

Artificial Fog Does Not Appear To Increase Airborne COVID-19 Disease Transmission Risk In Entertainment Productions

New study, sponsored in part by IATSE Local 891, shows that artificial fog may even reduce levels of suspended respiratory aerosols



PLEASANTON, Calif., April 6, 2021 /PRNewswire/ -- A new study released by Aura Health and Safety, The Phylmar Group, and SafeTraces, Inc, a market leader in DNA-based technology solutions, suggests that artificial fog has no negative impact on the air safety in entertainment venues and productions. This is great news for the film, television and live entertainment industries, with a US market size in excess of \$700 billion.

The COVID-19 pandemic represents a once-in-a-century crisis that has led to unprecedented health and safety challenges in the built environment, including the entertainment industries. Scientific, medical, and public health experts, including the Center for Disease Control (CDC), have stated that SARS-CoV-2 is a highly infectious virus that is primarily transmitted via respiratory droplets and aerosols. Indoor environments face significant airborne exposure risk, with enclosed areas, prolonged exposure, and poor ventilation high risk factors common in many entertainment venues.

As the entertainment industry, trade associations, and labor unions prepare to reopen venues and stage new productions, there has been significant concern whether artificial fog increases the airborne transmission risk of diseases such as COVID-19. Artificial fog is widely used in the entertainment industries to enhance lighting, as a visual effect, and to create a specific sense of mood or atmosphere as it disperses across densely occupied venues such as concert halls and theaters, rendering it a potential high-risk factor for airborne disease transmission.

For the joint study "[COVID-19 Implications of the Physical Interaction of Artificial Fog on Respiratory Aerosols](#)", Aura Health and Safety public health scientists used the aerosol-based [veriDART™ solution by SafeTraces](#), the most powerful risk assessment tool for

airborne pathogens like SARS-CoV-2. It leverages DNA-tagged tracer particles that safely mimic aerosol mobility and exposure in order to identify high-risk infection hotspots and transmission routes, assess ventilation and filtration efficacy, and inform remediations with a rigorous science-based, data-driven methodology.

The scientists released unique DNA-tagged tracer particles with and without glycerin- or glycol-containing artificial fog into a closed environment. They took air samples at regular intervals to determine DNA tracer degradation over time. The study found that none of artificial fog application increased the time that respiratory aerosols remained suspended in the air. In fact, artificial fog containing glycol actually decreased suspension time, indicating that this fog application reduces the time respiratory aerosols remain suspended in the air to impact disease transmission.

The highly significant finding that artificial fog does not increase, and may even reduce, the risk of airborne transmission of diseases from respiratory aerosols has important implications, as it directly affects the entertainment industries' readiness to re-open and their ability to generate revenue and create jobs.

"Over the past several years the use of atmospheric smoke and fog has been on the rise with many in our membership expressing concern over health concerns around the products used, and any lasting effects of its use. When the COVID-19 pandemic shut down the industry in March of 2020 one of the many concerns brought forward to Local 891 - concerns heard throughout the industry North America wide - was, what happens when someone who may have the disease releases aerosols into the fog on a set?" asked Keith Woods, President of the International Alliance of Theatrical Stage Employees, Moving Picture Technicians, Artists and Allied Crafts (IATSE) Local 891 labor union. "Given this, it seemed natural to support a study of this sort to help get some answers to this most pressing of concerns. It gives us some relief to know that artificial fog does not appear to allow the released aerosols to suspend more than normal," stated Woods.

About SafeTraces:

SafeTraces is committed to ensuring the highest safety standards for the air we breathe, the food we eat, and the medication we take by harnessing the power of DNA. We provide market leading, DNA-enabled diagnostic solutions for indoor air quality, food and pharmaceutical traceability, and sanitation verification. Information is available at www.safetraces.com.

About Aura Health and Safety:

Aura Health and Safety provides specialized industrial hygiene and environmental public health consulting to a range of industries. Aura has been working with the film and television industry for several years, conducting artificial fog research, indoor air quality investigations, and most recently COVID-19 plans.

About the Phylmar Group:

The Phylmar Group facilitates environmental health and safety/sustainability forums in the areas of biopharmaceuticals, apparel/ footwear and occupational health and safety. Phylmar monitors, analyzes and advocates during rule making regarding federal and state regulations, and members have a private channel for information exchange and networking along with opportunities for continuing professional education and mentoring.