

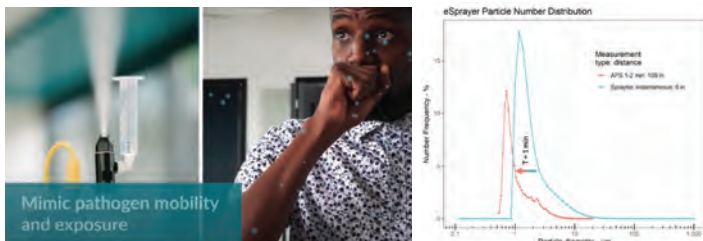
Measurement and Verification of Engineering Controls for Select Agents

Technical Information Sheet

Overview

Developed with support from the National Institutes of Health (NIH), SafeTraces' proprietary veriDART platform leverages the first-of-its-kind pathogen surrogate challenge methodology for measurement and verification of environmental controls including surface disinfection solutions in support of occupational safety, cost & energy efficiency, and regulatory compliance.

This technical information sheet provides a general overview of the veriDART platform. For additional detail, please access reference materials at www.safetraces.com.



DNA-Tagged Pathogen Surrogates

Product Materials: DNA-tagged pathogen surrogates are generated from a water-based solution with known concentrations of synthetic, short-sequence, non-coding DNA tags that safely simulate human saliva with virus.

Product Safety: Surrogate materials are sterile, Generally Recognized as Safe by the U.S. Food & Drug Administration (FDA-GRAS), and approved for safe usage in occupied spaces.

Tagging Capability: Surrogates can carry up to 24 DNA tags that are uniquely identifiable via polymerase chain reaction (PCR) testing, enabling rapid iterative scenario testing & avoiding background measurement in test areas.

Particle Size Distribution: Surrogates are well-characterized and mapped to human respiratory emissions, with desiccation and shrinkage occurring over time and distance from the point of emission.



Test Equipment & Supporting Software

Sprayer: Pneumatic electronic sprayers emit defined liquid volumes of aerosol solution per release, controlling for the particle size distribution referenced above, with portable setup & usage, and remote wireless control.

Sampling: Sampling methods include 1) a wireless four-channel air sampler with 25mm 3-ring cassettes, 5.5 liters per minute flow rate, and variable sampling interval feature, and 2) surface swabs to measure fomite deposition concentrations of pathogen surrogates.

Supporting Software: Certified veriDART professionals manage client projects, including defining project scopes, uploading building floor plans and assigning test areas, test types, test parameters, tracer emission and sampling points via cloud-based software provided by Safe Traces.

Quantification, Measurement & Reporting

Quantification: Testing quantifies the impact of environmental controls for air and surfaces including UV-C disinfection, ventilation, and filtration on the removal and inactivation of pathogen surrogates.

Measurement: Calculations measure a known concentration level of DNA copies initially emitted within a test area against subsequent concentration levels over defined sampling intervals. Test results are expressed in safety science and engineering metrics.

Reporting: Performance analytics are visualized in heatmap format overlaid on floor plans for test areas and compiled in dashboards at the building and portfolio levels via a cloud-based software platform.



To learn more about veriDART, contact us at info@safetraces.com