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**The Inactivation of *Bacillus subtilis* Spores at Low Concentrations of
Hydrogen Peroxide Vapour**

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Abstract

Spores of the bacterium *Bacillus subtilis* were deposited onto the surface of membranes by a process of filtration and exposed to concentrations of hydrogen peroxide vapour between 10 and 90 mg/m³ (ppm) for times ranging from 1.5 to 48 h. The inactivation data obtained in this way was modelled using the Weibull, Series-Event and Baranyi inactivation models. The Weibull model provided the best fit, and its use was extended to previously published literature obtained at higher hydrogen peroxide concentrations to produce a correlation yielding *D* (decimal reduction value) values over a range from 10 to almost 4000 ppm.

Keywords: Hydrogen peroxide vapour, disinfection, *Bacillus subtilis* spores, inactivation kinetics, *D* values

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