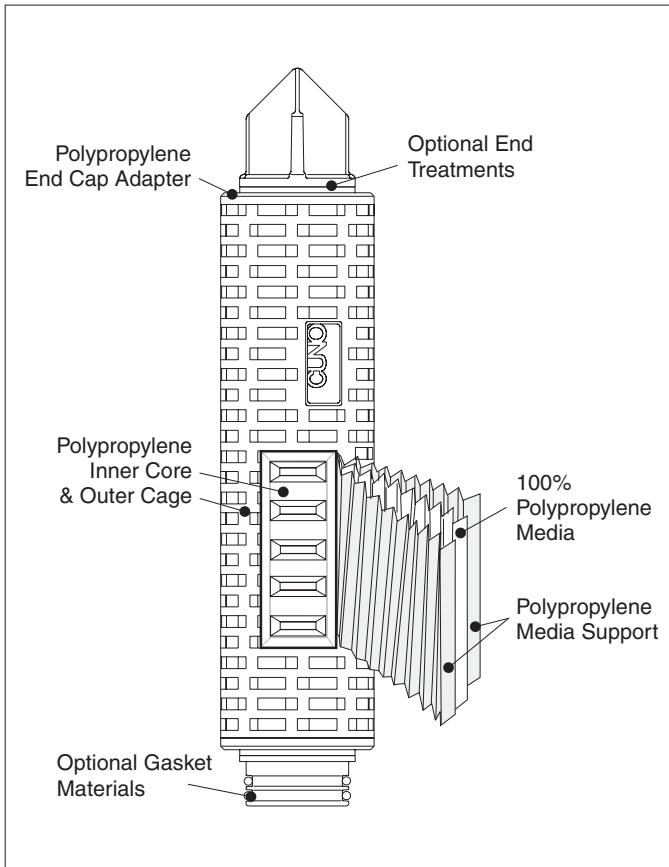
TABLE 1. - REPRESENTATIVE REMOVAL RATINGS

## SPECIFICATIONS

Parameter	Specification							
	09	10	19	20	29	30	39	40
Cartridge Code	09	10	19	20	29	30	39	40
Nominal Lengths (inches)	9 $\frac{3}{4}$	10	19 $\frac{1}{2}$	20	29 $\frac{1}{4}$	30	39	40
Outer Diameter	2 $\frac{1}{8}$ inches nominal							
Inner Diameter	1 $\frac{1}{32}$ inches nominal							
Maximum Operating Temperature	175°F (80°C)							
Maximum Differential Pressure	80 psid @ 70°F (5.5 bars @ 21°C)							
	60 psid @ 104°F (4.1 bars @ 40°C)							
	50 psid @ 150°F (3.4 bars @ 66°C)							
	35 psid @ 175°F (2.4 bars @ 80°C)							
Recommended Change-out Differential Pressure	35 psid (2.4 bars)							

## MATERIALS OF CONSTRUCTION

Betafine-D filter cartridges are constructed from 100% polypropylene and pleated for increased surface area. The migration-free media is supported both upstream and downstream by polypropylene support materials. To provide a structurally integral cartridge, the cartridge end caps are thermally bonded to the inner core and outer cage as well as the pleated edge of the media and support materials. Multiple cartridge lengths, of various end cap styles, are produced using the same thermal bonding technique. This eliminates the use of adhesives and cartridge housing adapters to provide users with a cost-effective alternative without housing changeout.



MATERIALS OF CONSTRUCTION	
Media	Polypropylene
Support Layers	
End Caps	
Cage & Core	
Flat Gasket	Ethylene Propylene (EPR) is standard Silicone, Fluorocarbon, Nitrile, & Polyethylene are optional
O-rings	Silicone is standard Fluorocarbon, Ethylene Propylene (EPR), Nitrile, & PTFE encapsulated Viton are optional

All materials used in the manufacture of Betafine-D filters are listed for food contact in CFR Title 21.

## BETAFINE-D FILTER CARTRIDGE ADVANTAGES

- ◆ Precision engineered, absolute rated, pleated filter cartridge for high performance and repeatable filtration in a variety of applications.
- ◆ Enhanced, pleated surface area for longer life in many applications and less down-time due to fewer filter change-outs.
- ◆ High flow rates with lower pressure drops for exceptional throughput and reduced processing time.
- ◆ Thermally bonded, 100% polypropylene construction for broad chemical and thermal compatibility; free of media migration.
- ◆ FDA listed materials of construction; suitable for a broad range of applications, including food, beverage and pharmaceutical applications.



*Betafine-D filters are available in CUNO CTG-Klean® packs, a convenient, self-contained filter pack system designed to reduce change-out and clean-up time, and to eliminate operator exposure to chemicals and solvents.*

## BETAFINE-D SERIES ORDERING GUIDE

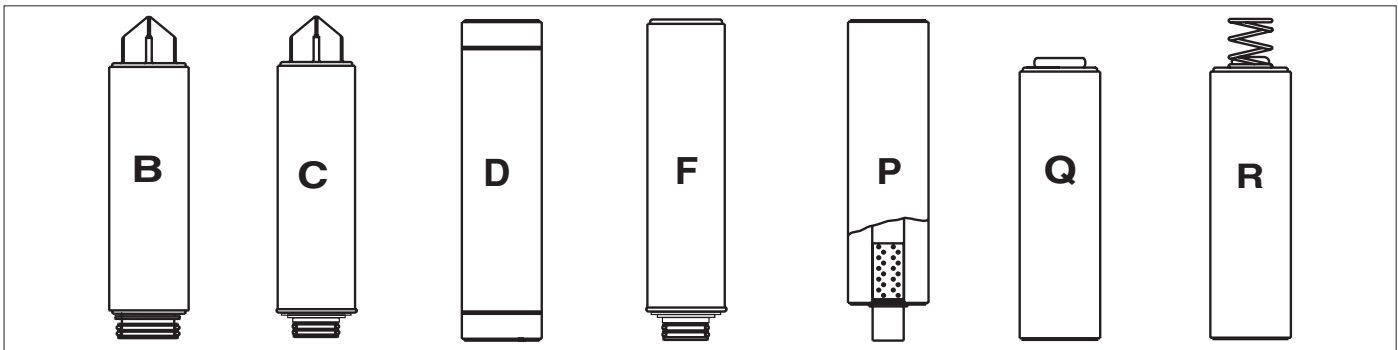
CARTRIDGE	LENGTH		MATERIAL	RATING		END STYLE	GASKET/O-RING
	CODE	INCHES		CODE	RATING (µm)		
DP - Betafine-D Series	09*	9 ¾	PP - Polypropylene	002	0.2	B - Bayonet Lock SOE (226 O-ring & Spear)	A - Silicone
	10	10		005	0.5		
	19*	19 ½		010	1	D - Double open end (DOE)	C - EPR
	20	20		025	2.5		
	29*	29 ¼		050	5	P - DOE + Polypropylene Core Extender	G - Polyethylene (end styles D, P, Q, & R only)
	30	30		100	10		
	39*	39		200	20	R - Single open end (SOE) endcap with spring	
	40	40		400	40		
		700	70				

(refer to Table 1.)

\* Available in P & D End Styles only.

\*\* Can be used as replacement cartridge for "R" configuration

## BETAFINE-D CARTRIDGE STYLES



### WARRANTY

Seller warrants its equipment against defects in workmanship and material for a period of 12 months from date of shipment from the factory under normal use and service and otherwise when such equipment is used in accordance with instructions furnished by Seller and for purposes disclosed in writing at the time of purchase, if any. Any unauthorized alteration or modification of the equipment by Buyer will void this warranty. Seller's liability under this warranty shall be limited to the replacement or repair, F.O.B. point of manufacture, of any defective equipment or part which, having been returned to the factory, transportation charges prepaid, has been inspected and determined by the Seller to be defective. THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR USE, OR ANY OTHER MATTER. Under no circumstances shall Seller be liable to Buyer or any third party for any loss of profits or other direct or indirect costs, expenses, losses or consequential damages arising out of or as a result of any defects in or failure of its products or any part or parts thereof or arising out of or as a result of parts or components incorporated in Seller's equipment but not supplied by the Seller.



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