Cell and tissue culture

Cell Cultivation, Cryogenic Storage, Filtration, Liquid Handling

TC Tested
Sterile/ DNA-/ DNase-/ RNase-/ Pyrogen-free/ non-cytotoxic
CERTIFIED

Cryo Performance Tested
CE/ IVD/ Sterile/ Pyrogen-free/ non-cytotoxic/ non-mutagenic
CERTIFIED

Come Grow with us

SARSTEDT

For more than 25 years, Sarstedt has been producing a wide range of high-quality cell culture products which are sold worldwide. These many years of experience and knowledge of the needs of users have allowed us to optimise and continually expand the product range.

We would like to use the following pages to introduce our product range for cell and tissue culture in detail.

Your Sarstedt Team

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Sarstedt quality seal for cell and tissue culture products

Today, cell and tissue cultures are not only used in fundamental research, but increasingly also in applied biotechnology and in clinical and pharmaceutical research. Products of the highest possible purity and quality are required for toxicity tests, quality controls of biochemical processes, industrial production systems (e.g. production of monoclonal antibodies) and many more applications. A basic requirement in order for experiments to be comparable and reproducible is compliance with quality standards for cell and tissue culture. For more than 20 years Sarstedt has been producing a wide range of certified consumables for working with cell and tissue cultures in order to meet these requirements.

TC Tested

Since 1990, Sarstedt has been offering high-quality cell culture products, which are produced in clean room conditions by trained personnel using protective clothing and automated production processes.
In accordance with our basic principle, that products which come into contact with cells must not have a disruptive influence on the cells, these products are produced under the strictest clean room conditions and are labelled with the "TC-Testedt" quality logo. The cell culture products meet the following requirements:

- Sterile
  In accordance with DIN EN ISO 11137 – "Sterilization of medical devices – Validation and routine control of sterilization by radiation"
- Non-pyrogenic / endotoxin-free
  Based on the LAL test as per the FDA guideline for medical devices, detection limit < 0.06 EU/ml
- Non-cytotoxic
  In accordance with DIN EN ISO 10993 – "Biological Evaluation of Medical Devices – Part 5 Test on in-vitro cytotoxicity"
- DNA-free
  Test method: Real-time PCR; detection limit human DNA <0.5 pg/µl, bacterial DNA <0.02 pg/µl
- DNase / RNase-free
  Test method: Fluorescence assay; detection limit DNase $7.1 \cdot 10^{-5}$ U/µl, RNase $7.1 \cdot 10^{-9}$ U/µl

Cryo Performance Tested

In the "vital" preservation in CryoPure tubes, cell and tissue samples must not be subjected to additional risks in terms of contamination with interfering substances. Sarstedt CryoPure tubes are therefore subject to a number of tests and after passing the defined examinations are certified as follows:

- Sterile
  In accordance with DIN EN ISO 11137 – "Sterilization of medical devices – Validation and routine control of sterilization by radiation"
- Non-pyrogenic / endotoxin-free
  Based on the LAL test as per the FDA guideline for medical devices, detection limit < 0.06 EU/ml
- Non-cytotoxic
  In accordance with DIN EN ISO 10993 – "Biological Evaluation of Medical Devices – Part 5 Test on *in-vitro* cytotoxicity"
- Non-mutagenic
  The evidence for estimating freedom from mutagens was carried out according to the Ames Test II
- IVD CE

Growth surfaces & colour coding

A basic requirement for the successful cultivation of cells *in-vitro* is to simulate the *in-vivo* environment of the relevant cell type as accurately as possible. The surface condition of the culture vessel is particularly important here, because many cell types can only survive, proliferate and differentiate following successful adhesion. In order to meet the requirements for as many different cell types as possible, Sarstedt offers flasks, dishes and plates with three different growth surfaces. The products are labelled as follows according to the Sarstedt colour coding system in order to allow for clear identification of the vessels, even after removal from the packaging:

Sarstedt standard surface for adherent cells

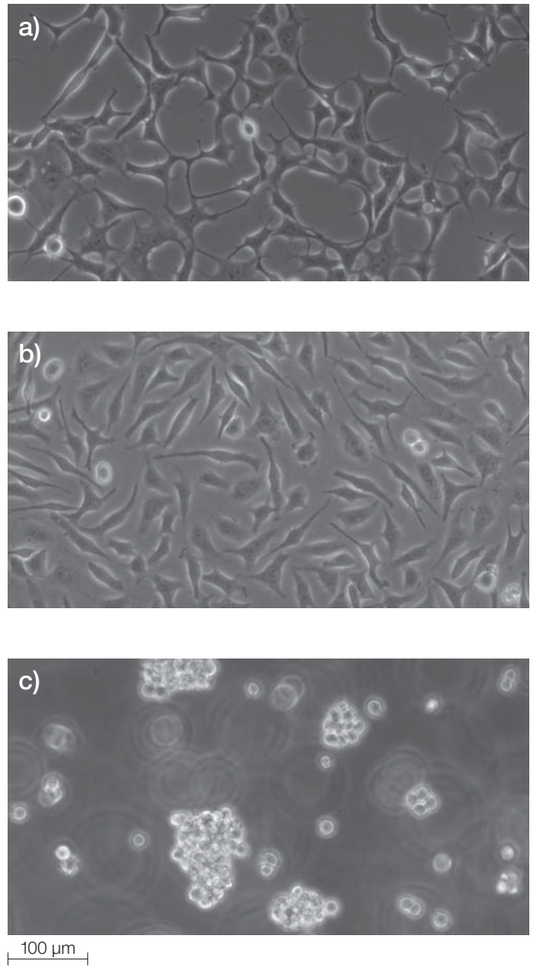
Hydrophilic groups are introduced into the surface via a special treatment of the polystyrene surface. This allows for the formation of cell surface proteins and therefore the adhesion of the cells to the plastic surface. The hydrophilic standard growth surface, which is coded red, therefore provides an optimum culture substrate for many adherent cells.

Sarstedt Cell⁺ surface for sophisticated adherent cells

Primary cells, sensitive cell culture lines and cells which are cultivated under serum-reduced/serum-free conditions have particularly high requirements for the surface of the cell culture vessel. The yellow-coded Cell⁺ growth surface was developed specifically for these cells. Additional polar groups are introduced into the hydrophilic surface via special treatment of the plastic surface. This leads to improved imitation of the *in vivo* environment and therefore to the adhesion of sophisticated cells. Due to its properties, the Cell⁺ surface can make the use of coated culture vessels redundant in many cases.

Sarstedt suspension culture surfaces

Culture vessels with the green, hydrophobic growth surface are ideally suited for suspension cells (usually cells of lymphoid origin, hybridoma cells etc.) which are not adherently cultivated in solution. The hydrophobic surface minimises cell losses during sub-cultivation due to unwanted microadhesion.



The cultivation of various cell types on Sarstedt growth surfaces clearly shows the vitality of the various cell types. a) HEK293 cells cultivated on the standard TC surface for 48 h. b) CHO cells cultivated on the Cell⁺ surface under serum-reduced conditions (1%) for 24 h. c) Jurkat cells cultivated on the suspension surface for 72 h. (c). The measuring bar corresponds to 100 µm.*

** A list of successfully cultivated cells for the various growth surfaces is available on request.*

Tissue culture flasks

For cell culture, Sarstedt offers flasks with a growth surface of 25 cm^2, 75 cm^2 and 175 cm^2. All tissue culture flasks are made of high-quality, transparent polystyrene, which is processed into a flat growth surface and which is ideally suited for microscopic observation. All tissue culture flasks are tested and certified according to the “TC-Testedt” quality seal (see p. 4).

Product characteristics of the new Sarstedt tissue culture flasks

The new, optimised flask geometry has the following characteristics:

- Accessibility of all corners with serological pipettes and cell scrapers. 1
- Large labelling fields on both sides of the neck and the printed white scaling on one side and engraved scaling on the other side to facilitate use of the product. 2
- High safety against overturning reduces the contamination risk. In addition, the stacking edge that has been applied to the flasks allows for secure positioning of flasks placed on top of each other.
- The optimised, canted flask neck and the anti-drip edge allow for easy tilting of the medium, whilst at the same time reducing the risk of contamination due to the medium spilling over. 3
- Lot no. and expiry date are printed on each flask which allows for easy traceability after removal from the packaging. 4
- All Sarstedt tissue culture flasks are offered with three different growth surfaces and can be clearly identified using the coloured lids:

  red = adherent cells
  yellow = sensitive, adherent cells
  green = suspension cells

Tissue culture flasks

The Quick-Release cap is particularly user-friendly, because only a 1/3 turn is needed for closing or opening. When handling cell culture flasks it is quite common to position the Quick-Release cap loosely onto the neck. In order to prevent inadvertent rotation of the smoth-running thread a “stop” has been integrated into the Quick-Release cap. This evident “stop” is overcome when screwing the cap onto the flask. The ribbed Quick-Release cap is available in two designs:

- The **filter cap** has a membrane with a pore size of 0.2 µm, which ensures constant, sterile gas exchange. Due to the hydrophobic filter properties, the risk of contamination is minimised at the same time.
- The **two-position screw cap** allows for the gas-tight sealing of the flasks when in the closed position, while in the ventilation position cells can be cultivated with even gas exchange (arrows point up and down). A recognisable click confirms that the cap has been secured against falling off during incubation. A gap in the ribbing and arrows on the cap allow for simple haptic and visual checking of the closure position when working and in the incubator. There is no need for lengthy manual checking of stacked flasks in the incubator to ensure the caps are in the right position.

Quick-Release cap open

Quick-Release cap vented

Quick-Release cap closed

The tissue culture flasks are packed in a bag with a re-sealable mini-grip, which is closed with a tamper-evident seal until it is opened for the first time.

Ordering information

Order no	Colour code*	Growth surface [cm²]	Cap	Recommended working volume [ml]	Max. volume [ml]	Packaging bag/case
83.3910		25	2-position	7	12.5	10/300
83.3910.002		25	vented	7	12.5	10/300
83.3911		75	2-position	21	55	5/100
83.3911.002		75	vented	21	55	5/100
83.3912		175	2-position	50	125	5/40
83.3912.002		175	vented	50	125	5/40
83.3910.300		25	2-position	7	12.5	10/300
83.3910.302		25	vented	7	12.5	10/300
83.3911.300		75	2-position	21	55	5/100
83.3911.302		75	vented	21	55	5/100
83.3912.300		175	2-position	50	125	5/40
83.3912.302		175	vented	50	125	5/40
83.3910.500		25	2-position	7	12.5	10/300
83.3910.502		25	vented	7	12.5	10/300
83.3911.500		75	2-position	21	55	5/100
83.3911.502		75	vented	21	55	5/100
83.3912.500		175	2-position	50	125	5/40
83.3912.502		175	vented	50	125	5/40

Accessories

Order no	Colour code*	Cap	Description	Packaging bag/case
83.3990.025		2-position	for T 25	25/100 • ind. wrapped, sterile
83.3990.075		2-position	for T 75	25/100 • ind. wrapped, sterile
83.3990.175		2-position	for T 175	25/100 • ind. wrapped, sterile

** red = adherent cells yellow = sensitive, adherent cells green = suspension cells*

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Tissue culture dishes

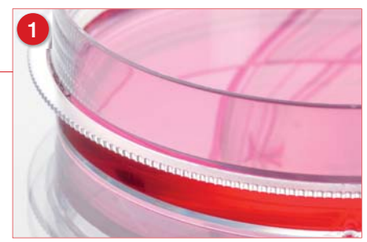
For the cultivation of cells in tissue culture dishes, Sarstedt offers 35 mm, 60 mm, 100 mm and 150 mm dishes, which have been tested and certified according to the “TC-Testedt” quality seal (see p. 4). The dishes are produced from high-quality, transparent polystyrene, meaning that a planar growth surface of excellent transparency is produced which allows for visual inspection of cell growth.

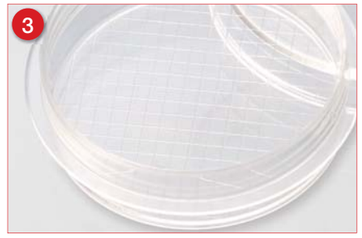
Product characteristics of the new Sarstedt tissue culture dishes

The new, optimised tissue culture dishes have the following characteristics:

- The new *SURE*Grip is a raised, rough ring which runs around the bottom part and allows for secure and convenient handling of the two parts of the dish, even when stacked. 1
  - Reduced contamination risk due to the handling of both dish and lid.
- Clearly visible and tangible arrows on the lid and dish allow for correct positioning of the two parts towards each other. 2
- The continual gas exchange and the secure fit of the lid is ensured by ventilation cams on the underside.
- Distinct stacking rings on the lid and base allow for secure stacking of several dishes.
- For cloning experiments, Sarstedt offers 35 mm and 60 mm dishes with grid. 3
- For better traceability, even after removal from the packaging, each dish is labelled with the colour code as well as the lot no. and expiry date. 4
- All tissue culture dishes are available with three different growth surfaces:

  red = adherent cells
  yellow = sensitive, adherent cells
  green = suspension cells





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Tissue culture dishes

The tissue culture dishes are packed in a bag with a re-sealable mini-grip, which is closed with a tamper-evident seal until it is opened for the first time.

Ordering information

Order no	Colour code*	Diameter/height [mm]	Growth surface [cm²]	Grid	Recommended working volume [ml]	Packaging bag/case
83.3900		35/10	8	without	3	10/500
83.3900.002		35/10	8	with	3	10/500
83.3901		60/15	21	without	5	10/500
83.3901.002		60/15	21	with	5	10/500
83.3902		100/20	58	without	13	10/300
83.3903		150/20	152	without	36	5/100
83.3900.300		35/10	8	without	3	10/500
83.3901.300		60/15	21	without	5	10/500
83.3902.300		100/20	58	without	13	10/300
83.3903.300		150/20	152	without	36	5/100
83.3900.500		35/10	8	without	3	10/500
83.3901.500		60/15	21	without	5	10/500
83.3902.500		100/20	58	without	13	10/300

** red = adherent cells*
yellow = sensitive, adherent cells
green = suspension cells

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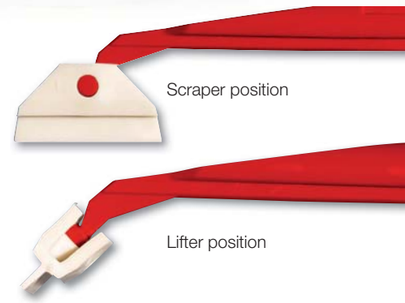
Cell scrapers

For easy and complete recovery of adherent cells

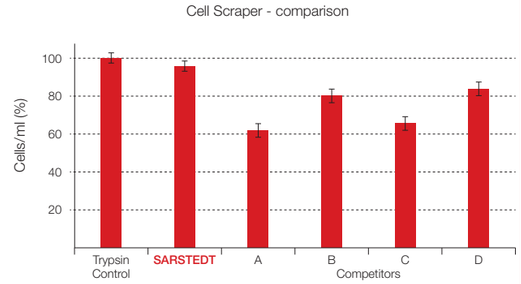
Sarstedt cell scrapers are used for easy and gentle removal of an intact cell monolayer from tissue culture flasks, dishes, plates and tubes. The smooth, flexible blade minimises the occurrence of cell damage and therefore represents a suitable and quick alternative to enzymatic detachment of the cell monolayer.

- The blades of the Sarstedt cell scrapers are made of a highly flexible, rubber-like, non-toxic material.
- Individual sterile packaging, non-pyrogenic/endotoxin-free, and non-cytotoxic
- The particularly thin blade and the polypropylene grip are available in various sizes in order to permit easy use even in culture vessels which are difficult to access.
- Depending on the desired use, the blade can be brought into the scraper or lifter position in order to remove the cells from the surface.



Apply ¼ turn for **"lifter position"**

Comparison of the Sarstedt cell scrapers with four competitor cell scrapers:
The graph shows that, in comparison with the trypsin control, the highest cell number per ml can be detached when using the Sarstedt cell scraper (96%). With the competitor products (A, B, C and D), the cell yields were between 62% and 84% in comparison with the trypsin control. The quality of the cell scrapers was compared by cultivating cells under the same conditions and harvesting them using the same technique. The cell vitality, on the other hand, was around 95% for all cell scrapers.



Ordering information - Cell scraper

Order no	Description	Blade length [cm]	Total scraper length [cm]	Packaging blister/box	Range of application
83.1832	Cell scraper with two-position blade	1.35	16.0	1/100	• Tissue culture flasks: T-25 • 24-well, 12-well, 6-well plates • Tissue culture dishes, tissue culture tubes
83.1830	Cell scraper with two-position blade	1.7	25.0	1/100	• Tissue culture flasks: T-75 • Tissue culture dishes: 35 x 10 / 60 x 15 • 6-well plates, 12-well plates
83.1831	Cell scraper	3.1	39.4	1/100	• Tissue culture flasks: T-175 • Roller bottles • Tissue culture dishes: 100 x 20 / 150 x 20 • 6-well plates

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For multiple cultivation on an average to small scale, Sarstedt offers tissue culture plates with 6, 12, 24, 48 and 96 wells. The plates are produced from high-quality, transparent polystyrene and are characterised by planar wells and a high uniformity of the entire plate. The highly transparent base is suitable for microscopic measurements from below. All tissue culture plates are tested and certified according to the “TC-Testedt” quality seal (see p. 4).

Product characteristics of the new Sarstedt tissue culture plates

The external dimensions of the new Sarstedt tissue culture plates correspond to the ANSI/SBS standard and can be used for analyses in holding devices with these dimensions. Further characteristics of the plates are as follows:

- For better traceability, even after removal from the packaging, each plate is labelled using the colour code as well as the lot no and expiry date. 1
- In order to ensure quick guidance when filling the wells, the wells are alphanumerically labelled on the edge 2 and in the areas between the wells 3.
- Free-standing wells reduce the risk of contamination when using a pipette. 2 & 3
- Non-slip side grids in the base make it easier to securely grab the entire plate. The transparent side walls of the base enable visual inspection of the medium. 4
- Both air vents and condensation rings are integrated into the lid, and these combine to ensure constant gas exchange and simultaneously minimise evaporation.
- All tissue culture plates are available with three different growth surfaces:

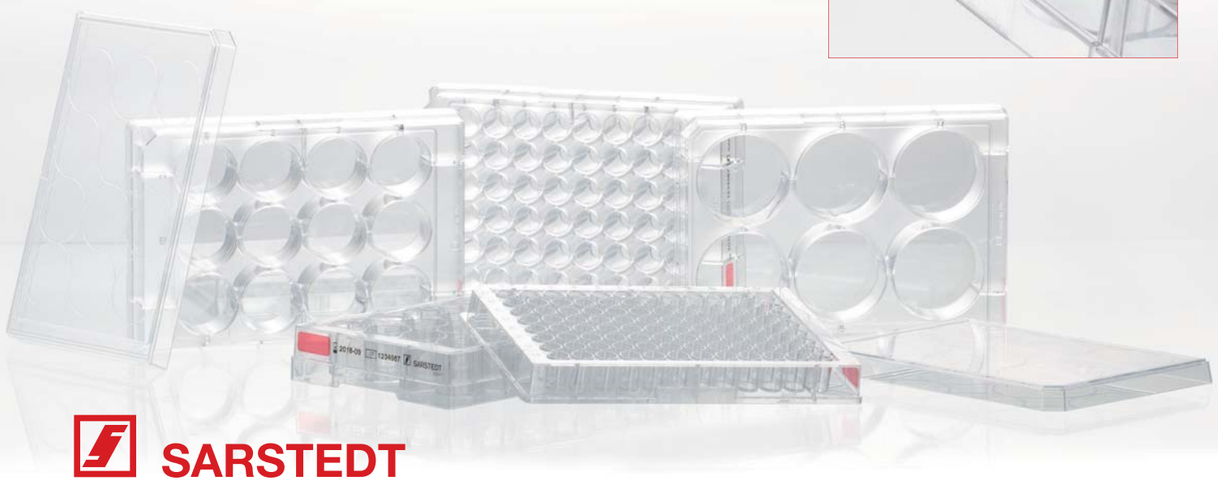
  red = adherent cells
  yellow = sensitive, adherent cells
  green = suspension cells

1

2

3

4



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Ordering information

Order no	Colour code	Number of wells	Base shape	Growth surface per well [cm²]	Working volume [ml]	Packaging blister/box
83.3920	red	6	flat	8.87	4	1/50
83.3920.005	red	6	flat	8.87	4	5/100
83.3921	red	12	flat	3.65	2	1/50
83.3921.005	red	12	flat	3.65	2	5/100
83.3922	red	24	flat	1.82	1	1/50
83.3922.005	red	24	flat	1.82	1	5/100
83.3923	red	48	flat	0.64	0.5	1/50
83.3923.005	red	48	flat	0.64	0.5	5/100
83.3924	red	96	flat	0.29	0.2	1/50
83.3924.005	red	96	flat	0.29	0.2	5/100
83.3925	red	96	U	-	max. 0.31	1/50
83.3926	red	96	V	-	max. 0.29	1/50
83.3920.300	yellow	6	flat	8.87	4	1/50
83.3921.300	yellow	12	flat	3.65	2	1/50
83.3922.300	yellow	24	flat	1.82	1	1/50
83.3923.300	yellow	48	flat	0.64	0.5	1/50
83.3924.300	yellow	96	flat	0.29	0.2	1/50
83.3920.500	green	6	flat	8.87	4	1/50
83.3921.500	green	12	flat	3.65	2	1/50
83.3922.500	green	24	flat	1.82	1	1/50
83.3923.500	green	48	flat	0.64	0.5	1/50
83.3924.500	green	96	flat	0.29	0.2	1/50
83.3925.500	green	96	U	-	max. 0.31	1/50
83.3926.500	green	96	V	-	max. 0.29	1/50

** red = adherent cells*
yellow = sensitive, adherent cells
green = suspension cells

SARSTEDT

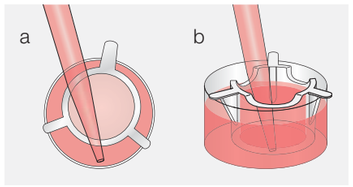
Sarstedt TC (Tissue Culture) Inserts are easy-to-use inserts for TC plates. When used in combination with our TC plates, the inserts form a 2-compartment cell culture system in which the *in vivo* situation of cells can be simulated excellently. Our TC inserts are suitable for performing many complex experiments in cell and tissue culture such as:

- Transport, secretion and diffusion studies
- Migration experiments
- Cytotoxicity tests
- Co-cultures
- Transepithelial electrical resistance (TEER) measurements
- Primary cell cultures
- 3D cell cultures

The exceptionally user-friendly design of the hanging Sarstedt TC Inserts boasts the following features:

- Stable housing made of highly transparent polystyrene (PS).
- Asymmetric position for comfortable pipetting in the well.
- Spacers prevent fluid from getting drawn up between the insert and the well.
- Lowered upper edges for optimal gas exchange (see Fig 1b).

Figure 1

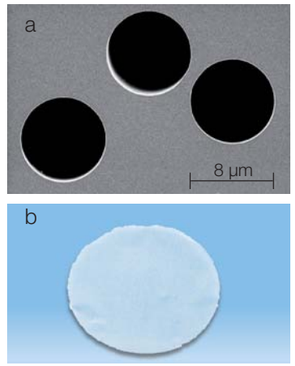


Membrane properties

The TC Inserts are provided with a PET (polyester) membrane and are available in five different pore sizes (0.4 µm, 1 µm, 3 µm, 5 µm and 8 µm) and two optical properties (transparent and translucent). Our PET membrane offers the following advantages:

- Ultra-thin, high-quality track-etched PET membrane with defined pore size (Fig. 2a)
- Both translucent (higher pore density, optically turbid) and transparent (lower pore density) exhibit a defined pore density.
- Both sides of the membrane are surface-treated (TC treated) for optimal cell adhesion.
- The chemical properties of the PET membrane minimise non-specific molecule binding.
- High chemical resistance allows performance of many standard fixing and staining methods.
- Detached membranes stay flat for convenient further processing (Fig. 2b).

Figure 2



General information: area of application of the Sarstedt TC inserts

- Membranes with small pore sizes (0.4 µm, 1 µm) are suitable for applications in which the migration of cells through the membrane pores is not desired. In co-culture experiments, for example, cells can be cultivated in close proximity to one another without the cell types becoming mixed together.
- Membranes with larger pores are recommended for experiments in which the migration of cells through the pores to the underside of the membrane should be possible. Depending on the cell type, membranes with a pore size of 3 µm, 5 µm or 8 µm should be used for performing chemotaxis, invasion and migration studies.
- Translucent membranes with a pore diameter of 0.4 µm allow for optimal basolateral diffusion for transport, secretion, diffusion and cytotoxicity studies, due to the high pore density.
- Translucent membranes are suitable for both electron microscopy and TEER (transepithelial electrical resistance) experiments.
- Transparent membranes can be used for both light and electron microscopy.

The TC Inserts are compatible with the corresponding TC plates (see page 12 & 13).
All options are non-pyrogenic / endotoxin-free, non-cytotoxic and individually sterile packed.

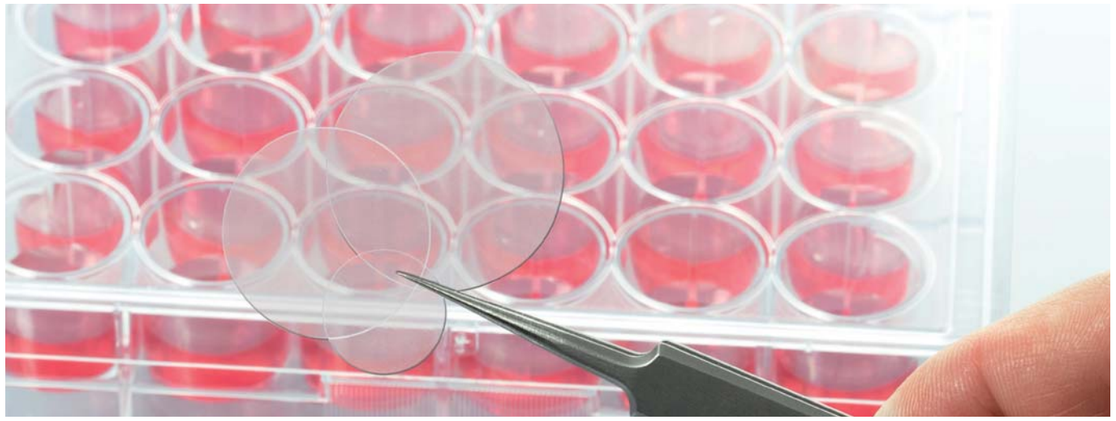
Ordering information

Order no.	Format	Membrane material	Pore Ø [µm]	Pore density [pores/cm²]	Optical property	Membrane thickness [µm]	Growth area [cm²]	Recommended working volume [ml]		Packaging blister/box
								Insert	Well	
83.3930.040	6 Well	PET	0.4	1 x 10^8	translucent	12	4.5	1 - 4	2.4 - 4.8	1 / 24
83.3930.041		PET	0.4	2 x 10^6	transparent	12	4.5	1 - 4	2.4 - 4.8	1 / 24
83.3930.101		PET	1.0	2 x 10^6	transparent	11	4.5	1 - 4	2.4 - 4.8	1 / 24
83.3930.300		PET	3.0	2 x 10^6	translucent	9	4.5	1 - 4	2.4 - 4.8	1 / 24
83.3930.500		PET	5.0	6 x 10^5	translucent	10	4.5	1 - 4	2.4 - 4.8	1 / 24
83.3930.800		PET	8.0	2 x 10^5	translucent	11	4.5	1 - 4	2.4 - 4.8	1 / 24
83.3931.040	12 Well	PET	0.4	1 x 10^8	translucent	12	1.1	0.2 - 0.8	1.2 - 2.4	1 / 48
83.3931.041		PET	0.4	2 x 10^6	transparent	12	1.1	0.2 - 0.8	1.2 - 2.4	1 / 48
83.3931.101		PET	1.0	2 x 10^6	transparent	11	1.1	0.2 - 0.8	1.2 - 2.4	1 / 48
83.3931.300		PET	3.0	2 x 10^6	translucent	9	1.1	0.2 - 0.8	1.2 - 2.4	1 / 48
83.3931.500		PET	5.0	6 x 10^5	translucent	10	1.1	0.2 - 0.8	1.2 - 2.4	1 / 48
83.3931.800		PET	8.0	2 x 10^5	translucent	11	1.1	0.2 - 0.8	1.2 - 2.4	1 / 48
83.3932.040	24 Well	PET	0.4	1 x 10^8	translucent	12	0.3	0.1 - 0.4	0.8 - 1.6	1 / 48
83.3932.041		PET	0.4	2 x 10^6	transparent	12	0.3	0.1 - 0.4	0.8 - 1.6	1 / 48
83.3932.101		PET	1.0	2 x 10^6	transparent	11	0.3	0.1 - 0.4	0.8 - 1.6	1 / 48
83.3932.300		PET	3.0	2 x 10^6	translucent	9	0.3	0.1 - 0.4	0.8 - 1.6	1 / 48
83.3932.500		PET	5.0	6 x 10^5	translucent	10	0.3	0.1 - 0.4	0.8 - 1.6	1 / 48
83.3932.800		PET	8.0	2 x 10^5	translucent	11	0.3	0.1 - 0.4	0.8 - 1.6	1 / 48

SARSTEDT

Highly transparent coverslips for cell cultivation

Whenever adherent cells need to be cultivated in sterile conditions, fixed, dyed and subsequently placed under a microscope on a small surface, Sarstedt coverslips are the ideal solution. The two-side surface treatment and the good optical quality of the modified plastic material allow for for easy working with coverslips. All options are certified sterile, non-pyrogenic / endotoxin-free and non-cytotoxic.



The sterile coverslips can be used in various products for cell cultivation:

Order no	Description	Colour code	Diameter [mm]	Packaging unit/case	35 x 10 dish	6-well plate	12-well plate	24-well plate
83.1840	Coverslips		25	200	✔	✔	✘	✘
83.1840.001	Coverslips		22	200	✔	✔	✘	✘
83.1840.002	Coverslips		13	200	✔	✔	✔	✔

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lumox® cell culture products are characterised by their 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 good light transmission of the lumox® film lead to a consistently high sensitivity in assays and when using imaging and reader techniques. lumox® products enable a range of applications from normal tissue culture to automated analysis of fluorescence-based cell assays.

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

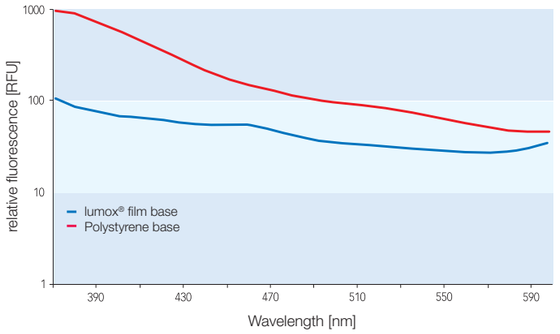
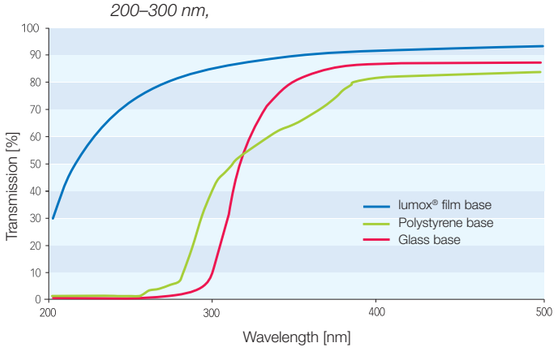
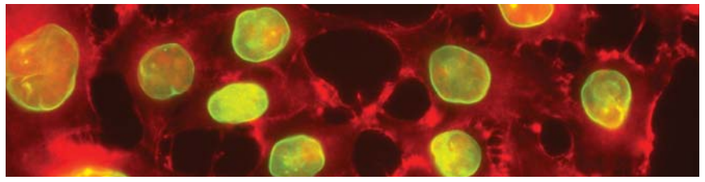


Fig. 2 Light transmission measurement. Detection of low signals, particularly possible with wavelengths of 200–300 nm,



lumox® • Advantages at a glance

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



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. On the one hand, the cells are directly supplied with oxygen and, on the other hand, metabolic waste products such as CO_2 can escape. Exeptionally short diffusion paths ensure an optimal gas exchange.

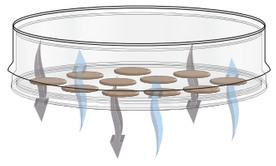


Fig. 3 Gas exchange in the lumox® dish directly through the lumox® film base

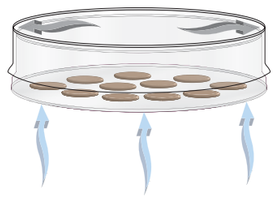


Fig. 4 No gas exchange is possible in conventional cell culture vessels via the polystyrene or glass bases

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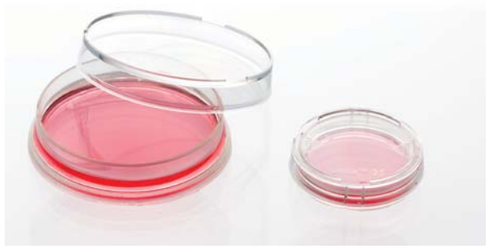
lumox® dish • Gas-permeable cell culture dish



lumox® dish is available with a diameter of 50 mm and 35 mm. lumox® dish consists of a transparent polystyrene cover and a polystyrene frame with a transparent base made of gas-permeable, thin (25 µm) lumox® film. The cultivation surface may optionally have hydrophilic or hydrophobic properties.
This means that both adherently growing cells and suspension cells can be cultivated in a lumox® dish. The lumox® dish is certified sterile, non-pyrogenic/endotoxin-free and non-cytotoxic.

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.
All options are certified sterile, non-pyrogenic/endotoxin-free and non-cytotoxic.

Ordering information – lumox® multiwell

Order no	Description	Surface	Growth surface per well [mm²]	Working volume per well [µl]	Packaging pcs./case
94.6000.014	lumox® multiwell, 24 Well		190	500 - 1500	4
94.6110.024	lumox® multiwell, 24 Well		190	500 - 1500	20
94.6000.024	lumox® multiwell, 96 Well		34	25 - 340	4
94.6120.096	lumox® multiwell, 96 Well		34	25 - 340	20
94.6000.034	lumox® multiwell, 384 Well		11	10 - 130	4
94.6130.384	lumox® multiwell, 384 Well		11	10 - 130	20

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x-well Cell culture chambers

The x-well cell culture chambers enable the cultivation and analysis of cells on a slide. In combination with a polystyrene frame, the slides form one- and multiple-chamber vessels. Regardless of whether you are carrying out fluorescence- or light-microscopy analyses of living or fixed cells, individual analyses or test series, our comprehensive x-well product range provides ideal solutions for your applications. All products are certified sterile, non-pyrogenic/endotoxin-free and non-cytotoxic.

- Time efficient histological and fluorescence staining
- Small compartments for cost efficient experiments
- Slides with excellent optical properties
- Cultivation of adherent cells
- High chemical resistance

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 a lower autofluorescence and higher chemical resistance in comparison with polystyrene.

- Low autofluorescence
- Slide in standard format with writing area
- Slide can be detached without leaving any adhesive residues
- Optimal magnification up to 400-fold (40x objective)

x-well Coverglass

The x-well coverglass cell culture chambers have a base thickness of 170 µm and are therefore particularly well suited for high-resolution microscopy. The high chemical resistance enables using a wide range of staining reagents.

- Low autofluorescence
- Slide in the short format without writing space
- Slide not detachable
- Optimal magnification up to 1,000-fold (100x objective)

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 permits the use of most fixatives and dyes.

- No autofluorescence
- Slide in the standard format with writing area
- Slide can be detached with a click without leaving behind any adhesive residues
- Optimal magnification up to 400-fold (40x objective)

x-well lumox® • Detachable

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

- Slide with thin lumox® film (50 µm) in standard format with writing area
- No autofluorescence
- High transparency
- Slide can be detached without leaving any adhesive residues
- Optimal 400-fold magnification (40x lens)

Ordering information – x-well®

Format	PCA	lumox®	Glass	Coverglass	Growth surface [cm²]	Volume [ml]	Packaging blister/box
1-well	94.6140.102	94.6150.101	94.6170.102	94.6190.102	9	4	6/96
2-welll	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

flexiPERM® – Reusable tissue culture insert

flexiPERM® is a reusable silicone insert which subdivides tissue 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.

- flexiPERM® are adhesive, reusable tissue culture chambers made of silicone
- flexiPERM® is hydrophobic and not toxic for tissue and cells
- flexiPERM® cell culture inserts are heat resistant (up to 125°C), cold resistant (down to -20°C) and resistant to almost all laboratory chemicals
- Can be sterilised by autoclaving or 70% ethanol
- flexiPERM® are suitable for DIN microscope slides and tissue culture dishes
- flexiPERM® tissue culture inserts 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

The models 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 which has been subdivided into 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
94.6077.435	flexiPERM® conB	4	1	3.1	2,000 - 3,000	5
94.6077.434	flexiPERM® conA	3	1	1.1	1,000 - 1,500	5
94.6034.067	flexiPERM® disc	5	4	1.8	500 - 1,000	5

SARSTEDT

quadriPERM® – Cell culture dish for parallel analyses

quadriPERM® is a rectangular cell culture dish for a range of applications that stands out for the following benefits:

- **Cell culture dish for parallel analyses**
  quadriPERM® has four compartments of identical size for the parallel cultivation of tissue culture cells under the same conditions. Suspension cells can be cultivated directly in the quadriPERM®. For the cultivation of adherent cells, the x-well products, flexiPERM® or DIN slides can be placed directly into the compartments.

- **Easy handling**
  In quadriPERM®, cells can be easily and quickly supplied with fresh medium. In addition, the outer dimensions of a quadriPERM® dish conform to the ANSI/SLAS (formerly ANSI/SBS) standard so that quadriPERM® dishes, like all Sarstedt TC plates, are ideal for microscopic analysis.

- **Applications**
  Apart from cell cultivation, quadriPERM® is especially suited for the in-situ preparation of chromosomes by cytogenetic analyses (e.g. replication studies). Moreover, cells can be fixed, and histologically, immunocytochemically or immunofluorescently stained. Therefore, quadriPERM® is suited for both parallel analyses and most immunological detection methods.

- **Certified quality**
  quadriPERM® dishes are certified sterile, 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

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miniPERM® bioreactor

The miniPERM® is an easy-to-handle bioreactor which was developed for the cultivation of eukaryotic cells (mammalian, insect and plant cells) in high density and therefore for biomass production and for the production of cell products. The sub-division of the bioreactor into production and nutrient modules and the rotating cultivation allow for the production of highly concentrated cell products in small volumes. Therefore, depending on the cell line, cell densities of more than 107 cells/ml and product concentrations of several mg/ml can be achieved. This means that the miniPERM® bioreactor is a cost-effective and time-saving alternative to using conventional roller bottles and fermentation systems.

Advantages of the miniPERM® bioreactor

- High cell densities
- High product concentrations
- Easy to use
- Multiple harvests
- The production module is available in various sizes

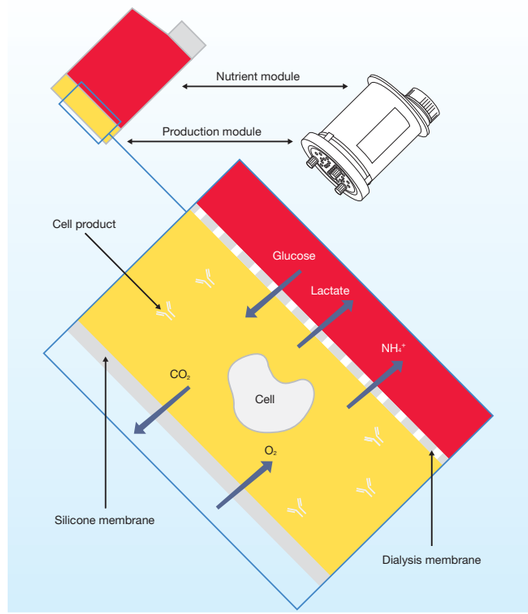
The miniPERM® bioreactor is suitable for a number of applications*, such as:

- Cultivation of hybridoma cells for obtaining antibodies.
- Cultivation of transfected cells for obtaining recombinant proteins or for virus production.
- Biomass production of both eucoryotic and procaryotic cells.

*References:
Belin, V., Rousselle, P., Production of a recombinantly expressed laminin fragment by HEK293-EBNA cells cultured in suspension in a dialysis-based bioreactor, Protein Expression & Purification, 48: 43–48 (2006)
Konstantinov, S. et al., Three-Dimensional Bioreactor Cultures: A Useful Dynamic Model for the Study of Cellular Interactions, Ann. N. Y. Acad. Sci. 1030: 103–115 (2004)
Further references and user reports are available upon request.

The principle

The miniPERM® bioreactor is subdivided into a production module and a nutrient module (two-compartment system) by a dialysis membrane. The dialysis membrane has a cut off size of 12.5 kDa so that neither cells nor secreted cell products can diffuse into the nutrient module. At the same time, the exchange of nutrients and cell metabolites takes place via the dialysis membrane. The gas exchange is effected via a thin, gas-permeable silicone membrane on the outer side of the production module.



miniPERM® production modules

For suspension cells

- miniPERM® classic, with 35 ml cell culture volume, is the ideal production unit for research laboratories.
- miniPERM® HDC50, with 50 ml culture volume, is suitable for the production of larger protein and biomass amounts.

For adherent cells

- miniPERM® SM is suitable for the cultivation of adherent cells due to the integration of two stationary matrices into the production module (240 cm^2 cultivation area).

As soon as the cell product is released, it is supplied into the production module. For the proliferation of biomass, the cells can be harvested from the stationary matrix after opening the production module at the end of the cultivation process.
To complete the range of applications, miniPERM® production modules are available with varying cell cultivation volumes.

The bioreactor and accessories

miniPERM® bioreactors

- miniPERM® sterile:
  The combined production and nutrient module is certified sterile, non-pyrogenic / endotoxin-free and non-cytotoxic, and supplied as a single-use bioreactor.
- miniPERM® reusable:
  The nutrient module is autoclavable and designed for multiple use. The production modules are certified sterile, non-pyrogenic / endotoxin-free and non-cytotoxic, and available individually packed for single use only.

minPERM® start-up support kit
This kit contains all accessories for initial startup of the cultivation, sampling and harvesting.

miniPERM® accessories

The following accessories are available for easy handling of the miniPERM® bioreactor:

- Sterile single-use syringes (2 ml, 50 ml)
- Sterile filling tubes
- Sterile Luer syringe
- Sterile septum ports
- miniPERM® stands
- antiFOAM® (defoaming agent)
- cellPROTECT® (cell protector)

Universal Turning Device

For optimal supply and disposal in the miniPERM® bioreactor, the cells are kept in suspension using continuous rotation. During cultivation, the miniPERM® bioreactor is rolled lying on its longitudinal axis on a Universal Turning Device in a CO_2 incubator at a minimum of 70% relative humidity.
The Universal Turning Device accommodates up to four miniPERM® bioreactors.

SARSTEDT

Ordering information

Order no	Description		Packaging unit/case
94.6001.059	miniPERM® classic	Bioreactor, sterile	12
94.6077.009	miniPERM® classic	Test Kit*, sterile	1
94.6001.055	miniPERM® classic	Production module, sterile	12
94.6077.121	miniPERM® HDC 50	Bioreactor, sterile	12
94.6077.122	miniPERM® HDC 50	Test Kit*, sterile	1
94.6077.017	miniPERM® HDC 50	Production module, sterile	12
94.6077.618	miniPERM® SM	Bioreactor, sterile	12
94.6077.609	miniPERM® SM	Test Kit*, sterile	1
94.6077.616	miniPERM® SM	Production module, sterile	12

**4 bioreactors + start-up support kit (94.6001.094)*

Ordering information - Accessories

Order no	Description		Packaging unit/case
94.6001.153	Nutrient module for miniPERM®, autoclavable.		4
94.6001.054	Stands for miniPERM®		4
94.6001.036	Screw caps for production module, sterile		6
94.6077.037	Screw cap for nutrient module, sterile		16
74.4312	IN plugs, septum port, sterile		100
94.6077.135	Luer syringe needles 25G x 5/8“ (0.5 x 16 mm), sterile		100
94.6077.136	Single use 2 ml Luer Syringe sterile		100
94.6077.137	Single use 50 ml Luer Lock Syringe, sterile		60
94.6077.138	Filling tube 5“, Luer, sterile		100
94.6077.320	antiFOAM®, sterile, 100 ml		1
94.6077.041	cellPROTECT®, sterile, 100 ml		1
94.6001.094	Start-up support kit	Quantity	1
	• Single use 50 ml Luer Lock Syringe, sterile	8	
	• Single use 2 ml Luer Syringe, sterile	20	
	• Filling tube 5“, Luer, sterile	8	
	• Luer syringe needle, 25G x 5/8“, sterile	20	
	• Septum port, sterile	6	
	• Stand for miniPERM®	1	
	• cellPROTECT®, 1 ml, sterile	1	

Ordering information – Universal Turning Device / accessories

Order no	Description	Packaging unit/case
94.6001.061	Universal Turning Device 115/230 V	1
94.6077.360	Adapter for centrifuge Tubes 12x15 ml	1
94.6077.361	Adapter for centrifuge Tubes 5x50 ml	1
94.6077.362	Adapter for centrifuge Tubes 48x1.5 / 2.0 ml	1
94.6001.000	Tray, Rocking Device	1

SARSTEDT

CryoPure storage system

Sarstedt's CryoPure vessels for vital preservation are tested and certified for the protection of the cell material (see also p. 4):

- Sterile
- Non-pyrogenic / endotoxin-free
- Non-cytotoxic
- Non-mutagenic
- IVD CE

For the storage of cell materials and their components at temperatures as low as -196°C, Sarstedt offers a professional storage system with a wide range of highly transparent CryoPure tube products

Versatile design

- CryoPure tubes with **external thread** are available in a volume range of 1.2 ml to 5 ml with a safe externally threaded screw cap to reduce contamination risks. 1
- CryoPure tubes with **internal thread and silicone O-ring** are available with a volume of 2 ml for more compact storage (10 x 10 format). 1

Inspirationally ergonomic

The QuickSeal sealing mechanism permits for the ergonomic and secure opening and closing of both sealing types with just one turn. 2

Exceptional versatility

The combination of 6 different cap colours with 6 different cap insert colours provides up to 36 colourcoding options for visual coding and easy identification of the samples.

Optimum design

- The optimised contour of the interior tube base enables easy removal of complete samples.
- Free-standing design. 3
- The skirted design of the CryoPure tubes allows for user-friendly single-handed operation of the tubes in the CryoRack 40 and most other conventional racks. 4

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Data matrix barcode

The automated tracking, encryption and traceability of biological samples is becoming increasingly important. The two-dimensional data matrix barcode encrypts large amounts of data in a small area and has an integrated error correction code (ECC200). Therefore, the data matrix barcode is especially well suited for the encryption of samples.

Advantages of the data matrix barcode:

- High amount of data can be coded in a very small area
- Very high legibility due to error correction code (ECC200) in the data matrix barcode
- Legibility of the data matrix barcode also possible with partial damage
- No alignment of the code is necessary to read the data (360° legibility)

Advantages of barcoded CryoPure tubes:

Sarstedt offers printed CryoPure tubes with scratch-proof labels even at lowest temperatures. Depending on the vessel size, the customer may be able to help design the printed image:

- Number of digits
- Numerical or alphanumeric
- Restricted possibility for additional symbols

If you are interested, please contact us (see back page).

CryoRack 40/Work Rack

- Accommodates 40 tubes (4 rows of 10 grooves)
- Interlocking connection with tube bases provides easy single-handed operation
- Alphanumeric colour-coding for easy sample identification
- Anti-slip rubber pads

Ordering information – CryoRack 40

Order no	Packaging
93.856.040	1/bag · 10/case

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CryoPure 1.2 ml tubes with external thread

Order no	Screw cap	Nominal volume	Packaging
72.377	white	1.0 ml	50/bag 500/inner box 2,000/case
72.377.002	red	1.0 ml	
72.377.004	yellow	1.0 ml	
72.377.005	green	1.0 ml	
72.377.007	violet	1.0 ml	
72.377.992	Colour mix	1.0 ml	

CryoPure 2.0 ml tubes with external thread

Order no	Screw cap	Nominal volume	Packaging
72.379	white	1.8 ml	50/bag 500/inner box 2,000/case
72.379.002	red	1.8 ml	
72.379.004	yellow	1.8 ml	
72.379.005	green	1.8 ml	
72.379.006	blue	1.8 ml	
72.379.007	violet	1.8 ml	
72.379.992	Colour mix	1.8 ml	

CryoPure 5.0 ml tubes with external thread

Order no	Screw cap	Nominal volume	Packaging
72.383	white	4.5 ml	25/bag 250/inner box 1,000/case
72.383.002	red	4.5 ml	
72.383.004	yellow	4.5 ml	
72.383.005	green	4.5 ml	
72.383.007	violet	4.5 ml	
72.383.992	Colour mix	4.5 ml	

CryoPure 2.0 ml tubes with internal thread and silicone O-ring

Order no	Screw cap	Nominal volume	Packaging
72.380	white	1.6 ml	50/bag 500/inner box 2,000/case
72.380.002	red	1.6 ml	
72.380.004	yellow	1.6 ml	
72.380.005	green	1.6 ml	
72.380.006	blue	1.6 ml	
72.380.007	violet	1.6 ml	
72.380.992	Colour mix	1.6 ml	

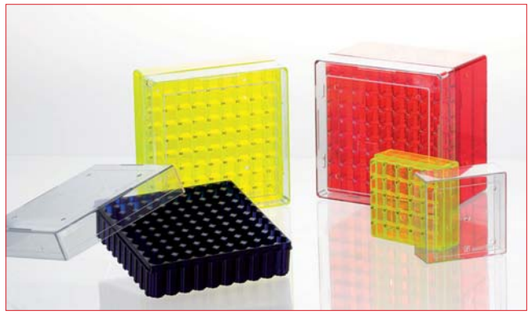
Ordering information – Colour coding inserts for CryoPure tubes

Order no	Colour	Packaging
65.386	white	100/bag · 3,000/case
65.386.002	red	100/bag · 3,000/case
65.386.004	yellow	100/bag · 3,000/case
65.386.005	green	100/bag · 3,000/case
65.386.006	blue	100/bag · 3,000/case
65.386.007	violet	100/bag · 3,000/case
65.386.992	Colour mix	100/bag · 5 colours · 2,500/case

SARSTEDT

Cryo boxes for low-temperature range storage

- High-quality durable polycarbonate storage boxes for a deep-freeze temperature range to -196°C
- Numerical coding for each tube enables quick sample identification
- Optically clear lid and coloured base with large apertures for swift ventilation
- Full range of box options tailored to accommodate standard 1.2/2.0/3.5 and 5.0 ml cryo tubes
- Compartmentalised boxes in multiple formats (5 x 5, 9 x 9, 10 x 10) offer flexible storage options
- Autoclavable at 121°C, 20 min.



Dimensions

Suitable for cryo tubes	1.2 - 2.0 ml	1.2 - 2.0 ml	1.2 - 2.0 ml	3.5 - 5.0 ml
Format	5 x 5	9 x 9	10 x 10	9 x 9
Storage capacity	25	81	100	81
Box size (W x D x H) in mm	75 x 75 x 52	132 x 132 x 53	132 x 132 x 53	132 x 132 x 95
Ideal for tubes with	Internal and external thread		Internal thread	Internal and external thread

Ordering information – Cryo boxes

Packaging	Colour	Order no.			
5/bag · 20/case		93.872.225	93.873.281	93.874.210	93.875.281
5/bag · 20/case		93.872.425	93.873.481	93.874.410	93.875.481
5/bag · 20/case		93.872.625	93.873.681	93.874.610	93.875.681

SARSTEDT

The Filtropur product range is suitable for the filtration of aqueous solutions (e.g. cell culture medium) and includes filtration units for the most wide-ranging volumes. The filter membranes are available with different pore sizes and can therefore be used for a wide range of applications. The Filtropur product range is characterised by its variability, cost efficiency and rapidity:

Variability

Depending on the application, Sarstedt offers products for vacuum filtration (Filtropur V/BT) and pressure filtration (Filtropur L), as well as syringe filters (Filtropur S/S plus). Large filtration areas with or without integrated pre-filters can be used for volumes between 1 ml and 10 l, depending on the application.

Cost efficiency

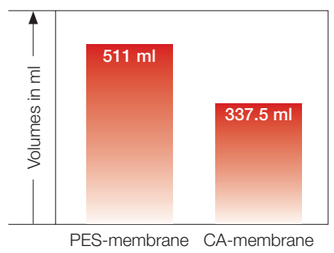
optimum design of the Filtropur products allows for the throughput of large volumes with only one filtration unit, thus considerably reducing the costs for filtration.

Rapidity

Filtropur membranes are particularly suitable for solutions which are difficult to filter. During vacuum and pressure filtration, large filtration areas ensure high flow rates whilst at the same time using a low vacuum or pressure, leading to optimised flow rates and minimising idle time.

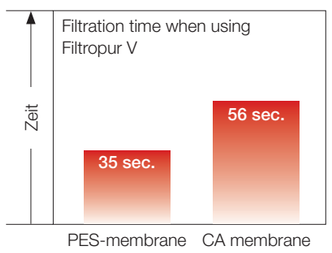
High throughput with PES-membrane

Throughput (ml) of 10% foetal calf serum in Filtropur V 50 with 0.2 µm pore size within 80 seconds.



Time efficiency with PES-membrane

Filtration of 500 ml PBS in Filtropur V 50 with 0.2 µm pore size



SARSTEDT

Filtropur V and Filtropur BT vacuum filtration

Filtropur V and Filtropur BT were mainly developed for applications in the field of cell culture and are equipped with polyethersulfone (PES) membrane filters. These products are therefore ideally suited for cold sterilisation of cell culture media and aqueous protein solutions.

- Filtropur V and Filtropur BT are available with three pore sizes (0.45 µm, 0.22 µm and 0.1 µm).
- The 0.1 µm PES-membrane is used for effective prevention and removal of mycoplasms from solutions.
- Ergonomically shaped, stable, sterile receiver bottles are available for volumes of 250 ml to 1,000 ml.
- Quick product identification via specification of the filter material, the pore size and the lot number on the filtration unit.
- The PES-membrane allows for a high throughput and, at the same time, reduces the filtration time.
- Filtropur V and Filtropur BT are certified sterile, non-pyrogenic/endotoxin-free and non-cytotoxic.

Vacuum filtration units*

Order no	Description	Filtration volume [ml]	Membrane diameter [mm]	Membrane/ pore size	Packaging bag/case
83.1822	Filtropur V 25	250	60	PES/0.45 µm	1/12
83.1822.001	Filtropur V 25	250	60	PES/0.22 µm	1/12
83.1823	Filtropur V 50	500	90	PES/0.45 µm	1/12
83.1823.001	Filtropur V 50	500	90	PES/0.22 µm	1/12
83.1823.004	Filtropur V 50	500	90	PES/0.1 µm	1/12
83.1824	Filtropur V 100	1,000	90	PES/0.45 µm	1/12
83.1824.001	Filtropur V 100	1,000	90	PES/0.22 µm	1/12

**Each filtration unit has a screw cap in sterile packaging for the collection vessel.*

Bottle top filter* for storage vessels, max. 45 mm outer diameter

Order no	Description	Filtration volume [ml]	Membrane diameter [mm]	Membrane/ pore size	Packaging bag/case
83.1822.100	Filtropur BT 25	250	60	PES/0.45 µm	1/12
83.1822.101	Filtropur BT 25	250	60	PES/0.22 µm	1/12
83.1823.100	Filtropur BT 50	500	90	PES/0.45 µm	1/12
83.1823.101	Filtropur BT 50	500	90	PES/0.22 µm	1/12
83.1823.104	Filtropur BT 50	500	90	PES/0.1 µm	1/12

**Special prefilters (83.1825, 83.1825.001) are available for the filtration of solutions that are difficult to filter.*

Receiver bottles for Filtropur

Order no	Description	Filtration volume [ml]	Design	Packaging bag/case
83.1822.003	Receiver bottles for Filtropur BT 25 & BT 50	250	with assembled cap	1/12
83.1823.003		500	with assembled cap	1/12
83.1824.003		1,000	with assembled cap	1/12

Filtropur S, Filtropur S plus and Filtropur L

Filtropur S, Filtropur S plus and Filtropur L are suitable for the filtration of aqueous solutions and are also characterised by the following properties:

- Low protein adsorption and high flow rate thanks to Filtropur membranes
- Low hold up volume
- Sterile, non-pyrogenic/endotoxin-free and non-cytotoxic
- Biocompatibility due to glass fibre (GF) pre-filters 100% free from binding agents, and membranes 100% free from wetting agents

Filtropur S and Filtropur S plus

The syringe filters Filtropur S and Filtropur S plus are often used for sterile filtration of cell culture media, cell culture additives and buffers, as they reliably remove microorganisms and particles from the solutions that need to be filtered. The syringe filters are available with a pore size of 0.2 µm and 0.45 µm.

Filtropur L

The ready-to-use Filtropur L products have a cellulose acetate (CA) membrane with an integrated glass fibre (GF) pre-filter. Filtropur L, when combined with a membrane pump, is suitable for the quick sterile filtration of cell culture media and aqueous solutions with a volume of up to 10 l. Filtropur L filters are optionally available with Luer lock or a tube connector.

Ordering information – Filtropur

Order no	Description	Application	Membrane	Pore size	Packaging bag/case
83.1826	Filtropur S 0.45 syringe filter	ultracleaning/ clear filtration	28	PES / 0.45 µm	1/50, sterile
83.1826.001	Filtropur S 0.2 syringe filter	sterile filtration	28	PES / 0.2 µm	1/50, sterile
83.1826.102	Filtropur S plus 0.2 syringe filter	sterile filtration/ to increase the total filtration volume	28	CA/GF / 0.2 µm	1/50, sterile
83.1827	Filtropur L 0.2 S* Tube connector	sterile filtration	64	CA/GF / 0.2 µm	1/50, sterile
83.1827.001	Filtropur L 0.2 LS* Luer-Lock connector	sterile filtration	64	CA/GF / 0.2 µm	1/50, sterile

**For pressure filtration*

Ordering information – Accessories

Order no.	Description	Packaging
83.1850	Membrane pump with tube set, stainless steel sinker and tube adapter for Filtropur L	1/case

Serological pipettes

- Manufactured from transparent polystyrene
- Larger pipetting volume due to negative scaling
- Variable method of working due to counter scaling
- Optimised filter end piece for universal fit in most common pipetting aids
- Guide ribs on the filter end piece of the 25 ml pipettes offer a stable fit in the retaining adapter of pipetting aids
- Simple volume identification using international colour code on each individual blister pack
- Easy to open, anti-static packaging
- Available in individual sterile* packaging or in a bag of 25 units

** Individually wrapped sterile pipettes are certified, non-pyrogenic-/endotoxin-free and non-cytotoxic.*

Serological pipettes 1 ml, 2 ml, 5 ml, 10 ml, 25 ml, 50 ml

Order no	Total volume/ graduation		Design	Colour code	Packaging unit/case
86.1251.001	1 ml	1/100 ml	plugged, ind. wrapped, sterile		1/1,000
86.1251.025	1 ml	1/100 ml	plugged, sterile, in 25 units		25/1,000
86.1252.001	2 ml	1/100 ml	plugged, ind. wrapped sterile		1/1,000
86.1252.025	2 ml	1/100 ml	plugged, sterile, in 25 units		25/1,000
86.1253.001	5 ml	1/10 ml	plugged, ind. wrapped, sterile		1/500
86.1253.025	5 ml	1/10 ml	plugged, sterile, in 25 units		25/500
86.1254.001	10 ml	1/10 ml	plugged, ind. wrapped, sterile		1/500
86.1254.025	10 ml	1/10 ml	plugged, sterile, in 25 units		25/500
86.1685.001	25 ml	2/10 ml	plugged, ind. wrapped, sterile		1/200
86.1685.020	25 ml	2/10 ml	plugged, sterile, in 20 units		20/200
86.1689.001	50 ml	1/2 ml	plugged, ind. wrapped, sterile		1/100

Aspiration pipette, polystyrene

- For the aspiration of liquids using a vacuum pump
- Sterile, individually wrapped in paper/plastic peel packaging
- Non-pyrogenic/endotoxin-free and non-cytotoxic
- No print, no cotton plugs

Ordering information – Aspiration pipette

Order no	Total volume/ graduation	Design	Packaging unit/case
86.1252.011	2 ml/without graduation	without plug and print, ind. wrapped, sterile	1/1,000

Automatic-Sarpette®

The Automatic-Sarpette® is an ergonomically shaped pipettor for easy, fatigue-free pipetting. It is designed with an environmentally friendly NiMH battery. Two dispensing speeds and gravity drainage can be adjusted for dispensing. The pipette holder is easy to remove and autoclavable. The charger, two replacement filters and a practical table stand which allows for stacking with the pipette inserted, are included with the Automatic-Sarpette®.

- New, ergonomically shaped model
- Even easier, fatigue-free work
- Battery powered with modern nickel metal hydride battery
- Two dispensing speeds and gravity drainage can be adjusted

M-Sarpette®

- The M-Sarpette® is a manual bulb pipettor for easy use without a power cord and battery.
- An ergonomically shaped thumb lever controls the suction and discharge of liquid; the discharge button is used for complete drainage.
- No batteries required.
- Considerable weight advantage in comparison with automatic pipettors.
- Reliable and controlled pipetting via special valve system.
- Integrated hydrophobic filter as liquid barrier.
- Compatible with pipettes of 1-100 ml.

Ordering information – Automatic-, M-Sarpette® and accessories

Order no	Description	Packaging unit/case
90.189.100	Automatic-Sarpette® incl. EU charger and table-top stand	1
92.189.140	Wall holder for Automatic-Sarpette®	1
90.1427	M-Sarpette®	1
92.189.120	Replacement membrane filter for Automatic-Sarpette®, 0,45 µm	5
92.189.121	Replacement membrane filter for Automatic-Sarpette®, 0,2 µm	5
92.1417.001	Replacement filter M-Sarpette®, 0,45 µm	5
92.1417.002	Replacement silicone adapter	1

Conical tubes, 15 ml and 50 ml volume, sterile

- Extremely clear polypropylene (PP) allows for unrestricted inspection of the sample material
- Printed graduation and writing space
- Graduation and writing space resistant to ethanol and methanol
- Can be centrifuged up to 15,500 x g*
- Certified sterile, non-pyrogenic/endotoxin-free and non-cytotoxic

Order no	Volume [ml]	Length [mm]	Diameter [mm]	Version	Packaging bag/case
62.559.001	50	115	28	with skirted base, red cap assembled, assembled	25/300
62.547.004	50	114	28	red cap assembled, assembled	25/styrofoam rack/300
62.547.254	50	114	28	red cap assembled, assembled	25/300
62.554.002	15	120	17	red cap assembled, assembled	50/styrofoam rack/500
62.554.502	15	120	17	red cap assembled, assembled	50/500

** For liquid density of 1.06 g/ml and centrifugal inserts adapted to the conical tube base, tested at 20°C, for 30 minutes.*

Tissue culture tubes, clear PS, sterile

The pretreated polystyrene tubes with screw cap are particularly suitable for:

- Cultivation of small cell populations
- Cultivation of suspension or monolayer cultures
- The screw cap allows for continuous aspiration and gas-tight sealing of the cells

Order no	Volume [ml]	Length [mm]	Diameter [mm]	Version	Packaging bag/case
83.9923.945	15	125	16	red cap, TC-treated	5/1,000
83.9923.943	12	99	16	red cap, TC-treated	5/1,000
83.9923.929	10	97	16	red cap with skirted conical base, TC-treated	5/1,000

Tubes with two-position closure, sterile

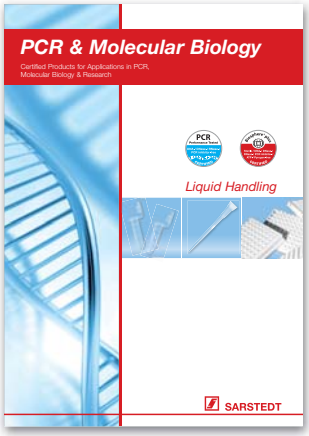
The ventilation plug has a two-position closure. The first position (plug lightly fitted) enables ventilation of the inside of the tube. When securely pressed down, the closure is in the plug tight position, sealing the tube.

Order no	Volume	Length	Diameter	Version	Packaging bag/case
55.526.006 PP	5 ml	75 mm	12 mm	without print	25/1,000
55.476.013 PS	5 ml	75 mm	12 mm	without print	25/1,000
62.526.028 PP	5 ml	75 mm	12 mm	printed graduation	ind. wrapped, sterile • 500/case
62.476.028 PS	5 ml	75 mm	12 mm	printed graduation	ind. wrapped, sterile • 500/case
62.515.006 PP	13 ml	100 mm	16 mm	printed graduation	25/500
62.515.028 PP	13 ml	100 mm	16 mm	printed graduation	ind. wrapped, sterile • 500/case

For further information on our tube range refer to our "Tube Finder" at www.sarstedt.com.

If you have any questions, we'll be happy to help!

Visit our website: www.sarstedt.com



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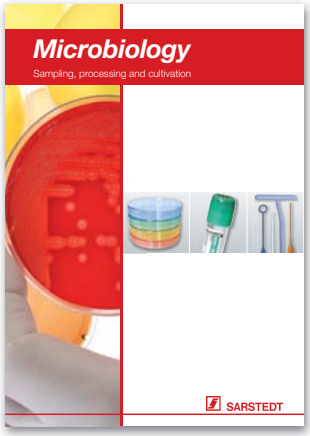

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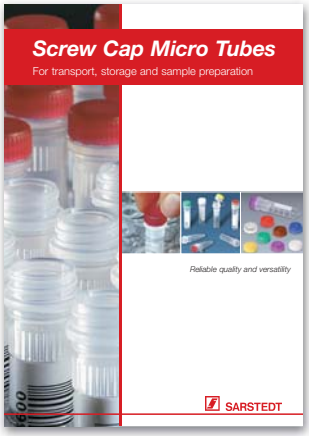

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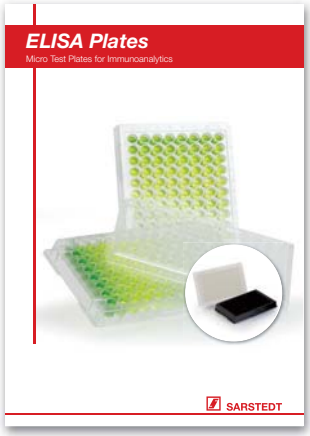

Order No.: 20.681

Order No.: 20.632

Order No.: 20.670

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