

## Unique Cartridge Construction Improves Particle Retention, Service Life and Flow Rates

Clark-Reliance Pleated Cellulosic Cartridges meet a broad range of critical filtration applications. Each cartridge in the Cell-Pure Pleated Cellulosic series is manufactured with premium grade, phenolic impregnated, cellulosic filter media. Phenolic resin locks the cellulosic fibers into a rigid, porous matrix. This structure provides superior particle removal and particle retention performance under the most severe conditions.

Cell-Pure Pleated Cartridges are available in 2µm, 3µm, 10µm, 30µm and 60µm pore sizes (99%+removal:  $\beta = 100$ ).

### Applications

- Chemical
- Oil Field
- Photographic Film & Paper
- Metal Treatment
- Process Water
- Synthetic Fibers
- Recording Media
- Coatings, Paint, Ink & Resins
- Petroleum
- Process Gas



### Features and Benefits

- Premium pleated cellulosic media allow high flow capacity at low pressure drop.
- Available in a variety of cartridge lengths and end cap configurations to fit most industrial vessels.
- Phenolic resin impregnated to provide strength, integrity and high contaminant capacity.
- High flow rates permit the use of smaller vessels and fewer cartridges.
- Lower  $\Delta P$  reduces power requirements and pump wear and tear.
- Longer cartridge life reduces frequency of filter change out resulting in less disposal costs, reduced inventory and less process interruptions.



**WARNING! FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**  
This document and other information from Clark-Reliance Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection for the products and systems and assuring that all performance, safety and warning requirements of the application are met.

# Cell-Pure Pleated Series

## Specifications

### Filtration Ratings:

- 99%+ at 2µm, 3µm, 10µm, 30µm, and 60µm pore sizes

### Materials of Construction:

- Phenolic impregnated cellulosic media (CPPC)
- Polypropylene support
- Stainless steel support (optional)
- CPPC is glass-modified cellulose

### Recommended Operating Conditions:

- Maximum 10 gpm per 10 in length (38 lpm/254 mm)
- Stainless Steel Support:
  - Maximum Temperature: 250°F (121°C)
  - Maximum ΔP: 50 psi (3.5 kg/cm<sup>2</sup>)
  - Optimum Change Out ΔP: 35 psi (2.5 kg/cm<sup>2</sup>)
- Polypropylene Support:
  - Maximum Temperature @ 10 psid (0.7 kg/cm<sup>2</sup>): 200°F (93°C)
  - Maximum Temperature @ 35 psid (2.5 kg/cm<sup>2</sup>): 125°F (52°C)
  - Maximum ΔP @ 75°F (24°C): 60 psi (4.2 kg/cm<sup>2</sup>)
  - Change Out ΔP: 35 psi (2.5 kg/cm<sup>2</sup>)

### Flow Rate and

### Pressure Drop Formulas:

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

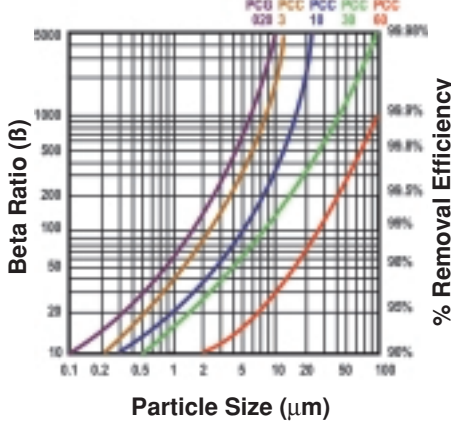
### Liquid Particle Retention Ratings (µm) @ Removal Efficiency of:

Cartridge	β=5000 Absolute	β=1000 99.9%	β=100 99%	β=50 98%	β=20 95%	β=10 90%
CPPC 020	10	7.0	1.8	0.9	0.3	0.1
CPPC 3	12	9.5	3.0	1.7	0.6	0.2
CPPC 10	22	17.0	5.5	3.0	1.0	0.3
CPPC 30	100	50.0	11.0	5.5	1.5	0.5
CPPC 60	150	100.0	30.0	15.0	5.0	2.0

### CPPC Flow Factors (psid/gpm @ 1 cks)

Rating (µm)	Flow Factor
2	0.026
3	0.017
10	0.002
30	0.001
60	0.0005

### CPPC Particle Removal Efficiency Over Life



### CPPC Length Factors

Length (in)	Length Factor
9	1.0
10	1.0
19	2.0
20	2.0
29	3.0
30	3.0
40	4.0

### Notes:

- Clean ΔP** is PSI differential at start.
- Viscosity** is centistokes. Use Conversion Tables for other units.
- Flow Factor** is ΔP/GPM at 1 cks for 10 in (or single).
- Length Factors** convert flow or ΔP from 10 in (single length) to required cartridge length.

Beta Ratio (β) =

$$\frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

$$\text{Percent Removal Efficiency} = \left( \frac{\beta - 1}{\beta} \right) \times 100$$

Performance determined per ASTM F-795-88. Single-Pass Test using AC test dust in water at a flow rate of 2.5 gpm per 10 in (9.5 lpm per 254 mm).

## Ordering Information

PPPC	10	A	N	TC
Cartridge Code	Nominal Length (code) (in) (mm)	Support Construction	Seal Material	End Cap Configuration
PPPC 020 = 2µm	9 9-5/8 244	A = Polypropylene (DOE/SOE)	A = Polyethylene Foam (DOE Gasket Only)	AR = 020 O-Ring/Recessed
PPPC 3 = 3µm	10 9-13/16 249	G = 304 Stainless Steel (DOE)	E = EPR	DO = Double-Open-End (DOE)
PPPC 10 = 10µm	19 19-5/8 498		N = Buna-N	DX = DOE With Core Extender
PPPC 30 = 30µm	20 19-15/16 506		S = Silicone	LL = 120/120**
PPPC 60 = 60µm	29 29-1/4 743		V = Viton	LR = 120 O-Ring/Recessed**
	30 30-1/16 764			OB = Std. Open End/Polypro Spring Closed End
	40 40 1016			PR = 213 O-Ring/Recessed**
				SC = 226 O-Ring/Cap
				SF = 226 O-Ring/Fin
				TC = 222 O-Ring/Cap
				TF = 222 O-Ring/Fin
				TX = 222 O-Ring/Flex Fin
				XB = Ex. Core Open End/Polypro Spring Closed End

\*\* Available only in 9-5/8" (-9) and 19-5/8" (-19) lengths

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