Press Release

Efficient reduction of indoor viral load

Weinheim, October 30, 2020. Filter technology can effectively remove viruses, such as SARS-CoV-2 including in aerosols, from the air. Alongside the global manufacture of facemasks, Freudenberg is helping to reduce the risk of infection with efficient high-tech filtration solutions and new services in indoor air and vehicle engineering. When it comes to using mobile air purifiers, the experts have some valuable tips.

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Aerosols, which are also a source of infection, waft through indoor air and disperse as virus-laden tiny particles like cigarette smoke. “Effective state-of-the-art ventilation systems equipped with the right filtration system are fundamentally suited to reducing the viral load,” explains Dr. Thomas Caesar, Director Global Filtration Technology Industrial Filtration. For example, Freudenberg’s filtration systems work with high-performance suspended particulate filters that capture almost 100 percent of the viruses, such as SARS-CoV-2, in pharmaceutical cleanrooms or hospitals.

In response to the current pandemic, Freudenberg has also expanded its “Viledon filterCair” air quality management service with two hygiene modules that work against pathogens and viruses. Both are mainly for use in the food and beverage industry. The two new modules include a comprehensive ventilation system check whereby expert service technicians conduct plant surface sampling and several microbiological tests. One of the modules also includes a thorough hygiene inspection of the entire air conditioning system in line with relevant guidelines issued by the Association of German Engineers (VDI 6022).

A closer look at mobile air purifiers

Fundamentally, mobile air purifiers reduce the concentration of viruses indoors over time. So, Freudenberg's experts recommend high-quality devices with appropriate filtration efficiency as a measure in addition to ventilation from a building's air conditioning system with pure fresh air as well as window ventilation. Ventilation technology is an important element in the range of preventative measures that also include social distancing, washing hands and wearing protective masks. The volume flow per hour of mobile equipment should be at least six times the volume of the room. An air purifier also needs powerful, high-quality filters that capture droplets emitted when breathing, speaking, singing, and coughing.

Vehicle cabin four-layer filter solution for optimal protection

To lower the risk in a vehicle interior cabin, the experts generally recommend increasing the fresh air supply to reduce the concentration of aerosols. High-quality filter elements are also important. In recirculation mode, removing viruses from the air largely depends on the efficiency of the filtration system and the air exchange rate. Automotive interior filters of the "micronAir® proTect line", which Freudenberg manufactures for car manufacturers, can filter roughly 90 percent of the viral aerosols. The first two layers capture most of the ultrafine aerosols. The optional third layer captures harmful gases. An innovative fourth layer coated with fruit extract then inactivates almost 100 percent of the detected viral load, preventing the release of active viruses back into the cabin air following vibration. This has been demonstrated in a series of comprehensive tests carried out in cooperation with an independent external research institute.

Photo information:

- Samples taken during a filter system check by Freudenberg experts to protect against germs and viruses.
- Vehicle graphics: An increased supply of fresh air is important to reduce aerosols in the vehicle. In the recirculation process, air purification is highly dependent on the efficiency of the filtration system and air exchange rate.
- Graphic: Four-layer automotive cabin air filters from Freudenberg can filter around 90 percent of virus-laden aerosols. The fourth layer, which is coated with fruit extract, inactivates the separated viruses.

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Strength of innovation, strong customer orientation, diversity, and team spirit are the cornerstones of the Group. The 170-year-old company holds strong to its core values: a commitment to excellence, reliability and pro-active, responsible action.
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