

SMPS Filter Cartridges

■ Polypropylene

Quality-Pure Pleated Series

Maximize Planarization Yield with Quality-Pure SMPS Cartridges

Clark-Reliance Quality-Pure SMPS Filter Cartridges provide uniform slurry delivery while optimizing the chemical mechanical planarization of wafer interlayer dielectric (ILD) and tungsten and copper metal layers. A unique proprietary melt blown media provides a particle classification effect, which improves service life while maintaining optimum polishing characteristics of alumina and silica based slurries.

Several particle classification matrices are available to match the wide range of CMP oxide and metal polishing slurries in recirculation and distribution loops as well as point-of-use CMP tools.

Applications

Oxide Polishing Slurries

- Point-of-Use
- Distribution
- Recirculation Loop

Metal Polishing Slurries

- Point-of-Use
- Distribution
- Recirculation Loop



Features and Benefits

- Classification matrix extends slurry life and maintains consistent slurry delivery.
- All polypropylene construction provides excellent compatibility for both acidic and basic slurries.
- Sieve-like filtration matrix provides sharp particle size cutoff to remove only agglomerated particles causing wafer surface damage.
- Heavy duty construction handles rigors of CMP process fluid conditions.
- Increase wafer yield by removing oversized, agglomerated or foreign particulate matter.
- Large Surface area provides high flux rate.
- All polymeric construction is totally incinerable.
- Thermal bonding eliminates particle bypass.
- Parker's TQM system assures consistent performance.
- Several classification matrices are available to accommodate wide range of polishing slurry formulations.
- Fits standard Quality-Pure and similar competitive filter vessels.



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.

Quality-Pure Pleated Series

Specifications

Particle Classification Codes:

- 02, 04, 06, 08, 10, 12, 14, 16

Materials of Construction:

- Filter Medium: Melt Blown Polypropylene
- Filter Medium Support: Polypropylene
- Structural Components: Natural polypropylene
- O-Ring Material: EPDM, Viton, PFA/Viton
- Gasket Material: Polyethylene Foam
- Sealing Method: Thermal bonding

Dimensions:

- Diameter: 2.5 in (64 mm)
- Lengths: 4-30 in (102-764 mm)

Maximum Recommended Operating Conditions:

- Temperature: 200°F (93°C) @ 10 ΔP (0.7 bar)
- Differential Pressure: 70 psi (4.8 bar) @ 77°F (25°C)
10 psi (0.7 bar) @ 200°F (93°C)
- Flow Rate: 10 gpm (38 lpm) per 10 in cartridge
- Changeout Net ΔP: 10 psi (0.7 bar)

Flow Factors (psid/gpm @ 1 cks per 10-inch cartridge)

Code	Flow Factors
02	1.00
04	0.75
06	0.50
08	0.13
10	0.03
12	0.02
14	0.01
16	0.01

+ P=Flow Rate X Viscosity
(cks) X Flow Factor

Cartridge Selection Guide

Slurry Particle Size Range (micrometers)	Recommended Cartridge Code	Typical Application
0.05 - 0.1	02	Point of Use
0.10 - 0.2	04	
0.20 - 0.4	06	
0.50 - 1.0	08	
1.00 - 2.0	10	Distribution
2.00 - 4.0	12	
4.00 - 8.0	14	Recirculation Loop
7.00 - 14.0	16	

Note: Cartridge selection based on removing particles larger than the slurry particle size range specified.

Ordering Information

SMPS	12	10	N	V	TC
Cartridge Code	Particle Classification Code	Nominal Length (code) (in) (mm)	Support Construction N = Natural Polypropylene	Seal Material	End Cap Configuration
SMPS = Quality-Pure	02μm 04μm 06μm 08μm 10μm 12μm 14μm 16μm	04 4 102 10 9-13/16 249 20 19-15/16 506 30 30-1/16 764		A = Polyethylene Gasket (DO Only) E = EPDM O-Ring T = PFA/Viton O-Ring V = Viton O-Ring	DO = Double-Open-End TC = 222 O-Ring/Cap