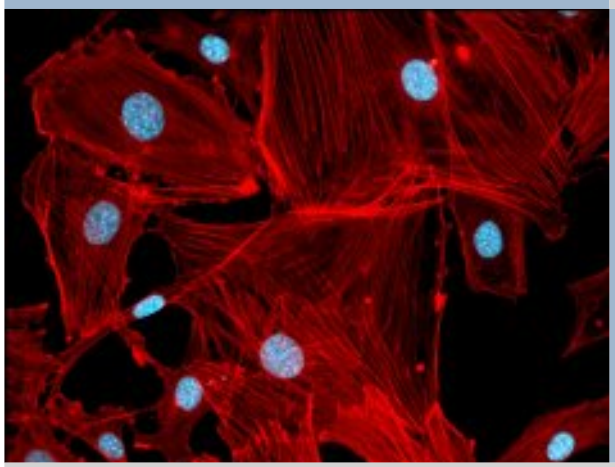
FAQ

Imaging Plate FC (Fluorcarbon)



Technical specification of the fluorcarbon film

- Thickness 25µm ± 10%
- Light transmission >70%@240nm, >90%@300nm
- Refractive index: 1.34
- Abbe´s number: >70
- Oxygen permeability [$cm^3/(m^2*d*$ bar)]: >6300
- CO_2 permeability [$cm^3/(m^2*d*$ bar)]: >7000
- Coefficient of thermal conductivity [mW/K]: 0.01
- Dielectric strength: 240kV/mm

Can the thin bottom film of the Imaging Plate FC be perforated by pipette tips?

The fluorcarbon film shows an elongation at break of 300%. Very sharp instruments are usually necessary to puncture the film accidentally or by intention (e.g. metal canulas, scalpel knives). Strong forces and touching of the bottom by pipette tips nevertheless should be avoided (deformation, scratches, shearing film from plate bottom).

Can the Imaging Plate FC be used in a centrifuge?

Though the adhesive used to bond the film and plate bottom withstands mild centrifugation forces if the bottom is mechanically supported it is generally not recommended to use the plate in a centrifuge.

Which immersion media can be used?

All general types of immersion media (oil, glycerine, water) can be used.

How long can the Imaging Plate FC be incubated?

Batch release incubation tests are performed for 14 days. Longer incubation should be possible without harm.

I have problems with focussing. What can be done?

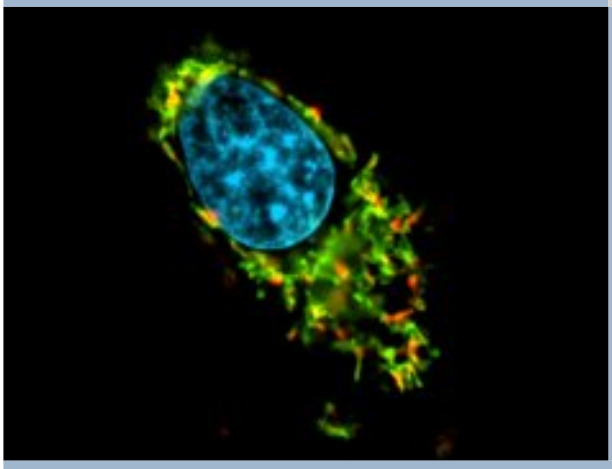
The bottom of the plates is only 25µm thick. Please make sure that you use objectives (important for 40x magnification and higher) which can be adjusted to these bottom thicknesses or are corrected for 170µm or thinner cover glass. A known incompatibility exists with the InCell Analyzer 3000 (it`s autofocus system needs a bottom of minimal 600µm). Other systems are fully compatible (e.g. InCell Analyzer 1000) and give you the full benefit of optical properties of the plates.

Which methods and chemicals can be used for fixation and permeabilisation in the plates?

The polystyrene (PS) body of the plates is the limitating factor in the selection of chemicals (s. chemical compatibility charts for PS). The fluorcarbon bottoms withstand all generally applied chemicals and fixation, permeabilisation or embedding procedures. Upper temperature limits for the integrity of the plates are 50°C. Lower temperature limits are -80°C.

Tips & Tricks

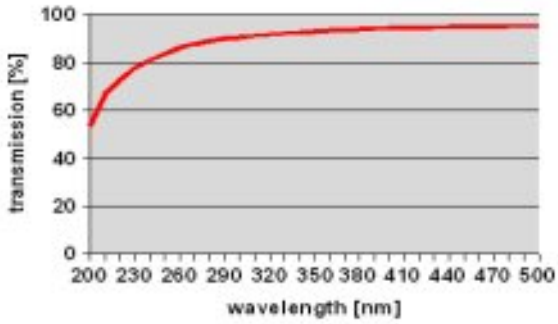
Imaging Plate FC (Fluorcarbon)



The properties of the fluorcarbon film bottom enable beside imaging and physiological cell growths some special applications. Among these enabling features are:

- **Transparency for UV-A and UV-B light**
- **High gas transfer**
- **The film bottom can be cutted and cells transferred for other examination procedures**
- **The thin film bottom and it's refractive index enable the use of water dipping objectives**

UV-A and UV-B light transmission



The film bottom of the plates is transparent for UV-A and UV-B light.

Experimental investigation of cell responses to short wavelength light is possible by irradiating the cells through the plate bottom. This enables equal and well controlled experimental conditions to study photo effects.

Gas transfer through the plate bottom

The thin fluorcarbon film bottom enables high gas transfer rates between the cellular microenvironment and the surrounding incubator. Therefore unique control over gas partial pressure in the cellular microenvironment is possible. Metabolic highly active cells can get the required oxygen without limitation. A rapid and homogenous adaptation of gas partial pressure for hypoxia experiments in prepared incubators is also enabled.

Cutting the film bottom

Especially the 24 well version is suited to get access to the cultivated cell layers. The film bottom can be easily cutted with a scalpel and transferred for further applications, e.g ultrathin and semithin cross sections for TEM or light microscopy. Another frequent application is the transfer to a glass microscope slide. Let the film flatten on the slide by aid of a droplet of ethanol. Afterwards it can be covered by conventional techniques with a cover glass (for upright microscopy or archiving of the sample).

Water dipping objectives

Perfect resolution and quantum yield can be obtained if water dipping objectives with high numerical apertures are used for inverse microscopy. With no other product combination you get as close to the cells with equivalent quantum yield.