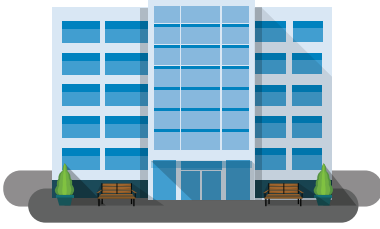


The Importance of Clean Air Environments



Airborne Contaminants in the Workplace

The U.S. Environmental Protection Agency (EPA) identified indoor air quality (IAQ) as one of the top five most urgent environmental risks to public health. The air we breathe at home, work, and school may contain a variety of contaminants, such as bacteria, pollen, and viruses.

An extensive body of scientific evidence demonstrates that short- and long-term exposure to fine particle pollution negatively affects the cardiovascular system. Poor IAQ are commonly associated with improperly operated and maintained heating, ventilating, and air conditioning (HVAC) systems.

Indoor Air Quality

The world's leading health-related organizations consider PM₁₀, PM_{2.5}, and PM₁ fine dust fractions as the most important and dangerous for humans.

Particles with an aerodynamic diameter of:

10 micron (ePM₁₀)

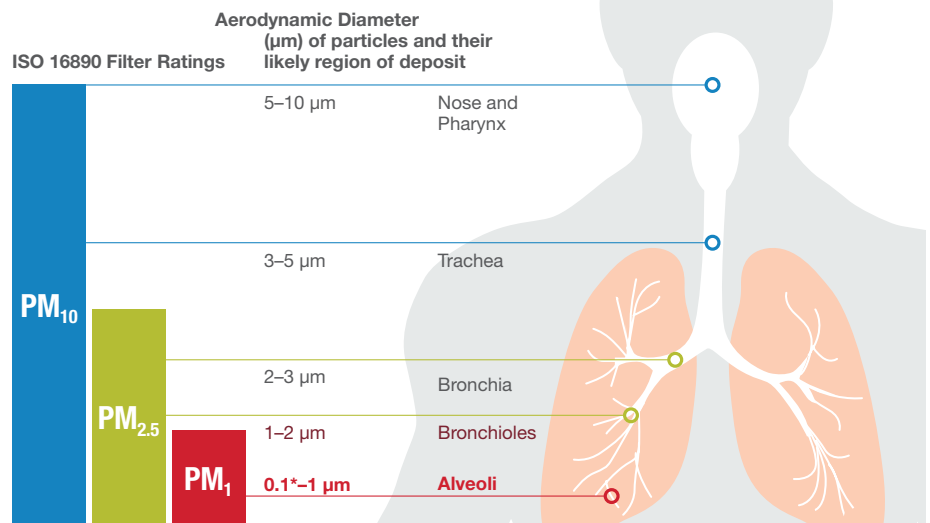
deposit in the **nose and pharynx** of the human respiratory system

2.5 micron (ePM_{2.5})

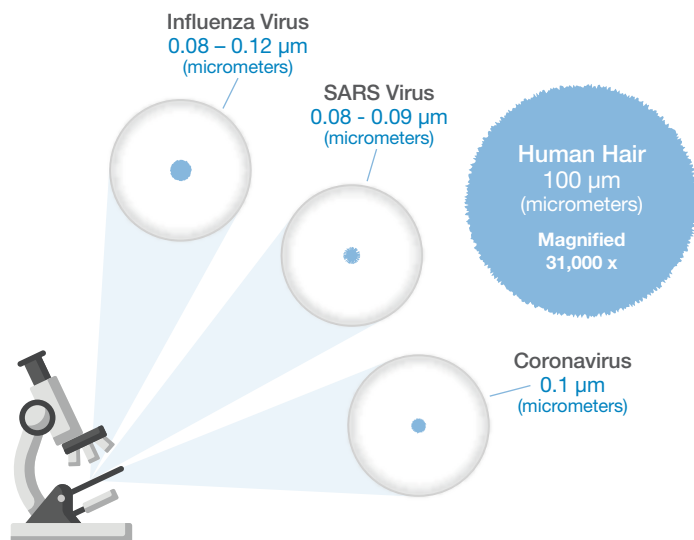
are small enough to reach the **human lung** and deposit in the bronchia

1 micron (ePM₁) or smaller

are small enough to find their way through the cell membranes of the alveoli into the **human blood stream** and cause life-threatening diseases



*Efficiency on particles smaller than 0.3 micron is not defined by ISO 16890.



Particulate Size and Air Filtration

Our ability to measure and identify particulate and airborne molecular contamination changes the way we think about air filtration. Because these particles are so small, viruses and other contaminants can penetrate deep into the lungs and bloodstream, where they pose a grave threat to human health.

Fortunately, proper air filtration has been proven to reduce the spread of viruses and other contaminants. For example, research has demonstrated that appropriate air filtration limits the pass-through of virus particles, which frequently hitch a ride on larger particles, into downstream areas. This result may be achieved with MERV 14-16 air filters, as well as with high-efficiency particulate air (HEPA) filters, when installed in suitable air handling systems.