

## Healthcare Applications



### Sterilization Vent

Porex's vent for steam sterilization containers introduces a new concept to the industry. Known as a permanent "fit and forget" filter, it provides substantial cost-saving and performance advantages over traditional vent materials.



### Design Challenge

A container manufacturer contacted Porex to develop a robust, reusable bacterial barrier as a cost-saving replacement for single-use paper and textile filters for steam sterilization containers. The Porex solution was to serve a dual purpose, function as a vent to allow pressure equalization during the sterilization process and as a barrier to bacteria during subsequent storage. A target of one thousand sterilization cycles was set, with no observable degradation of product performance while maintaining traceability.

### Solution

Porex engineers chose PTFE as the material for the vent due to its ability to withstand repeated sterilization cycles. The success of the project depended on optimizing the correct pore structure and surface characteristics, ensuring that the final product was price-competitive with paper and could be permanently imprinted with a batch identification and date code to monitor usage. Our engineers developed a process to combine the optimal pore structure with a material thickness that would ensure ease of manipulation and particle capture at the required levels. Finally, Porex engineers developed a printing process that allowed each filter to be permanently marked with excellent definition at a rapid throughput rate.

### Results

The Porex sterilization vent introduced a new concept to the market, which became known as a permanent, or "fit and forget", filter. The flexibility of Porex's manufacturing processes provided a cost saving alternative for traditional materials that provided substantial performance and convenience advantages.

*By combining ideas, know-how and proven results with the highest standard of innovation and excellence, POREX Porous Media provides unique solutions for various applications.*



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[www.porex.com](http://www.porex.com) 800.241.0195

#### Porex Technologies

500 Bohannon Road  
Fairburn, GA 30213 USA

E-mail: [porous.info@porex.com](mailto:porous.info@porex.com)

770.964.1421 Phone  
770.969.0954 Fax

#### Porex Technologies GmbH

Sales & Marketing Europe  
Strangenhäuschen 30  
52070 Aachen, Germany

E-mail: [info@porex.de](mailto:info@porex.de)

+49 241 910525-0 Phone  
+49 241 912426-16 Fax

#### Porex Technologies Sdn Bhd

Lot P.T. 74, Jalan Hulu Tinggi 26/6  
Seksyen 26, Sektor A  
Hicom Industrial Park  
40400 Shah Alam,  
Selangor, Malaysia

E-mail: [sales@porex.com.my](mailto:sales@porex.com.my)

+603 3343 4828 Phone  
+603 3341 3308 Fax