



HOW TO SELECT A VENT FILTER

LIFE SCIENCES

A quick guide to choosing the right vent filter for sterile and efficient bioprocessing systems.



WHAT IS A VENT FILTER?

A vent filter is a specialized filter used in bioprocess applications that enables the free passage of gases, such as air or nitrogen, to maintain near-ambient pressure during filling or emptying of the system, while also acting as a barrier to block contaminants like bacteria and particulates from entering.

CORE FUNCTIONS

Pressure Equalization

Maintains near-ambient pressure in containers to prevent over-pressurization or vacuum formation during filling, harvesting, sampling, or removal of depleted media.

Contamination Control

Enables gas exchange to support biological processes while blocking contamination to safeguard both product sterility and workplace safety.

Process Optimization

Manages pressure fluctuations in continuous or perfusion cultures to support an optimal cell culture environment.

CRITICAL ATTRIBUTES

Hydrophobic

Maintains sterile airflow; resists wetting

Sterilizing Grade

0.2 µm membrane tested per ASTM F 838

Non-Restrictive

Low differential pressure at target flow

Integrity Testable

Verifiable sterilizing-grade performance

Robust

Withstands pressure and temperature conditions

Compliant

Meets all quality and regulatory guidelines

Adaptable

Fits seamlessly into systems without complexity

Sterilizable

Compatible with gamma irradiation or autoclave

Compatible

Works with fluid chemistries and environments



COMMON MISTAKES TO AVOID

Using the right filter helps air flow better, reduces delays, and lowers the risk of costly problems.

Undersizing or use of overly restrictive fittings may lead to...

- Inadequate gas exchange
- Impaired cell growth or viability
- Pressure build-up
- Slower processing
- System or container damage
- Product contamination

Oversizing or use of filters with fittings that require the use of adaptors may lead to...

- Higher cost
- Larger system footprint
- Overall reduced efficiency

PUREFLO® VENT FILTER OPTIONS

PureFlo® PE and PTFE vent filters deliver industry-leading flow rates, translating to faster processing times and smaller system footprints. Combined with a range of flexible fitting and size options, they are the perfect choice for single-use venting applications in the pharmaceutical industry.

PureFlo® PE	PureFlo® PTFE
0.2 µm - sterilizing grade	0.2 µm - sterilizing grade
Hydrophobic Polyethylene (PE)	Hydrophobic Polytetrafluoroethylene (PTFE)
Gamma irradiable	Autoclave or Steam-in-Place (SIP)