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## VHP Decontamination

Vaporised Hydrogen Peroxide

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## HYDROGEN PEROXIDE VAPOUR DECONTAMINATION

(VHP - HPV - VPHP)

Castium 'Hydrogen Peroxide Bio-decontamination service' uses pre-qualified mobile bio-decontamination equipment that meets all of the new EU regulatory standards including the current BPR regulations which is set up on a temporary basis to undertake a high level of disinfection anti-microbial gassing process. Hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) 30–35% w/W disinfection solution is vaporised in a gas generator and distributed within the room (s) to be bio decontaminated by dynamic gas distribution nozzles and oscillating stirring fans.

Following a set of gas injection cycles, residual H<sub>2</sub>O<sub>2</sub> is removed from the room, to below the work exposure limits (WEL), either by a catalytic variation process which reduces H<sub>2</sub>O<sub>2</sub> to the safe components of oxygen and water or by purging H<sub>2</sub>O<sub>2</sub> to vapour from the enclosure utilising the rooms ventilation system. The knowledge, technology, experience and flexibility of the contractor is crucial to a successful decontamination.

### THE TECHNOLOGY

HPV is produced from a solution of liquid H<sub>2</sub>O<sub>2</sub> and water, by generators specifically designed for the purpose. These generators initially dehumidify the ambient air, then produce HPV by passing aqueous hydrogen peroxide over a vaporiser, and circulate the vapour at a programmed concentration in the air, typically from 140 ppm to 1400 ppm, depending on the infectious agent to be cleared. After the HPV has circulated in the enclosed space for a pre-defined period of time, it is circulated back through the generator, where it is broken down into water and oxygen by a catalytic converter, until concentrations of HVP fall to safe levels (typically <1 ppm). [6] Alternatively, the HPV is vented to the outside air, in cases where recapturing of the HPV is not needed.

**Low temperature:** The hydrogen peroxide vapour is produced in an air stream at approximately 65 °C and introduced into an environment which does not require humidity or temperature pre-conditioning.

**Residue-Free:** Hydrogen peroxide breaks down in contact with UV light and organic material to its constituent components - water (humidity) and oxygen - hence there is no need for any post- decontamination clean up.

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