How to choose a Vacuum Filter *in* 3 Easy Steps

1 Choose your pore size based on your application needs

Tip!

Q: Which pore size is recommended for bacteria retention?

A: Bacteria are generally 0.2 µm or larger, so use a vacuum filter with a 0.2/0.22 µm pore size.

Clarification or pre-filtration of buffers

0.45 µm pore size

Sterile filtration of media and reagents

0.2/0.22 µm pore size

Mycoplasma removal

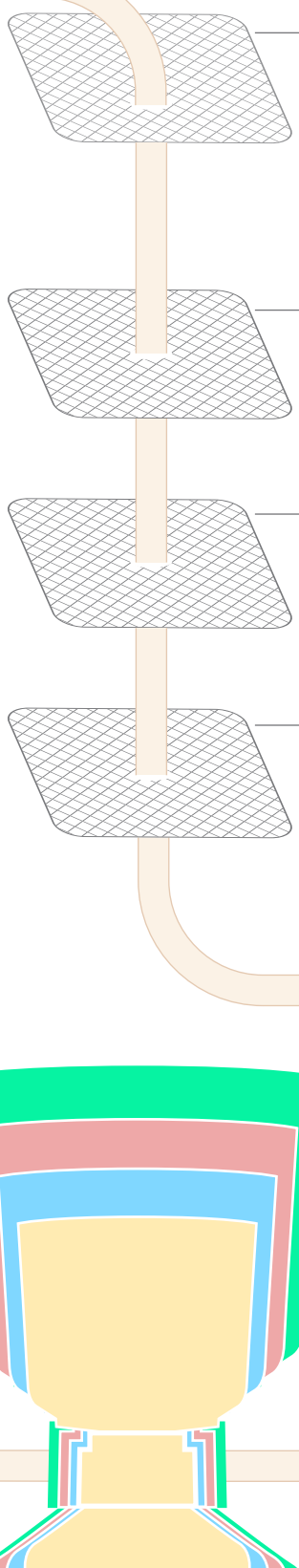
0.1 µm pore size

Tip!

When trying to control mycoplasma, take a team approach by combining filtration with Corning® Ciprofloxacin Hydrochloride (HCl).

It's a 4-fluoroquinolone antibiotic often used to control mycoplasma contamination in infected cell lines.

2 Optimize your flow rate by picking the best membrane for your liquid type



Polyethersulfone (PES)

- Highly recommended for cell culture media, sera and buffers
- Very low protein binding
- Fast flow rates
- No wetting agents, low extractables

Cellulose Acetate (CA)

- Recommended for general filtration
- Low protein binding
- Naturally hydrophobic, contains wetting agent

Cellulose Nitrate (CN)

- General lab applications such as buffer filtration
- May bind proteins
- Naturally hydrophobic, contains wetting agent

Nylon

- For filtering more aggressive solutions such as those with alcohol or DMSO
- No wetting agents
- May bind proteins

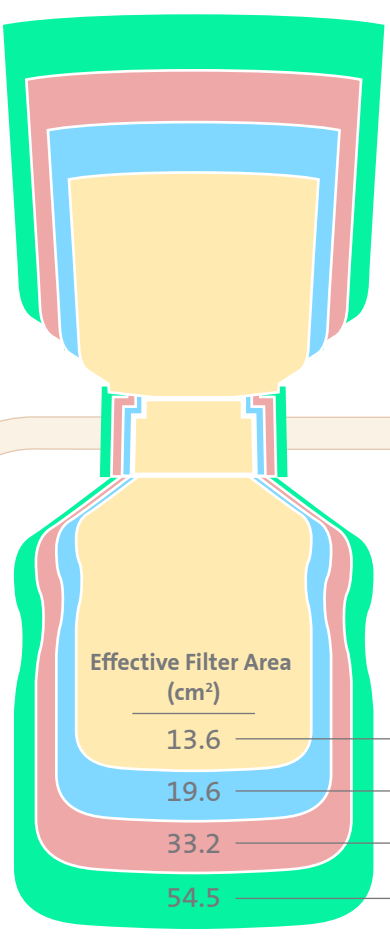
Tip!

While Corning classical cell culture media is filtered with a 0.22µm PES filter and tested for the presence of mycoplasma, filtering is still required when combining media with sera, to remove flocculent precipitate from aggregated attachment factors.

Tip!

Use nylon with cryopreservation solutions and reagents. Keep in mind total protein levels in the solution, as nylon binds more protein than PES.

3 Select a vessel that maximizes liquid throughput while minimizing "hold-up" volume



Throughput range:

- 13.6 — 100 mL to 500 mL
- 19.6 — 200 mL to 750 mL
- 33.2 — 300 mL to 1,500 mL
- 54.5 — 500 mL to 3,000 mL

Tip!

Another simple way to improve filter performance is to pre-treat your solution.

- Centrifugation will remove most suspended particles and reduce filter clogging, improving both flow rate and throughput.
- You can also try prefiltering through a glass fiber pad or depth filter to reduce particle load and premature membrane clogging.

How can I reduce liquid loss when I filter media or reagents?

All filtration systems retain some amount of liquid as it passes through the membrane, which can result in loss of media and reagents. This retained liquid is called "hold-up" volume.

In a recent internal study, Corning filtration systems were shown to have the lowest "hold-up" volume of all major brands, helping you save valuable media and reagents every time you filter.

Watch a comparison video to see the difference

Visit **www.corning.com/lifesciences/filtration** to watch a comparison video.

Safety Tips

Bottle top filters have the same funnel designs as systems and come in 2 styles, one for 33 mm and one for 45 mm neck sizes. Follow all safety precautions:

- Always use cylindrical bottles
- Never use a 45 mm threaded bottle top filter on a PYREX® or PYREXPLUS® media bottle larger than 2 liter capacity
- Never use a square bottle for vacuum applications
- Never use a 33 mm threaded bottle top filter on a glass media bottle that is larger than 500 mL

If you would like to request a sample or would like more information on Corning filtration systems or media, please visit **www.corning.com/lifesciences/filtration**

Download our comprehensive guide to filtration

Request a sample now

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