

VaraClean CET Series Filter Cartridges

High Surface Area Asymmetric Membrane Filter Cartridge for Copper Electroplating Applications

- Designed for next generation copper plating chemistries including 90 nm, 65 nm nodes
- Compatible with all copper formulations and additive packages
- Rated at >99.9% efficiency with retention ratings of 0.05 and 0.1 μm
- Proprietary highly asymmetric membrane
- Contaminant trapped and held by mechanical retention
- Manufactured in a certified cleanroom and pre-flushed with ultrapure 18 megohm-cm water

Performance Specifications

Filter grades ¹	0.05 μm , 0.1 μm , 0.2 μm
Maximum forward differential pressure	<ul style="list-style-type: none"> • 5.5 bard (80 psid) @ 20°C (68°F) • 1.4 bard (20 psid) @ 95°C (203°F)
Recommended change-out differential pressure ²	2.4 bard (35 psid)
Chemical compatibility	Cartridge resists most acids and bases, pH 1-14, and most oxidizing agents
Rinse-up	Cartridges will rinse in to inlet resistivity levels with minimum throughput



Product Specifications

Materials of construction

Filter media	Highly asymmetric polysulfone membrane
Hardware	Polypropylene
Sealing	Thermal bond
Support material	Polyester
O-rings/gaskets	Silicone elastomer, Nordel ³ , nitrile, FEP encapsulated fluorocarbon elastomer, fluorocarbon elastomer
Dimensions (nominal)	<ul style="list-style-type: none"> • Outside diameter: 66 mm (2.6 in) • Lengths: 102 mm (4 in), 254 mm (10 in), 508 mm (20 in), 762 mm (30 in), 1016 mm (40 in)

¹ >99.9% retention rating by standard latex bead challenge.

² Provided that the maximum differential pressure is not exceeded based on temperature limits defined above.

³ Nordel is a trademark of The Dow Chemical Company.

Liquid Retention Ratings (μm) and Flow Specifications

Cartridge Designation	>99.9% Efficiency	Typical DI Water Flow mbard / lpm (psid / gpm) 10 inch Equivalent
VCET050	0.05	9.1 / 0.5
VCET100	0.1	6.0 / 0.33
VCET200	0.2	4.6 / 0.25

Part Numbers/Ordering Information

VCET 1 2 3 4 (e.g., VCET100-10M3S)

Table 1

Code	Filter grades (μm)
050	0.05
100	0.1
200	0.2

Table 2

Code	Cartridge lengths (cm / in) nominal
04	10.2 / 4
10	25.4 / 10
20	50.8 / 20
30	76.2 / 30
40	102 / 40

Table 3

Code	End configurations
M2	SOE flat closed end fits 020 O-ring post
M3	SOE flat closed end, external 222 O-rings (retrofits other manufacturers' Code 0) ⁴
M5	DOE internal O-ring (retrofits 213 O-ring style) ⁴
M7	SOE fin end, external 226 O-rings (retrofits other manufacturers' Code 7) ⁴
M8	SOE fin end, external 222 O-rings (retrofits other manufacturers' Code 5) ⁴
M10	DOE internal O-ring (retrofits other manufacturers' housings) ⁴
DOE	DOE with elastomer gasket seal & end caps

⁴ For details, contact Pall Corporation.

Table 4

Code	Gasket / O-Ring materials
S	Silicone
E	Nordel
V	Fluorocarbon elastomer
N	Nitrite
F	FEP encapsulated fluorocarbon elastomer (O-rings)
T	FEP encapsulated silicone (O-rings)
T	Encapsulated PTFE (gaskets)



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