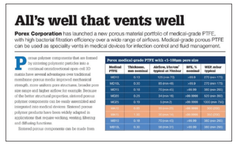
## Sterilization Media

Reusable container systems used for the packaging, transportation and storage of surgical and dental instruments prior to, during and after steam sterilization have traditionally contained disposable, single use paper or textile filters. Porex sterilization media manufactured from medical grade PTFE, is the robust and reusable medical media that serves as a replacement for singe use filters with dual capabilities: a vent that allows pressure equalization during the sterilization process and a bacteria barrier for subsequent storage conditions. Available in two configurations, in compliance with USP class VI requirements, free of animal-derived additives and with batch ID and date code printing for usage monitoring.

| PTFE Sterilization Media | Thickness, mm Nominal | Airflow, l/hr/cm², Typical at 70 mbar | BFE² % Nominal | WEP, mbar Typical |
|---|---|---|---|---|
| MA10 | 0.65 | 35 (min 25) | >99.9999 | 300 (min 200) |
| MA15 | 1.00 | 30 (min 14) | >99.9999 | 350 (min 200) |




Check out our article in Medical Device Developments
**"All's well that vents well"**

Scan the QR code to view the article!

**Antiseptic Materials**

A major challenge to patient and practitioner safety is the increased prevalence of hospital acquired infections and the resulting need for improved antimicrobial technologies. Porex Barrier Technology™ available in standard bacterial filtration, microbicidal and sliver antimicrobial medias is an integrated porous media that helps inhibit microbial growth on product surfaces and kills microbes on contact in liquid and gas streams.

Effective against a wide range of microbes, including gram positive and gram negative bacteria, virus, fungi, algae and spores, Porex's Barrier Technology can be applied in medical devices to help reduce infection caused by airborne and blood/fluid contact exposures.

Independent, third party laboratory testing using Japanese Industrial Standard JIS Z2801:2000 /JIS Z2801 to quantify antimicrobial activity levels. Results shown on the left.

| Staphylococcus aureus (gram pos) | | | | |
|---|---|---|---|---|
| Product | Initial CFU | 24 hrs CFU | % Reduction | Log Reduction |
| Negative Control | 3.3 x $10^6$ | 3.7 x $10^6$ | -13 | -0.05 |
| Standard Product (without CHX) | 3.3 x $10^6$ | 3.4 x $10^6$ | -2 | -0.01 |
| Barrier Technology (with CHX) | 3.3 x $10^6$ | <200 | >99.994 | >4.22 |

| Escherichia coli (gram neg) | | | | |
|---|---|---|---|---|
| Product | Initial CFU | 24 hrs CFU | % Reduction | Log Reduction |
| Negative Control | 2.4 x $10^6$ | 2.9 x $10^7$ | -1212 | -1.12 |
| Standard Product (without CHX) | 2.4 x $10^6$ | 2.8 x $10^7$ | -1075 | -1.07 |
| Barrier Technology (with CHX) | 2.4 x $10^6$ | <200 | >99.9915 | >4.07 |

| Escherichia coli | | | | |
|---|---|---|---|---|
| Sample Time | Volume (L) | E. Coli Challenge Counts (CFU/ml) | E. Coli Effluent Counts (CFU/ml) | % Reduction |
| 30 Sec | 0.5 | 690,000 | 0 | 100 |
| 1 Min 30 Sec | 1.5 | 690,000 | 0 | 100 |
| 3 Min 30 Sec | 3.5 | 690,000 | 0 | 100 |
| 5 Min 30 Sec | 5.3 | 690,000 | 0 | 100 |

The Pure Porex Certification substantiates Porex® Filters and Materials for filter purity, no material additives or contaminants, no heavy metal or inorganic element interference, clinical laboratory methodology compatibility and 99.9% bacterial aerosol filtration efficiency.

## Orthopedics

**Adhesive Fume Media**

Potentially harmful fumes can result from the bone cement mixing process used in various orthopedic and surgical procedures. Porex's adhesive fume media maximizes the airflow rate from the bone cement mixing chamber and adsorbs and traps monomer fumes to maximize removal of offensive gases prior to discharge in the operating room.

## Urology & Ostomy Care

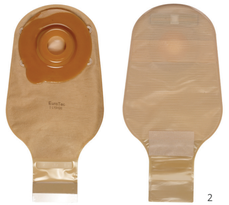
**Urinary Drainage Bag Vents**

Urine collection products are gravity dependent with the majority of inpatient products hanging down the side of a hospital bed.

Porex hydrophobic urine collection vents are manufactured utilizing precisely sized geometries and porosities to facilitate press fit assembly solutions, to equalize pressure differences between the drainage bag's interior and exterior regions and to expedite urine disposal during draining procedures.

**Ostomy System Vents**

Porex hydrophobic ostomy bag vents are design optimized to allow gases to escape from the ostomy pouch while also preventing water from penetrating the filter during bathing or swimming activities. The continuous venting ostomy material helps stoma product manufacturers design patient friendly ostomy products with improved lifestyle outcomes.



1. Patent #8187534
2. Photo courtesy EuroTec BV- Roosendaal, Netherlands.



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PXT-658-012016-00

# Porex Medical Products, Media & Filters


The changing global healthcare environment requires differentiated, reliable and reproducible medical materials to help provide precision, accuracy and consistency in current and next generation medical and surgical devices. Porex Medical Products, Media and Filters are the performance tested and technologically advanced portfolio of porous materials designed specifically for use in today's challenging medical-surgical device applications.

Available in a wide variety of material configurations, Porex advanced porous materials, microporous PTFE, porous polymeric fiber, porous glass membrane, porous composites, Certified Pure Porex™ and functionalized and bio-activated porous media, combine novel Porex manufacturing processes with proprietary and patented technologies to help deliver purity, flexibility, strength, biocompatibility, conformity, scalability and cost effectiveness for specific application needs.

Porex's unparalleled material science, engineering and manufacturing expertise, combined with internationally recognized quality and regulatory standards and six sigma disciplines, aids market driven product development and helps improve the market value of our customer's products by providing new, better or cost improved solutons.

When performance counts, turn to Porex to partner in your next medical innovation and see for yourself how Porex Medical Products, Media and Filters can advance product outcomes and turn your next innovation into reality.

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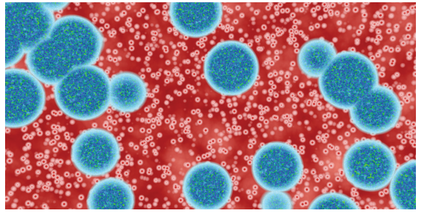
## Infection Control

Porex offers a broad array of materials for use in infection control products to help advance patient and staff safety, address antimicrobial resistance, emerging pathogens and infectious diseases and optimize healthcare practice environments.

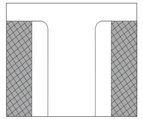


**Fluid Management Materials**
Porex fluid canister, negative wound pressure and suction filters help improve infection control outcomes by preventing unwanted fluid transmission through use of specialized, porous polymer valves that close off liquid and air flow when fluids reach a critical level.

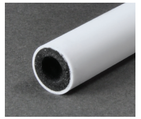
Available in an extensive array of materials and geometric shapes. Design options include an integrated splash guard to prevent premature shut-off due to splash issues, the patented color change[1] valve, manufactured with intrinsic color change indicator which activates upon liquid exposure and the enhanced infection control design with activated carbon that allows for odor control and prevention of unwanted fluid spillage.

Porex Fluid Management products have been tested for Bacterial Filtration Efficiency using test methods that conform to ASTM F2101, modified. Airflow measured at a vacuum of 0.28 inches Hg, using a Gast 2567-V1008 vacuum source, Dwyer RMC-104 SSV-CPF flow meter and Dwyer DPGA-00 pressure gage.


Color Change Indicator



Integrated Splash Guards



Enhanced Infection Control

Table 1. BFE results (modified ASTM F2101)

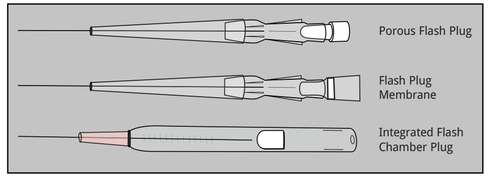
| Product | Description | BFE | Airflow SCFH |
|---|---|---|---|
| PPV1 | Standard BFE | 99.98% | 29.2 |
| PPV2 | High BFE | 99.996% | 27.6 |
| PPV3 | Super BFE | 99.999994% | 15.0 |

**IV Safety Catheter Plugs**
Porex IV Safety Catheter plugs, available in a porous flash plug, integrated flash chamber plug and flash plug membrane, allow air or gases to freely pass through the porous media but when wet, block liquids by forming an immediate viscous solution, thus shutting off the air flow. Patented color change technology also available for material incorporation.

## Injection Therapy

IV catheter and arterial syringe devices serve a number of important patient functions including fluid introduction, medication administration and blood sample retrieval.

Preventing accidental needlestick injuries, blood borne pathogen exposure and healthcare acquired infections, continues to be major concerns for healthcare workers and practitioners. Injection therapy flash plug products pioneered by Porex, eliminate blood bypass from the flashback chamber and help reduce accidental blood exposure.




**Arterial Syringe Vents**
Samples of blood gas analysis collected under arterial pressures require high air flow and prevention of contamination from blood and blood borne pathogens. Porex arterial syringe vents allow for maximized air flow at arterial pressures and elimination of blood by pass through use of specially designed porous vents that help prevent aqueous liquid contamination.

| PTFE IV Catheter Media | Thickness, mm Nominal | Airflow, l/hr/cm², Typical at 70 mbar | BFE² % Nominal | WEP, mbar Typical |
|---|---|---|---|---|
| MD10 | 0.13 | 125 (min 70) | >99.9 | 270 (min 175) |
| MD10L | 0.30 | 85 (min 48) | >99.9 | 270 (min 175) |
| MD15 | 0.18 | 70 (min 45) | >99.99 | 380 (min 265) |
| MD20 | 0.25 | 34 (min 16) | >99.9999 | 520 (min 350) |
| MD25 | 0.19 | 5 (min 2) | >99.9999 | 1000 (min 750) |

## Dialysis

Porex Dialysis filters provide containment of dialysis system media, such as those utilizing bicarbonate concentrates in disposable and dry formulations.

Dialysis fluid is prepared according to individual patient needs and Porex filters, both inlet and outlet, help regulate concentrate bag fluid flow and back pressure, allow for balanced filtration efficiency and provide optimized chemical and physical resistance. Filters can be customized to accommodate specific device design and function requirements.

## Topical and Drug Delivery

Porex fluid, adhesive and drug delivery materials are designed for pliability and to transfer liquid and medications quickly and accurately. An extensive line of porous materials in press-fit assemblies are available including porous composites and functionalized and bio-activated products.

**Topical Therapies**
Porex fluid media, designed to function as an applicator tip, maximizes fluid delivery, minimizes applicator tip fluid retention and filters out unwanted particles or device fragments in pre-operative skin preparaton, ocular and other topical therapies including over-the-counter and prescription medicines.

**Drug Delivery Media**
Porex media help facilitate dose controlled, continuous medication systems and pump spray bottle designs where it is critical to maintain low air resistance for adequate diffusion of medical or therapeutic agents. Materials with structural integrity and functional additives are available to provide enhanced airflow, balanced diffusion and filtration and sterility maintenance.

## Medical & Pharmaceutial Packaging

Medical packaging plays an important role in preventing healthcare associated infection (HAI). The sterile barrier system, a mainstay in operating rooms and healthcare facilities, is an intrinsic element in the prevention of HAI's and surgical site infections. With prevention and reduction of HAI a major healthcare initiative, practitioners want to be assured about the protection afforded by medical device packaging after sterilization. Porex PTFE medical and pharmaceutical packaging materials, designed for optimal functionality and reliability, are available in various pore size, volume and structure configurations.

**Porex P3 Technology™**
To assist device manufacturers with the prevention of HAI, Porex developed P3 Technology, a specialty porous PTFE membrane technology that harmonizes high air flow and sterile barrier capabilities to improve ETO sterilization efficiency. Helping to maintain medical device sterility after sterilization, Porex's P3 Technology, with USP Class VI compatibility, incorporates a major advancement in material uniformity over flashspun high density polyethylene and complies with various ASTM F2638 packaging requirements. P3 Porous PTFE embodies a unique combination of performance properties:

| Material | Thickness, mm Nominal | Airflow, l/hr/cm², Typical at 70 mbar | BFE² % Nominal | WEP, mbar Typical |
|---|---|---|---|---|
| PMP31 | 0.14 | 125 (min 70) | >99.9 | 270 (min 175) |
| PMP32 | 0.26 | 65 (min 35) | >99.999 | 380 (min 250) |
| PMP33 | 0.18 | 70 (min 45) | >99.99 | 380 (min 265) |

**Lyophilization Container Vents- picture that you have**
How well a medical device performs, can depend on how well it vents. Porex lyophilization vents are hydrophobic, with high airflow and high Bacterial Filtration Efficiency (BFE). Used as cap liners for bone graft and other tissue containers, Porex lyophilization vents provide a sterile barrier with high efficiency venting and help maintain the sterile integrity of bone/tissue grafts.

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