

THE WORLD LEADER IN CLEAN AIR SOLUTIONS

# MEGAcel® II

with ePTFE Filtration Technology

## MINI-PLEAT HEPA FILTERS



### Proven Reliability With Exceptional Performance

- AAF ePTFE Filtration Technology media combines ultra-high efficiency with negligible pressure drop
- Superior durability and tensile strength, 84 times the pleated strength of microglass
- Chemical-resistant capabilities reduce media degradation in highly corrosive environments
- Exceptional water resistance compared to ultrafine microglass
- Negligible offgassing properties (boron, sodium, potassium, silicon)
- Lowest pressure drop mini-pleat HEPA filter available, reducing energy consumption for significant savings
- MEGAcel II and ePTFE media are manufactured, tested, and packaged in ISO 7 clean facilities to ensure the highest purity, quality, and consistency

The AAF MEGAcel line of filters is designed to meet semiconductor industry cleanroom filtration requirements for fabs, modular, mini and microenvironments, as stated in the I300I specifications. Manufactured with high performance ePTFE media, MEGAcel filters provide extremely high particulate filtration efficiencies, lower pressure drop and negligible offgassing.

### MEGAcel® II Overview

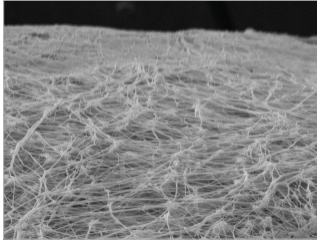
- Available in H13 - U17 efficiency
- Lowest pressure drop mini-pleat HEPA filter available
- 50 mm pleated pack
- Anodized extruded aluminum or stainless steel frame
- Gel, gasket, or knife-edge seal available
- Thermoplastic hot-melt separators

**Less Downtime. Less Worry. Less Risk.**

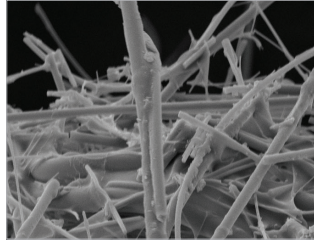
# MEGAcel® II Filters

## Industry-Leading Durability

Independent tests have shown that MEGAcel II HEPA filters with ePTFE Filtration Technology have superior mechanical strength over filters with traditional ultrafine microglass media.



Resilient ePTFE Filtration Technology media at fold tip @ 10.000x magnification.



Fractured ultrafine microglass media fibers at fold tip @ 10.000x magnification.

Superior mechanical strength is demonstrated by a high tensile strength, burst pressure, and abrasion resistance. ePTFE media retains its integrity with a high resistance to any potential damage, such as mishaps in handling or installation. This means that the risk of filter media failure is minimized and that fiber shedding, which could cause contamination when entering the airstream, is eliminated. As a result, there is a decreased risk of contaminants entering cleanroom environments. Protection of sterile products and cleanroom personnel is optimized. Improvement in quality risk management systems of critical applications ensures a consistent supply of quality products and a reduction of failure rates.

## Enhanced Chemical Tolerance

### High Corrosion Resistance

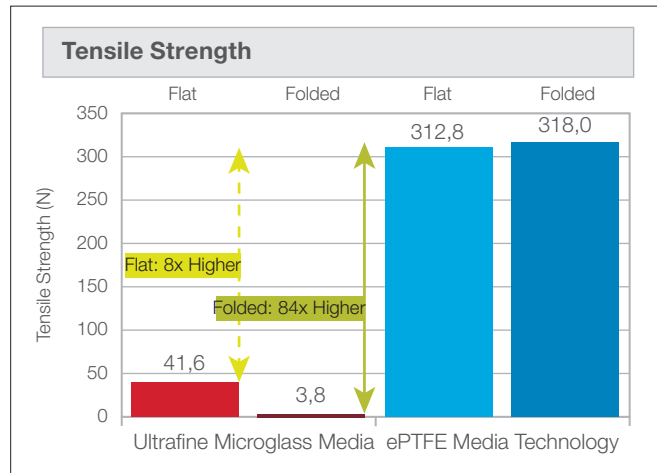
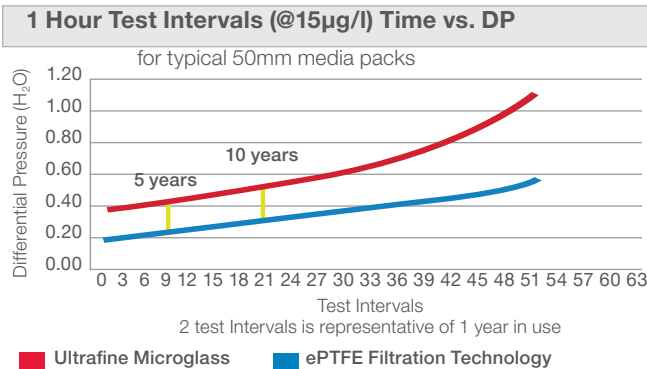
ePTFE media is proven to be resistant in highly corrosive environments and will withstand attacks from common decontamination chemicals. Both components of the ePTFE media, the membrane and non-woven layers, are stable against exposure to disinfectant agents.

### Superior Water Resistance

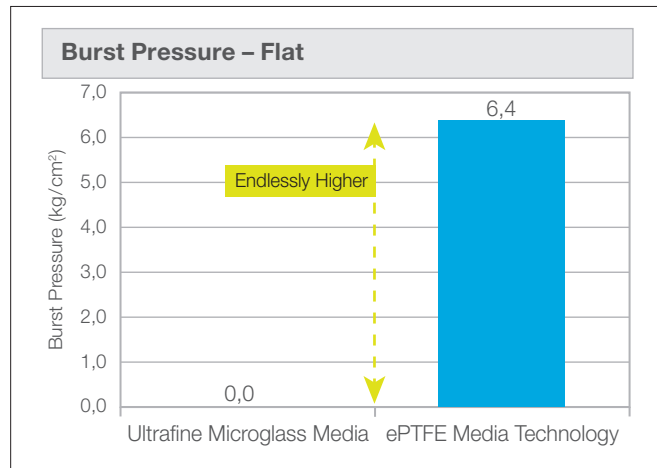
Based on AAF's test lab results, ePTFE Media provides superior water resistance in comparison with ultrafine microglass media, reducing damage risk.

### Negligible Offgassing

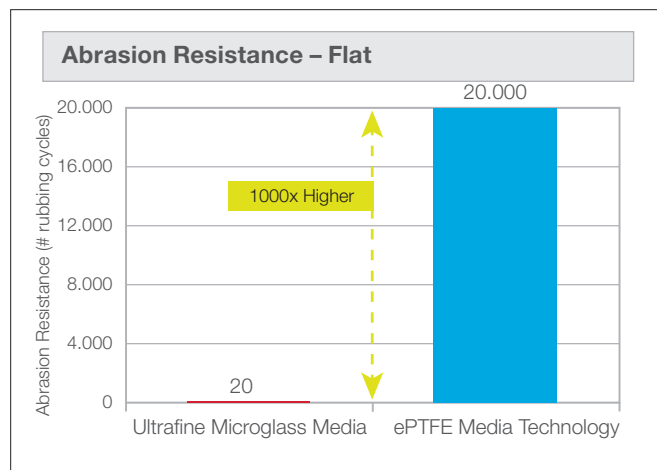
ePTFE media has extremely low offgassing of chemical components, resulting in the highest quality clean air available.



Results based on Test Standard DIN EN 29073-3.



Results based on Test Standard DIN EN 13938-2.



Results based on Test Standard DIN EN 12947-2.

# MEGAcel® II Filters

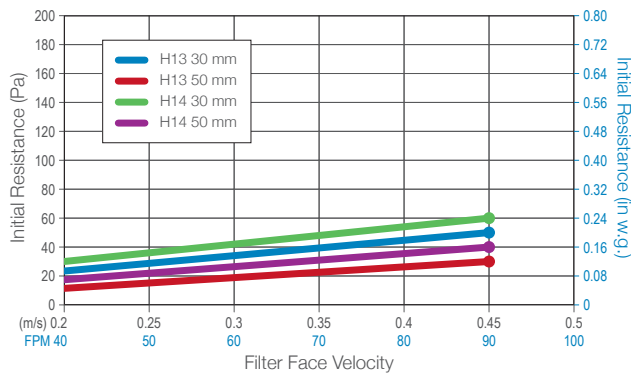
## Lower Energy Consumption

Estimates show that up to 50% of a facility's energy consumption is used for heating, cooling, and air handling. With increasing utility prices and peak power billing plans, lowering energy consumption is a key initiative.

MEGAcel II filters with ePTFE media feature a lower pressure drop than traditional filters with ultrafine microglass media, up to 50% lower depending on the exact conditions. At the same time, the overall filtration efficiency for MEGAcel II filters has proven to be higher than for filters with ultrafine microglass media. The lower pressure drop and improved efficiency are achieved from an evenly distributed layer of fibers with very fine nanometer-scale diameters. Air molecules can efficiently pass through the fibers, and airborne particles can be captured more easily. **The result: air quality is optimized and energy costs are substantially reduced.**

## Performance Data

**MEGAcel II ePTFE H13/H14**  
Initial Resistance vs. Filter Face Velocity



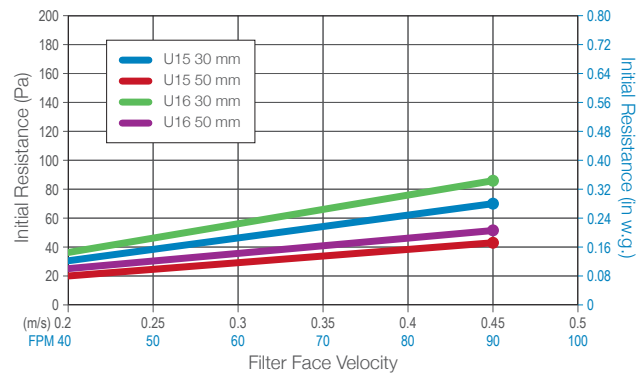
## Manufactured in ISO 7 Clean Facilities

Both the MEGAcel II HEPA filter and ePTFE Media are manufactured by AAF. By doing so, we can control the quality and consistency of the media. The media is produced in an ISO 7 cleanroom to ensure the purity and cleanliness of the product. The filter is then assembled, tested, and packaged in an ISO 7 clean manufacturing facility, resulting in unparalleled product performance and operational efficiency.



AAF ePTFE Filtration Technology produced in an ISO 7 cleanroom.

**MEGAcel II ePTFE U15/U16**  
Initial Resistance vs. Filter Face Velocity



# MEGAcel® II Filters

## Standard Configuration

Filter Media	Filter Frame
Material: ePTFE media	Material: Anodized extruded aluminum
Pack design: Mini-pleat	Sealant: Polyurethane (PU)
Separator: Hot-melt	
Pack depths: 50 mm	

Gasket	Faceguard
Material: PU foamed endless, EPDM, Silicone Fluid Seal, Poron (dovetail), Silicone	Material: Galvanized steel epoxy-coated RAL 9016, Stainless steel
Position: Air leaving side	Position: Both sides

Labeling	Enclosed documentation
Duplicate air filter label	Individual test report to EN1822:2009
Double tear-off air filter label	Installation and in-situ test instructions
In-situ test instruction labels	

MEGAcel II is also available in Fluid Seal and Knife-Edge execution.

## Performance

Filter Efficiency	
At 0,14 µm PSL	For MPPS to EN1822:2009
99,98%	H13 ≥ 99,95%
99,998%	H14 ≥ 99,995%

Efficiencies for MPPS as per EN1822-5:2009, Annex A, Alternative Method for filter class H14 and U16 as per EN1822-1:2009.

- Recommended final resistance: 500 Pa
- Maximum operating temperature: 70 °C
- Fire classification: UL 900. See complete marking on product
- Performance graph: MEGAcel II 610 x 1220 x 69 mm (HxWxD)

Standard sizes in mm			Nominal Airflow	
H	W	D	m³/h	m³/s
305	305	69	150	0,04
305	610	69	300	0,08
570	570	69	525	0,15
570	1170	69	1080	0,30
610	610	69	600	0,17
610	915	69	900	0,25
610	1220	69	1200	0,33

Sizes exclude gasket. For special sizes, please contact your AAF sales office. Non-standard configurations may result in differing performance characteristics.

For HxW dimensions as from 610 x 1220 mm, two faceguards or one faceguard with divider are recommendable for frame stability.

Initial resistance at 0,45 m/s		
Pack depth	H13	H14
50 mm	30 Pa	40 Pa

MEGAcel® is a registered trademark of AAF International in Europe and other countries.



Bringing clean air to life:

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AAF International has a policy of continuous product research and improvement and reserves the right to change design and specifications without notice.

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