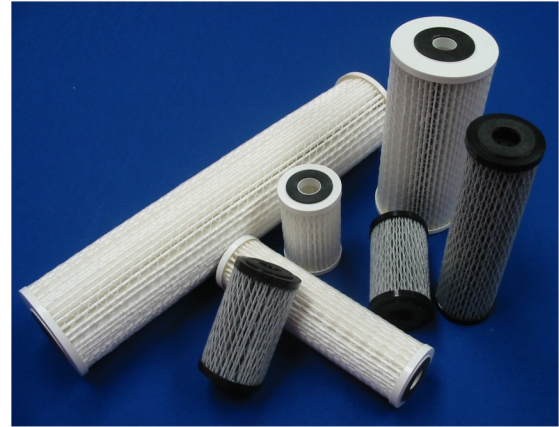


NanoCeram® & NanoCeram® PAC Filters

Bacteria, Virus, and Cysts Removal

Key Media Features

- NSF/ANSI 42 & 53 Certified
- Reduces or Removes Bacteria, Virus, and Cysts
- NASA-derived technology
- Available with Powdered Activated Carbon (PAC) and antimicrobial Agion
- Pleated construction yields high flow rates and low pressure drop.
- Fits standard residential and industrial housings



What is NanoCeram®

Argonide's NanoCeram® & PAC Series of Pleated Filter Cartridges act as a **Broad Spectrum Particle Magnet**. They feature a thermally bonded blend of microglass fibers & cellulose infused with Nanoalumina fibers in a non-woven matrix. By using the scientific principle of electropositive attraction / capture, NanoCeram® NASA-derived technology leads to a rapid and highly efficient adsorption of virtually all particle sizes. When assembled into a pleated cartridge, NanoCeram® offers a unique combination of efficiency, capacity, flow rate & low pressure drop at levels unmatched in today's filtration marketplace.

All NanoCeram® filter cartridges are assembled using only FDA-compliant materials.



Applications / Markets

- Potable Water
 - Residential Point of Use / Under Counter / Counter Top Water Filtration Systems
 - Point of Entry (POE)
- Food & Beverage
- RO Prefiltration (SDI reduction)
- Process Water (turbidity, particulate, colloidal suspensions)
- Waste Water (biologicals, proteins, dyes)
- Cooling Towers, Chill Water Loops (iron removal)

Media Retention Characteristics

- Silt Density Index (SDI) 0.5– 1.0
- >99.99% Efficiency at 0.2 microns (latex spheres)
- >3 LRV Cyst Retention
- >5 LRV Klebsiella terrigena Retention
- <0.01 NTU until Terminal ΔP: 35 psid (2.4 bar)
- Dirt Holding Capacity: 82 g/ft²
 - Superior to microglass, meltblown, and membrane media.
- >99.95% Endotoxin Removal
- Effective at High / Low pH and in Presence of Salt Water



Argonide Corporation

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T-822-05 REV: D 8.04.2020



NanoCeram-DP™ Series Double Layer Pleated Filter Cartridges

Argonide's NanoCeram-DP™ Series Pleated Filter Cartridges offer two pleated layers of our patented electropositively-charged filter media, providing a unique combination of high efficiency, capacity, flow rate for particulate adsorption while maintaining a low pressure drop.

A combination of a thermally-bonded blend of microglas fibers & cellulose infused with nanoalumina fibers in a non-woven matrix creates an electropositively-charged depth filter media. When assembled into a pleated cartridge, the NanoCeram-DP™ filter offers an ultra-high level of filtration efficiency because of the extra bed-depth of the two layers of electropositive filter media.

These cartridges are available in four (4) versions: standard, powder activated carbon (PAC w/ Agion), and two hybrid filters both of which incorporate an activated carbon block as the center core with one using standard NanoCeram media and the other using NanoCeram PAC-AG media as a pleated layer surrounding the carbon block.

Features

- Effective at high & low pH and in the presence of salt
- Pleated construction yields high flow rates
- Available in standard DOE configurations
- Provides optical clarification to fluids
- Manufactured with strict quality control
- All DP Components are manufactured with materials that meet FDA requirements 21CFR177.1520 for direct food contact applications.



Media Retention Characteristics

- >99.99% Efficiency at 0.2 microns (latex spheres)
- >3 LRV Cyst Retention
- >6 LRV Virus Retention
- >7.5 LRV E. coli Retention
- >99.95% Endotoxin Removal (235 to <0.12 EU/ml @ 10 mL/cm²/min)
- <0.01 NTU until Terminal ΔP (35 psid) using A2 Fine Test Dust

Applications

- Make Up Water (particulate, microbial control)
- Polishing Filters (carbon fines, emulsified oil removal)
- RO Prefiltration (SDI reduction)
- Process Water (turbidity, particulate, colloidal suspensions)
- Waste Water (biologicals, proteins, dyes)
- Cooling Towers, Chill Water Loops (iron removal)
- Clarifying Filtration of Cell Cultures



All NanoCeram® Standard products have been tested and certified by IAPMO R & T to meet NSF/ANSI std. 53 for Material Safety only.

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NanoCeram-DP™ Series



Specifications

| Part No | P2.5-5DP / PAC2.5-5DPAG | P2.5-10DP / PAC2.5-10DPAG | P2.5-20DP / PAC2.5- 20DPAG | P4.5-10DP / PAC4.5-10DPAG | P4.5-20DP / PAC4.5-20DPAG |
|----------------------------|-------------------------------|-------------------------------|----------------------------------|---------------------------------|------------------------------|
| Dimensions | 2.8 x 4.85" 7.1 x 12.32 cm | 2.8 x 9.75" 7.1 x 24.77 cm | 2.8 x 20" 7.1 x 50.8 cm | 4.5 x 9.75" 11.43 x 24.77 cm | 4.5 x 20" 11.43 x 50.8 cm |
| Suggested Flow Rate | 1 gpm 3.8 lpm | 2 gpm 7.5 lpm | 4 gpm 15 lpm | 4.6 gpm 17 lpm | 10 gpm 38 lpm |
| Maximum Flow Rate | 2.5 gpm 10 lpm | 5 gpm 19 lpm | 10 gpm 38 lpm | 12 gpm 45 lpm | 25 gpm 45 lpm |



Materials of Construction

Media :

NanoCeram® Media
NanoCeram® PAC-AG Media

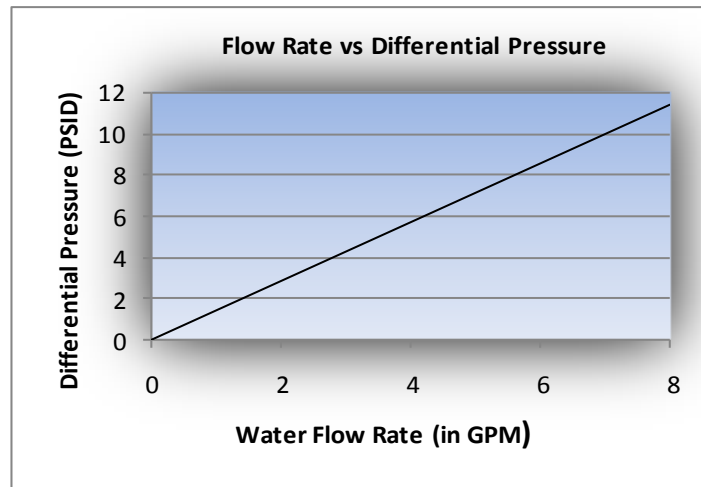
Support:

Polypropylene, Hot Melt

Gaskets:

EPDM

WATER FLOW RATE P2.5-10DP



Operating Conditions

Temperature:

39-180°F (4-82°C)

pH Range:

5.0 to 10

Maximum Operating Pressure:

Virus (MS2) and Bacterial (E. coli) Retention Testing

Testing was conducted on NanoCeram-DP cartridges for the purpose of the determining the retention of the MS2 Virus and E. coli bacteria.

Twenty five liters of the MS2 or the E. coli suspension were passed through a cartridge at 4 gpm @ 7 psid.

Ordering Information

Part No:

| | |
|-----------|---------------|
| P2.5-5DP | PAC2.5-5DPAG |
| P2.5-10DP | PAC2.5-10DPAG |
| P2.5-20DP | PAC2.5-20DPAG |
| P4.5-10DP | PAC4.5-10DPAG |
| P4.5-20DP | PAC4.5-20DPAG |

| Test | Flow Rate GPM | MS2 inlet Concentration PFU/mL ¹ | MS2 Removal LRV ² | E. Coli input Concentration CFU/mL ³ | E. Coli Removal LRV ² |
|-------------|---------------|---|------------------------------|---|----------------------------------|
| 1 | 4 | 1.1x10 ⁶ | >6 | 1.8 x 10 ⁶ | 7.6 |
| 2 | 4 | 1.1x10 ⁶ | >6 | 1.8 x 10 ⁶ | 7.6 |
| 3 | 4 | 1.1x10 ⁶ | >6 | 1.8 x 10 ⁶ | 7.4 |
| Avg. | 4 | 1.1x10⁶ | >6 | 1.8 x 10⁶ | 7.5 |

1) Plaque Forming Units 2) Log Reduction Value 3) Colony Forming Units