Стеклянные капилляры

Описание

По вопросам продаж и поддержки обращайтесь:

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Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
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Улан-Удэ (3012)59-97-51
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Череповец (8202)49-02-64
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Ярославль (4852)69-52-93

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Overview of all capillary profiles: Variety in perfection

In addition to the standard geometry of a simple, round cross-section with various wall thicknesses, special geometries that include flat, square and triangular capillaries are also available. Here, you will find a detailed overview of a wide variety of capillary profiles that we have already created for our customers – everything from the simple, round tube to multiple bundled multi-channel capillaries.
Can’t find what you’re looking for? Talk to us today!

Materials

We use a wide variety of glass types when manufacturing our capillaries. This glass is sourced from both leading glass manufacturers and smaller suppliers of specialist glass, both of whom can guarantee a high standard of product quality with their meticulous manufacturing processes. For several

applications, we use glass from specialist suppliers who are able to produce the tube glass themselves in small quantities and on a laboratory scale.
We use the following glass types, among others:

- Soda-lime glass (AR, I860, PH360 etc.)
- Borosilicate glass (DURAN©, PYREX©, SIMAX© etc.)
- Neutral glass (FIOLAX© and DUROBAX©)
- Aluminum-silicate glass (Schott 8252/8253)
- Quartz glass (naturally melted and synthetically produced quartz glass, such as F300 Heraeus)
- Lead glass (lead content max. 28%)
- Sealing glass for various metals such as Kovar, molybdenum, steel, silver, platinum, palladium
- Special glass such as UV glass or radiographic glass

Dimensions

We manufacture capillaries with an outer diameter of between 0.05 and 10 mm and with a wide variety of wall thicknesses and inner diameters. For small diameters, wall thicknesses of up to 10 µm (0.01 mm) are possible. In order to guarantee high-precision workmanship (even for micro values), our smallest inner diameter is 4–5 µm and the wall thicknesses are 10–20 µm. Our standard production lengths are 1060 mm and 1500 mm, however flexible production

processes allow for the manufacture of customer-specific lengths and cuts within a range of 1–3000 mm. With small capillaries, which have a diameter of up to approx. 0.25 mm, lengths greater than 3000 mm are even possible.

Sectors & Areas of application

Our glass capillaries are used in a wide variety of sectors and applications. Their presence is not always obvious, for example when used as micropipettes or sample tubes in NMR measuring technology. Our capillaries are often installed deep inside electronic components or as non-recoverable parts in forming processes.

Important areas of application:

- Analytics, measurement technology
- Chemistry and pharmacology
- Physiology and cell biology
- Medicine and in the laboratory
- Automotive sector, aerospace
- Electrical engineering and sensor technology
- Telecommunications and data transfer technology
- Display and lighting technology

View the capillary cross-sections here

Simple | round

Simple | round | with filament

Theta profiles

Flat capillaries

Oval capillaries

Jagged profiles

Triangular profiles

Twofold | round

Triple bundling

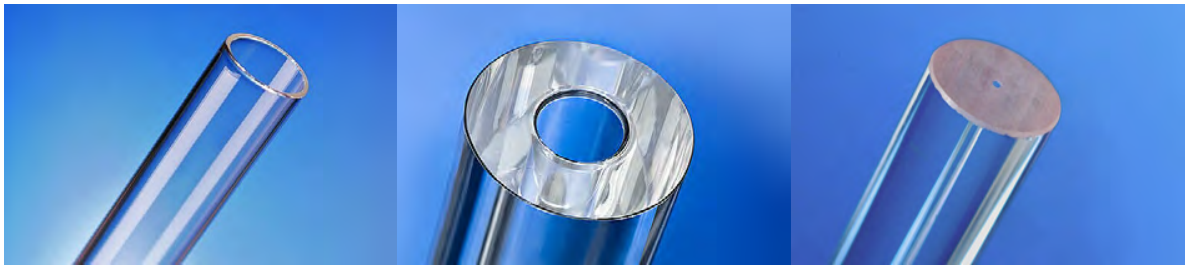
Quadruple bundling

Multiple bundling

Multi-capillaries

Simple capillaries

The simple, round capillaries have standard geometries and a variety of wall thicknesses. Here, you will find an overview of our standard products. We can also accommodate any specific size requirements, get in touch and we'll be happy to discuss your options further.



From extremely thin- to extremely thick-walled capillaries

The walls of our ultra-thin-walled capillaries are extremely thin in relation to the capillary diameter, so thin that they can be mechanically deformed to a certain extent. The ultra-thin capillaries also boast only the slightest of optical flaws and very low absorption for a broad radiation spectrum. This makes them very useful when it comes to the formation of optical measuring cells, for example.

With our exceptionally thick-walled glass tubes, our portfolio now includes a special product that boasts larger wall thicknesses than the standard. This means that wall thicknesses of up to 15 mm are possible with a relatively small diameter. The tubes are drawn directly from the melt and produced according to customer requirements. The large wall thicknesses allow for particularly high internal pressures and are therefore suitable for the manufacture of reaction and pressure vessels.

View the simple, round capillaries we currently have in stock here:

Capillaries made from borosilicate glass

- Ends cut
- Minimum purchase: 100 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1408499	1.00 ± 0.05	0.580 ± 0.05	0.21	75
1406119	1.00 ± 0.05	0.580 ± 0.05	0.21	100
1405005	1.00 ± 0.05	0.580 ± 0.05	0.21	150
1409257	1.00 ± 0.05	0.722 ± 0.05	0.13	75
1408409	1.00 ± 0.05	0.722 ± 0.05	0.13	100
1408410	1.00 ± 0.05	0.722 ± 0.05	0.13	150
1409255	1.20 ± 0.05	0.696 ± 0.05	0.252	75
1405012	1.20 ± 0.05	0.696 ± 0.05	0.252	100
1406179	1.20 ± 0.05	0.696 ± 0.05	0.252	150
1409249	1.50 ± 0.05	0.870 ± 0.05	0.315	75
1405063	1.50 ± 0.05	0.870 ± 0.05	0.315	100

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1405060	1.50 ± 0.05	0.870 ± 0.05	0.315	150
1409250	1.50 ± 0.05	1.050 ± 0.05	0.225	75
1408411	1.50 ± 0.05	1.050 ± 0.05	0.225	100
1408412	1.50 ± 0.05	1.050 ± 0.05	0.225	150
1405020	2.00 ± 0.10	1.000 ± 0.10	0.5	75
1406180	2.00 ± 0.10	1.000 ± 0.10	0.5	100
1405006	2.00 ± 0.10	1.000 ± 0.10	0.5	150
1409256	2.00 ± 0.10	1.160 ± 0.10	0.42	75
1407425	2.00 ± 0.10	1.160 ± 0.10	0.42	100
1408414	2.00 ± 0.10	1.160 ± 0.10	0.42	150
1405059	2.00 ± 0.10	1.400 ± 0.10	0.3	75
1405076	2.00 ± 0.10	1.400 ± 0.10	0.3	100

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1408413	2.00 ± 0.10	1.400 ± 0.10	0.3	150
1422037	2.00 ± 0.10	1.600 ± 0.05	0.2	75
1423037	2.00 ± 0.10	1.600 ± 0.05	0.2	100
1425037	2.00 ± 0.10	1.600 ± 0.05	0.2	150
1422057	3.00 ± 0.15	2.400 ± 0.15	0.3	75
1423057	3.00 ± 0.15	2.400 ± 0.15	0.3	100
1425057	3.00 ± 0.15	2.400 ± 0.15	0.3	150

Capillaries for in-vitro fertilization

- Minimum purchase: 1000 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1409092	0.250 ± 0.03	0.140 ± 0.030	0.055	120 ± 1
1409091	0.260 ± 0.03	0.130 ± 0.030	0.065	120 ± 1

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1409093	0.268 ± 0.03	0.150 ± 0.030	0.059	120 ± 1
1405084	0.375 ± 0.01	0.161 ± 0.008	0.107	140 ± 1
1408454	0.405 ± 0.01	0.135 ± 0.010	0.135	140 ± 1
1409271	0.483 ± 0.02	0.145 ± 0.020	0.169	140 ± 1
1405085	0.536 ± 0.05	0.300 ± 0.010	0.118	140 ± 1
1405097	0.540 ± 0.05	0.162 ± 0.020	0.189	140 ± 1

Capillaries made from quartz glass

- Minimum purchase: 100 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1406785	1.0 ± 0.10	0.80 ± 0.10	0.1	75
1406730	1.0 ± 0.10	0.80 ± 0.10	0.1	100
1406786	1.0 ± 0.10	0.80 ± 0.10	0.1	150

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1406784	1.0 ± 0.15	0.58 ± 0.15	0.21	75
1406752	1.0 ± 0.15	0.58 ± 0.15	0.21	100
1406774	1.0 ± 0.15	0.58 ± 0.15	0.21	150
1406787	1.2 ± 0.10	0.60 ± 0.10	0.3	75
1406707	1.2 ± 0.10	0.60 ± 0.10	0.3	100
1406788	1.2 ± 0.10	0.60 ± 0.10	0.3	150
1406721	1.2 ± 0.10	0.90 ± 0.10	0.15	75
1406720	1.2 ± 0.10	0.90 ± 0.10	0.15	100
1406789	1.2 ± 0.10	0.90 ± 0.10	0.15	150

Capillaries made from soda-lime glass

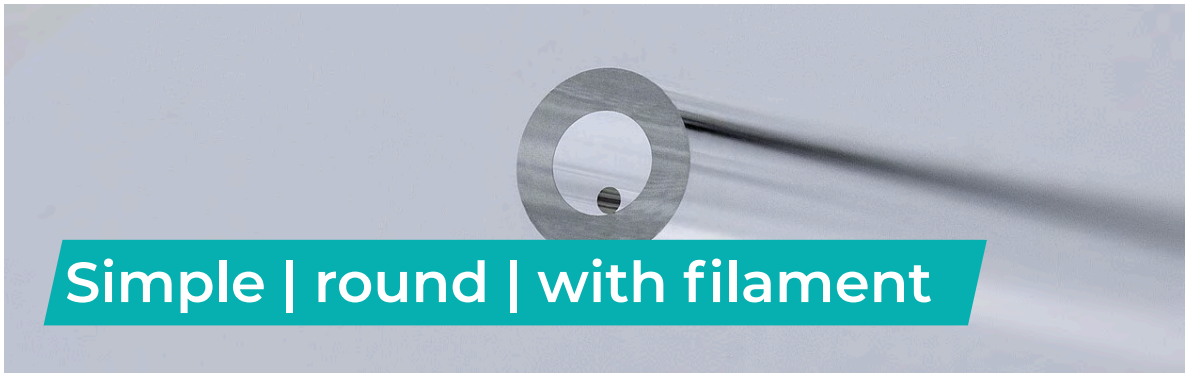
- Length 30 mm to 100 mm
- Minimum purchase: 1000 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1410213	0.8	0.64	0.08	30
1411012	0.75	0.6	0.075	50
1411022	1.25	1	0.125	50
1411037	2	1.6	0.2	50
1411637	2	1.6	0.2	65
1411807	0.5	0.4	0.05	70
1411808	0.55	0.44	0.055	70
1411815	0.9	0.72	0.09	70
1411837	2	1.6	0.2	70
1412011	0.7	0.56	0.07	75
1412047	2.5	2	0.25	75
1412205	0.4	0.32	0.04	80
1412207	0.5	0.4	0.05	80
1412209	0.6	0.48	0.06	80
1412211	0.7	0.56	0.07	80
1412213	0.8	0.64	0.08	80
1412215	0.9	0.72	0.09	80
1412217	1	0.8	0.1	80

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1412227	1.5	1.2	0.15	80
1413007	0.5	0.4	0.05	100
1413008	0.55	0.44	0.055	100
1413009	0.6	0.48	0.06	100
1413011	0.7	0.56	0.07	100
1413013	0.8	0.64	0.08	100
1413017	1	0.8	0.1	100
1413021	1.2	0.96	0.12	100
1413022	1.25	1	0.125	100
1413023	1.3	1.04	0.13	100
1413025	1.4	1.12	0.14	100
1413027	1.5	1.2	0.15	100
1413033	1.8	1.44	0.18	100
1413037	2	1.6	0.2	100

- Length from 120 mm
- Minimum purchase: 1000 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Length (mm)
1413812	0.75	0.6	0.075	120
1413813	0.8	0.64	0.08	120
1413815	0.9	0.72	0.09	120
1413817	1	0.8	0.1	120
1413821	1.2	0.96	0.12	120
1415009	0.6	0.48	0.06	150
1415015	0.9	0.72	0.09	150
1415017	1	0.8	0.1	150
1415021	1.2	0.96	0.12	150
1415025	1.4	1.12	0.14	150
1415037	2	1.6	0.2	150
1415405	0.4	0.32	0.04	160
1415407	0.5	0.4	0.05	160
1416817	1	0.8	0.1	200
1416824	1.35	1.08	0.135	200
1417415	0.9	0.72	0.09	230



Simple capillaries with filament

Our simple, round capillaries with filaments are available with solid or hollow filaments. We offer this product with solid filaments as standard in a number of wall thicknesses. We can also accommodate any specific size requirements, get in touch and we'll be happy to discuss your options further.

View the capillaries with filaments we currently have in stock here:

Capillaries with max. outer diameter 1.2 mm

- Made from borosilicate glass 3.3
- Minimum purchase: 100 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1403575	1.00 ± 0.05	0.580 ± 0.05	0.21	0.1	75
1403547	1.00 ± 0.05	0.580 ± 0.05	0.21	0.1	100
1403550	1.00 ± 0.05	0.580 ± 0.05	0.21	0.1	150
1403571	1.00 ± 0.05	0.580 ± 0.05	0.21	0.133	75
1403501	1.00 ± 0.05	0.580 ± 0.05	0.21	0.133	100
1403517	1.00 ± 0.05	0.580 ± 0.05	0.21	0.133	150
1405218	1.00 ± 0.05	0.750 ± 0.05	0.125	0.1	75
1405201	1.00 ± 0.05	0.750 ± 0.05	0.125	0.1	100
1405208	1.00 ± 0.05	0.750 ± 0.05	0.125	0.1	150

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1404523	1.00 ± 0.05	0.800 ± 0.05	0.1	0.1	75
1404502	1.00 ± 0.05	0.800 ± 0.05	0.1	0.1	100
1404503	1.00 ± 0.05	0.800 ± 0.05	0.1	0.1	150
1403570	1.20 ± 0.05	0.696 ± 0.05	0.252	0.16	75
1403526	1.20 ± 0.05	0.696 ± 0.05	0.252	0.16	100
1403529	1.20 ± 0.05	0.696 ± 0.05	0.252	0.16	150
1406304	1.20 ± 0.05	0.764 ± 0.05	0.218	0.12	75
1406301	1.20 ± 0.05	0.764 ± 0.05	0.218	0.12	100
1406303	1.20 ± 0.05	0.764 ± 0.05	0.218	0.12	150
1405219	1.20 ± 0.05	0.900 ± 0.05	0.15	0.12	75
1405202	1.20 ± 0.05	0.900 ± 0.05	0.15	0.12	100
1405210	1.20 ± 0.05	0.900 ± 0.05	0.15	0.12	150

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1403012	1.20 ± 0.05	0.960 ± 0.05	0.12	0.12	75
1403003	1.20 ± 0.05	0.960 ± 0.05	0.12	0.12	100
1403004	1.20 ± 0.05	0.960 ± 0.05	0.12	0.12	150

Capillaries with outer diameter > 1.2 mm

- Made from borosilicate glass 3.3
- Minimum purchase: 100 units

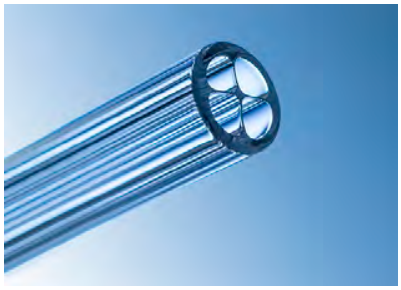
Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1403574	1.50 ± 0.05	0.870 ± 0.05	0.315	0.15	75
1403542	1.50 ± 0.05	0.870 ± 0.05	0.315	0.15	100
1403549	1.50 ± 0.05	0.870 ± 0.05	0.315	0.15	150

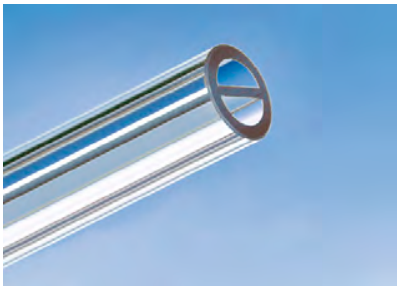
Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1403573	1.50 ± 0.05	0.870 ± 0.05	0.315	0.2	75
1403512	1.50 ± 0.05	0.870 ± 0.05	0.315	0.2	100
1403530	1.50 ± 0.05	0.870 ± 0.05	0.315	0.2	150
1405215	1.50 ± 0.05	1.124 ± 0.05	0.188	0.15	75
1405203	1.50 ± 0.05	1.124 ± 0.05	0.188	0.15	100
1405207	1.50 ± 0.05	1.124 ± 0.05	0.188	0.15	150
1403013	1.50 ± 0.05	1.177 ± 0.05	0.162	0.15	75
1403005	1.50 ± 0.05	1.177 ± 0.05	0.162	0.15	100
1403001	1.50 ± 0.05	1.177 ± 0.05	0.162	0.15	150
1404524	1.50 ± 0.05	1.200 ± 0.05	0.15	0.15	75
1404501	1.50 ± 0.05	1.200 ± 0.05	0.15	0.15	100
1404519	1.50 ± 0.05	1.200 ± 0.05	0.15	0.15	150

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1403569	2.00 ± 0.10	1.160 ± 0.10	0.42	0.267	75
1403513	2.00 ± 0.10	1.160 ± 0.10	0.42	0.267	100
1403531	2.00 ± 0.10	1.160 ± 0.10	0.42	0.267	150
1408018	2.00 ± 0.10	1.600 ± 0.10	0.2	0.2	75
1404506	2.00 ± 0.10	1.600 ± 0.10	0.2	0.2	100
1404518	2.00 ± 0.10	1.600 ± 0.10	0.2	0.2	150
1403543	3.00 ± 0.15	1.740 ± 0.15	0.63	0.3	75
1403551	3.00 ± 0.15	1.740 ± 0.15	0.63	0.3	100
1403552	3.00 ± 0.15	1.740 ± 0.15	0.63	0.3	150

Simple capillaries with septum

The main feature of our theta cross-section capillaries is their four completely separate chambers in a round cross-section. The individual inner chambers are separated from each other by the thinnest possible membrane, which remains fully intact even when drawing out to very thin tips.
They are ideally suited to liquid perfusion applications on cells, as the deformation of the cell wall or cell membrane can be reduced to a minimum.
In addition to the theta cross-section profiles, there are also capillaries with a septum creating two chambers. There is also the option of inserting filaments here.





View the theta profile capillaries we currently have in stock here

Theta, with septum

- Made from borosilicate glass
- Minimum purchase: 100 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Septum (mm)	Length (mm)
1401010	1.50 ± 0.05	1.05 ± 0.05	0.225	0.165	75
1401016	1.50 ± 0.05	1.05 ± 0.05	0.225	0.165	100
1401019	1.50 ± 0.05	1.05 ± 0.05	0.225	0.165	150

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Septum (mm)	Length (mm)
1401046	2.00 ± 0.15	1.40 ± 0.15	0.3	0.22	75
1401021	2.00 ± 0.15	1.40 ± 0.15	0.3	0.22	100
1401025	2.00 ± 0.15	1.40 ± 0.15	0.3	0.22	150

Theta cross-section profiles

- Made from borosilicate glass
- Minimum purchase: 100 units
- Length: 100 mm

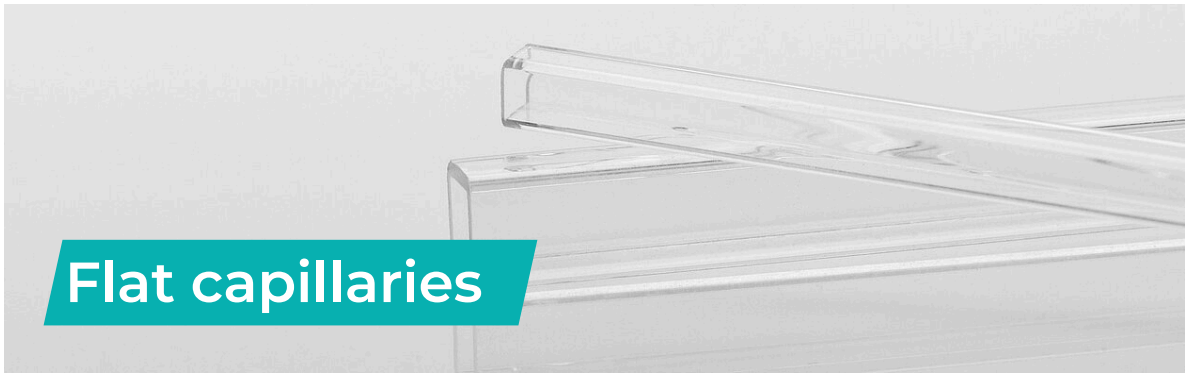
Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Septum (mm)
1401730	1.00 ± 0.10	0.70 ± 0.10	0.15	0.044
1401731	2.00 ± 0.10	1.40 ± 0.10	0.3	0.088
1401728	3.00 ± 0.20	2.20 ± 0.20	0.4	0.12

SPECIAL

We have already manufactured special customer-specific solutions for this product group. Further examples of special products can be found under the respective product category or under Special Solutions.

Large-volume theta cross-section capillaries

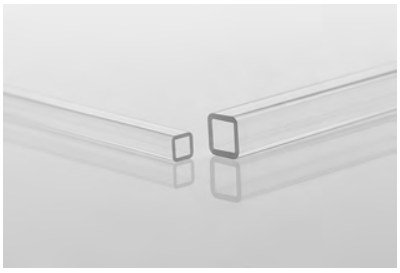
We have further developed our small theta cross-section capillaries to now manufacture a larger version. The large-volume capillaries have a total diameter of max. 8 mm. The thin partitions separate the internal cross-section into four equally sized chambers, like a clover leaf. The tubes are used, for example, in reaction vessels in which several substances are encapsulated and can be released as necessary by breaking the tube.

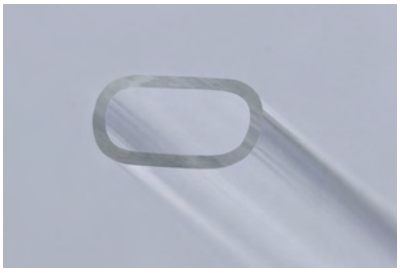


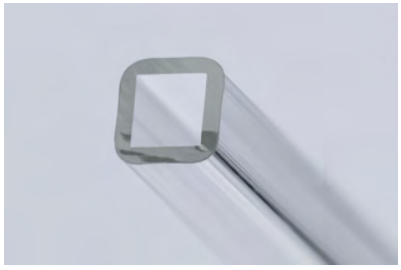
Flat capillaries

Capillaries with parallel side walls

Our exploration of new production processes has allowed us to continually improve our own approach and create new products. For example, we can manufacture extremely thin-walled capillaries with two parallel surfaces in a whole host of dimensions. The innovative production process allows us to manufacture wall thicknesses of less than 150 µm. The low wall thickness and parallel sides provide the ideal basis for high-precision measurements, as signals are only minimally disturbed or absorbed. These thin-walled rectangular capillaries are ideal for use as measuring cuvettes and flow cells.







View the flat capillaries we currently have in stock here

Flat capillaries made from borosilicate glass

- Length: 80 mm
- Minimum purchase: 25 units

Article number	Outer dimensions (mm)	Wall thickness (mm)
1470640	2.0 x 1.00	~ 0.110
1408963	4.2 x 1.25	~ 0.125
1470641	5.0 x 1.32	~ 0.220
1408964	6.5 x 1.40	~ 0.160

Oval capillaries

Oval capillaries with thin walls are also manufactured using our special redrawing technique for profile tubes. Very thin wall thicknesses from 0.1 mm to 0.4 mm can be achieved with direct forming. The oval form can take a number of different geometric shapes, meaning it is possible to create width-to-height ratios of varying degrees.

Materials

- Soda-lime glass (e.g. AR©)
- Borosilicate glass (e.g. DURAN©, PYREX©, SIMAX©)
- Neutral glass (e.g. FIOLAX© and DUROBAX©)
- Aluminum-silicate glass (e.g. Schott 8252/8253)

Dimensions

- Diameter: 2–6 mm
- Lengths: 20–1060 mm
- Wall thicknesses: 0.1–0.5 mm

Designs

- Ends cut
- Ends flamed
- Ends closed
- Ends ground

Geometries

- Oval
- Largest width-to-height ratio: 1.00 : 4.00
- Smallest width-to-height ratio: 1.00 : 1.25

Advantages

- Thin walls
- Low absorption

Jagged profiles

Our capillaries can be ordered in a wide variety of shapes and sizes. Examples such as the jagged profile here have an enlarged surface.
Whatever form you need, talk to us and we'll be happy to discuss your options.

Triangular capillaries with thin walls are manufactured using our special redrawing technique for profile tubes. Very thin wall thicknesses from 0.1 mm to 0.4 mm can be achieved with direct forming. The capillaries have rounded edges and their size can be adapted to customer requirements.

Materials

- Soda-lime glass (e.g. AR©)
- Borosilicate glass (e.g. DURAN©, PYREX©, SIMAX©)
- Neutral glass (e.g. FIOLAX© and DUROBAX©)
- Aluminum-silicate glass (e.g. Schott 8252/8253)

Dimensions

- Edge lengths: 1–6 mm
- Lengths: 20–1060 mm
- Wall thicknesses: 0.1–0.5 mm

Designs

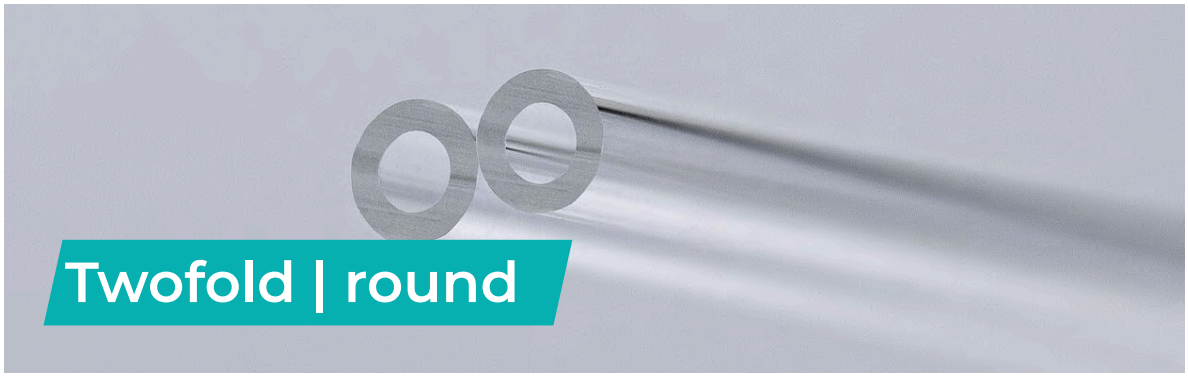
- Ends cut
- Ends flamed
- Ends closed
- Ends ground

Geometries

- Equilateral
- Isosceles
- Scalene

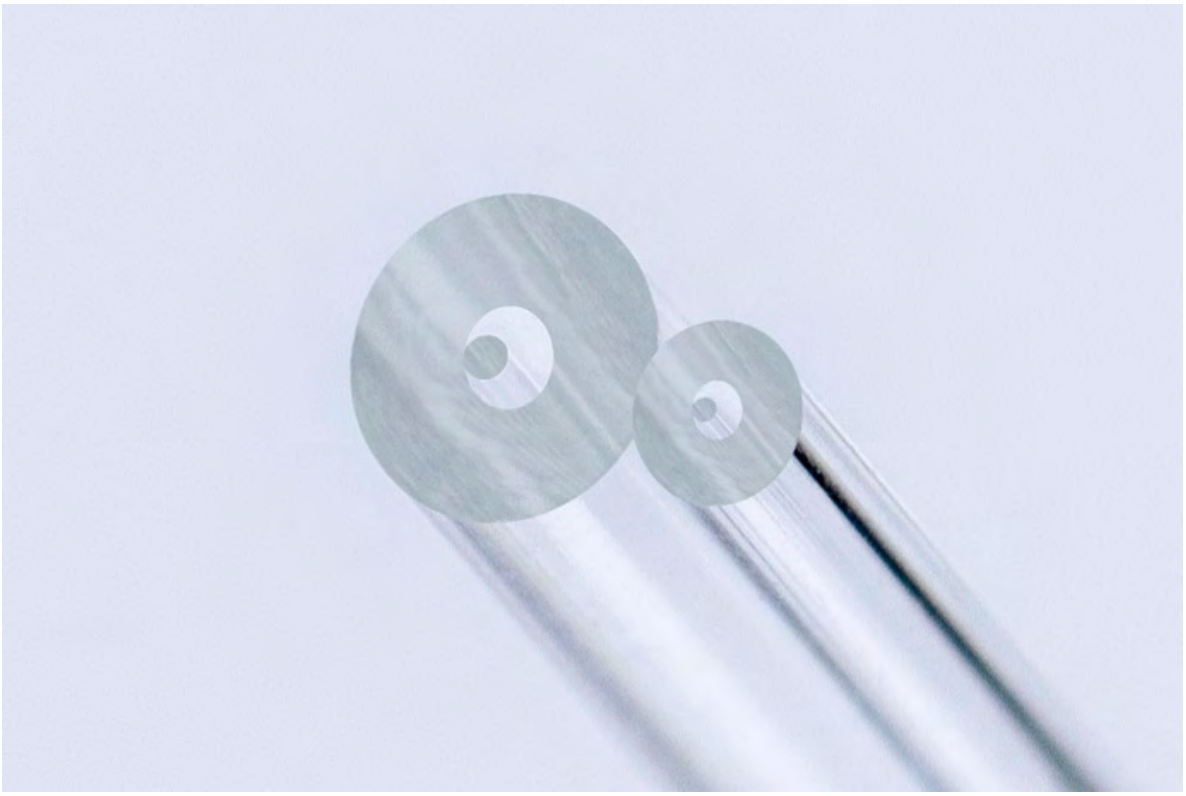
Advantages

- Thin walls
- Low absorption



Double round capillaries

Our double bundled capillaries come in a wide variety of combinations. We combine various diameters, with or without filament.
We will be more than happy to provide you with a version that best meets your requirements.

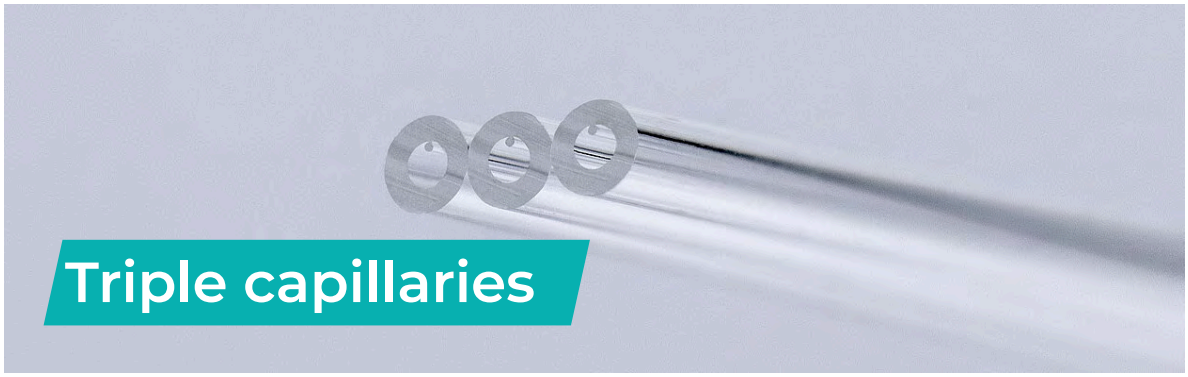


View the double round capillaries we currently have in stock here

Double capillaries, round

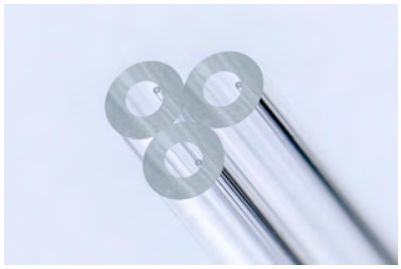
- Made from borosilicate glass
- Minimum purchase: 100 units

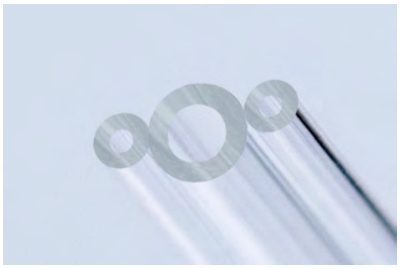
Art. No.	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1402837	1.20 ± 0.05	0.600 ± 0.05	0.3	0.12	75
1402810	1.20 ± 0.05	0.600 ± 0.05	0.3	0.12	100
1402813	1.20 ± 0.05	0.600 ± 0.05	0.3	0.12	150
1402838	1.50 ± 0.05	0.750 ± 0.05	0.375	0.15	75
1402806	1.50 ± 0.05	0.750 ± 0.05	0.375	0.15	100
1402819	1.50 ± 0.05	0.750 ± 0.05	0.375	0.15	150
1402839	1.50 ± 0.05	0.870 ± 0.05	0.315	0.15	75
1402817	1.50 ± 0.05	0.870 ± 0.05	0.315	0.15	100
1402818	1.50 ± 0.05	0.870 ± 0.05	0.315	0.15	150



Triple capillaries: bundled or parallel

Our triple bundle or parallel arranged capillaries come in various designs. For example, select the number of filaments or decide whether solid rods should be included in processing. Find the design that suits you and get in touch with us!



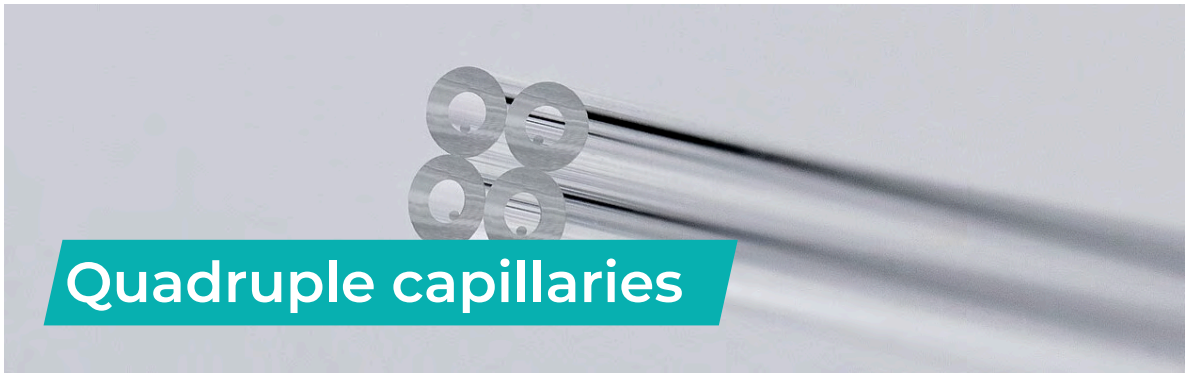


View the triple capillaries we currently have in stock here

Triple bundle capillaries

- Made from borosilicate glass
- Minimum purchase: 100 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1402920	1.20 ± 0.05	0.695 ± 0.05	0.253	0.12	75
1402917	1.20 ± 0.05	0.695 ± 0.05	0.253	0.12	100
1402916	1.20 ± 0.05	0.695 ± 0.05	0.253	0.12	150



Quadruple capillaries: bundled or parallel

Our quadruple bundle or parallel arranged capillaries come in a number of designs, with or without filaments. For example, select the number of filaments or decide whether solid rods should be included in processing. Find the design that suits you and get in touch with us!

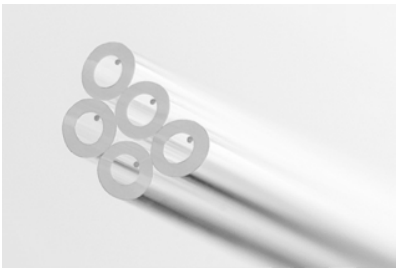
View the quadruple capillaries we currently have in stock here

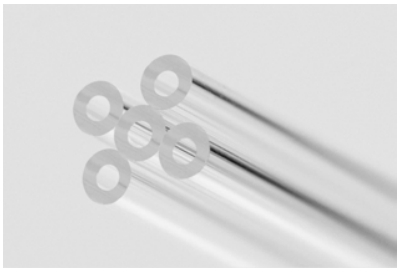
Quadruple bundle capillaries

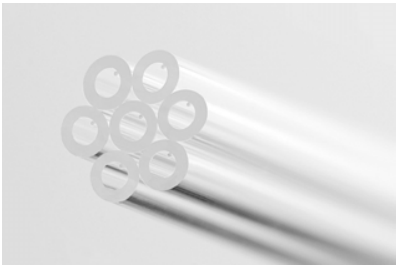
- Made from borosilicate glass

- Minimum purchase: 100 units

Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1405118	1.20 ± 0.05	0.600 ± 0.05	0.3	0.12	75
1405102	1.20 ± 0.05	0.600 ± 0.05	0.3	0.12	100
1405106	1.20 ± 0.05	0.600 ± 0.05	0.3	0.12	150







Unlike the multi-capillaries, our bundled capillaries do not have filled hollow spaces. The channels and gaps result from

the bundling of various simple capillaries.
Here, it is possible to combine various diameters, wall thicknesses and rods, as well as capillaries with or without filaments.

Ninefold bundle capillaries
With their 9 channels, the capillaries arranged symmetrically in layers form the square total cross-section. The individual channels are made with solid walls, however these walls can be manufactured to be thinner, depending on the application. These capillaries are mainly used in electrophysiology and electrochemistry.

View the multiple bundle capillaries we currently have in stock here

Quintuple bundle capillaries

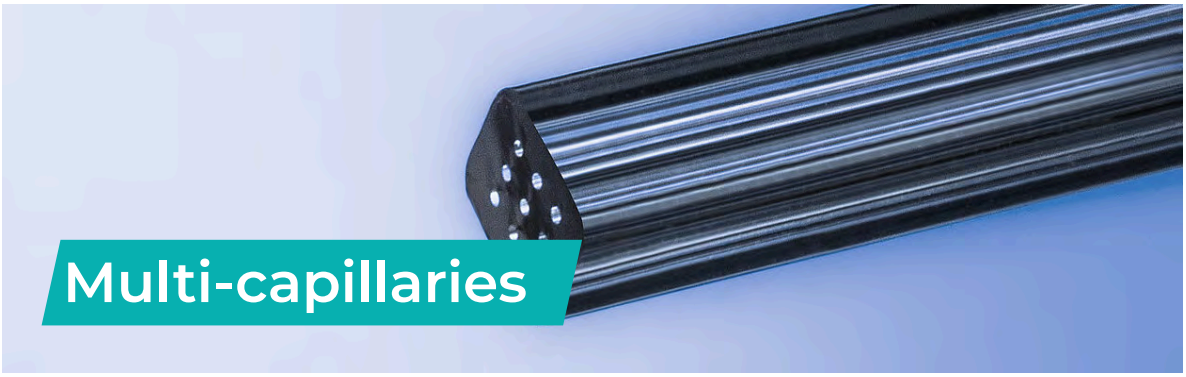
- Made from borosilicate glass
- Minimum purchase: 100 units

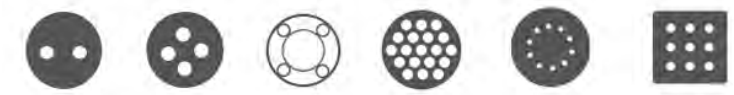
Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1405317	1.20 ± 0.05	0.672 ± 0.05	0.264	0.12	75
1405302	1.20 ± 0.05	0.672 ± 0.05	0.264	0.12	100
1405303	1.20 ± 0.05	0.672 ± 0.05	0.264	0.12	150

Sevenfold bundle capillaries

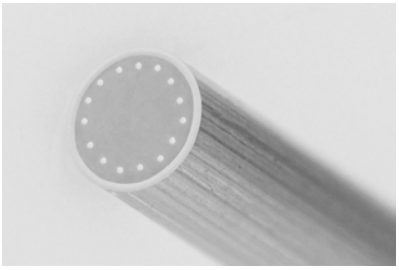
- Made from borosilicate glass
- Minimum purchase: 100 units

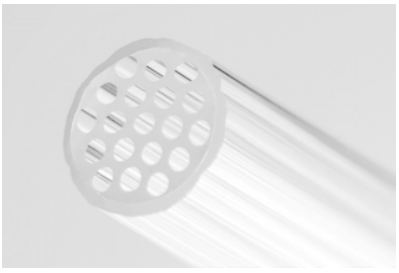
Article number	Outer Ø (mm)	Inner Ø (mm)	Wall thickness (mm)	Filament (mm)	Length (mm)
1406809	1.00 ± 0.05	0.560 ± 0.05	0.22	0.1	75
1406801	1.00 ± 0.05	0.560 ± 0.05	0.22	0.1	100

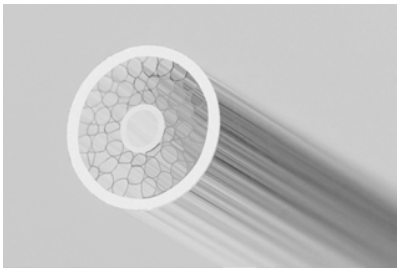




The cross-sections of these capillaries comprise a variety of individual openings, which are either randomly arranged or form a (strictly) arranged structure. With anything from 2 to 500 channels, the capillaries can be used for a wide variety of tasks.







Our multi-capillaries are divided into two categories: those manufactured from a single piece and those comprising individual capillaries where the gaps are filled. There are two approaches taken here:

1. Manufactured from a preform

Before the process of drawing (and stretching) the capillaries, corresponding preforms are assembled and joined together. Here, the channels are created by the individual capillaries. The resulting hollow spaces are filled with glass rods and then evacuated with heat. This causes all unwanted side channels and hollow spaces to close up, with the result being a closed cross-section only punctuated with the internal geometry of the individual capillaries. When using thick-walled capillaries, easily reproducible cross-section sizes are possible. The closed area is proportionately larger than the open space of the holes. Thin-walled capillaries create a very airy structure with fewer closed spaces and a large open cross-section. Due to their thin walls, these capillaries tend to be easier to deform on the inside and are therefore not entirely suitable for the manufacture of precise internal geometries.

2. Manufactured by laminating with epoxy resin

Another approach to the manufacture of multi-channel capillaries involves lamination with epoxy resin. This method is particularly suitable when ambient parameters, such as high temperatures or solvent resistance, do not explicitly require a pure glass structure, however the accuracy of the internal diameter is important. Here, correspondingly high-precision single capillaries are added to an array or bundle. The hollow spaces between the capillaries are sealed with an acrylate- or epoxy-based resin and cured with UV light. Depending on the application, there are a variety of adhesives to choose from.

Square capillaries with 9 inner channels

In addition to the ninefold bundle capillaries, we have created a new multi-channel capillary containing 9 small, symmetrically arranged channels in a square cross-section. The channels here are all the same size and the outer edges of the capillaries are rounded. The capillaries are used in the manufacture of sensors, electrophysiology and analytics.

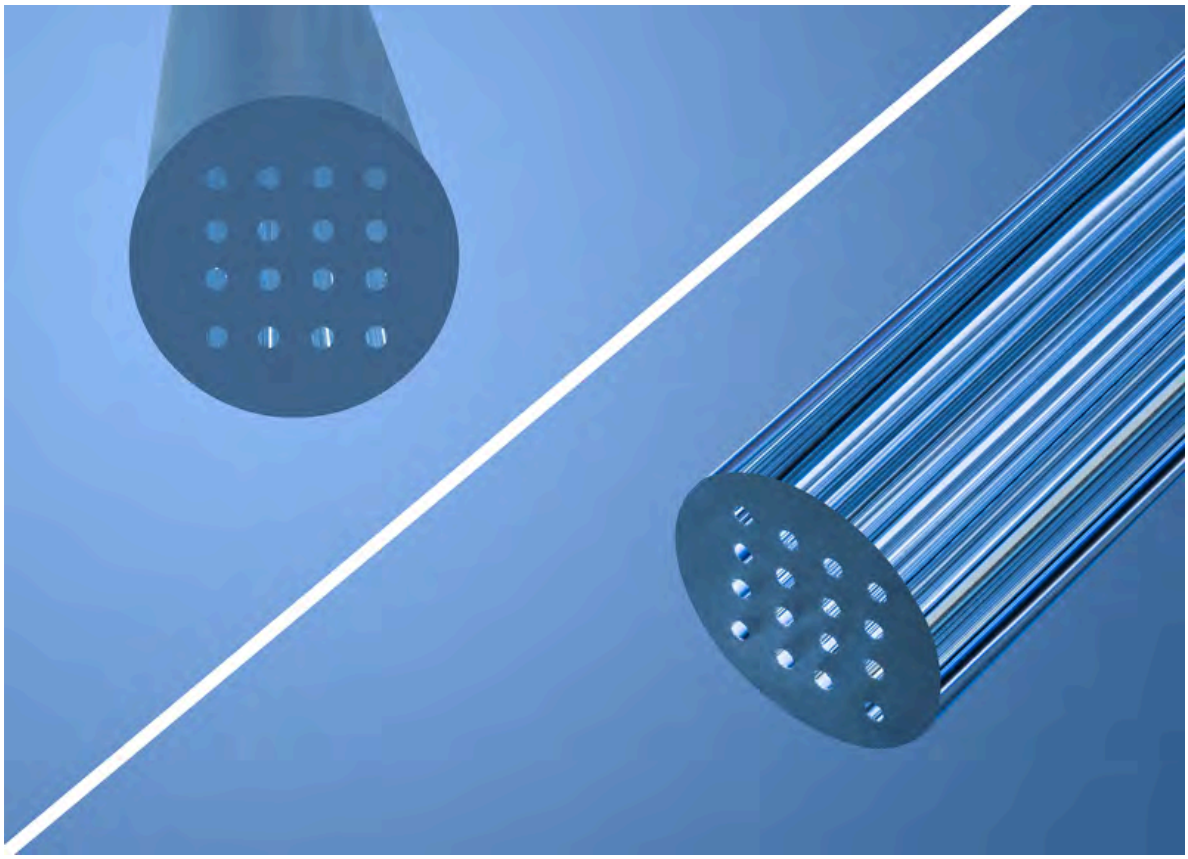
SPECIAL

We have already manufactured special customer-specific solutions for

this product group. Further examples of special products can be found under the respective product category or under Special Solutions.

16 in 1 – preform

This preform for the redrawing of glass capillaries was developed on the basis of customer requests and is used for the drawing of fibers with appropriate holes. The preform with 16 channels arranged in a square in a circular cross-section was made of quartz glass and can be drawn out to small capillaries < 1 mm.



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