

*Ethylene Oxide abator
used with the Andersen Products
EOGas Sterilizer*

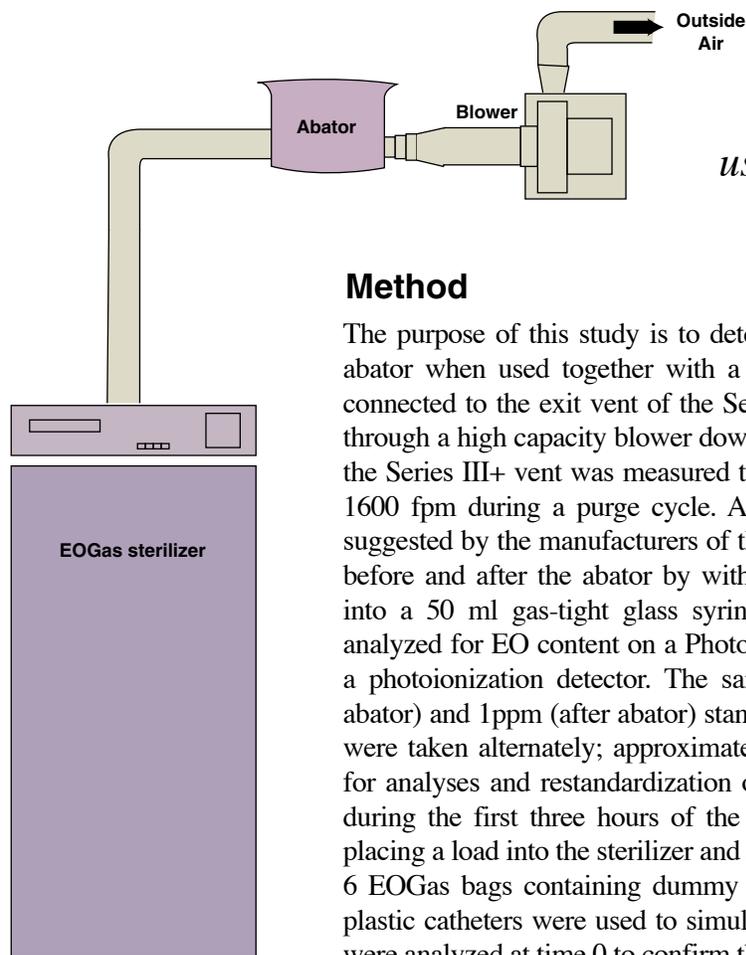


Figure 1

Method

The purpose of this study is to determine the efficacy of an Ethylene oxide (EO) abator when used together with a Series III+ EOGas Sterilizer. The abator was connected to the exit vent of the Series III+ sterilizer and exhausted to the outside through a high capacity blower downstream of the abator (see Figure 1.). Airflow at the Series III+ vent was measured to be 600-700 fpm during normal operation and 1600 fpm during a purge cycle. Airflow through the system is within the limits suggested by the manufacturers of the Safe-Cell abator. The airstream was sampled before and after the abator by withdrawing grab samples through neoprene septa into a 50 ml gas-tight glass syringe. 50 µl aliquots of the grab samples were analyzed for EO content on a Photovac® 10S50 gas chromatograph equipped with a photoionization detector. The samples were analyzed against 50 ppm (before abator) and 1ppm (after abator) standards. Grab samples before and after the abator were taken alternately; approximately 10 minutes were required between samples for analyses and restandardization of the gas chromatograph. Samples were taken during the first three hours of the sterilization cycle starting at 15 minutes after placing a load into the sterilizer and activating the EOGas cartridges. Number 5, and 6 EOGas bags containing dummy loads consisting of drapes, surgical wrap, and plastic catheters were used to simulate a typical sterilization load. Control samples were analyzed at time 0 to confirm that no EO was present in the sterilizer system.

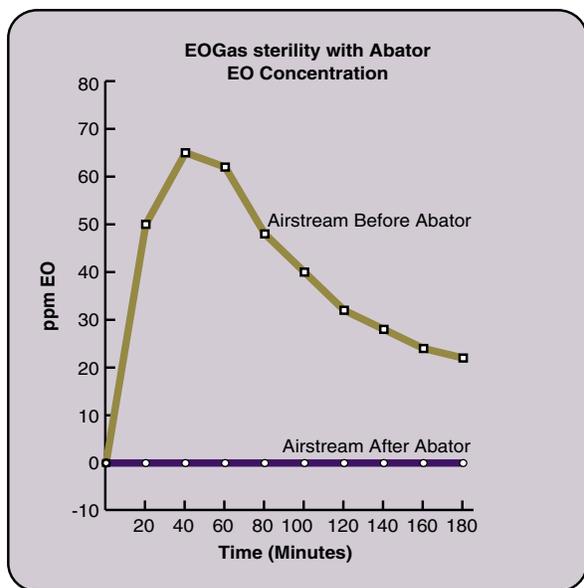


Figure 2

Discussion

The concentration of EO in the airstream before the abator (i.e. untreated exhaust) rose during the first hour of sterilization to a peak of about 60 ppm. Thereafter it decreased, declining to about 25 ppm at the end of the three hours. At no point could any EO be measured in the airstream after the abator (see figure 2.). EO removal from the Series III+ EOGas Sterilizer airstream by the abator at a rate of efficiency greater than 99% was confirmed.

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