

# **New Level of Respiratory Protection against Airborne Viruses: Improved Respirator for Emergency Responders and Healthcare Workers**

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There is considerable evidence that the influenza virus can be transmitted via the airborne route and therefore adequate respiratory protection is required. Considering the high fatality rate of the Influenza A/H5N1 virus and the elevated exposure risk of first responders and healthcare workers, proper respiratory protection will be crucial in the event of a pandemic. This will not be provided by surgical masks due to very low infectious doses for some airborne microorganisms (Q fever = 1 organism; Influenza A H1N1 = 0.5 – 3.0 TCID<sub>50</sub>).

Triosyn Corp. has developed the T-series P95 respirator by combining the equivalent of a N95 respirator with an iodinated polymer, thus offering a new level of respiratory protection. Viral Filtration Efficiency (VFE) of respirators was evaluated by small-scale sample testing at a third party facility against SARS, and by full-scale device testing against the viral surrogate, MS2 coliphage. Viral challenges were delivered using Collison nebulizers to generate a bioaerosol containing 10<sup>3</sup> - 10<sup>5</sup> PFU per liter of air. Aerosolized viruses were then filtered through the test respirators at the recommended flow rate and the effluent sampled in All Glass Impingers. VFE of two commercial N95 respirators and the T-series P95 were measured. The Triosyn respirator membrane reduced the SARS coronavirus challenge below the detection limit over a 2-hour period. . While N95s showed reduction levels of 93% and 99% over 8 hours of filtration, the T-series P95 respirator reduced the viral challenge by an additional 2 to 3 logs (VFE of 99.99%).

Along with the added benefit of being resistant to oil-containing aerosols, the Triosyn T-series P95 respirator offers a higher level of respiratory protection to first responders and healthcare workers against airborne viruses.