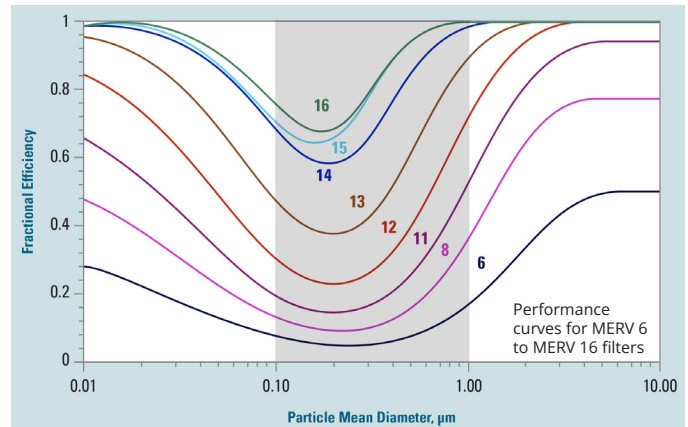


How to Mitigate Growing IAQ Problems with Wildfire Smoke

The Problem: Wildfires burned nearly 7 million acres per year from 2000 to 2021, and continue to worsen. According to the EPA, studies show wildfire smoke is a complex mixture of gases and fine particles, often in the submicron range. The fine particles found in smoke are more likely to deeply penetrate the respiratory system and cause adverse health effects.

The Challenge: Regardless of their MERV-rating, studies show filters have a weak spot in capturing certain airborne particles, including submicron particles from wildfire smoke (0.1 - 1.0 μm).



Source: Kowalski, et al., 2002

The Solution: A multi-layered approach that includes adding Needlepoint Bipolar Ionization (NPBI™) to improve filter performance. Third-party testing shows that ionization improves filter performance, especially in the submicron range.

NPBI™ + MERV 8 Filter*

⊕ Average of 99.8% of submicron particles removed in 4 air changes versus 47.7% without NPBI

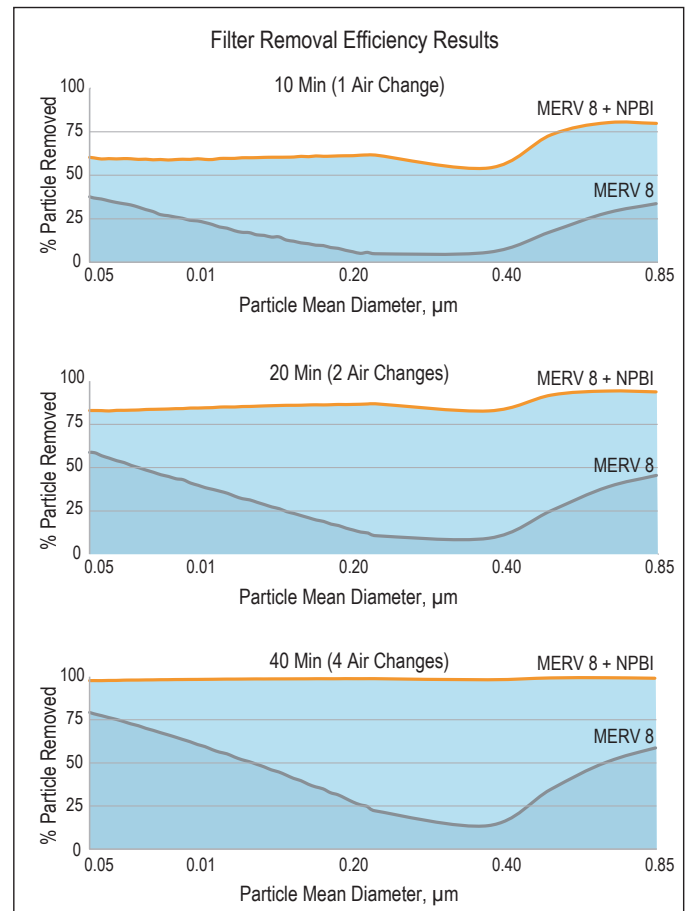
⊕ On average, submicron particle removal efficiency comparable to HEPA filter performance**

⊕ Removed PM1.0 twice as fast as a MERV 8 filter alone

* Filter labeled as a MERV 8, but tested as a MERV 10
** 98% versus 99.3% for HEPA

Test Background:

GPS sponsored testing was conducted at a third-party, A2LA accredited [ISO 17025] laboratory. Test reports and test parameters available upon request.



Disclaimer: GPS Air makes every attempt to ensure that accepted industry test methods in controlled environments are used in the testing it commissions. The purpose of these tests is to isolate in these controlled conditions the impact on particulate reduction efficacy of a filter versus a filter used with NPBI. Test results relate to the specific filter tested under specific conditions

Practical Real-World Benefits From Adding NPBI

⊕ Particles are removed faster

Being able to improve indoor air quickly and thoroughly matters. This includes hotels, schools, universities, airports, and office buildings where wildfire smoke can easily penetrate into the space.

Studies show that on average adding NPBI increases the speed by which filters can remove airborne particles, like those found in wildfire smoke, from indoor spaces.

⊕ Easy to retrofit and cost-effective

Adding a higher MERV rated filter may not be possible given the age and design of the buildings and the HVAC system.

Using MERV 8 rated filters with NPBI within existing systems is a cost effective solution while providing improved particle capture.

⊕ Extends the life of the HVAC system and lowers operation costs

According to the U.S. Dept. of Energy, HVAC systems are the largest single source of energy consumption in buildings. Higher-rated air filters can increase the resistance to airflow and pressure loss across the filter. The HVAC systems must work harder, increasing energy costs and wear and tear.

Adding NPBI can help improve the performance of existing air filters while not increasing airflow resistance, lowering energy costs, and extending the life cycle of the existing HVAC system.

⊕ Improves filter performance at a lower cost

With air filters, the MERV rating generally corresponds to cost - the higher the MERV rating, the higher the cost. MERV 13 filters can be up to 3-4X more expensive than MERV 8 filters.

Upgrading to NPBI with a MERV 8 filter can be a more cost-effective long term solution than a MERV 13 filter alone and is more efficient at capturing submicron particles.

Learn more about the impact of wildfire smoke on IAQ

To learn more about how needlepoint bipolar ionization can help as part of a multi-layered approach, visit GPS at www.gpsair.com.

Find disclaimers and additional information at gpsair.com/third-party-testing

