TPP Techno Plastic Products AG
Zollstrasse 7, CH-8219 Trasadingen, Switzerland
Tel. +41 (0)52 687 01 87, Fax +41 (0)52 687 01 77
info@tpp.ch, www.tpp.ch

Instruction for Use
TPP Clipmax

The TPP Clipmax is a chamber system that combines the advantages of a cell culture flask with the performance of a high-quality microscopy slide. The slide is made of cycloolefin polymer (COP), a material specifically developed for high optical requirements COP exhibits excellent transparency and enables precise measurements down to ~270 nm. Its high chemical resistance allows the use of standard staining techniques, including those with organic solvents.

Adherent cells can be cultivated on the 10 cm² opto-mechanically activated growth surface and subsequently fixed and stained directly within the system, eliminating the need for cell transfer. This protects sensitive samples and minimizes potential artifacts.

The media chamber and slide are connected by a biocompatible seal. After cultivation, the chamber can be removed without tools by unclipping it. An integrated filter screw cap ensures continuous and sterile gas exchange during incubation.

TPP Clipmax is only available with a filter screw cap.

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

Safety instructions

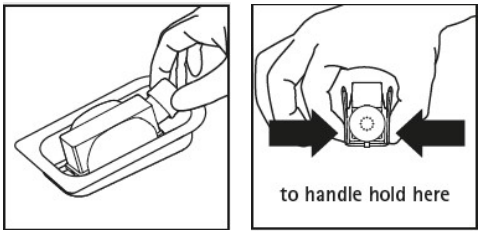
- Handling and Safety
  Handling of biological materials shall be performed in full compliance with all applicable national and international regulations. Activities must conform to the laboratory's assigned biological safety level, the relevant Safety Data Sheets (SDS), and the manufacturer's Instructions 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

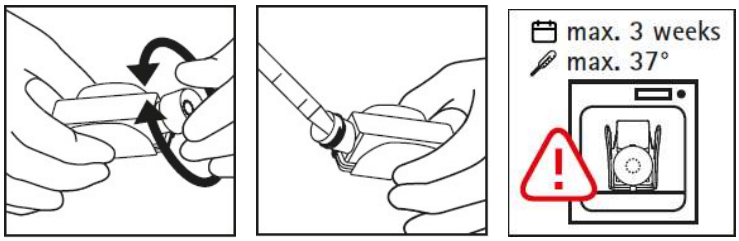
- Check the expiry date (EXP) on the label and packaging. Use only products with a valid EXP.
- Open the package in a sterile environment and remove a complete system for use.

Open the Package



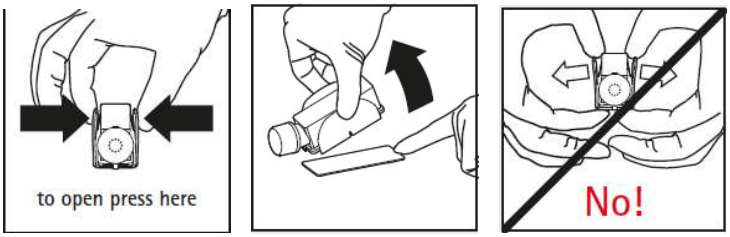
- Peel back the foil on the underside of the packaging to open.
- Carefully remove the Clipmax, ensuring you do not touch or scratch the microscope slide. Handle the unit only by the designated grip areas shown in the diagram.

Cultivation



- Open the Clipmax under aseptic conditions by unscrewing the filter cap.
- Add the culture medium and inoculum following standard laboratory procedures. Please refer to the optimal fill volume, see Technical Data: Recommended fill volume.
- Avoid touching the treated bottom with sharp objects.
- Close the filter screw cap with ventilation holes. Continuous gas exchange is provided through the integrated 0.22 µm hydrophobic membrane. Note: If the PTFE membrane becomes wet, gas exchange may be temporarily reduced
- Do not cultivate cells for more than 3 weeks or at temperatures exceeding 37 °C.

Remove Chamber



- Fixation and staining shall be performed directly on the slides according to the established protocol.
- To clip off the chamber, firmly press the upper portion of the wings together. Once you hear an audible "click," the microscope slide can be safely removed for imaging.
- Do not pull the wings apart or forcibly tear the chamber off the slide.

Optimization of Adherent Cell Growth

To achieve optimal proliferation of adherent cells on the surface, observe the following guidelines:

- Cells must be fully and gently resuspended to obtain a true single-cell suspension. Residual aggregates lead to heterogeneous settling and nonuniform attachment.
- Prevention of foam formation: Foam should be minimized during resuspension and seeding, as protein denaturation and trapped air bubbles can impair cell viability and gas exchange.
- Immediately after seeding, the culture vessel should be gently rocked in an orthogonal (cross-shaped) pattern to ensure homogeneous distribution of cells across the growth surface and to prevent central or peripheral accumulation (“bullseye effect”).
- The seeding density must be selected according to cell line specific recommendations. Excessively high densities accelerate contact inhibition, increase metabolic stress, and promote overcrowding artifacts.
- Incubator shelves must be precisely leveled to ensure uniform medium depth across the growth area. Tilted surfaces promote media pooling and cause heterogeneous attachment.
- Follow the vessel’s specified fill volume. Too little medium increases meniscus effects, leading to cell accumulation at the edges. Adjust medium volume and culture duration according to the specific requirements of the cell line.
  Use 0.2–0.5 mL of medium per cm^2 of growth surface, corresponding to a medium height of approximately 2–5 mm [1]. Medium height, and therefore total volume, is a key factor for oxygen supply and influences the Oxygen Transfer Rate (OTR) (Gstraunthaler et al., 1999).
- Vibrations in or around the incubator must be avoided, particularly during the initial attachment period, to maintain reproducible attachment patterns.
- Cultures shall be maintained under controlled environmental conditions (temperature, humidity, and CO_2 concentration). Maintenance of high relative humidity is critical to prevent evaporative loss, which induces a detrimental increase in medium osmolarity.

General Handling and Limitations

- Before starting routine operations, perform a test run with your selected parameters to verify the system's suitability for your specific application.
- These devices are stackable. Air vents on the top of the chambers ensure optimal heat distribution between stacked units.
- Unclipping the chamber from the slide is irreversible. Replacing the chamber on the slide would result in a leaking chamber system.
- The slide features a labeling field.

Technical Data

Component	Material
Medium chamber	Polystyrene (PS)
Microscopy slide	Cyclo Olefin Polymer (COP)
Screw cap	Polyethylene (PE)
Membrane	Polytetrafluoroethylene (PTFE)

Measurement:	70010
Cap	Filter
Membrane µm	0.22
Heights mm	32
Width mm	33
Length mm	92
Refractive index (nD 589 nm)	1.52
Growth area cm^2	10
Rec. volume mL [1]	3.5
Max. volume mL	5
Outer dimensions slide Width x length mm	25 x 75

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

Distributors who purchase and distribute TPP products acknowledge and agree to these Terms & Conditions and the associated disclaimer.

Literature

[1] Amanda Capes-Davis, R. Ian Freshney (2010) Freshney's Culture of Animal Cells: A Manual of Basic Technique and Specialized Applications (8th Ed.) - Wiley (p.180)