lumox® & x-well Technology

SARSTEDT

lumox® cell culture products are characterised by their ultra-thin, gas-permeable film base. Optimum gas exchange is guaranteed due to the gas permeability and the short diffusion paths. The lumox® film base has very low autofluorescence in comparison with conventional polystyrene bases (Fig. 1) and a higher light transmission in comparison with conventional polystyrene or glass bases (Fig. 2). The low autofluorescence and the excellent light transmission of the lumox® film lead to a consistently high sensitivity in assays and when using imaging and reader techniques. The range of uses of the lumox® products spans from normal cell culture to automated analysis of fluorescence-based cell assays.

Fig. 1 Fluorescence measurement of the lumox® film and the polystyrene base at 330 nm

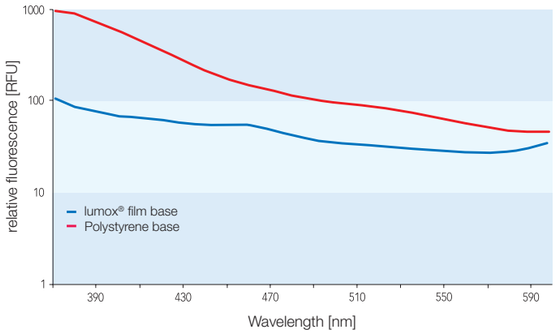
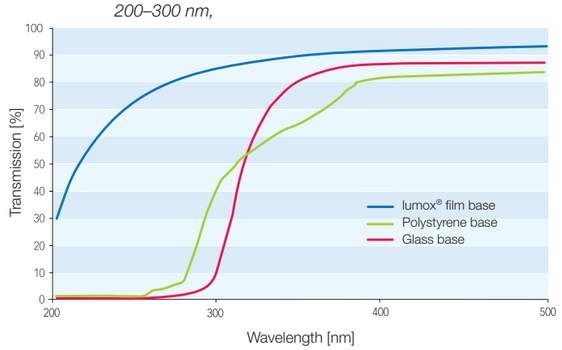
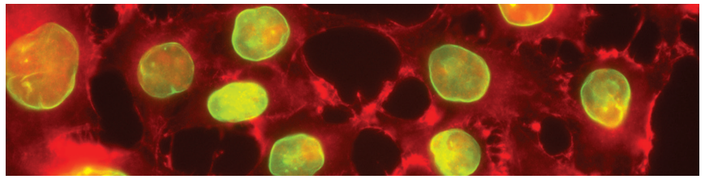


Fig. 2 Light transmission measurement. Detection of low signals, particularly possible with wavelengths of 200–300 nm,



Lumox® • Advantages at a glance

- Very low autofluorescence
- High transparency
- Gas-permeable film base
- Optimal growth
- Ideal for microscopic analyses



Cells simply grow better

The gas permeability of the film base of the lumox® products offers numerous advantages. The cells grow directly at the border between the gaseous and liquid phase, where the culture medium cannot act as a diffusion barrier. Exceptionally short diffusion paths ensure an optimal gas exchange. While the cells are directly supplied with oxygen, metabolic waste products such as CO_2 can escape.

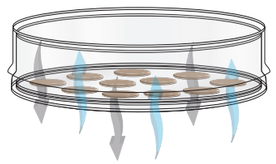


Fig. 3 Gas exchange through the lumox® film base

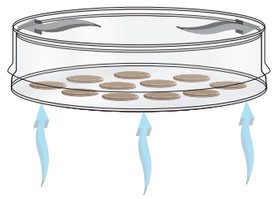
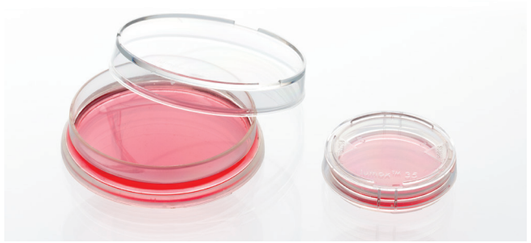


Fig. 4 No gas exchange is possible in conventional cell culture vessels via the polystyrene or glass bases

SARSTEDT

lumox® dish • Gas-permeable cell culture dish



lumox® dish is made of a transparent polystyrene cover and a polystyrene frame with a transparent base made of the gas-permeable, ultra-thin (25 µm) lumox® film. lumox® dish is available with a diameter of 35 mm and 50 mm.

- Two different growth surfaces:
  - red = for adherent cells
  - green = for suspension cells

For further analyses, like e.g. electron microscopy, the lumox® film can be excised using a scalpel.

Ordering information – lumox® dish

Order no	Description	Surface	Diameter/ height [mm]	Working volume [ml]	Packaging inner box/case
94.6077.333	lumox® dish 35		35/6	2.5	50/250
94.6077.331	lumox® dish 35		35/6	2.5	50/250
94.6077.305	lumox® dish 50		50/12	5-10	50/200
94.6077.410	lumox® dish 50		50/12	5-10	50/200

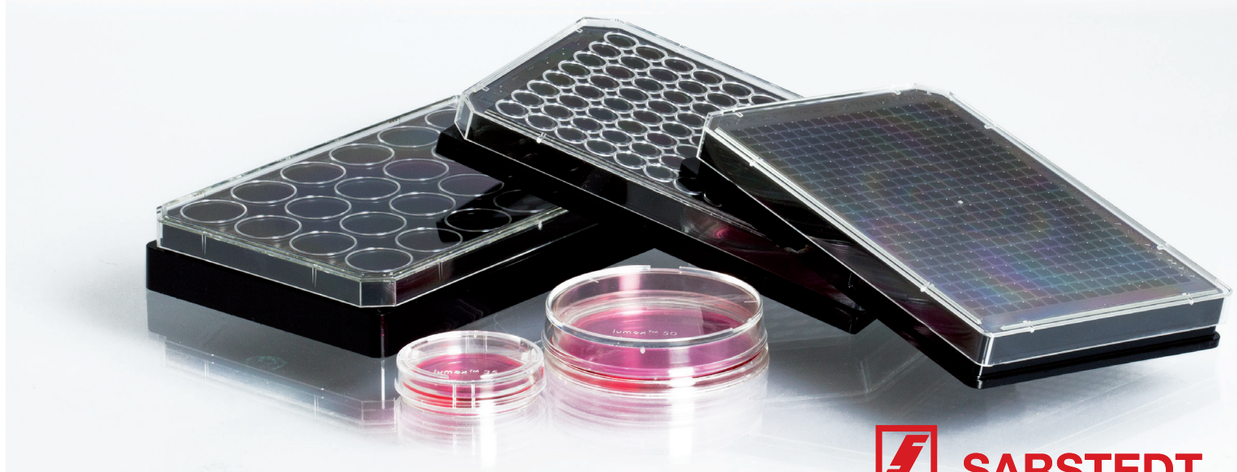
lumox® multiwell • Multiwell plate with low autofluorescence

lumox® multiwell plates consist of a black polystyrene frame (standard dimensions) with a transparent base made from ultra-thin (50 µm), gas-permeable lumox® film. lumox® multiwell plates are available in 24-Well, 96-Well and 384-Well format.

Ordering information – lumox® multiwell

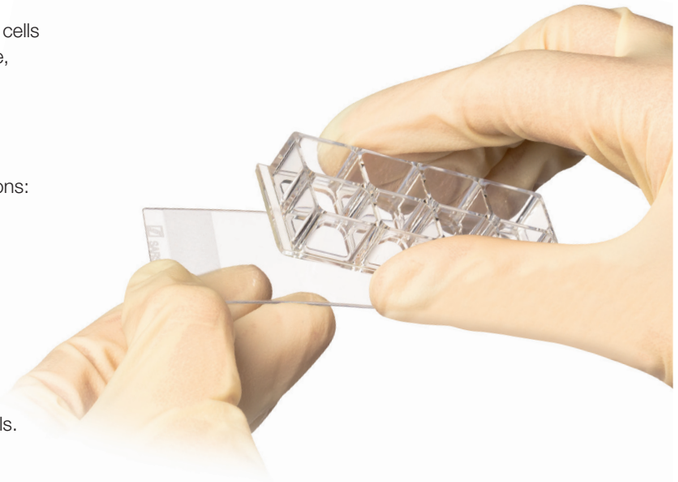
Order no	Description	Surface*	Growth surface per well [cm²]	Working volume per well [µl]	Packaging pcs./case
94.6000.014	lumox® multiwell, 24-Well		1.90	500 - 1500	4
94.6110.024	lumox® multiwell, 24-Well		1.90	500 - 1500	20
94.6000.024	lumox® multiwell, 96-Well		0.34	25 - 340	4
94.6120.096	lumox® multiwell, 96-Well		0.34	25 - 340	20
94.6000.034	lumox® multiwell, 384-Well		0.11	10 - 130	4
94.6130.384	lumox® multiwell, 384-Well		0.11	10 - 130	20

* red = adherent cells



SARSTEDT

The x-well cell culture system allows cultivation and analysis of cells on a microscope slide. In combination with a polystyrene frame, the chamber slides form one- and multiple chamber vessels. Regardless of whether you are carrying out fluorescence- or light microscopic analyses on living or fixated cells, individual analyses or parallel test series, our comprehensive x-well product range provides ideal solutions for your applications:



- Time-saving histological and fluorescent staining because all steps can be carried out in the x-well system.
- Small compartments enable cost efficient testing by reducing cell numbers and reagents.
- Slides with excellent optical properties for optimal results in your cell imaging experiments with living and fixated cells.
- All slide surfaces are suited for the cultivation of adherent cells.
- All x-well cell culture chambers are certified sterile, non-pyrogenic/endotoxin-free and non-cytotoxic.
- The chambers of all products marked “detachable“ can be detached from the slide without a tool, leaving no adhesive residues that might have to be removed to enable further test procedures or archiving.
- x-well cell culture chambers are available with slides made of PCA, glass, cover glass or the lumox® film.

x-well PCA • detachable

The slide of the x-well PCA cell culture chambers is made of a plastic from the polyolefin family and has the advantage of lower autofluorescence and higher chemical resistance in comparison with polystyrene.

- Slide in the standard format with writing area
- Low autofluorescence
- High chemical resistance permits use of most staining reagents
- The chamber can be detached from the slide with an audible click – no tool required and leaving no adhesive residues on the slide
- Optimal magnification up to 400-fold (40x objective)

x-well lumox® • detachable

The growth surface of the x-well lumox® specimen slide is made of gas-permeable lumox® film. Due to the outstanding optical properties of the film base, x-well lumox® products are ideally suited for fluorescence-based cell analyses.

- Slide with thin lumox® film (50 µm) in the standard format with writing area
- Very low autofluorescence and high transparency
- The hydrophilic surface and gas permeability provide enhanced cultivation of many sophisticated cells
- High chemical resistance permits use of most staining reagents
- The chamber can be detached from the slide with an audible click – no tool required and leaving no adhesive residues on the slide
- Optimal magnification up to 400-fold (40x objective)

SARSTEDT

x-well Cell Culture Chamber

x-well glass • detachable

The standard format glass specimen slide combines ideal growth conditions for cells with outstanding optical properties. The high chemical resistance also allows for the use of most fixatives and dyes.

- Slide in the standard format with writing area
- Very low autofluorescence
- High chemical resistance permits use of most staining reagents
- The chamber can be detached from the slide with an audible click – no tool required and leaving no adhesive residues on the slide
- Optimal magnification up to 400-fold (40x objective)

x-well cover glass

The x-well cover glass cell culture chambers have a base thickness of 170 µm and are therefore particularly well suited for high-resolution and confocal microscopy.

- Very low autofluorescence
- Short format slides without writing area
- High chemical resistance permits use of most staining reagents
- Slide not detachable
- Optimal magnification up to 1,000-fold (100x objective)

Ordering information – x-well®

Format	PCA	lumox®	Glass	Cover glass	Growth surface [cm²]	Volume [ml]	Packaging tray/box
1-well	94.6140.102	94.6150.101	94.6170.102	94.6190.102	9	4	6/96
2-well	94.6140.202	94.6150.201	94.6170.202	94.6190.202	4.4	2	6/96
4-well	94.6140.402	94.6150.401	94.6170.402	94.6190.402	1.9	1	6/96
8-well	94.6140.802	94.6150.801	94.6170.802	94.6190.802	0.8	0.5	6/96
Flask	94.6140.002	-	94.6170.002	94.6190.002	9	4	6/96

SARSTEDT

quadriPERM® – Cell culture dish for parallel analyses

quadriPERM® is a rectangular cell culture dish suited for a range of applications with the following benefits:

- **Cell culture dish for parallel analyses**
  quadriPERM® has four compartments of equal size for parallel cell cultivation under identical conditions. Suspension cells can be cultivated directly in the quadriPERM®. For the cultivation of adherent cells, x-well products, flexiPERM® or DIN slides can be placed into the compartments.
- **Easy handling**
  In quadriPERM®, cells can be easily and quickly supplied with fresh medium. The outer dimensions of a quadriPERM® dish are in accordance with the ANSI/SLAS (formerly ANSI/SBS) standard so that quadriPERM® dishes – like all Sarstedt TC plates – are conveniently suited for microscopic analyses.
- **Applications**
  Apart from cell cultivation, quadriPERM® is ideal for in-situ preparation of chromosomes for cytogenetic analyses (e.g. replication studies). Also, cells can be fixed and stained in a histological, immunocytochemical or immunofluorescent manner in quadriPERM®. Therefore, quadiPERM® is suited for both parallel analyses and most immunological detection methods.
- **Certified quality**
  quadriPERM® dishes are sterile and certified non-pyrogenic/endotoxin-free and non-cytotoxic.

Ordering information – quadriPERM®

Order no	Description	Chamber area per unit [cm²]	Working volume per unit [ml]	Packaging bag/box
94.6077.307	quadriPERM®	24.9	approx. 10	12/48
94.6077.308	quadriPERM®	24.9	approx. 10	12/192

quadriPERM® in combination with flexiPERM® slide and flexiPERM® micro 12

flexiPERM® – Reusable cell culture insert

flexiPERM® is a reusable silicone insert which subdivides cell culture dishes and microscope slides into smaller cultivation units. The highly adhesive bottom of flexiPERM® sticks to all plain surfaces, such as glass, plastic or lumox® film.

- Adhesive, reusable tissue culture chambers made of silicone
- Hydrophobic and not toxic for tissue and cells
- Heat resistant (up to 125°C), cold resistant (down to -20°C) and resistant to almost all laboratory chemicals
- Can be sterilized by autoclaving or 70% ethanol
- Suitable for DIN microscope slides and tissue culture dishes
- Can be used for long-term tests of up to two weeks

flexiPERM® slide and flexiPERM® micro 12

flexiPERM® slide ❷ with eight and flexiPERM® micro 12 ❶ with twelve subdivisions are suitable for parallel analyses of cells on DIN slides. In addition, these two versions can be used with or without a slide in combination with quadriPERM®.

flexiPERM® conA and conB

flexiPERM® conA ❸ and flexiPERM® conB ❹ were developed for special cell examinations in animal and plant physiology.

The cone-shape form can be used for numerous applications in micromanipulation or microinjection. Intracellular and intercellular measurements can be performed in simultaneous microscopic observation.

flexiPERM® disc

The flexiPERM® disc ❺ with four compartments is the ideal insert for the gas-permeable lumox® dish 50 or any cell culture dish with a diameter of 50 mm.

The flexiPERM® disc can be used for co-cultivation of various cell lines in one vessel.

Ordering information – flexiPERM®

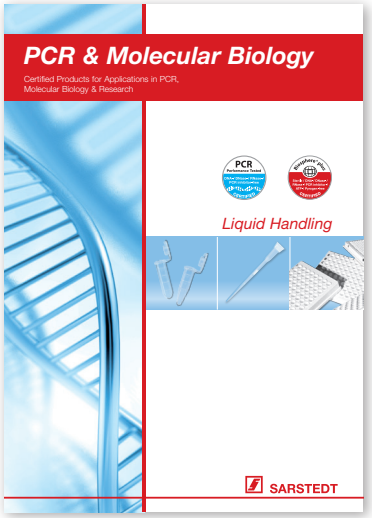
Order no	Description	Fig.	Cultivation units	Cultivation area per unit [cm²]	Working volume [µl]	Packaging unit/ case
94.6011.436	flexiPERM® micro 12	1	12	0.3	100–200	5
94.6032.039	flexiPERM® slide	2	8	0.9	300–500	5
94.6077.434	flexiPERM® conA	3	1	1.1	1,000–1500	5
94.6077.435	flexiPERM® conB	4	1	3.1	2,000–3,000	5
94.6034.067	flexiPERM® disc	5	4	1.8	500–1,000	5

You may also be interested in the following subjects ...

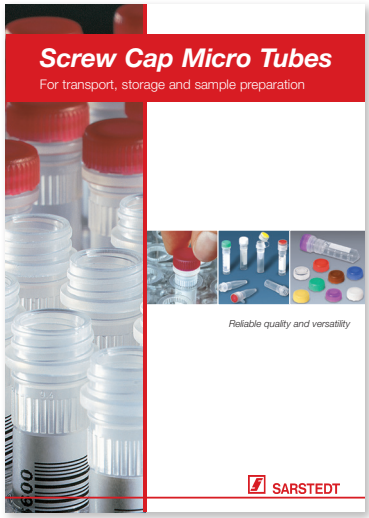
Order No.: 00.20.215

Order No.: 00.20.417

Order No.: 00.20.512



Order No.: 00.20.362



Order No.: 00.20.471

Order No.: 00.20.670

SARSTEDT AG & Co.
P.O. Box 12 20
D-51582 Nümbrecht
Phone +49 2293 3050
Fax +49 2293 305-2470
info@sarstedt.com
www.sarstedt.com

719-200

SARSTEDT