

The ibidi product family is comprised of a variety of μ-Slides and μ-Dishes, which have all been designed for high-end microscopic analysis of fixed or living cells. The high optical quality of the material is similar to that of glass, so you can perform all kinds of fluorescence experiments with uncompromised resolution and choice of wavelength. The μ-Slide 4 well is an array of 4 square fields where cells can be cultivated and, subsequently, investigated with microscopical methods. It is intended for the optimization of experimental parameters like antibody dilution, seeding density, or the most effective drug concentration.

The Bioinert surface is a thin hydrogel layer that is covalently attached to the ibidi Polymer Coverslip No. 1.5. In contrast to standard ultra-low attachment (ULA) coatings, Bioinert is completely non-adherent and allows no binding of any biomolecule, even in long-term experiments. This makes Bioinert ideal for the culture and high resolution imaging of suspension cells and cell aggregates, like spheroids, organoids and embryoid bodies.

Material

ibidi μ-Slides, μ-Dishes, and μ-Plates are made of a polymer that has the highest optical quality. The polymer coverslip on the bottom exhibits extremely low birefringence and autofluorescence, similar to that of glass. Also, it is not possible to detach the bottom from the upper part. The μ-Slides, μ-Dishes, and μ-Plates are intended for one-time use and are not autoclavable, since they are only temperature-stable up to 80°C/175°F. Please note that gas exchange between the medium and the incubator's atmosphere occurs partially through the polymer coverslip, which should not be covered.

Optical Properties ibidi Polymer Coverslip

Refractive index n_D (589 nm)	1.52
Abbe number	56
Thickness	No. 1.5 (180 μm)
Material	Polymer coverslip

Please note! The ibidi Polymer Coverslip is compatible with certain types of immersion oil only. A list of suitable oils can be found on page 3.

Shipping and Storage

The μ-Slides, μ-Dishes and μ-Plates are sterilized and welded in a gas-permeable packaging. The shelf life under proper storage conditions (in a dry place, no direct sunlight) is listed in the following table.

Conditions	
Shipping conditions	Ambient
Storage conditions	RT (15-25°C)

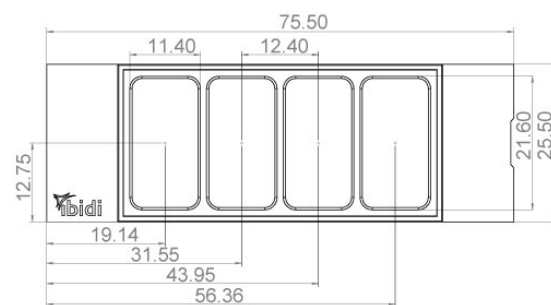
Shelf Life

Bioinert	36 months
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Store the Bioinert products in a dry place (relative humidity <50%).

Geometry of the μ-Slide 4 Well

The μ-Slide 4 Well Bioinert provides a standard slide format according to ISO 8037/1.



Geometry

Outer dimensions in mm (w × l)	25.5×75.5
Number of wells	4
Dimensions of wells in mm (w × l × h)	21.6 × 11.4 × 9.3
Volume per well	700 μl
Total height with/without lid	10.8/9.5 mm
Growth area per well	2.5 cm ²
Coating area per well	4.1 cm ²
Bottom	ibidi Polymer Coverslip

Characteristics of the Bioinert Surface

Characteristics	
Bioinert surface thickness	200 nm
Bioinert surface material	Polyol-based hydrogel
Protein coatings	Not possible

The Bioinert Surface

The Bioinert surface allows no adsorption, coating, or binding of proteins, antibodies, enzymes, and other biomolecules. Therefore, the Bioinert technology provides a stable passivation in cell-based assays for several days or even weeks. The hydrophilic Bioinert surface hinders any protein attachment, thus inhibiting subsequent cell attachment. The Bioinert surface is not biodegradable by cells allowing long-term assays with suspension cells and cell aggregates. Unlike with the ibiTreat and Uncoated surfaces, a coating is not possible.

Seeding Cells

Without a surface modification, Bioinert does not support direct cell adherence. Depending on your application the number of cells or cell aggregates might differ. Follow these steps for a general cell application protocol:

- Trypsinize and count cells as usual. Dilute the cell suspension to the desired concentration. Depending on your cell type, we recommend a $5-11 \times 10^4$ cells/ml suspension.
- Apply 700 μl cell suspension into each well of the μ-Slide. Avoid shaking as this will result in inhomogeneous distribution of the cells.
- Cover with the supplied lid and incubate at 37°C and 5% CO₂ as usual.

Undemanding cells can be left in their seeding medium for up to three days. However, best results might be achieved

when the medium is exchanged every 1–2 days. To minimize cell disturbances, carefully aspirate 50% of the old medium and replace it with fresh cell culture medium.

Tip:

Make sure to avoid uneven incubator shelves and microscope stages. Single cells or cell clusters might roll on one side over time. Please also avoid evaporation and temperature changes. Both will lead to convective flow.

Chemical Compatibility

The following table provides some basic information on the chemical and solvent compatibility:

Chemical / Solvent	Compatibility
Methanol	yes
Ethanol	yes
Formaldehyde	yes
Acetone	yes, without lid
Mineral oil	no
Silicone oil	yes
Immersion oil	See Immersion Oil on page 3.

Microscopy

To analyze your cells, no special preparations are necessary. Cells can be directly observed live or fixed, preferably on an inverted microscope. The bottom cannot be removed. For optimal results in fluorescence microscopy and storage of fixed and stained samples, ibidi provides a mounting medium (50001) optimized for μ-Dishes, μ-Slides, and μ-Plates.

Immersion Oil

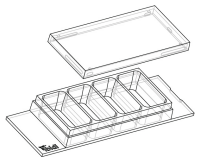
When using oil immersion objectives with the ibidi Polymer Coverslip, use only the immersion oils specified in the table below. The use of any non-recommended oil could damage the ibidi Polymer Coverslip. The resulting leakage may harm objectives and microscope components. All immersion oils that are not listed in the table below should be considered as non-compatible.

Company	Product	Ordering No.	Lot Number	Test Date
ibidi	ibidi Immersion Oil	50101	16-12-27	01/2017
Cargille	Type A	16482	100592	01/2017
Cargille	Type HF	16245	92192	01/2017
Carl Roth	Immersion oil	X899.1	414220338	01/2017
Leica	Immersion Liquid	11513859	n.a.	03/2011
Nikon	Immersion Oil F2 30cc	MXA22192	n.a.	01/2020
Nikon	Silicone Immersion Oil 30cc	MXA22179	20191101	01/2020
Olympus	Silicone Immersion Oil	SIL300CS-30CC	N4190800	01/2017
Zeiss	Immersionol 518 F	444960	160706	01/2017
Zeiss	Immersionol W 2010	444969	101122	04/2012

Ordering Information

The μ-Slide 4 Well is available as open well and as a Ph+ version. See the table below for choosing your μ-Slide 4 Well.

μ-Slide 4 Well



Cat. No.	Description
80426	μ-Slide 4 Well ibiTreat: #1.5 polymer coverslip, tissue culture treated, sterilized
80422	μ-Slide 4 Well Collagen IV: #1.5 polymer coverslip, sterilized
80424	μ-Slide 4 Well Poly-L-Lysine: #1.5 polymer coverslip, sterilized
80420	μ-Slide 4 Well Bioinert: #1.5 polymer coverslip, surface passivation with Bioinert, sterilized
80421	μ-Slide 4 Well Uncoated: #1.5 polymer coverslip, hydrophobic, sterilized
80427	μ-Slide 4 Well Glass Bottom: 1.5H (170 μm ±5 μm) D 263 M Schott glass, sterilized

μ-Slide 4 Well^{Ph+}



Cat. No.	Description
80446	μ-Slide 4 Well^{Ph+} ibiTreat: #1.5 polymer coverslip, tissue culture treated, sterilized
80442	μ-Slide 4 Well^{Ph+} Collagen IV: #1.5 polymer coverslip, sterilized
80444	μ-Slide 4 Well^{Ph+} Poly-L-Lysine: #1.5 polymer coverslip, sterilized
80447	μ-Slide 4 Well^{Ph+} Glass Bottom: 1.5H (170 μm ±5 μm) D 263 M Schott glass, sterilized

For research use only!

Further information can be found at ibidi.com. For questions and suggestions please contact us by e-mail info@ibidi.de or by telephone +49 (0)89/520 4617 0.

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