Porvair Filtration Group is a major manufacturer and developer of sintered porous materials, offering optimum solutions in a wide range of applications. Spearheading the porous polymeric materials is BioVyon™, manufactured to high cleanliness standards to meet the demands of the Bioscience market.

BioVyon™ sintered porous polypropylene or polyethylene is available in rolls and sheets that are cut to size, machined to shape or fabricated to meet the exacting requirements of the diagnostic, biopharmaceutical and healthcare industry. BioVyon™ polyethylene is also available in a moulded format. Offering high void volumes makes BioVyon™ ideally suited to wicking, emanation and applications requiring high flow with minimum hold-up.

**Applications**

Our range of BioVyon™ materials are used in a myriad of applications including:

- **Healthcare**
  - Bone cement filters
  - Catheter vents
  - Syringe vents
  - Urine bag vents
  - Diagnostic test wicks
  - In-line filters
  - Medical gas filters.

- **Pharmaceutical**
  - Packaging bottle vents
  - Chemical emanators
  - Powder handling
  - Process Chromatography columns.

- **Analytical**
  - Pipette tip filters
  - Microtitre plate filters
  - Soil Phase Extraction (SPE) columns
  - Water purification.

**Enhanced properties of BioVyon™**

- Chemical resistance to a wide range of acids, bases and organic solvents.
- Hydrophobic BioVyon™ exhibits a water contact angle of 130°-135° (standard polyethylene is 105°-110°).
- Oleophobic BioVyon™ resists wet-out from low surface tension fluids.
- Ultra-clean with very low extractables/leachables.
- Thermally-bonded so contains no added bonding agents.
- Suitable for food contact and pharmaceutical applications.

**Quality Assurance**

BioVyon™ has been tested for biocompatibility and bio-safety to USP Class VI and is approved to FDA 21 CFR and EC-directives. Manufactured in an ISO Cleanroom environment in accordance with cGMP, BioVyon™’s suitability to medical devices has been demonstrated through its Drug Master File status. Registered to ISO 9001, Porvair Filtration Group procedures are subjected to high standards of quality.

**Sterilisation**

BioVyon™ can be gamma irradiated or ETO treated to ensure sterility.
Filtration and Separation Media

### Standard BioVyon™

<table>
<thead>
<tr>
<th>Product</th>
<th>Material Type</th>
<th>Thickness Range (mm)</th>
<th>Porosity (%) (Void Volume)</th>
<th>Typical Mean Flow Pore (μm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BioVyon™ HP</td>
<td>HDPE</td>
<td>2.0-6.0</td>
<td>52-58</td>
<td>100</td>
</tr>
<tr>
<td>BioVyon™ PHP</td>
<td>PP</td>
<td>2.0-6.0</td>
<td>50-52</td>
<td>100</td>
</tr>
<tr>
<td>BioVyon™ F</td>
<td>HDPE</td>
<td>0.75-6.0</td>
<td>32-46</td>
<td>35</td>
</tr>
<tr>
<td>BioVyon™ PPF</td>
<td>PP</td>
<td>1.5-6.0</td>
<td>39-41</td>
<td>35</td>
</tr>
<tr>
<td>BioVyon™ D</td>
<td>HDPE</td>
<td>3.2-6.0</td>
<td>25-27</td>
<td>20</td>
</tr>
<tr>
<td>BioVyon™ PPD</td>
<td>PP</td>
<td>3.2-6.0</td>
<td>33-38</td>
<td>20</td>
</tr>
<tr>
<td>BioVyon™ T</td>
<td>UHMWPE</td>
<td>1.0-5.0</td>
<td>41-59</td>
<td>10</td>
</tr>
<tr>
<td>BioVyon™ M</td>
<td>UHMWPE</td>
<td>1.0-3.2</td>
<td>28-32</td>
<td>7</td>
</tr>
</tbody>
</table>

HDPE: High Density Polyethylene   PP: Polypropylene   UHMWPE: Ultra High Molecular Weight Polyethylene

Alternate polymers offering increased temperature and chemical resistance, flexibility or enhanced rigidity are available including PTFE; PEEK; PES; Nylon; COC (Cyclic Olefin Copolymer) and thermoplastic elastomers such as EVA.

### Specialist BioVyon™

Through a range of proprietary techniques Porvair offers advanced BioVyon™ materials with enhanced performance capabilities. In addition to the standard ultra-clean materials, BioVyon™ is also available as nano-clean - high purity materials with trace extractables.

<table>
<thead>
<tr>
<th>Product</th>
<th>Key Feature</th>
<th>Applications</th>
</tr>
</thead>
</table>
| BioVyon™ Hydrophobic | • Enhanced hydrophobicity/oleophobicity with a surface energy <10 dynes/cm | • Venting - pipette tips; urine bags, bottles  
|                  |                                                                             | • Sample preparation – multiwell plates; filtration discs                                       |
| BioVyon™ Hydrophylic  | • Long lasting wettable surface                                              | • Wicking – diagnostic tests; controlled release  
|                   |                                                                             | • Process Chromatography – bed supports  
|                   |                                                                             | • Sample preparation – multiwell plates; filtration discs                                       |
| BioVyon™ Functionalised | • Functionality including linker molecules, biologically active species and chemically active species | • Sample preparation – ion exchange, affinity chromatography                                     |
| BioVyon™ Composite | • Immobilised materials including carbon, biocides, nutrients               | • Shut-off vents – catheters; arterial syringes  
|                  |                                                                             | • Forensics – DNA isolation                                                                   |
|                  |                                                                             | • Sample preparation – protein precipitation; SPE                                              |
| BioVyon™ Laminated  | • Thermally bonded membranes (PES; PTFE; nylon) allowing sub-micronic filtration to 0.1μm | • Air and liquid filtration for clarification and microbial retention                           |