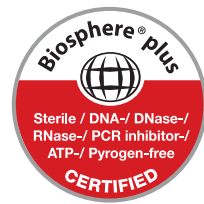


Micro tubes

The versatile solution



SARSTEDT

Micro tubes

It is impossible to imagine a laboratory routine these days without the small, tapered plastic tubes with a snap-lid – the micro tubes. Quick to open and leak-tight when closed, they are used in a myriad of applications. They are essential components of scientific investigations and diagnostic tests or in the storage and filling of reagents. They are as resistant to heat and subzero temperatures as they are to chemicals and mechanical stress.

With over 55 years of experience in plastics technology, Sarstedt has developed and perfected the ideal micro tubes for use in a volume range from 0.5 to 5 millilitres. Precise, durable and made from premium polypropylene, they are the optimal laboratory companions.

We present a brief introduction to our range of micro tubes and related lab accessories on the following pages in order to help you easily choose the right tubes.

Your Sarstedt Team



Guaranteed reliability and reproducibility

Cleanroom conditions, skilled personnel wearing protective clothing, and automated production processes are the prerequisites for the certified Sarstedt 'PCR Performance Tested' and 'Biosphere® plus' quality standards.

Since 1995, we have provided our customers with product purity certifications tailored to their applications to ensure maximum reproducibility in their analyses. Our certification standards are continuously adjusted so that we can offer the user the required level of purity in their routine work at all times.



PCR performance tested quality · The Sarstedt quality and purity standard

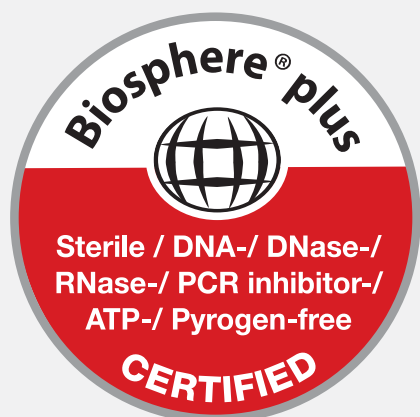
The 'PCR Performance Tested' certification is tailored to the demands and requirements of work with nucleic acids (e.g. qPCR, PCR, purification and storage). This quality grade allows customers to use Sarstedt disposables with confidence, directly in nucleic acid analysis.

PCR Performance Tested products meet the following purity criteria, which are certified by an independent laboratory:

- ✓ DNA-free
- ✓ DNase- and RNase-free
- ✓ PCR inhibitor-free

We guarantee that the following limits are not exceeded:

**Human DNA <0.5 pg/μl · Bacterial DNA <0.02 pg/μl · DNase <1x10⁻⁵ U/μl
RNase <1x10⁻⁹ Kunitz units/μl**



Biosphere® plus quality · Highest purity

Scientific analysis methods have become continuously refined to the point where even individual molecules can now be identified. As sensitivity increases, disposables are required to meet significantly more exacting requirements so that users can be certain that even the smallest contamination will be reliably excluded.

The Biosphere® plus quality constitutes a purity standard that enables the utmost protection against any possible contamination.

In addition to our high purity production conditions, all Biosphere® plus certified products undergo a validated decontamination process. The limits are thus significantly lower than those of the 'PCR Performance Tested' quality. Biosphere® plus items are also free from ATP and pyrogens/endotoxins, and are sterile in accordance with ISO 11135.

Biosphere® plus items fulfil the following purity criteria, which are certified by an independent laboratory:

- ✓ Sterile
- ✓ DNA-free
- ✓ DNase- and RNase-free
- ✓ PCR inhibitor-free
- ✓ ATP-free
- ✓ Pyrogen-free/endotoxin-free

We guarantee that the following limits are not exceeded:

**Human DNA <5.0 fg/μl · Bacterial DNA <0.2 fg/μl · DNase <5x10⁻⁷ U/μl
RNase <5x10⁻¹¹ Kunitz-units/μl · ATP <1x10⁻¹² mmol/μl · pyrogens <0.002 EU/ml
Sterility validated according to ISO 11135**

Micro tubes – small tubes that are big on details

Wide lid connection – easy closing

The specially developed, reinforced, extra wide lid hinge makes it easier to close the micro tubes. The lid can be guided precisely and securely closed even using just one hand.



Durable label fields – secure labelling

Slightly rough, frosted fields on the lid allow for long-lasting labelling of the samples. All micro tubes with volumes of 1.5 and 2.0 ml also have frosted spaces on the side for additional labelling.



Clear graduation – quick volume estimations

Easy estimation of the sample volume means additional certainty. Clear, frosted graduations on the 1.5 ml and 2.0 ml micro tubes make it easy to estimate the fill level of the sample, even with dark or cloudy liquids.



Coloured options – individual coding

Micro tubes in different colours make it easier to reliably identify samples or stored reagents. Colour coding reduces the risk of confusing samples and increases efficiency in the lab.



Micro tubes – quality and diversity

As an important material in day-to-day lab work, micro tubes have to meet the highest demands of the users. Sarstedt micro tubes feature the following outstanding characteristics:

- Easy handling – the optimised design makes it easier to open and close the tubes and facilitates efficient handling in any application
- Chemical-resistant – the processed materials are resistant to a wide range of the most commonly used solvents, acids and bases
- Temperature-resistant – polypropylene micro tubes can be autoclaved at 121°C and withstand temperatures as low as -80°C
- Transparent – highly polished tools and premium raw materials guarantee that you will always be able to see your sample inside the tube
- Durable – the combination of design and materials enables the micro tubes to be centrifuged up to 20,000 × g, and some variants can even be centrifuged up to 30,000 × g

Sarstedt micro tubes are as diverse as the applications for which they are designed:

- 0.5 ml, 1.5 ml, 2.0 ml or the intermediate 5 ml – four tube volumes that are tailor-made for any application
- Biosphere® plus, PCR Performance Tested or standard quality – three purity grades for every requirement
- SafeSeal, standard or easy-fit caps – three tube and cap designs for secure handling
- Low binding, coloured or transparent – three material variants for protein or DNA analytics, sensitive applications or automated processing



Low Binding micro tubes – minimal sample loss

As the trend towards decreasing volumes continues, it is increasingly important to minimise any interactions between the analytes and the tubes used. Sarstedt has therefore developed micro tubes and screw cap micro tubes that ensure a maximum recovery rate to meet the requirements of protein and DNA analytics. Minimising sample loss – especially for costly and valuable reagents – is essential to save costs, achieve accurate analysis results, and ensure secure storage over a long period of time. Special high-quality plastics are used for Sarstedt low binding vessels. A repellent coating, for example with silicones, which could falsify the analyses is not necessary.

Product benefits of the low binding micro tubes at a glance:

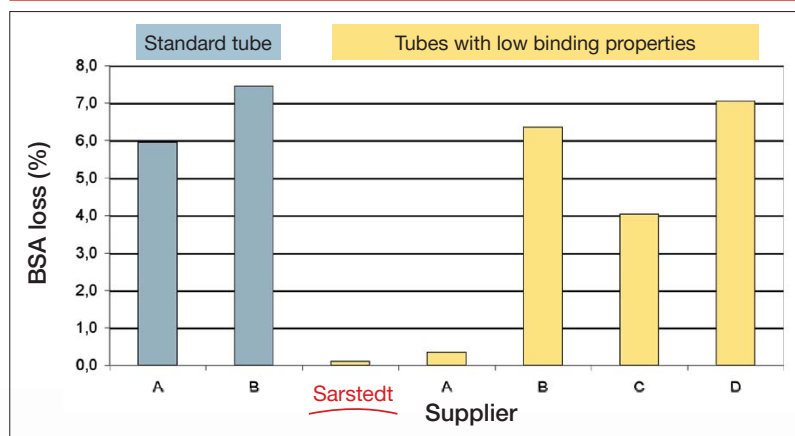
- Available in three sizes – 0.5 ml, 1.5 ml and 2.0 ml
- Durable – Low protein binding tubes can be centrifuged up to $20,000 \times g^*$, low DNA binding tubes can be centrifuged up to $30,000 \times g^*$ (2 ml up to $25,000 \times g^*$)
- Certified PCR Performance Tested quality – DNA-free, DNase/RNase-free and free from PCR inhibitors
- Convenient small pack sizes – 50 tubes in a resealable bag to reduce risk of contamination

*Filled with demineralised water (low surface tension) up to nominal volume, at 20°C for 90 minutes in a fixed-angle rotor.

Low protein binding – minimal protein loss

Low protein binding micro tubes are particularly suitable for the storage, filling and analysis of antibodies, enzymes and other valuable substances both in the field of proteomics and in many other routine applications. The low protein-binding to the vessel wall ensures maximum recovery, improved analysis and clearer results.

Low protein binding – Comparative representation of mean BSA loss:



Test performance:

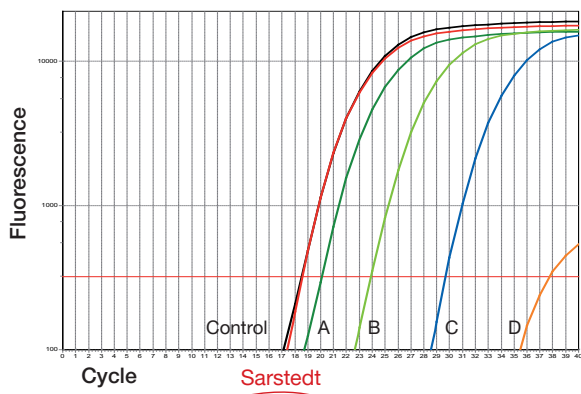
10 test tubes each from various suppliers were filled with an aqueous solution of BSA in a concentration of 10 µg/ml in water and stored at 4°C. After incubation for 24h the BSA solution was removed, and the concentration was determined via a Bradford Assay (Zor, T. and Selinger, Z. 1996, *Anal. Biochem.* 236, p. 302-308).

The percentage loss calculation was based on the average value established for the 10 tested tubes.

DNA Low Binding – minimal DNA loss

DNA Low Binding micro tubes are suitable for all applications involving DNA. For example, they can be used for the analysis of plasmids, oligonucleotides or cell extracts. They allow for maximum DNA recovery even when working with extremely small volumes.

DNA Low Binding – Comparative representation of DNA loss:



Test procedure:

10 test tubes each from various suppliers were filled with 100 µl of a plasmid-DNA solution (concentration: 10⁵/µl) and shaken at 37°C. After the incubation time of 3 h the DNA content was determined via real-time PCR.

One of the 10 test series is shown as an example in this diagram.

- Control
- Sarstedt
- Supplier A
- Supplier B
- Supplier C
- Supplier D

Ordering information – Low binding micro tubes

Order no.	Low Binding	Volume	Packaging bag/inner box/case
72.704.600	Protein	0.5 ml	50/300/1,200
72.704.700	DNA	0.5 ml	50/300/1,200
72.706.600	Protein	1.5 ml	50/200/800
72.706.700	DNA	1.5 ml	50/200/800
72.695.600	Protein	2.0 ml	50/200/800
72.695.700	DNA	2.0 ml	50/200/800













SafeSeal – optimal sealing properties











SafeSeal micro tubes are especially suitable for use under thermal or mechanical stress. The lid design with a molded retaining cam allows for reliable sealing even at high centrifugation forces, or when mixing or heating samples. The SafeSeal micro tubes offer additional security when handling especially sensitive reagents, detergents such as SDS, or volatile substances.

- Special lid design – secure sealing even under thermal and mechanical stress
- Durable – 2.0 ml micro tubes can be centrifuged up to 25,000 × g*; 0.5 and 1.5 ml micro tubes can be centrifuged up to 30,000 × g* without the lids opening unexpectedly
- Certified quality – three purity grades to meet all requirements

Ordering information – 0.5 ml SafeSeal micro tubes

Order no.	Purity grade	Colour	Packaging bag/inner box/case
72.704.200		transparent 	50/250/500
72.704.400		transparent 	250/500/2,000
72.704		transparent 	500/500/2,000
72.704.001		brown 	500/500/2,000
72.704.002		red 	500/500/2,000
72.704.004		yellow 	500/500/2,000
72.704.005		green 	500/500/2,000
72.704.006		blue 	500/500/2,000

Ordering information – 1.5 ml SafeSeal micro tubes

Order no.	Purity grade	Colour	Packaging bag/inner box/case
72.706.200		transparent 	50/250/500
72.706.400		transparent 	250/1,000/2,000
72.706		transparent 	250/1,000/2,000
72.706.001		brown 	250/1,000/2,000
72.706.002		red 	250/1,000/2,000
72.706.004		yellow 	250/1,000/2,000
72.706.005		green 	250/1,000/2,000
72.706.006		blue 	250/1,000/2,000

Ordering information – 2.0 ml SafeSeal micro tubes

Order no.	Purity grade	Colour	Packaging bag/inner box/case
72.695.200		transparent 	50/250/500
72.695.400		transparent 	250/1,000/2,000
72.695.500		transparent 	250/1,000/2,000
72.695.001		brown 	250/1,000/2,000
72.695.002		red 	250/1,000/2,000
72.695.004		yellow 	250/1,000/2,000
72.695.005		green 	250/1,000/2,000
72.695.006		blue 	250/1,000/2,000
72.695.007		violet 	250/1,000/2,000







*Filled with demineralised water (low surface tension) up to nominal volume, at 20°C for 90 minutes in a fixed-angle rotor.

SafeSeal – optimal sealing properties

Individually blister-packed SafeSeal micro tubes

Highly sensitive applications such as those in the fields of analytics, diagnostics and development call for the highest degree of purity for all consumables used. Individually blister-packed Biosphere® plus SafeSeal micro tubes are the ideal choice for such high demands. The small packages make it easier to quickly remove the tubes from the case and allows for space-saving storage.

Ordering information - Individually blister-packed SafeSeal micro tubes

Volume	Order no.	Purity grade	Colour	Packaging bag/inner box / case
0.5 ml	72.704.201*		transparent 	1/50/100
1.5 ml	72.706.201		transparent 	1/60/120
2.0 ml	72.695.201		transparent 	1/60/120

*Available on request.


5 ml micro tubes - Reliable handling of filling volumes between 2 and 5 ml

Routine applications in the lab like dilution series, cell breakdown or sample backup frequently require filling volumes above 2 ml. Due to their slender design or screw caps, tubes with a larger volume are sometimes not ideally suited for these purposes. The new Sarstedt micro tubes combine the advantages of the SafeSeal micro tubes and 5 ml screw cap tubes in a single product. Easy to open with just one hand thanks to the ergonomic design, the snap-on lids with lip seal and retaining cams provide secure sealing characteristics even under thermal strain. The wide hinge enables easy and precise closure, and cap mix-ups associated with screw caps are eliminated. Certified DNA-, DNase-, RNase- and PCR inhibitor-free, the 5 ml micro tubes in PCR Performance Tested quality provide particular purity in nucleic acid analytics and molecular biology.

Advantages of the 5 ml micro tube at a glance:

- Robust polypropylene – centrifugation to 20,000 x g, autoclavable
- Low height – minimises contamination risk from pipette cone contact
- Compact size – space-saving backup storage of samples, media or cultures

Ordering information – 5 ml micro tubes

Order no.	Purity grade	Description	Packaging bag / case
72.701		5 ml micro tubes	100/200
72.701.400		5 ml micro tubes, PCR Performance Tested	100/200



Standard micro tubes – outstanding all-round performance






Sarstedt micro tubes in standard quality are the optimal day-to-day companions in any lab. Made of durable polypropylene and easy to handle, they are ideal for any routine application.

- Durable standard quality – all micro tubes can be safely centrifuged at 20,000 × g*
- Sophisticated design – easy to open, securely sealed when closed
- Larger packaging units – economical storage and backup








Ordering information – 0.5 ml micro tubes

Order no.	Colour	Packaging bag / case
72.699	transparent 	1,000/5,000
72.699.001	red 	500/5,000
72.699.002	yellow 	500/5,000
72.699.004	green 	500/5,000
72.699.003	blue 	500/5,000
72.699.005	violet 	500/5,000

Ordering information – 1.5 ml micro tubes

Order no.	Colour	Packaging bag / case
72.690.001	transparent 	500/5,000
72.690.004	brown 	500/5,000
72.690.477	red 	500/5,000
72.690.478	yellow 	500/5,000
72.690.476	green 	500/5,000
72.690.475	blue 	500/5,000
72.690.007	violet 	500/5,000

Ordering information – 2.0 ml micro tubes

Order no.	Colour	Packaging bag / case
72.691	transparent 	500/5,000
72.691.001	brown 	500/5,000
72.691.002	red 	500/5,000
72.691.004	yellow 	500/5,000
72.691.005	green 	500/5,000
72.691.006	blue 	500/5,000
72.691.007	violet 	500/5,000

*Filled with demineralised water (low surface tension) up to nominal volume, at 20°C for 90 minutes in a fixed-angle rotor.

Micro tubes for special applications

0.5 ml micro tube with ventilation aperture

Micro tubes with small apertures in the lid allow for ventilation and pressure balance between the tube and its environment, without having to open the lid. This prevents the lid from popping open even at high gas pressures or excessive heating, and makes it easier to open when there is low pressure in the tube.

Ordering information – Micro tube with ventilation aperture

Volume	Order no.	Cap	Packaging bag / case
0.5 ml	72.698	PP with ventilation aperture	1,000/5,000



Ordering information – 1.5 ml EASY CAP micro tubes

EASY CAP micro tubes were specially developed for routine applications where an easy-fit cap and large pierceable lid membrane are particularly important. The snap-lid can be perforated, for example in order to extract a sample from the tube. The especially clear polypropylene allows for automated fill-level control and easy sample inspection. The large labelling surface on the lid simplifies labelling.

Ordering information – EASY CAP micro tubes

Volume	Order no.	Cap	Packaging bag / case
1.5 ml	72.690.550	PP, „EASY CAP“	500/5,000



Micro tubes with loop soft caps

Easy-fit, loop soft caps are suitable for applications where the micro tubes are frequently opened and closed. Since a low amount of force is required to open and close the tubes, there is less stress on the fingers and hands. The colour coding allows for samples to be differentiated more quickly.

Ordering information – PP micro tubes, with loop LD-PE soft cap

Order no.		Cap colour	Packaging bag / case
1.5 ml	2.0 ml		
72.688	72.689	transparent 	500/5,000
72.688.001	72.689.001	blue 	500/5,000
72.688.002	72.689.002	green 	500/5,000
72.688.003	72.689.003	red 	500/5,000
72.688.004	72.689.004	yellow 	500/5,000
72.688.005	72.689.006	violet 	500/5,000



Micro tubes without caps

For special applications such as cleaning or aliquoting, micro tubes without attached caps are a practical solution. The lack of labeling field and graduations means that samples can be seen easily. The surface offers space for adhesive labels. Separate push-caps are available to close the tubes.

Ordering information – PP micro tubes without caps

Volume	Order no.	Skirted base	Packaging bag/case
0.5 ml	72.698.200	no	500/5,000
1.5 ml	72.696	no	500/10,000
2.0 ml	72.708	no	500/5,000
2.0 ml	72.709	yes	500/5,000



Separate caps for 1.5 ml and 2.0 ml micro tubes

Separate LD-PE caps are especially suitable for automated closing or storage of samples in micro tubes without an attached cap. The flat caps allow for space-saving storage, while the raised edge of the tall caps makes it easier to open and close the tubes. The soft caps with movable retaining loop for attachment are a flexible alternative when it is crucial not to confuse the lids.

Ordering information – LD-PE caps

Cap type	Order no.	Packaging bag/case
Flat push cap	65.697	1,000/10,000
Tall push cap	65.723	1,000/10,000
Soft cap with retaining loop	65.109	1,000/10,000



MC 6 centrifuge

With a footprint of less than 25 cm² and a speed of up to 6,000 revolutions per minute (rpm), the MC 6 bench centrifuge is ideally suited for fast centrifugation or microfiltration in up to six micro tubes. The supplied adapter for PCR tubes and the strip rotor for up to sixteen 0.2 ml PCR tubes make it suitable for all applications within a volume range of 0.2 to 2 ml.

Ordering information – MC 6 centrifuge

Order no.	Description	Accessories included
90.186.100	MC 6 centrifuge, 230 V	Rotor, strip rotor, 2 × 6 adapters for 0.2 ml and 0.5 ml PCR and micro tubes

Felt marker

Waterproof felt markers in four different colours allow for clear and reliable labelling of micro tubes and other consumables and containers in the lab. The alcohol-resistant felt marker is especially suitable for applications where alcohols, e.g. for disinfection or sample processing, are used.

Ordering information – Felt marker

Order no.	Colour	Property	Packaging
95.953	blue	permanent, waterproof	10/case
95.954	black	permanent, waterproof	10/case
95.955	green	permanent, waterproof	10/case
95.956	red	permanent, waterproof	10/case
95.950	black	Permanent, alcohol-resistant	10/case



Polycarbonate racks

The rack system is made of durable crystal-clear, shatter-proof polycarbonate and offers space for up to 48 tubes. Available in three different capacity formats, they are ideal for processing and storing all micro tubes. They can be disassembled, cleaned and easily autoclaved with just a few hand movements.

Ordering information – Polycarbonate racks

Order no.	for micro tubes	Capacity/format	Length	Width	Height
93.870	2.0 ml	18/3 x 6	137	70	40
93.826	1.5 ml	18/3 x 6	137	70	40
93.849.100	1.5 ml and 2.0 ml	20/2 x 10	257	62	40
93.48.011	0.5 ml	48/4 x 12	257	90	40
93.837	1.5 ml	48/4 x 12	257	90	40
93.868	2.0 ml	48/4 x 12	257	90	40
93.850.001	5 ml	18/3 x 6	137	70	40
93.1431.001	5 ml	48/4 x 12	257	90	40

IsoFreeze® Rack for 1.5 and 2.0 ml screw cap micro tubes

Many sample preparations require consistent and reliable sample cooling. For temperature-sensitive applications, such as the analysis of enzymes, PCRs or cell-based assays, but also for the careful thawing of samples and the stopping of reactions, Sarstedt offers the IsoFreeze® Rack, a pipetting and storage station with reliable temperature control. After freezing, the rack keeps the sample temperature at 4°C for up to 3.5 hours with the lid in place. If the IsoFreeze® Rack is heated above 7°C, the colour noticeably changes from purple to pink. An additional advantage of the IsoFreeze® Rack is a minimised contamination risk, since the samples no longer have to be stored on ice.

Ordering information – IsoFreeze® Rack for 1.5 and 2.0 ml micro tubes

Order no.	Capacity/format	Length	Width	Height
95.983	24/4 x 6	146	105	70



Storage boxes

Plastic storage boxes

For the convenient storage of micro tubes with a volume of 1.5 ml and 2.0 ml, Sarstedt offers high quality polypropylene storage boxes which are suitable for long-term storage down to -90°C.

Advantages of plastic storage boxes:

- Hinged or slip-on lids – suitable handling for all types of storage
- Alphanumeric marking in the box – easy sample identification
- Autoclavable – simple hygienic cleaning (121°C, 20 min.)
- Cold resistant – reliable storage down to -90°C
- Six colours – quick identification of the desired storage box

Slip-on lid boxes

- dimensions: 130 mm x 130 mm x 45 mm (LxWxH)
- 81 tube storage capacity
- grid format 9 x 9

Hinged-lid boxes

- dimensions: 150 mm x 140 mm x 55 mm (LxWxH)
- 100 tube storage capacity
- grid format 10 x 10

Ordering information – Plastic storage boxes

Colour	Slip-on lid	Hinged lid	Packaging unit / bag / case
transparent	93.876	93.877	5/20
pink	93.876.281	93.877.210	5/20
orange	93.876.381	93.877.310	5/20
yellow	93.876.481	93.877.410	5/20
green	93.876.581	93.877.510	5/20
blue	93.876.681	93.877.610	5/20



Storage boxes

Cardboard storage boxes

Sarstedt cardboard storage boxes enable the safe and light-protected storage of micro tubes of all sizes. Their grid inserts with storage space for 100 or 81 vessels and the large inscribable lid allow for neat organisation of the samples. Storage at -80°C is easily possible, even over a long period, due to the resistance of the moisture-repellent, sealed, stable and cold-resistant material.

Ordering information – Case storage boxes

Order no.	Capacity/format	Suitable for	Length	Width	Height
95.64.923	100/10 x 10	0.5 ml	135	135	34
95.64.997	100/10 x 10	1.5/2.0 ml	135	135	45
95.64.981	81/9 x 9	1.5/2.0 ml	135	135	45

Styrofoam containers

Due to their insulating properties, Styrofoam containers are particularly suitable for storing temperature-sensitive reagents and samples. The small container in particular, with a storage capacity of 20 micro tubes, can also be used as a practical rack on the laboratory bench.

Ordering information – Styrofoam container for 1.5 ml and 2.0 ml micro tubes

Order no.	Capacity/format	Lid	Length	Width	Height
95.1439	100/5 x 20	without	390	80	50
95.64.249	100/5 x 20	✓	340	100	65
95.64.253	20/5 x 4	✓	100	85	65



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

Visit our website: www.sarstedt.com



Brochure 362



Brochure 471



Brochure 537



Brochure 215



Brochure 683



Brochure 681



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SARSTEDT AG & Co. KG
P.O. Box 12 20
D-51582 Nümbrecht
Phone +49 2293 305-0
Fax +49 2293 305-3992
export@sarstedt.com
www.sarstedt.com