



PROFESSIONAL INFORMATION REPORT **95-1**

PERFORMANCE OF PROPPER'S **VAPOR LINE®** INTEGRATOR
Versus Biological Indicators

*John Dyckman, PhD.
Director, Product Research
Propper Manufacturing Co., Inc.
Long Island City, New York 11101, USA*

Performance of Propper's Vapor Line® Integrator versus Biological Indicators

Product Description and Purpose

Propper's Vapor Line® integrator is a chemical indicator for use in all steam sterilization processes between 250°F and 272°F. It may be used to monitor the sterilization of wrapped or unwrapped instrument sets and small or fullsize fabric packs consisting of drapes towels, sponges, and other standard surgical items in healthcare institutions.

Vapor Line® was designed to monitor the entire sterilization cycle, including the "overkill" period beyond the conditions needed to kill even the most resistant forms of microorganisms. A cycle which meets these sterilization conditions is indicated by the migration of the chemical indicator along a paper wick into the green "PASS" area. The purpose of this study was to verify that the Vapor Line® integrator would monitor complete sterilization cycles.

Performance Testing

A series of steam sterilization cycles was performed for several exposure times at 250°F, 260°F, and 272°F in a BIER vessel (Joslyn Sterilizer Corp., Farmington, NY). Ten Vapor Line® integrators and ten Duo-Spore® biological indicators were run in each cycle. Cycles were performed in duplicate for a total of twenty of each indicator per time/temperature combination. Following the cycles, the Vapor Line® indicators were examined to determine the interpretation. The Duo-Spore® strips were aseptically removed from their glassine envelopes, transferred to Trypticase Soy Broth and incubated at 56°C. Test tubes were examined daily for growth during a one week incubation period.

Results

Under the 3 temperatures and 23 times studied, Vapor Line® integrators did not show a "PASS" until after conditions necessary to result in sterilization of the spores. The time/temperature combinations needed for 100 percent spore death and all Vapor Line® integrators to indicate "PASS" is shown in Figure 1.



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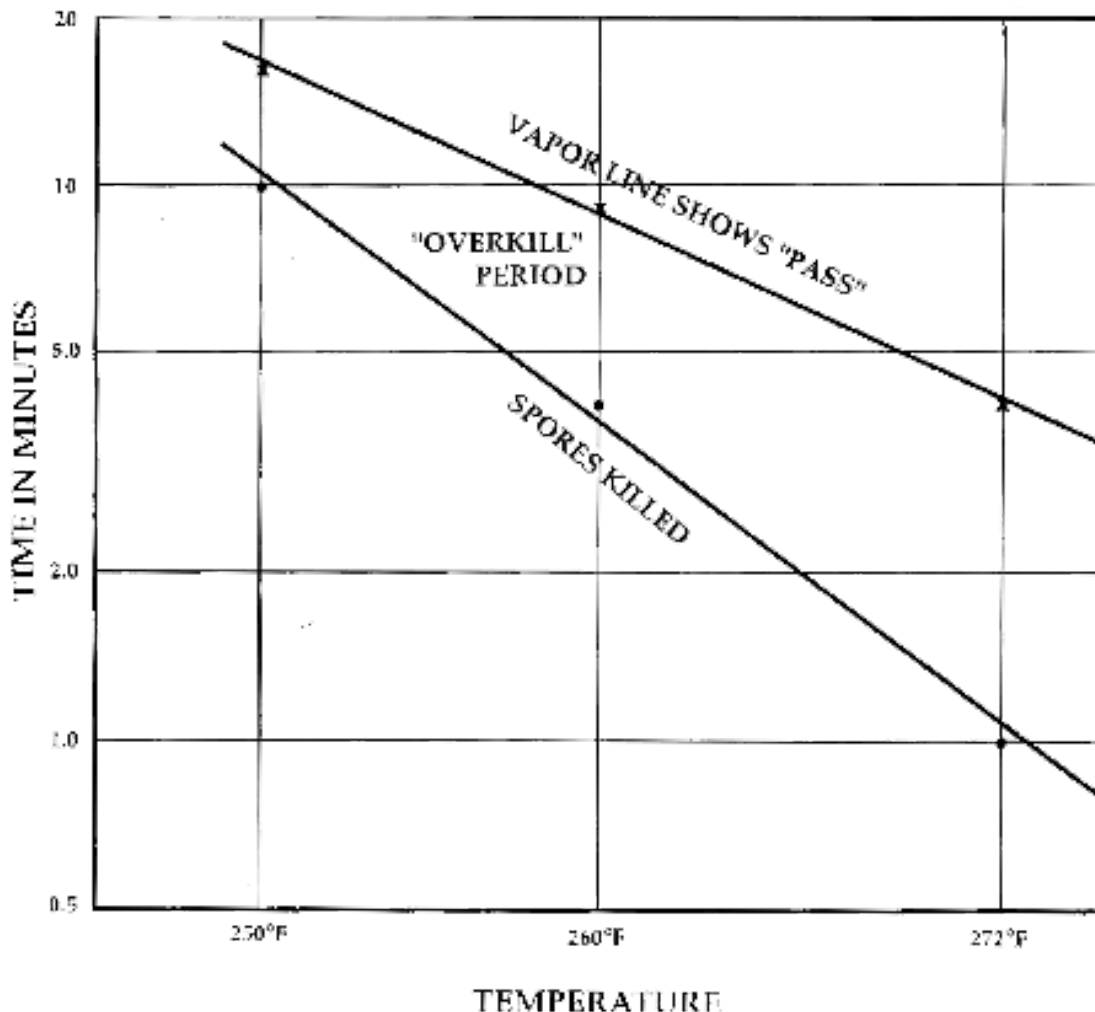


Figure 1

NOTE: Due to the very short come-up time in a BIER vessel (6-8 seconds), a BIER vessel requires a longer exposure time to show a "PASS" display than that which is normally seen in hospital sterilizers.

Conclusions:

The results of this study show that Vapor Line® is a highly reliable and reproducible chemical indicator for steam sterilization. It is capable of integrating time and temperature into a simple to interpret "FAIL-PASS" readout which advances into the "PASS" area only after conditions needed for spore death have been reached.

