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Instruction for Use
TPP Syringe Filter

TPP sterile syringe filters with pore sizes of 0.22 µm and 0.45 µm are designed for the filtration of aqueous solutions such as cell culture media and biological fluids. They remove microorganisms, particles, and undissolved precipitates larger than 0.22 µm or 0.45 µm, depending on the filter used. The filters can be used bidirectionally: forward (from syringe to container) or reverse (from container to syringe). However, each filter unit may only be used in one direction per application.

The TPP syringe filter is for single use only. Re-use disclaims all warranties.

Safety instructions

- Handling and Safety
  Handling of biological materials shall be performed in full compliance with all applicable national and international regulations. Activities must conform to the laboratory's assigned biological safety level, the relevant Safety Data Sheets (SDS), and the manufacturer's Instructions for Use (IFU).
  Appropriate personal protective equipment (PPE) shall be always worn during handling.
- Risk of Contamination
  All operations shall be conducted in accordance with aseptic techniques and established Good Laboratory Practices (GLP). Packaging shall be opened immediately prior to use. Only products that are visually intact and free from defects shall be utilized. Products exhibiting visible damage, contamination, or any other irregularities shall be disposed of in accordance with applicable regulations.
- Storage
  TPP products shall be stored under the following conditions:
  - Temperature: 10 °C to 30 °C (50 °F to 86 °F).
  - Light exposure: Products shall be protected from direct ultraviolet (UV) radiation.
  - Relative humidity: ≤ 60 %, with a recommended control range of 50 – 60 %.

  Storage conditions shall be monitored and recorded to ensure compliance with these requirements. Any deviations shall be documented, evaluated, and managed in accordance with the applicable quality.

Instructions

- Check the expiration date (EXP) on the label and packaging. Only use products with a valid EXP date.
- Before use, verify that the packaging is intact, as the consumable is only considered sterile if the packaging is undamaged.
- Before starting filtration, verify the compatibility of the liquids with the membrane by referring to the TechDoc: *Chemical Resistance of Filter Membrane*.

Forward Filtration

- Take a syringe and remove the syringe plunger.
- Under sterile conditions, remove the backing from syringe blister pack.
- Attach the syringe to the Luer lock or cone fitting of the syringe filter, holding the filter by the blister while connecting it.
- Fill the syringe with the solution to be filtered.
- Carefully reinsert the syringe plunger into the syringe barrel and filter the liquid by gently pressing the plunger into an appropriate sterile container.

Reverse Filtration

- Remove a syringe from the blister pack.
- Draw some air into the syringe first to prevent possible backflow, then withdraw the liquid to be filtered from the container into the syringe.
- Remove any adhering liquid residue from the syringe tip.
- Under sterile conditions, remove the backing from the syringe blister pack.
- Attach the syringe to the Luer lock or cone fitting of the syringe filter, holding the filter by the blister while connecting it.
- Filter the liquid by evenly pressing the syringe plunger into a suitable sterile container

General Handling and Limitations

- The TPP syringe filter fits securely on a standard 50 mL centrifuge tube (Fig. 1).

Figure 1: Syringe filter attached to a 50 mL centrifuge tube.

- For filtering cell culture suspensions, transfer the sample into a sterile centrifuge tube and centrifuge at 1,000–2,500 × *g* for 10 minutes. Use a 0.45 µm filter as a pre-filter before the 0.22 µm filter in a series connection (Fig. 2).

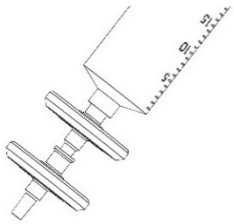

Figure 2: Series connection of 0.45 µm pre-filter and 0.22 µm main filter

- Each filter unit must only be used in a single direction per application.
- Use the syringe filter for one sample at a time to avoid carryover of sample residue.
- Each filter unit must only be used in a single direction per application.
- If plunger back pressure increases significantly during filtration, replace the filter, as it may be clogged. Excessive pressure may cause the filter to break.
- Do not use the TPP syringe filter at temperatures above 45 °C.
- The syringe filter is not suitable for filtering emulsions.
- Do not use the syringe filter for protein concentrations ≤ 5 mg/mL or quantify protein content before and after filtration.
- The syringe filter is not intended for in-line filtration for intravenous administration.
- The syringe filter is not designed for long-term or continuous use.
- Do not use the filter with syringes smaller than 10 mL, as this may exceed the maximum rated pressure and result in damage or personal injury.

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Technical Data

Component	Material
Membrane	Polyethersulfone (PES), type “TPP fast flow”
Housing	Polyethylene terephthalate (PET)

Measurements	99722	99745
Inlet to outlet mm	27	27
Diameter mm	33	33
Filter size cm^2	4.52	4.52
Pore size µm	0.22	0.45
Max. using temp °C	45	45
Flow rate water 25 °C / 2 bar	≥ 150 mL/min	≥ 180 mL/min
Burst pressure at 25 °C	10 bar	10 bar
Filtration volume mL	10 – 200	10 – 200
Dead volume following further flushing with air mL	0.1	0.1
Connection In-let	Luer-lock	Luer-lock
Connection out-let	Luer-conus	Luer-conus

Additional Information

Instructions for use, chemical resistance lists, and quality certificates for individual products can be downloaded from the TPP website at www.tpp.ch.

Disclaimer

TPP products are intended for Research Use Only (RUO) and are not approved for clinical, diagnostic, or in vitro fertilization (IVF) applications. The full Terms & Conditions, including limitations of warranty and liability, intended use, and reseller obligations, are available at: https://www.tpp.ch/page/qualitaets_sicherung/index.php

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