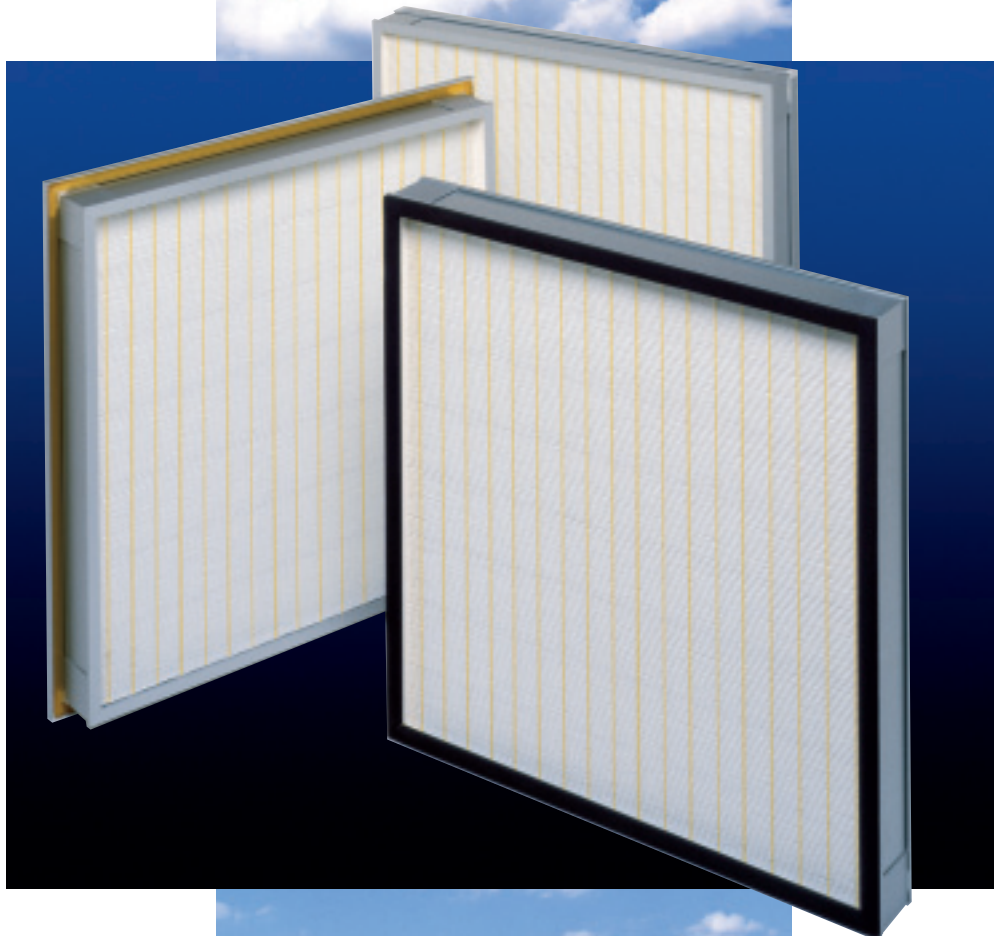


MEGAcel™

LPD Series
PTFE Membrane Filters



B E T T E R A I R I S O U R B U S I N E S S ®



MEGAcel™ LPD Series

PTFE Membrane Filters for State-of-the-Art Cleanroom Requirements

- **PTFE (PolyTetraFlouroEthylene) Membrane Combines Ultra-High Efficiency with Negligible Pressure Drop**
- **High Resistance to Corrosive Environments (Acid, Alkali and Organics)**
- **Negligible Off-Gassing Properties (Boron, Sodium, Potassium, Silicon)**
- **99.99995% Minimum Efficiency on MPPS**
- **Meets I300I Specifications and is UL 900, Class 1, Approved Design**
- **8 Pleats per Inch Allows for Increased Media Content in Shallower Pack Depths**
- **Superior Durability Over Conventional Media**

The AAF MEGAcel line of PTFE membrane filters is designed to meet stringent semiconductor industry Cleanroom filtration requirements for fab's, modular, mini and microenvironments, as stated in the I300I specifications. The MEGAcel was developed to provide extremely high particulate efficiencies combined with low pressure drops and negligible off-gassing properties.



STATE-OF-THE-ART DESIGN

Designed to combine maximum efficiency with lowest pressure drop, the MEGAcel media pack is available in assorted size configurations, allowing for a variety of application requirements.

The PTFE membrane pack is produced to assure precision in pleat spacing and height, thereby reducing "dead-spots" and promoting consistent and uniform air distribution throughout the filter. The pleat design allows the air to move throughout the entire depth of the filter, utilizing the full cleaning capability of the membrane.

FIGURE A

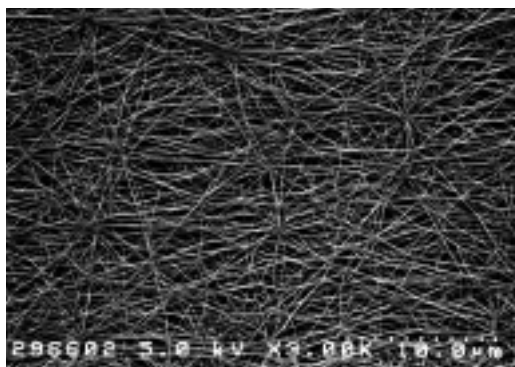
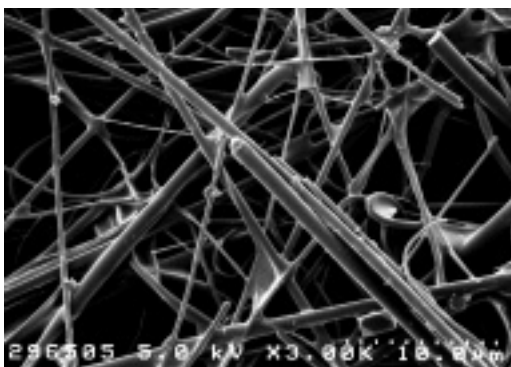
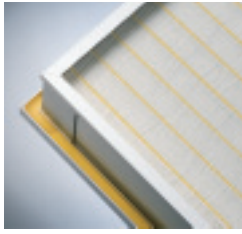


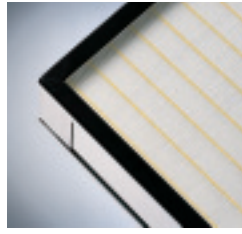
FIGURE B



These photographs, taken at 3000 X magnification, illustrate the finer diameter and more consistent composition of PTFE membrane media (Fig. A) in comparison with conventional, high efficiency micro-fiber glass media (Fig. B).

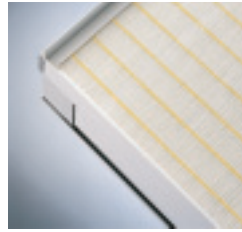


Gel Seal Frame



Neoprene Gasket Seal Frame

Tooling environments often produce harmful and corrosive by-products. MEGAcel is extremely resistant to these harsh conditions and also offers superior efficiency and pressure drop characteristics.



Knife Edge Frame

STURDY CONSTRUCTION

Manufactured with PTFE membrane and protective substrates, the MEGAcel filter is water resistant and meets the requirements of UL 900, Class 1.

The media pack is permanently attached to an anodized extruded aluminum frame with a UL classified, urethane adhesive.

Frames are available with gasket seal, gel seal or knife edge for fluid grid applications.

Although designed specifically for the mini-environment market, the MEGAcel's durability and performance characteristics allow for the product to be applicable for most all high filtration requirements, including: fabs, pharmaceutical, labs, hoods and food processing.

CHEMICAL ADVANTAGES OF PTFE

MEGAcel membrane has a smaller pore size and fiber diameter than glass media. These characteristics significantly reduce the levels of off-gassing impurities to almost zero, such as Boron, Sodium, Potassium and Silicon.

PTFE membrane has proven to be resistant in highly corrosive environments including Alkaline, Acid and organic substances. All of these environments can be found in semiconductor manufacturing processes.

STATE-OF-THE-ART-TESTING

AAF has established an air filtration testing methodology that is among the most comprehensive and accurate in the industry. Testing is essential in documenting filter efficiency and assisting in research and development of filtration products. AAF's testing facilities meet the highest standards for quality control.

Every MEGAcel™ filter is tested and certified, using procedures tailored to your specifications, to meet your performance requirements prior to shipping. AAF testing procedures for overall efficiency include laser particle counters with liquid or solid aerosol challenge. Pinhole leaks can be detected using either AAF's proprietary static scan test or automatic scan testing.

ONGOING QUALITY CONTROL

Process control is critical and AAF controls every aspect of filter production.

Once a roll meets our specification, it is carefully pleated and assembled in the cell side designed for the specific application. The filter is then tested and certified to meet the designated efficiency requirement. If required by the customer specification, the filter is also tested for pinhole leaks. A final visual inspection

ensures that dimensional tolerances have been met. Every filter is identified by serial and order number and is labeled with performance criteria, operator number, and part number.

This elaborate testing ensures that you receive only the highest quality cleanroom filtration products; cost-effective products that meet your toughest requirements.

MEGAcel®
Cleanroom Air Filter

To Order Replacements Call 1-888-223-2033

EFFICIENCY: 99.9999% @ 0.3 μm RES: ±0.62 W.W.G.
TEST FLOW: 360 CFM (PASSED CLEAN)
DATE: 10-17-99 BY: 360 W.W. (360-019-401) (ECO #1114)

Roll# 2003275870 Lot/Run# _____ Grade _____ C/N 2003275870-1
Fold/Pleat 73A Fixt # _____ Date 10-6-99 Shift 1 ID # _____

Assembled 84 Fixt # 714 Date 10-6-99 Shift 1 ID # _____

Trim/Clean 10-6-99 1 786 Caulk _____ Date _____ Shift _____ Clock # _____ Faceguard _____ Date _____ Shift _____ Clock # _____

Gasket 10-6-99 1 911 Top/Insul _____ Date _____ Shift _____ Clock # _____ Gel/Batten _____ Date _____ Shift _____ Clock # _____

Test _____ Date _____ Insp # _____ Test 10-7-99 Insp # 514 QAID # 1

Form CP-06.0101-2 Rev 08/96

AAF
INTERNATIONAL
Industries, Ltd.

AIR FLOW

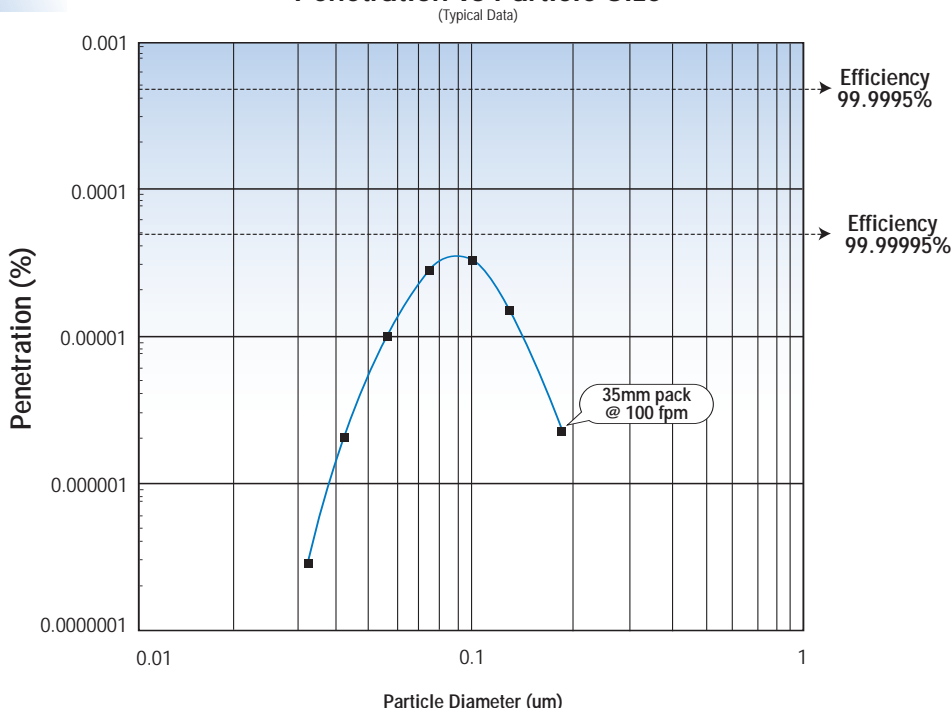
HIGH EFFICIENCY PERFORMANCE

MEGAcel provides efficiency and performance far superior to the competition. AAF is first with providing filters which meet rigorous I300I specifications for the manufacturing of 300mm wafers.

At a peak airflow of 100 fpm, Most Penetrating Particle Size (MPPS) efficiency is superior to the stringent requirements of 99.99995% efficiency.

The combination of advanced levels of efficiency and the lowest possible pressure drop makes MEGAcel a simple choice for use in 300mm wafer production.

Penetration vs Particle Size



LOWEST POSSIBLE PRESSURE DROP

Pressure drop is measured using a manometer as the test filter is subjected to a metered air volume. Testing on a volumetric basis is specified in the Institute of Environmental Sciences and Technology IEST-RP-CC007 recommended practice on ULPA filters.

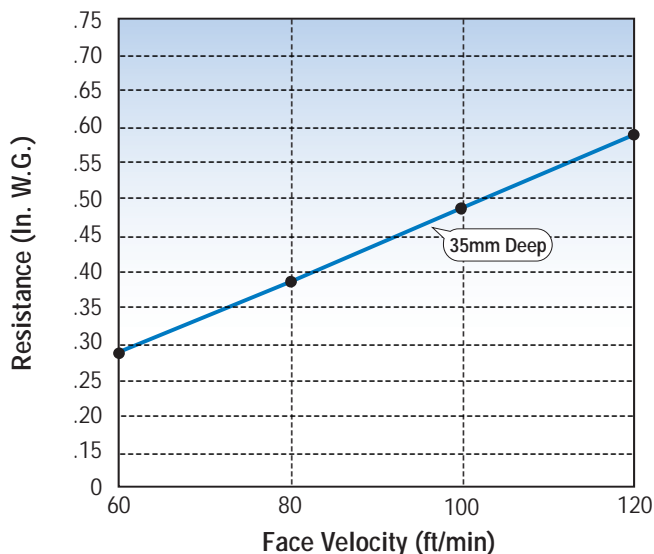
AAF calculates the total square footage of usable media pack area (outside dimensions of filter minus the frame thickness and adhesive) and multiplies this number by 100 fpm to determine an accurate volumetric test flow. (This value is approximately 720 cfm

for a nominal 24" X 48" filter.) This method simulates actual cleanroom airflow conditions ensuring a true measurement of pressure drop.

Some manufacturers determine the test flow by measuring the velocity (100 fpm) at 1 or 2 points on the downstream side of the filter using an anemometer. This procedure assumes the airflow is uniform 2" from the downstream side of the filter and in the majority of cases the assumed test flow will be less than 550 cfm for a nominal 24" X 48" filter.

Resistance vs Velocity

Typical Performance



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P O BOX 35690
LOUISVILLE KY 40232-5690
www.aafintl.com

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888.AAF.2003