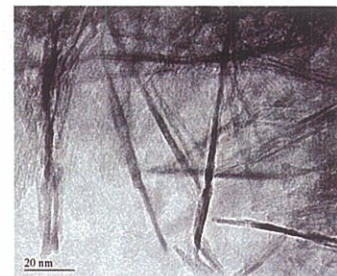
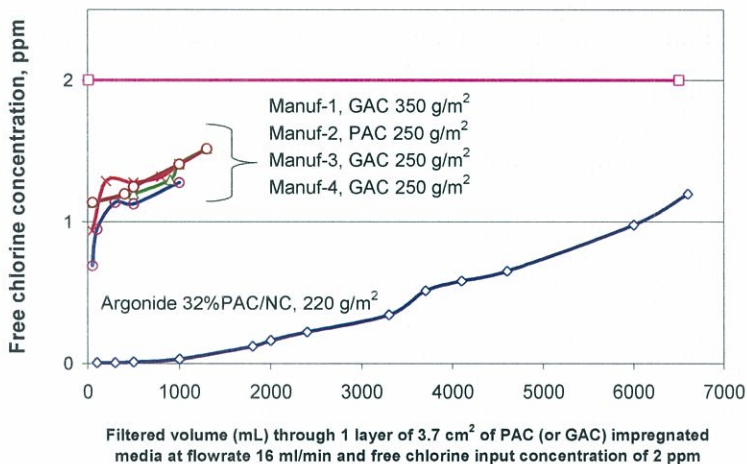


ナノセラム-PAC[®] フィルター

－ 高効率ナノフィルターと PAC（微粉末活性炭）の融合 －

米国の **Argonide 社** は世界に先駆けてナノセラム[®]フィルターの開発に成功、バイオテクノロジーや超微細粒子分離研究の飛躍的進歩に貢献しています。従来のウルトラポラスフィルターに比べ流量は 200 倍、ウイルスやバクテリアを 99.9999% 以上除去可能です。ナノセラムフィルターを構成する主要材料は直径 2 ナノのセラミック(アルミナ)のファイバー (**NanoCeram[®] Fiber**) で、基本原理はプラス電荷による吸着除去で、DNA, RNA, 内毒素, 電氣的にマイナスを帯びたたんぱく質やナノレベルの無機及び有機の超微細粒子を効率的に除去します。超微細粒子はフィルター表面ではなく、フィルターの内部に蓄積される **Depth Filter** で、最小限の圧力でも詰まりにくく、高流量を保持可能です。

進化し続けるアルゴナイド社のナノフィルター：新製品のナノセラム-PAC は構造内にエレクトロアドヒージョン(電氣的接着)によって微粉末活性炭(**Powdered Activated Carbon**)を固定しました。性能低下の原因ともなる接着剤は使用していません。特性データの一例として塩素除去実験でのフローレートを他社のフィルターと比較したものを下に示します。



ナノセラムファイバー
AlOOH, 2~4 nm dia.
アスペクト比 > 100
BET: 300~500 m²/g

応用例

- 廃液の浄化、溶媒の回収、混合溶液の選択的濾過
- 雑菌の除去（飲料水、その他飲料、血清、生物製剤、等）
- 濾過溶液中の脱落物質の除去、RO 膜の補助フィルター (Prefilter)
- DNA, RNA, 内毒素, 核酸, たんぱく質の分離抽出やバイオ分析
- バイオ兵器によるコンタミ除去、毒物検出用採集器、濃縮器

販売形態：

カートリッジフィルター： 2.5" x 5", 2.5" x 10", 2.5" x 20", 4.5" x 10", 4.5" x 20" Pleated PAC Filter

ディスクタイプパッケージ： 13 mm Disc Filter (200 filters/pack), 25 mm Disc Filter (100 filters/pack), 37 mm Disc Filter (60 filters/pack), 47 mm Disc Filter (40 filters/pack), 90mm Disc Filters (20 filters/pack), 142 mm Disc Filter (10 filters/pack), 25mm dia. **Syringe Filter** (with Luer-Loc connection, 50 units/pack)

尚、NanoCeram ファイバー素材そのものの供給も致します。

お問い合わせは下記まで：

(株) ニューメタルス エンド ケミカルス コーポレーション
〒104 - 0031 東京都中央区京橋 1 - 2 - 5 京橋 TD ビル
電話：(03) 5202 - 5624 Fax：(03) 3271 - 5860
担当：電子材料部・伊藤 Email：ito@newmetals.co.jp



NanoCeram[®]-PAC Series

Powder Activated Carbon Filter Cartridges

Features and Benefits

Pleated filter cartridges combine high efficiency particulate filtration with a high efficiency (powdered) activated carbon (PAC) in a single depth media. NanoCeram-PAC[™] is a further advancement in Argonide's series of filters and is a major breakthrough in activated carbon filtration. The line of NanoCeram-PAC filter cartridges offer a unique combination of efficiency, capacity, flowrate & low pressure drop for both particulate and chemical adsorption or soluble contaminants such as soluble organics and chlorine. Their best use is in those applications where a combination of fouling-resistant soluble contaminant removal and particulate reduction is desired.

- Chlorine Reduction Efficiency: 2ppm to less than 1ppm for > 5,000 gallons (Part No. PAC2.5-10)
- Silt Density Index (SDI): $\leq 1.0 \pm 0.1$
- Cyst Retention: > 4 LRV
- Temp. Range: 39 - 135° F (4 - 57°C)
- Turbidity Reduction: < 0.01 NTU until terminal pressure drop (35psi)
- Low ΔP : < 1.3psi @ 4gpm (Part No. PAC2.5-10)
- Efficiency: > 99.9% reduction of 0.2 μ particulate (monodispersed latex spheres)
- Flow Rate: 5mL/cm²/min @ 4gpm (Part No. PAC2.5-10)
- Dirt Holding Capacity (DHC): 572 mg/in² (A2 Fine Test Dust)
- Effective pH Range: 5 - 10
- Bacteria (*E coli*) Retention: > 6 LRV
- Max. Pressure: 70 psi (4.83 bar)

Applications

- ◆ Waste Water - VOC's, disinfection by-products (DBP's), trace toxic organics (i.e., organic pesticides, endocrine disruptors, soluble & particulate dyes, etc.)
- ◆ POE & POU - Residual chlorine, toxic organic pollutants and particulate
- ◆ Polishing Filter - downstream of large granular carbon beds, coagulation processes, and filtration water purification systems
- ◆ Removal of particulate sorbents downstream of filter beds (e.g., arsenic sorbents or IX resins)
- ◆ Prefilter for protecting RO membranes for both fresh water and sea water (reduces chlorine that can damage membranes as well as sub-micron particles that tend to foul RO membranes)
- ◆ Iron removal in chiller and cooling towers
- ◆ Chemical-Biological Filters - protection against terrorist contamination of water supplies

Industries

Food, Beverage & Bottled Water
Pharmaceutical & Biomedical
Cosmetics & Personal Care
Microelectronics & Semiconductors
Power Generation
Machining (including EDM)
Paints & Coatings

NanoCeram®-PAC Series:

Part No.		PAC2.5-5 2.5" x 5"	PAC2.5-10 2.5" x 10"	PAC2.5-20 2.5" x 20"	PAC4.5-10 4.5" x 10"	PAC4.5-20 4.5" x 20"
Filter Surface Area	(in ²)	200	450	960	1,500	3,000
	(ft ²)	1.4	3.1	6.7	10.5	21
	(cm ²)	1,290	2,900	6,200	9,700	19,500
	(m ²)	0.129	0.29	0.62	0.97	1.95
Electroadsorptive (active) Surface Area	(in ²)	8.8×10^6	1.98×10^7	4.22×10^7	6.6×10^7	1.32×10^8
	(ft ²)	62,000	137,500	293,000	460,000	916,000
	(cm ²)	5.70×10^7	1.28×10^8	2.73×10^8	4.26×10^8	8.52×10^8
	(m ²)	5,700	12,800	27,300	42,600	85,200
Diameter x Length	(in)	2.75 x 4.875	2.75 x 9.875	2.75 x 19.875	4.45 x 9.875	4.45 x 19.875
	(cm)	7 x 12.38	7 x 25.08	7 x 50.48	11.3 x 25.08	11.3 x 50.48
Suggested Flow Rate	(GPM)	2	4	8	11	22
	(LPM)	7.5	15	30	42	84
Peak Flow Rate *	(GPM)	5	10	20	25	35
	(LPM)	19	38	76	95	133

*Peak Flow Rate based on initial flow using new filter cartridge and clean water during laboratory testing.

NanoCeram®-PAC Filter Cartridge's Chlorine Adsorption:

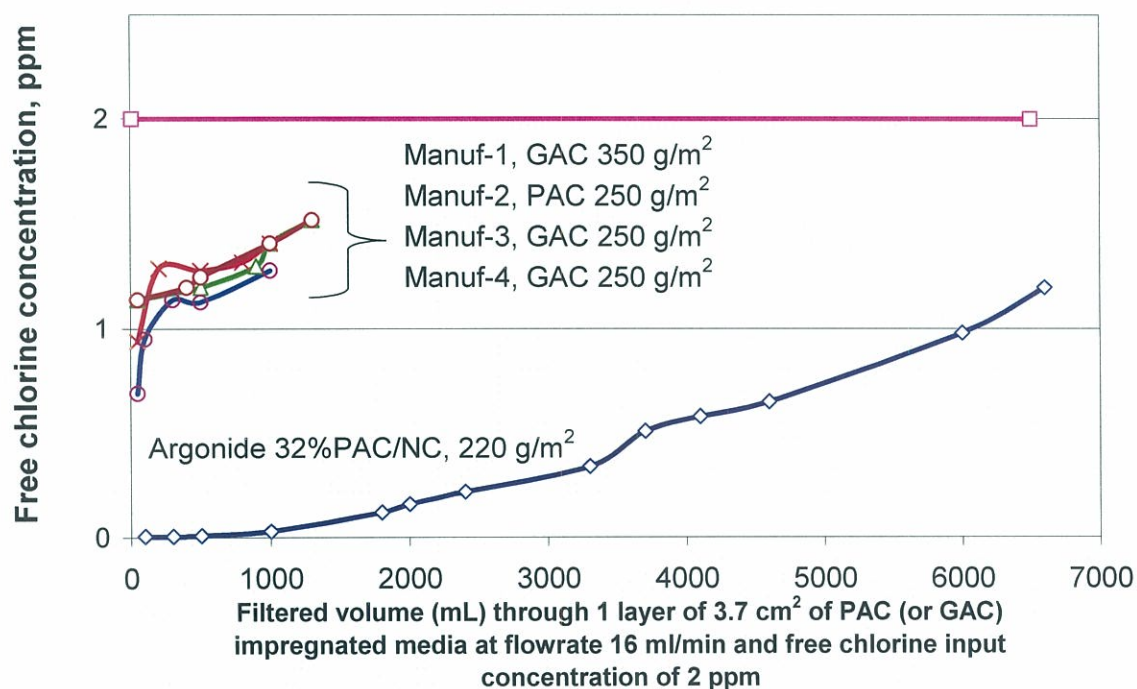


Figure 1 – Adsorption of chlorine by NanoCeram-PAC™ and other media



Argonide Corporation



SPECIFICATIONS

NanoCeram® Filter Cartridge

Argonide introduces a family of filters designed to satisfy the most difficult needs in water treatment. NanoCeram® is a highly electropositive filter that rapidly adsorbs particles, no matter how small. The media has a high capacity for particles as large as tens of microns or as small as a few nanometers. Such is the nature of electropositive attraction that even with an average pore size of 2 - 3 microns the NanoCeram® Filter Cartridge exhibits an Absolute Rating of 0.2 microns. The 0.2 micron rating is typically associated with ultraporous membranes. Yet NanoCeram® flow rates are hundreds of times greater than such membranes. The NanoCeram® filter is effective over pH 5-10, in water temperatures of 39 - 122°F (4 - 50°C) and in the presence of dissolved salts.

NanoCeram® P Series Cartridges are capable of:

- Cyst Retention: > 5 LRV
- Bacteria (*Klebsiella terrigena*): > 5 LRV
- Temperature Range: 39 - 122° F (4 - 50°C)
- Maximum Pressure: 70 psi (4.83 bar)
- Effective pH Range: 5 - 10



Part No.	P2.5-5	P2.5-10	P2.5-20	P4.5-10	P4.5-20
Effective surface area (in ²)	200	450	960	1500	3000
(cm ²)	(1,290)	(2,903)	(6,194)	(9,677)	(19,354)
Diameter × Length (in)	2.625 × 4.875	2.625 × 9.875	2.625 × 19.875	4.50 × 9.875	4.50 × 19.875
(cm)	(6.67 × 12.38)	(6.67 × 25.08)	(6.67 × 50.48)	(11.43 × 25.08)	(11.43 × 50.48)
Maximum Flow Rate * (GPM)	5	10	20	25	35
(LPM)	(19)	(38)	(76)	(95)	(133)

* Maximum Flow Rate based on initial flow using new filter cartridge and clean water during laboratory testing.