Efficacy of Waterless Spray on Sensitive Equipment Decontamination System

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Traditional decontamination methods are often ineffective at removing contamination from high value sensitive equipment which cannot come in contact with water or aggressive decontamination agents. This has created a need for a viable methodology for removing contamination for sensitive equipment. Additionally, with the advent of more and more technology integration into everyday items, a larger body of items contain internal circuit card assemblies along with small and inaccessible locations which become difficult to remove chemical, biological and radiological contamination further showing the need for effective decontamination which will not damage or affect sensitive electronics. This presentation will evaluate 4 efficacy studies carried out on a waterless spray on vacuum off decontamination system to assess the system's ability to remove Chemical, Biological and Radiological contamination from sensitive equipment such as cameras, optics, radios, computers and circuit card assemblies.

This waterless decontamination for sensitive equipment system is a spray decontaminant with a chemical solution containing an absorbent, solvent-cosolvent, water-free organic substances and a catalyzer to propel the reaction. The system encapsulates the Chemical, Biological, and Radiological agents and the agents are easily removed perpendicularly from the surface using a special vacuum device which safely holds all contamination for safe neutralization or disposal. The system minimizes off-gassing and cross contamination through vertical removal of the agent. With a 4 phase procedure of spraying the system onto the contaminated surface, a dwell time to allow for agent solubilization and diffusion into the decontamination layer, vertical removal with special vacuum device and finally safe disposal, the system is designed as a robust and rapid capability for contamination removal on sensitive electronics. This presentation will show the efficacy of the system through chemical (GD, VX, HD), biological (*Yersinia pestis*, *Bacillus anthracis*, and Vaccinia virus) and radiological (Ra-226) live agent testing to remove contamination on a variety of materials which are commonly used in sensitive equipment manufacturing as well as one test performed on the removal of biological agents from commonly used detection equipment (Smiths LCD 3.3 CWA and TIC detector). A real world case study using the waterless decontamination system for decontamination of an aircraft after transporting an Ebola effected patient will also be included in the presentation.