

ADVANCED NANOFIBER FILTRATION TECHNOLOGY

The Breakthrough in Clean Air



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United Air Specialists, Inc.

a CLARCOR company



Discover the new standard in filtration technology

Nanofiber filter technology is scientifically proven to achieve higher efficiency, cleaner air, lower pressure drop, longer filter life and greater energy savings than any other media used in cartridge filters.

United Air Specialists (UAS) now offers the industry's best-performing cartridge filter with Advanced Nanofiber Filtration Technology as standard on all UAS cartridge dust collectors. These superior filters bring remarkable advantages including:

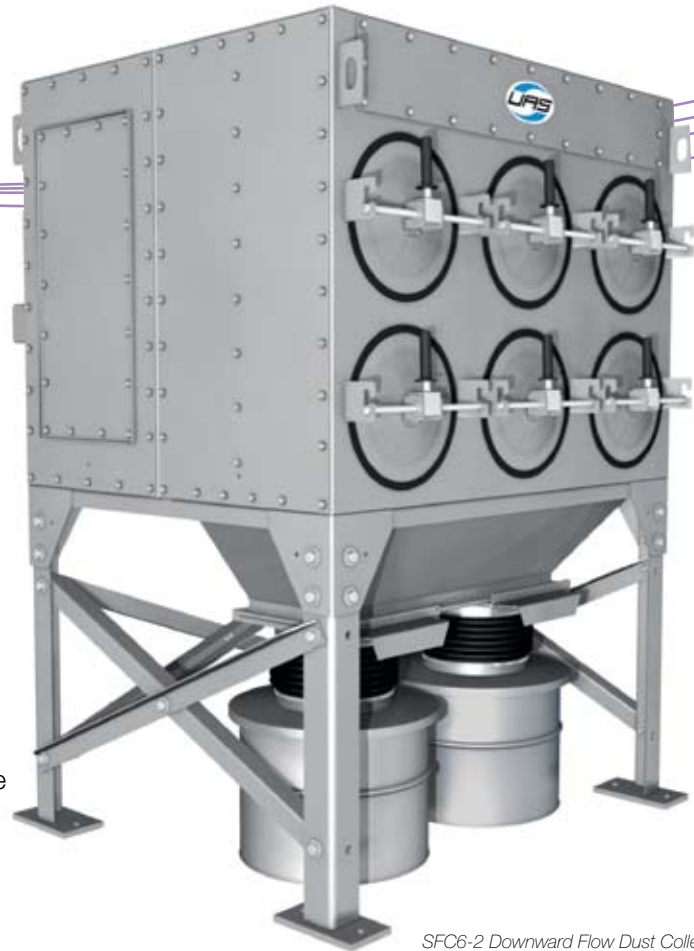
- **Capture of submicron particles** and reduction of dust collector emissions by 50%, resulting in cleaner workplace air
- **The industry's best surface-loading technology** to enhance dust cake release, leading to extended filter life
- **Better cleaning efficiency** with fewer pulses and significantly less compressed air usage
- **Lower pressure drop** over the life of the filter and less overall system energy cost

*Advanced Nanofiber
Filtration Technology
at 10,000x*

Put the ultimate system value to work

The combination of the industry's highest-rated filter and best-designed equipment gives you the most in performance and value. UAS' dust collectors are optimized to provide the superior efficiency and cleanability of nanofiber filters.

- **Higher efficiency** with standard MERV 15 filter
- **Less energy cost** through reduced compressed air usage
- **Longer filter life** because of superior cleaning ability
- **Greater value** due to lower cost per CFM
- **Cleaner air** from reduced outlet emissions
- **Industry's best pulse-jet technology** using UAS' patented cleaning system*



SFC6-2 Downward Flow Dust Collector

* U.S. Patent No: 6,902,592

The greatest difference is in the very fiber

UAS nanofiber filters feature an ultra-thin surface layer of synthetic fibers so extremely fine, they're measured in nanometers, or fractions of a micron. And they're the smallest nanofibers used in any filtration product—about 1,000 times smaller in diameter than human hair.

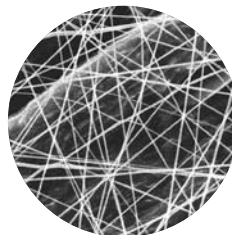
Compared with the other dust collection nanofiber technology, UAS nanofibers are:

- Approximately 50% finer
- More durable
- More moisture and temperature resistant
- Superior in adhesion to the substrate

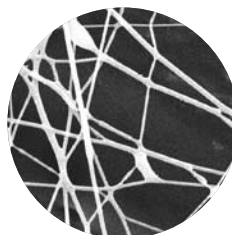
Because this layer of fine fibers is located on the filter's surface, it traps particulate before it embeds deeper in the media. Nanofiber cartridges, in fact, are true "surface-loading" filters, while all others are considered "depth-loading" filters. This is the key to nanofiber filtration's substantial advantages, particularly in filter life and energy savings.

Nanofiber diameter comparison at 5000x

UAS nanofibers are about 50% finer, yet more durable than the competing brand to achieve superior filtration and longest possible filter life.



UAS
70-150 nanometers
(.07 to .15 microns)



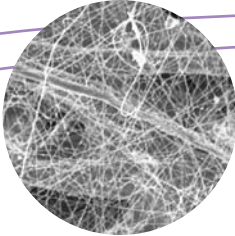
Other brand
200-300 nanometers
(.20 to .30 microns)

UAS nanofiber filters help you maximize:

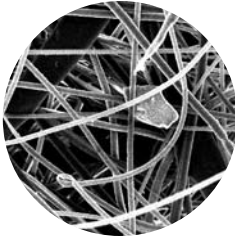
- **Operational savings –**
The nanofiber surface layer does virtually all of the work. It acts as a shield to prevent submicron particles from entering and becoming embedded into the media beneath the nanofiber. As a result, pressure does not build up as rapidly, and power requirements are dramatically reduced.
- **Compressed air savings –**
Dust is easily pulsed off of nanofiber filters because it remains on the surface, and not below the nanofiber layer. As a result, the number of compressed air pulse blasts is significantly less than with conventional depth-loading media.
- **Filter replacement savings –**
Lower pressure drop and fewer pulse blasts result in up to double the life and half the replacement costs with nanofiber filters.

Media
comparisons
at 600x

UAS ▶



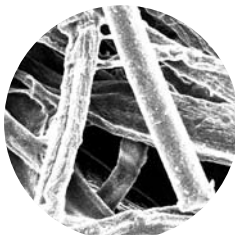
Melt-blown ▶



Spun-bond ▶



80/20
Cellulose
Blend ▶



Cellulose ▶



Surface loading excels over depth loading

UAS' Advanced Nanofiber Filtration Technology provides unequalled surface loading capabilities due to its nano-size interfiber pores. As a result, dust particles easily pulse off of the surface layer, while the media remains clean.

Other types of cartridge filters allow particulate to embed deep within the media substrate. These depth-loading filters require intensive cleaning and, therefore, are subjected to continual abrasion and wear.

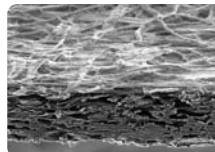
Some cellulose filters do use a melt-blown surface treatment to try to capture

particles on the surface. However, melt-blown fibers form a layer about 100 times thicker than a nanofiber layer. This creates large pores that are very deep and wide, which allow particles to penetrate deep within the melt-blown layer as well as the media substrate—similar to any other depth-loading cartridge filter.

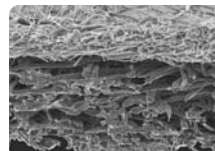
It's easy to see that no other filter media comes close to UAS' Advanced Nanofiber Filtration Technology to provide the most efficiently cleaned air.

Surface layer comparison

Nanofiber surface treatment is 100x thinner than a melt-blown layer.



◀ **UAS nanofiber**
.07 - .15 microns fiber diameter
.1 - .5 microns layer depth

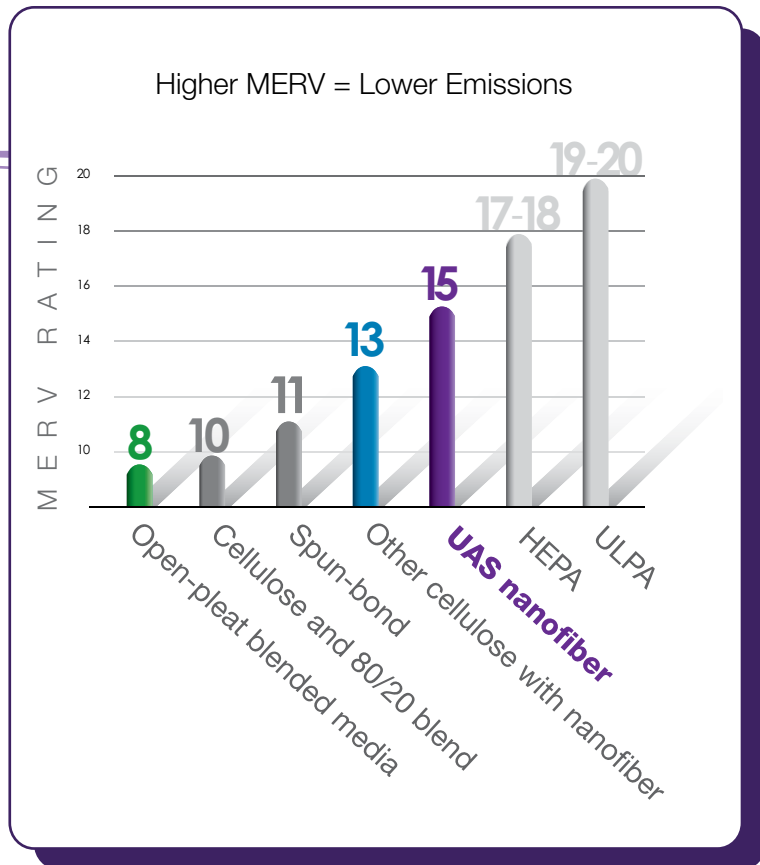


◀ **Melt-blown fiber**
10 microns fiber diameter
50 microns layer depth

MERV rating reveals the highest efficiency

Independent lab testing has certified UAS' nanofiber filter at MERV 15*—the highest of any standard cartridge filter used in industrial dust collection.

In rating filters, the MERV system is the industry-respected benchmark. The higher the MERV rating, the better the filter's efficiency and ability to remove even submicron dust particles from the air—and to minimize emissions.



UAS' nanofiber filter is nearly 50% more efficient on .3 to 1.0 micron dust particles than the MERV 13 nanofiber filter.

*The MERV (Minimum Efficiency Reporting Value) system is based on ASHRAE Standard 52.2-1999 and has been deemed the most accurate scale for determining a cartridge filter's efficiency and ability to filter submicron dust particles. UAS' MERV 15 efficiency has been tested per this standard and certified by independent lab testing.

Unsurpassed savings

UAS has set the new standard in cartridge filter dust collection with unparalleled innovations like our Advanced Nanofiber Filtration Technology media and patented pulse-jet cleaning system. The advantages that UAS' nanofiber filters offer over other cartridge filters quickly add up to bottom-line savings.

UAS also gives you the most efficiency and best value for industrial air cleaning processes, along with a comprehensive range of the best-performing cartridge filters for nearly any application.



Discover the UAS advantage

ANNUAL COSTS AND OWNERSHIP SAVINGS		
	Cellulose Blend	UAS Nanofiber
No. of Cartridge Filters	32	32
Airflow (ACFM)	19,000	19,000
Total System Losses	10"	8"
Motor HP	50	40
Brake HP	47.5	38
Motor Annual Cost *	\$15,200	\$12,160
Compressed Air Cost *	\$1,279	\$191
Total Energy Cost	\$16,479	\$12,351
Replacement Filter Cost (ea.)	\$65	\$105
Filter Life	6 months	12 months
Filter Changes Required	2	1
Total Filter Purchase Cost	\$4,160	\$3,360
Total Annual Savings		\$4,928

* Based on dust collection system running 4,160 hr/year and energy cost of 10 cents/kWh

WHY CHOOSE UNITED AIR SPECIALISTS?

A world-renowned reputation. For more than 40 years, we've been the industry leader in air quality technology—a proven track record that speaks for itself.

Commitment to quality products. Measuring our quality against documented expectations, we practice continuous improvement methods to anticipate challenges and implement successful solutions.

Unparalleled customer support. As a customer-driven solutions provider, we earn credibility and establish successful relationships by exceeding expectations for professional service and attitude.

Innovative technical leadership. Always, we keep technology at the forefront—ensuring continuous product advancements through ongoing investments in design and manufacturing.



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