microfluidic product catalogue

05/ 2010

microfluidic ChipShop

The Art of Microfabrication

Our mission at ***microfluidic ChipShop*** is to shrink the biological and chemical laboratory and to bring lab-on-a-chip systems into daily laboratory life.

This catalogue is part of our service to make our mission happen: From off-the-shelf microfluidic chips to complete lab-on-a-chip systems, our products are to serve a wide range of customer needs.

Whether you need one or thousands of chips, in the following pages you will find the essential components for an easy way into the world of microfluidic handling and manipulation. Be it for the first steps with lab-on-a-chip systems or the evaluation of new designs and functions: you do not need to make up your own design, you avoid tooling costs, and we ensure fast delivery to your doorstep.

Of course, our expertise at ***microfluidic ChipShop*** extends well beyond the products listed in this catalogue: Whether you seek a competent microfluidic-chip manufacturer, whether you want to translate specific functions into microfluidic designs, or whether you want to develop entire lab-on-a-chip systems, we are here to help you with our full range of production and development services.

microfluidic ChipShop GmbH

Carl-Zeiss-Promenade 10
07745 Jena, Germany

Phone +49 (0) 3641 - 347 05 0
Fax: +49 (0) 3641 - 347 05 90

info@microfluidic-ChipShop.com
www.microfluidic-ChipShop.com

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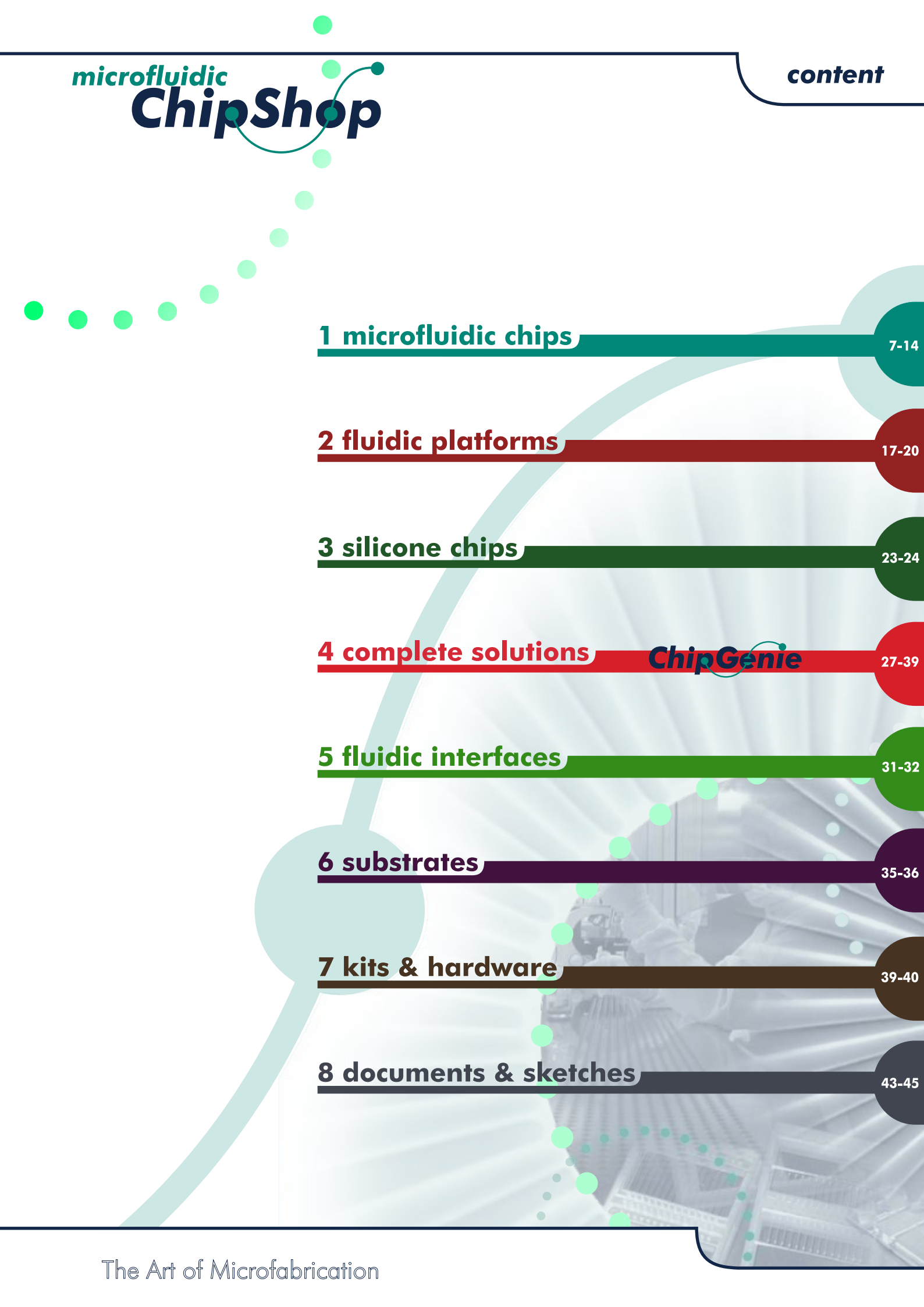

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1

1 microfluidic chips

You are interested in standard chip designs? In this chapter you will find our off-the-shelf range of H-, cross-, and double-T-shaped microfluidic structures as well as simple channels with different widths and lengths, with or without fluidic interfaces, chips with integrated electrodes, nanotiterplates, etc.

If you require variations to the designs offered in this catalogue, please do not hesitate to contact us.

1.1 Straight Channel – Chip Format: Microscopy Slide

On the format of a microscopy slide (75.5 mm x 25.5 mm x 1.5 mm) microfluidic channels in various width and depths are at hand. The channel distance from center to center is 4.5 mm according to the spacing of a 384 microtiter plate. The fluidic chips are available with simple through holes fitting with normal pipette tips, Mini Luer adapter that can be used with the respective counter-part (see chapter 5 fluidic interfaces) to be used with tubes, or alternatively with standard Luer interfaces.

1.1.1 Straight Channel Chips – Four Parallel Channels Fluidic Interfaces: Simple Through Holes

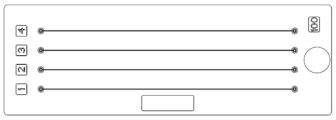


Fig. 1: Schematic drawing of the chips

Product Number	Chip Format	Channel [µm] Wid.	Dep.	Len.	Lid thickn. [µm]	Material	Price [€/chip] 1+	10+	30+
01-0152-0143-01	M	20	20	58.5	250	PMMA	42,50	31,20	23,50
01-0153-0143-02	M	20	20	58.5	130	Topas	42,50	31,20	23,50
01-0154-0145-01	M	50	50	58.5	250	PMMA	42,50	31,20	23,50
01-0155-0145-02	M	50	50	58.5	130	Topas	42,50	31,20	23,50
01-0156-0144-01	M	100	100	58.5	250	PMMA	42,50	31,20	23,50
01-0157-0144-02	M	100	100	58.5	130	Topas	42,50	31,20	23,50
01-0158-0156-01	M	200	200	58.5	250	PMMA	36,20	24,30	18,10
01-0159-0156-02	M	200	200	58.5	130	Topas	36,20	24,30	18,10
01-0160-0138-01	M	1,000	200	58.5	250	PMMA	36,20	24,30	18,10
01-0161-0138-02	M	1,000	200	58.5	130	Topas	36,20	24,30	18,10

1.1.2 Straight Channel Chips – 16 Parallel Channels Fluidic Interfaces: Simple Through Holes

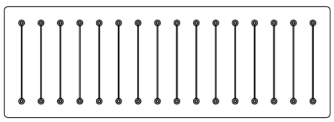
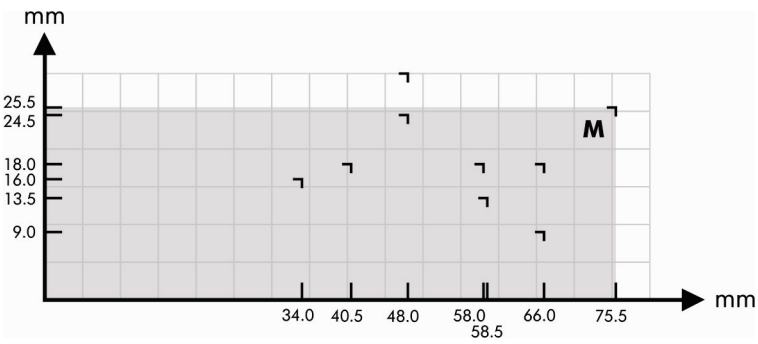


Fig. 2: Schematic drawing of the chips

Product Number	Chip Format	Channel [µm] Wid.	Dep.	Len.	Lid thickn. [µm]	Material	Price [€/chip] 1+	10+	30+
01-0162-0142-01	M	200	100	18.0	250	PMMA	36,20	24,30	18,10
01-0163-0142-02	M	200	100	18.0	130	Topas	36,20	24,30	18,10
01-0164-0152-01	M	1,000	200	18.0	250	PMMA	36,20	24,30	18,10
01-0165-0152-02	M	1,000	200	18.0	130	Topas	36,20	24,30	18,10



1.1.3 Straight Channel Chips – four Parallel Channels Fluidic Interfaces: Mini Luer

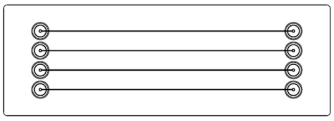


Fig. 3: Schematic drawing of the chips

Product Number	Chip Format	Channel [µm] Wid.	Dep.	Len.	Lid thickn. [µm]	Material	Price [€/chip] 1+	10+	30+
01-0166-0143-01	M	20	20	58.5	250	PMMA	42,50	31,20	23,50
01-0167-0143-02	M	20	20	58.5	130	Topas	42,50	31,20	23,50
01-0168-0145-01	M	50	50	58.5	250	PMMA	42,50	31,20	23,50
01-0169-0145-02	M	50	50	58.5	130	Topas	42,50	31,20	23,50
01-0170-0144-01	M	100	100	58.5	250	PMMA	42,50	31,20	23,50
01-0171-0144-02	M	100	100	58.5	130	Topas	42,50	31,20	23,50
01-0172-0156-01	M	200	200	58.5	250	PMMA	36,20	24,30	18,10
01-0173-0156-02	M	200	200	58.5	130	Topas	36,20	24,30	18,10
01-0174-0138-01	M	1,000	200	58.5	250	PMMA	36,20	24,30	18,10
01-0175-0138-02	M	1,000	200	58.5	130	Topas	36,20	24,30	18,10

1.1.4 Straight Channel Chips – 16 Parallel Channels Fluidic Interfaces: Mini Luer

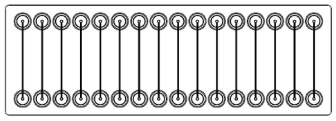
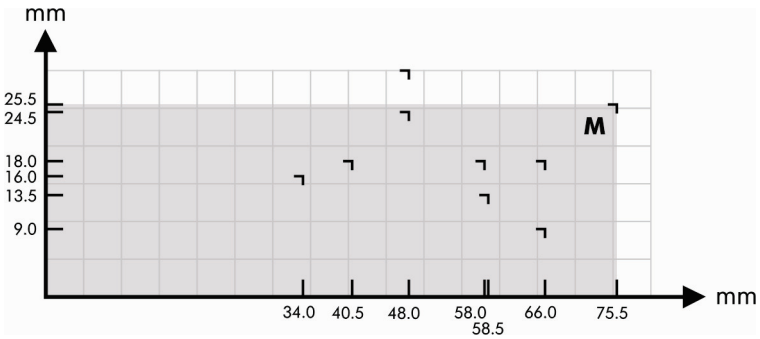


Fig. 4: Schematic drawing of the chips

Product Number	Chip Format	Channel [µm] Wid.	Dep.	Len.	Lid thickn. [µm]	Material	Price [€/chip] 1+	10+	30+
01-0176-0142-01	M	200	100	18.0	250	PMMA	36,20	24,30	18,10
01-0177-0142-02	M	200	100	18.0	130	Topas	36,20	24,30	18,10
01-0178-0152-01	M	1,000	200	18.0	250	PMMA	36,20	24,30	18,10
01-0179-0152-02	M	1,000	200	18.0	130	Topas	36,20	24,30	18,10



1.1.5 Straight Channel Chips – 8 Parallel Channels Fluidic Interfaces: Luer

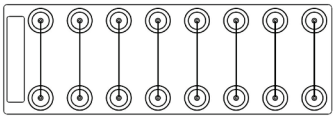
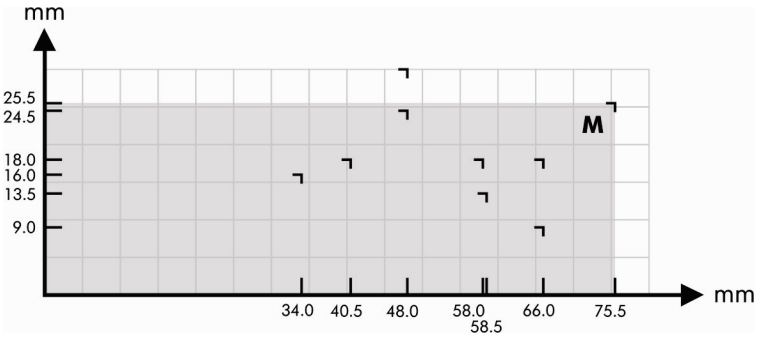


Fig. 5: Schematic drawing of the chips

Product Number	Chip Format	Channel [µm] Wid.	Dep.	Len.	Lid thickn. [µm]	Material	Price [€/chip] 1+	10+	30+
01-0180-0157-01	M	100	100	18.0	250	PMMA	42,50	31,20	23,50
01-0181-0157-02	M	100	100	18.0	130	Topas	42,50	31,20	23,50



1.2 Cross-Shaped Channel

1.2.1 Microfluidic Chips with Cross Shaped Channels and Integrated Fluidic Reservoirs

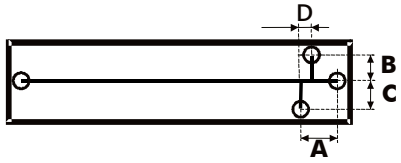


Fig. 6: Chip layout. The reservoirs have a standard volume of 74 µl (max 90 µl).

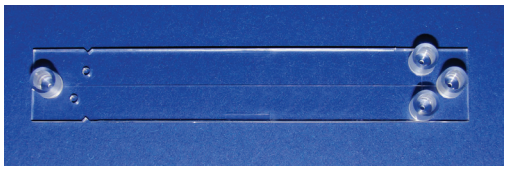


Fig. 7: Chip with integrated fluidic reservoirs

Product Number	Chip Format	Channel Wid. [µm]	Dep. [µm]	Len. [mm]	Hole diam. [mm]	Geometry A [mm]	B	C	D	Lid thickn. [µm]	Material	Price [€/chip] 1+	10+	100+	1000+
02-0750-0082-01	E	50	50	87.0	0.9	6.0	5.0	5.0	0	250	PMMA	42.35	31.19	25.18	9.98
02-0751-0082-02	E	50	50	87.0	0.9	6.0	5.0	5.0	0	130	Topas	42.35	31.19	25.18	9.98
02-0752-0082-01	E	50	50	87.0	0.9	6.0	5.0	5.0	0.1	250	PMMA	42.35	31.19	25.18	9.98
02-0753-0082-02	E	50	50	87.0	0.9	6.0	5.0	5.0	0.1	130	Topas	42.35	31.19	25.18	9.98
02-0754-0106-01	E	75	75	87.0	0.9	6.0	5.0	5.0	0	250	PMMA	42.35	31.19	25.18	9.98
02-0755-0106-02	E	75	75	87.0	0.9	6.0	5.0	5.0	0	130	Topas	42.35	31.19	25.18	9.98
02-0756-0166-01	E	100	100	87.0	0.5	6.0	5.0	5.0	0	250	PMMA	42.35	31.19	25.18	9.98
02-0757-0166-02	E	100	100	87.0	0.5	6.0	5.0	5.0	0	130	Topas	42.35	31.19	25.18	9.98

1.2.2 Microfluidic Chips with Cross Shaped Channels

Fig. 8: Chip layout.

Product Number	Chip Format	Channel Wid. [µm]	Dep. [µm]	Len. [mm]	Hole diam. [mm]	Geometry A [mm]	B	C	D	Lid thickn. [µm]	Material	Price [€/chip] 1+	10+	100+	1000+
02-0758-0082-01	E	50	50	87.0	0.9	6.0	5.0	5.0	0	250	PMMA	42.35	31.19	25.18	9.98
02-0759-0082-02	E	50	50	87.0	0.9	6.0	5.0	5.0	0	130	Topas	42.35	31.19	25.18	9.98
02-0760-0082-01	E	50	50	87.0	0.9	6.0	5.0	5.0	0.1	250	PMMA	42.35	31.19	25.18	9.98
02-0761-0082-02	E	50	50	87.0	0.9	6.0	5.0	5.0	0.1	130	Topas	42.35	31.19	25.18	9.98
02-0762-0106-01	E	75	75	87.0	0.9	6.0	5.0	5.0	0	250	PMMA	42.35	31.19	25.18	9.98
02-0763-0106-02	E	75	75	87.0	0.9	6.0	5.0	5.0	0	130	Topas	42.35	31.19	25.18	9.98
02-0764-0166-01	E	100	100	87.0	0.5	6.0	5.0	5.0	0	250	PMMA	42.35	31.19	25.18	9.98
02-0765-0166-02	E	100	100	87.0	0.5	6.0	5.0	5.0	0	130	Topas	42.35	31.19	25.18	9.98

1.3 Microfluidic Chips with Electrodes

The electrodes are placed on the cover lid.

Material of the electrodes: 10 nm Titanium / 100 – 150 nm Gold

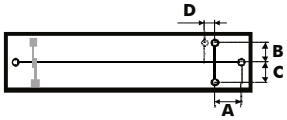


Fig. 9: Chip layout

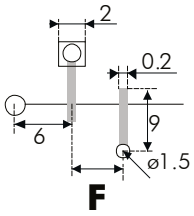


Fig. 10: Electrode design & through holes, dif. electrode geometries (F)

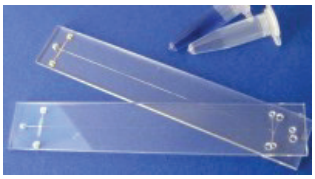
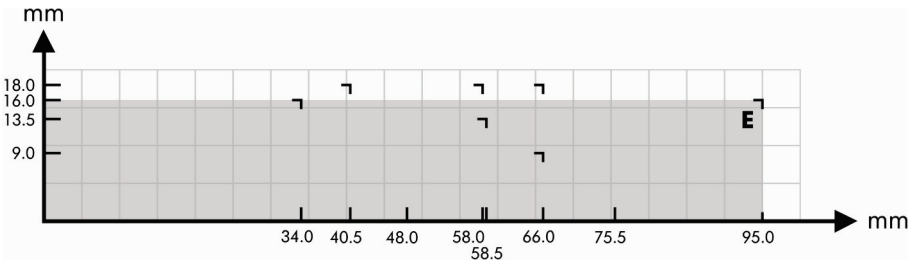


Fig. 11: Chip with electrodes

Product Number	Chip Format	Channel [µm] Wid. Top	Wid. Bot.	Dep.	Len. [mm]	Hole diam. [mm]	Geometry A [mm]	B	C	D	F	Lid thickn. [µm]	Material	Price [€/chip] 1+	10+	30+
03-0097-0013-01	E	70	42	20	87.8	1.5	6.0	5.0	5.0		0.4	250	PMMA	155	145	125
03-0098-0013-01	E	70	42	20	87.8	1.5	6.0	5.0	5.0		0.6	250	PMMA	155	145	125
03-0099-0013-01	E	70	42	20	87.8	1.5	6.0	5.0	5.0		0.8	250	PMMA	155	145	125
03-0100-0013-01	E	70	42	20	87.8	1.5	6.0	5.0	5.0	0.1	0.4	250	PMMA	155	145	125
03-0101-0013-01	E	70	42	20	87.8	1.5	6.0	5.0	5.0	0.1	0.6	250	PMMA	155	145	125
03-0102-0013-01	E	70	42	20	87.8	1.5	6.0	5.0	5.0	0.1	0.8	250	PMMA	155	145	125



1.4 H-Shaped Channel

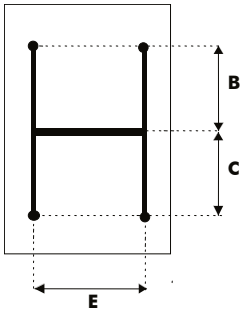


Fig. 12: Schematic drawing of the chips

Fig. 13: Chip with Luer Lok compatible fittings (diameter of Luer Lok-through hole: 1.3 mm)

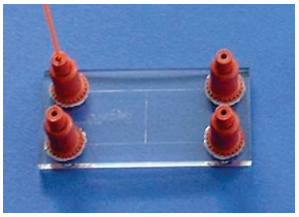
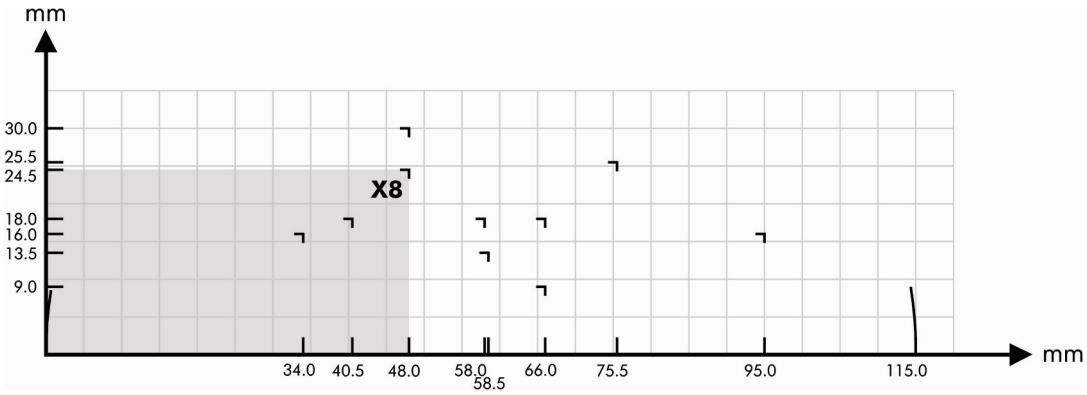


Fig. 14: Chip with Upchurch fittings

Product Number	Chip Format	Channel E [µm] Wid. Top	Wid. Bot.	Dep.	Len. [mm]	Hole diam. [mm]	Geometry B [mm]	C	E	Channels B & C Wid. Top	Wid. Bot.	Lid thickn. [µm]	Material	Fluidic Interface	Price [€/chip] 1+	10+	30+
04-0103-0018-01	X8	220	192	20	13.5	1.0	18.0	18.0	13.5	120	92	250	PMMA		70	65	55
04-0104-0018-02	X8	220	192	20	13.5	1.0	18.0	18.0	13.5	120	92	130	Topas		100	90	80
04-0123-0018-01	X8	212	198	10	13.5	1.0	18.0	18.0	13.5	112	98	250	PMMA		70	65	55
04-0124-0018-02	X8	212	198	10	13.5	1.0	18.0	18.0	13.5	112	98	130	Topas		100	90	80
04-0105-0018-01	X8	220	192	20	13.5	1.0	18.0	18.0	13.5	120	92	250	PMMA	Luer Lok	80	75	65
04-0125-0018-01	X8	212	198	10	13.5	1.0	18.0	18.0	13.5	112	98	250	PMMA	Luer Lok	80	75	65
04-0107-0018-01	X8	220	192	20	13.5	1.0	18.0	18.0	13.5	120	92	250	PMMA	Upchurch	150	145	135
04-0108-0018-02	X8	220	192	20	13.5	1.0	18.0	18.0	13.5	120	92	130	Topas	Upchurch	180	170	160
04-0127-0018-01	X8	212	198	10	13.5	1.0	18.0	18.0	13.5	112	98	250	PMMA	Upchurch	150	145	135
04-0128-0018-02	X8	212	198	10	13.5	1.0	18.0	18.0	13.5	112	98	130	Topas	Upchurch	180	170	160



1.5 Titerplate Chips

1.5.1 Nanotiterplates

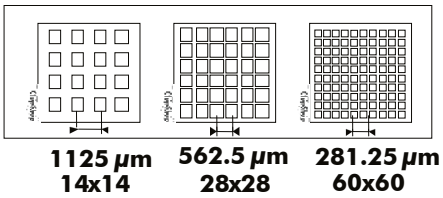


Fig. 15: Schematic drawing of the nanotiterplate

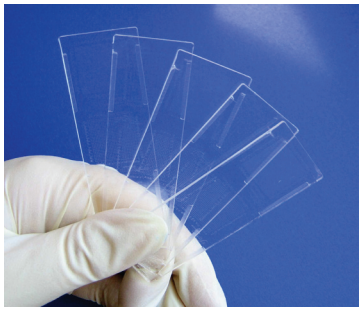


Fig. 16: Nanotiterplates

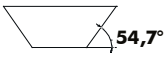


Fig. 17: Cross section of the well geometry

Product Number	Chip Format	Well Dep. [µm]	Well Size [µm] Part 1 Top	Part 1 Bot.	Part 2 Top	Part 2 Bot.	Part 3 Top	Part 3 Bot.	Well Spacing [µm] Part 1	Part 2	Part 3	Material	Price [€/chip] 1+	10+	50+	100+	500+
05-0131-0018-01	M	10	112	98	212	198	412	398	281.25	562.5	1125	PMMA	40	30	10	8.00	6.20
05-0132-0018-02	M	10	112	98	212	198	412	398	281.25	562.5	1125	Topas	45	35	15	9.00	6.40
05-0133-0018-01	M	20	124	96	224	196	424	396	281.25	562.5	1125	PMMA	40	30	10	8.00	6.20
05-0134-0018-02	M	20	124	96	224	196	424	396	281.25	562.5	1125	Topas	45	35	15	9.00	6.40
05-0137-0018-03	M	20	124	96	224	196	424	396	281.25	562.5	1125	PC	40	30	10	8.00	6.20
05-0138-0018-05	M	20	124	96	224	196	424	396	281.25	562.5	1125	Zeonor	45	35	15	9.00	6.40
05-0139-0018-04	M	20	124	96	224	196	424	396	281.25	562.5	1125	Zeonex	45	35	15	9.00	6.40

1.5.2 Titerplates

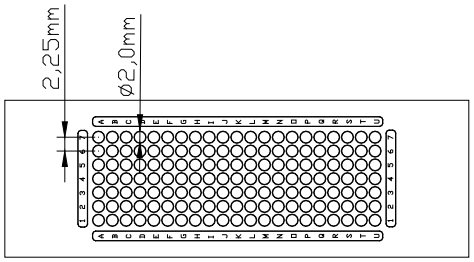


Fig. 18: Layout of the titerplate

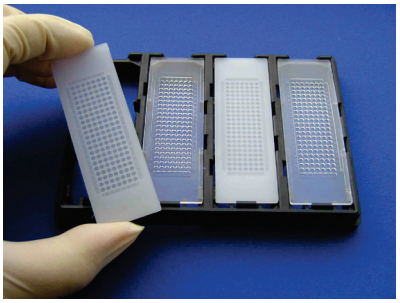


Fig. 19: Titerplates in handling frame

Product Number	Chip Format	Well Size [mm] Dep.	Diam.	Well Spacing [mm]	Material	Price [€/10 chips] 1+	10+	50+	100+	500+
05-0143-0074-08.10	M	0.8	2.0	2.25	PP	90	70	60	50	24.80
05-0144-0074-09.10	M	0.8	2.0	2.25	MABS	90	70	60	50	24.80
05-0145-0074-10.10	M	0.8	2.0	2.25	MBS	90	70	60	50	24.80

1.5.3 Microfluidics in SBS Microtiterplate Format

The SBS titerplate format is a worldwide standard used by almost any piece of equipment in laboratory equipment. To easily integrate microfluidics development in existing lab environments, we have developed a microfluidic platform with the outer dimensions of a standard microtiter plate. The plate is equipped with four labelled sets of 16 microchannels each, with dimensions 2 mm width, 150 µm height and 18 mm length. Fluidic access is easily provided by conical openings of 2.5 mm diameter at either channel end. The plate is available in a variety of polymer materials like PC, PS, PMMA or COP (Zeonor), either in its native state or hydrophilically primed for self-filling of the microchannels with aqueous solutions. It is possible to include surface functionalization in the channels like the spotting of DNA probes etc. (see Fig. 29) Applications include cell based assays, hybridization assays or small volume chemical synthesis.

Product Number	Chip Format	Channel Dim [mm]			Material		Price [€/chip]		
		W	H	L			1+	10+	30+
05-0146-0102-01	SBS-titerplate	2	0.15	18	PMMA		89	69	49
05-0147-0102-03	SBS-titerplate	2	0.15	18	PC		89	69	49
05-0148-0102-07	SBS-titerplate	2	0.15	18	PS		89	69	49
05-0149-0102-05	SBS-titerplate	2	0.15	18	Zeonor		89	69	49
05-0160-0102-01	SBS-titerplate	2	0.15	18	PMMA	hydrophilized	108	88	68
05-0161-0102-03	SBS-titerplate	2	0.15	18	PC	hydrophilized	108	88	68
05-0162-0102-07	SBS-titerplate	2	0.15	18	PS	hydrophilized	108	88	68
05-0163-0102-05	SBS-titerplate	2	0.15	18	Zeonor	hydrophilized	108	88	68

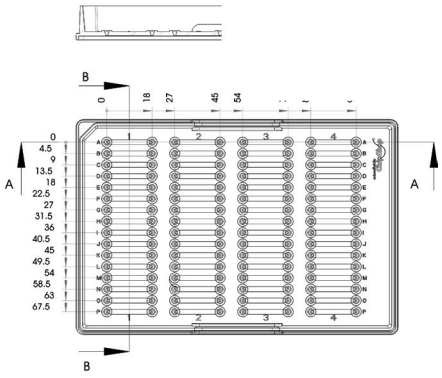


Fig. 20: Schematic drawing of the microfluidic wellplate

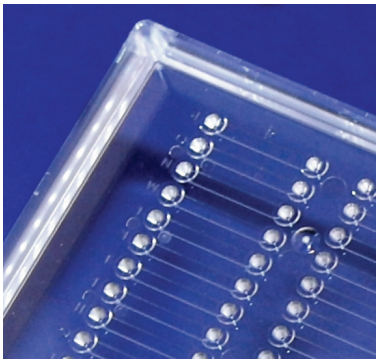


Fig. 21: Microfluidic wellplate

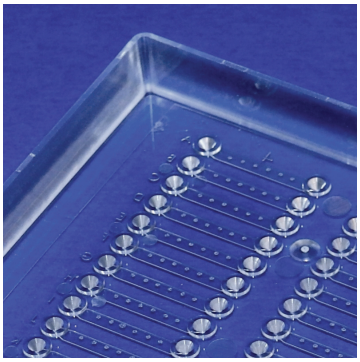


Fig. 22: Microfluidic-wellplate with spottetd DNA probes

microfluidic ChipShop

2

2 fluidic platforms

customization made simple

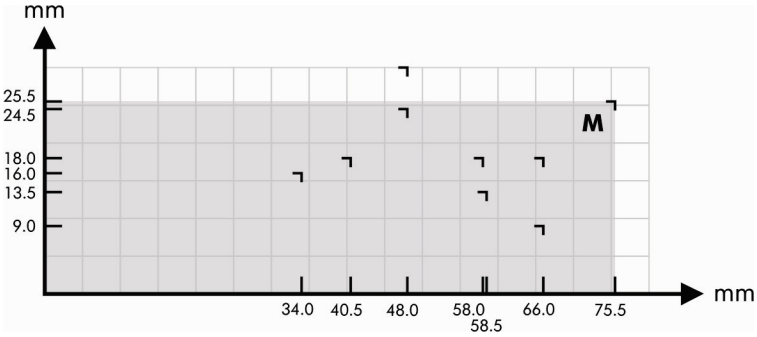
Our fluidic platforms have a defined footprint - the microscopy slide - and a freely configurable area for microstructures plus a choice of different fluidic interfaces.

2.1 Microscopy-Slide Platform – Adapted to 384 Titerplate

The platforms can be delivered as an unstructured device in the microscopy-slide format (25.5 mm x 75.5 mm x 1.5 mm) without cover lid or with a microstructure and cover lid. These chips are covered with a thin polymer foil of the same material as the micro structured part.

The tooling cost will be added to the chip Prices, such as for individually configured microstructures, integrated electrodes, etc. This cost depends on the complexity of the microfluidic design and is available upon request.

Note: The dimensions of the platforms may differ in the range of 0.5% depending on the material.



2.1.1 Microscopy-slide platform with 28 interfaces

For your design you may use the slide format with through holes with a diameter of 1 mm.

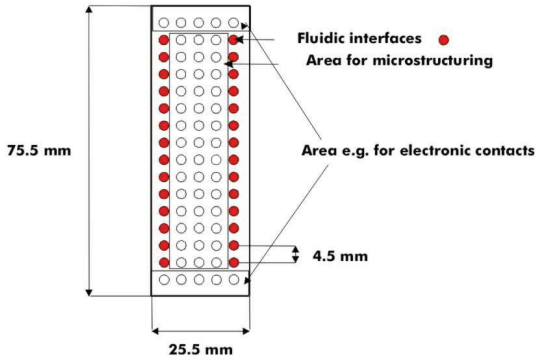


Fig. 23: Platform design principle

Fig. 24: Mixer array as example for the fluidic platform

Product Number	Chip Format	Material	Comment	Price [€/chip] 100+	1000+
06-0250-0000-01	M	PMMA	excl. tooling costs	30	12
06-0251-0000-02	M	Topas		30	12
06-0252-0000-03	M	PC		30	12
06-0253-0000-04	M	Zeonex		30	12

2.1.2 Microscopy-slide platform with 28 integrated olives

For the chip-to-world or the chip-to-chip-interfacing we offer, e.g., platforms with integrated tube fittings. They allow for two or up to 28 fluidic interfaces, or olives. The spacing between the fittings corresponds with the well spacing of a 384-well titerplate.

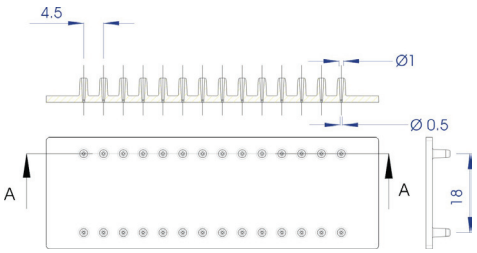


Fig. 25: Fluidic platform in slide format with 28 integrated olives

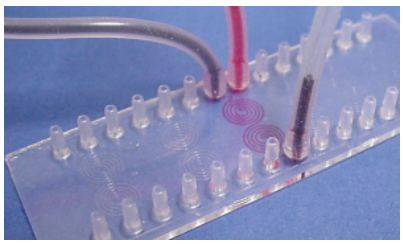


Fig. 26: Use of the 28-olive platform for a mixer array

Product Number	Chip Format	Material	Comment	Price [€/chip] 100+	1000+
06-0350-0000-04	M	Zeonex		15	6
06-0352-0000-05	M	Zeonor	unstructured, without cover lid, excl. tooling costs	15	6
06-0351-0000-03	M	PC		15	6
06-0353-0000-04	M	Zeonex	micro structured, with cover lid, excl. tooling costs	30	12

2.1.3 Microscopy-slide platform with 2 integrated olives

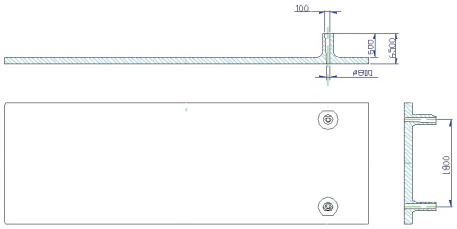


Fig. 27: Fluidic platform in slide format with 2 integrated olives

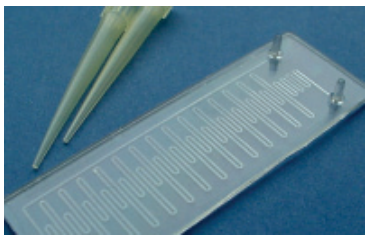


Fig. 28: Use of the 2-olive platform for a continuous-flow PCR chip

Product Number	Chip Format	Material	Comment	Price [€/chip] 100+	1000+
06-0400-0000-03	M	PC		15	6
06-0403-0000-04	M	Zeonex	unstructured, without cover lid, excl. tooling costs	15	6
06-0404-0000-05	M	Zeonor		15	6
06-0410-0000-03	M	PC	micro structured, with cover lid, excl. tooling costs	30	12

2.2 Extended Size Platform – Adapted to Capillary Electrophoresis Chips

This platform is for those who require chips in a long and narrow format (95 mm x 16 mm) with channel structures that differ from either our standard chips with electrodes (see pages 9 and 10) or our *ChipGenie® edition E* capillary electrophoresis chips (see page 29).

The chips are available with a simple fluidic interface (through holes) or with directly molded reservoirs and as either unstructured devices without cover lid or as microstructured devices with cover lid, that is, a thin polymer foil of the same material as the microstructured part.

The tooling costs will be added to the chip Prices, such as for the individually configured microstructures as well as any electrodes applied to the platform chip (for direct measurements) or to the lid (for contact-less conductivity measurements). Actual costs will depend on the complexity of both the microfluidic and the electrode designs.

Note: The dimensions of the platforms may vary by up to 0.5% depending on the material.

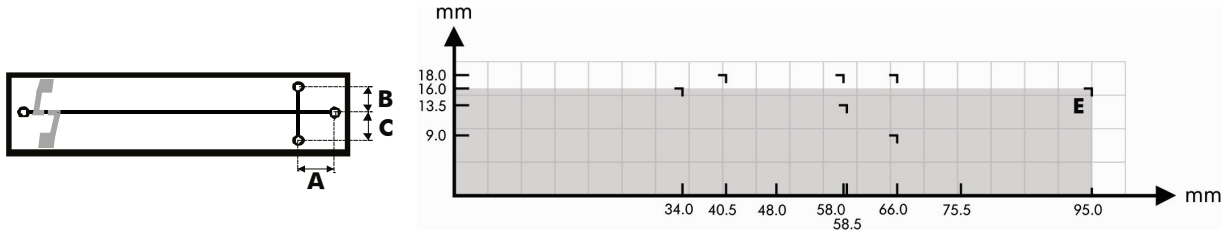


Fig. 29: Chip layout

2.2.1 Extended size platform with fluidic interfaces

The interfaces are through holes with a diameter of 1 mm.

Product Number	Chip Format	Comment	Material	Price [€/chip] 100+	1000+
06-0430-0000-01	E	unstructured, without cover lid, excl. tooling costs	PMMA	15	6
06-0431-0000-01	E	microstructured, with cover lid, excl. tooling costs	PMMA	30	12

2.2.2 Extended size platform with 4 reservoirs

The reservoirs (3 inlets, 1 outlet) have a standard filling volume of 70 µl (maximum 90 µl).

Product Number	Chip Format	Comment	Material	Price [€/chip] 100+	1000+
06-0435-0000-01	E	unstructured, without cover lid, excl. tooling costs	PMMA	15	6
06-0436-0000-01	E	microstructured, with cover lid, excl. tooling costs	PMMA	30	12

3 silicone chips

Our product range in silicone (PDMS) covers standard designs as well as tailor-made micro devices. In principle, all microfluidic designs shown in this catalogue can be ordered in silicone, too.

The silicone parts can be delivered as pure silicone devices without cover lid or bonded to, e.g., glass, various polymers, or silicone itself, including our microfluidic platforms. This enables the simple combination of standard fluidic interfaces with user-specific fluidic designs.

3.1 Slide Format Silicone & Silicone-Hybrid Devices

Microfluidic silicone devices with custom-made or standard fluidic design can be realized in the slide format or any other format that is desired. Silicone slides are supposed to be bonded to glass microscopy slides that are then functionalized and bonded at site of use.

The hybrid microfluidic platforms combine microstructured silicone with a hard plastic backbone with integrated fluidic interfaces. An example of such a device is shown in Fig. 30.

Note: All fluidic designs shown in the catalog can be realized in PDMS as well.

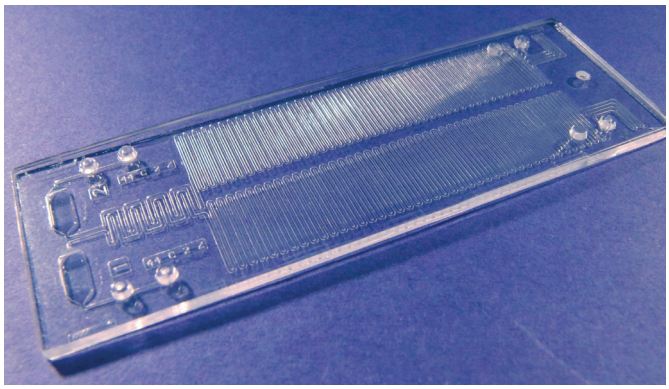


Fig. 30: Silicone microfluidic chip bonded to a hard plastic platform with integrated fluidic interfaces

Product Number	Chip Format	Material	Comment	Price [€/chip] 1+	10+	50+
07-0450-0000-06	M	PDMS	excl. tooling costs	98	64	42
07-0451-0000-07	M	Topas/PDMS		150	120	80

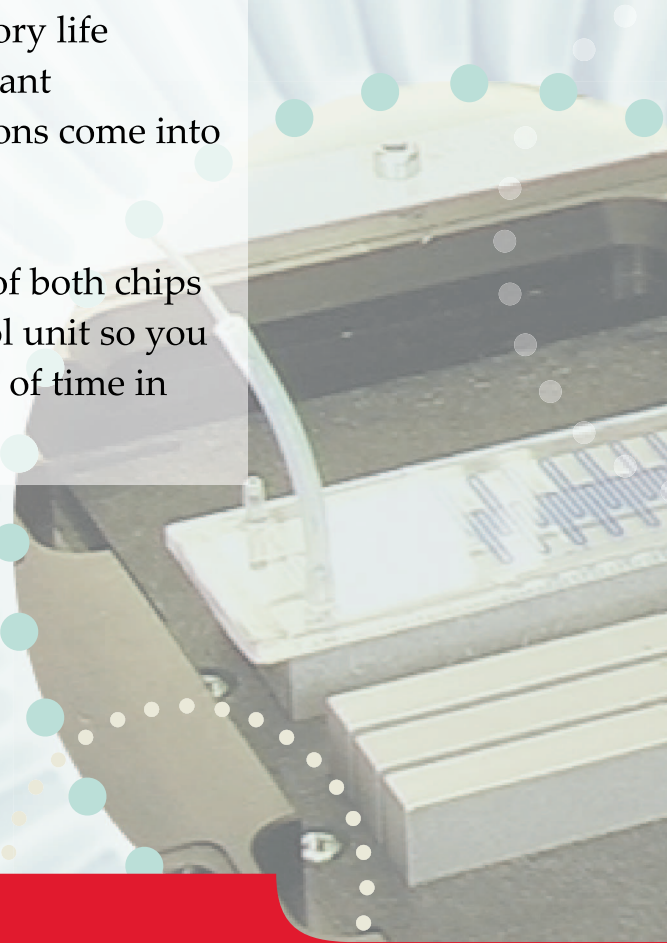
microfluidic ChipShop

complete solutions ChipGenie

instruments & applications

To use microfluidic systems in daily laboratory life usually requires not only the chips but relevant instrumentation. Here our ChipGenie® editions come into play.

ChipGenie® edition T, for instance, consists of both chips in various formats and a temperature control unit so you can directly start your reactions in a fraction of time in comparison to conventional instruments.



4.1 Continuous Flow Chip-PCR – *ChipGenie® edition T*

microfluidic ChipShop and Clemens GmbH offer an innovative system for PCR on the chip. Different from conventional PCR with heating-up and cooling-down cycles, in this Chip-PCR system the complete reaction vessel is temperature controlled: The PCR solution flows through separated temperature zones, it winds itself through the temperature profile. The time-determining step in PCR – the carrying out of the repeated heating and cooling cycles – is not longer necessary since the temperature in the heating zones remains constant and only the liquid undergoes the temperature cycling.

The PCR system comprises the PCR-chip and the thermocycler (or better: thermal control unit, as no cycling in its conventional sense is involved) that has been specially developed for Lab-on-a-Chip applications. A pump moves the PCR solution through the chips. In comparison to conventional systems, this Lab-on-a-Chip PCR-system allows for a significant reduction of the PCR-reaction time: Without much optimization, a 15-cycle PCR can be completed in less than 5 minutes.

In order to allow you an easy use of the PCR system we offer **Chip-PCR Support Kits** (that include tubes and mineral oil for pumping the PCR solution) as well as **pumps** for driving of the fluids.

Product Number	Chip Format	Lid thickn. [µm]	Material	**Comment** Channel depth	length	width	Unit	Price [€/unit] 1+	10+	100+	1000+
08-0470-0047-03	M	250	PC	**15 cycles (1 inlet, 1 outlet)** 100 µm	810 mm	500 µm	chip	42.50	32.50	25.20	12.00
08-0471-0065-03	M	250	PC	**36 cycles (2 inlets, 3 outlets)** 100 µm	1,257 mm	220 µm	chip	42.50	32.50	25.20	12.00
08-0472-0061-03	M	250	PC	**41 cycles (1 inlet, 1 outlet)** 100 µm	1,879 mm	200 µm	chip	42.50	32.50	25.20	12.00
08-0485-0000-00				***ChipGenie edition T* instrument**			instrument	6,450.00			
11-0850-0000-00				***ChipGenie edition T* support kit** - Silicone tube (ID: 0.5 mm, 1 m) - PTFE tube (ID: 0.5 mm, 2 m) - mineral oil (3 ml) - mcs foil 007 – Adhesive Al-Tape (3 sheets)			kit	28.90			

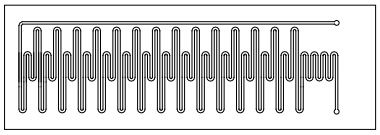


Fig. 31: 15-cycle continuous-flow PCR-chip (08-0470-0047-03)

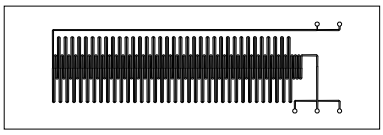


Fig. 32: 36-cycle continuous-flow PCR chip (08-0471-0065-03)

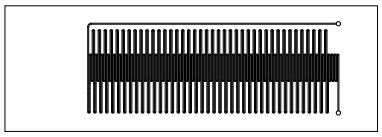


Fig. 33: 41-cycle continuous-flow PCR-chip (08-0472-0061-03)

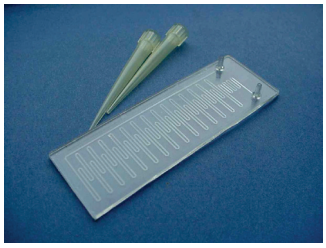
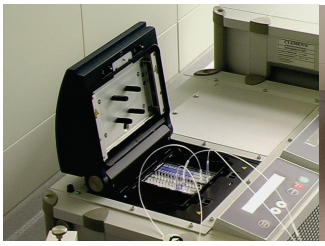


Fig. 34: 15-cycle continuous-flow PCR chip



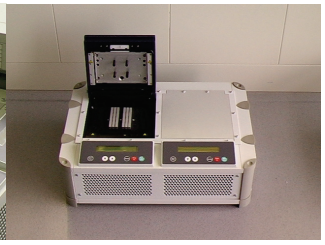


Fig. 35: The thermal control unit with two triplets of individually controllable temperature zones.

Fig. 36: Chip-PCR support kit

4.2 Capillary Electrophoresis – *ChipGenie® edition E*

Our latest addition to the catalogue: After extensive evaluation, the first capillary electrophoresis units are becoming available. Together with chips made with various electrode materials, a system is available that allows optics- and label-free measurements of conductivity to be performed a) at high speeds that covers b) a larger analyte range and c) at greatly reduced costs compared to HPLC, etc.

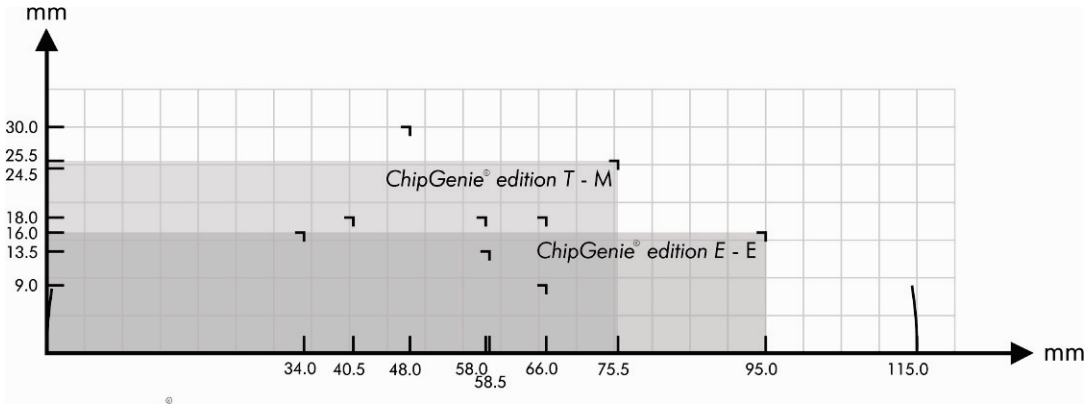
Fig. 37: CE chip layout

Fig. 38: *ChipGenie® edition E* chips

Product Number	Chip Format	Channel [µm] Wid.	Dep.	Len. [mm]	Geometry A [mm]	B	C	D	Lid thick. [µm]	Material	Price [€/chip] 1+	10+	100+
03-0110-0082-01	E	50	50	87	6.0	5.0	5.0		60	PMMA	125	85	32.50
03-0111-0082-01	E	50	50	87	6.0	5.0	5.0	0.1	60	PMMA	125	85	32.50

Fig. 39: *ChipGenie® edition E* capillary electrophoresis unit

Product Number	Description	Price [€/instrument]
08-0486-0000-00	*ChipGenie® edition E* instrument	3,780.00



microfluidic ChipShop

5 fluidic interfaces

solutions for the chip-to-world coupling

To use lab-on-a-chip systems routinely requires an interface between the chip and the macroscopic environment. Here you will find some standard interfaces as well as the necessary tubing for this task.

5.1 Luer Lok Compatible Adapter

These devices can be mounted on the fluidic chips and are compatible with standard male Luer and Luer Lok adapters as, e.g., used for syringes. The diameter of the through hole is 1.3mm.

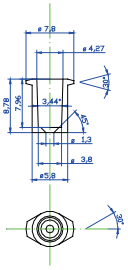


Fig. 40: Schematic drawing of the adapter

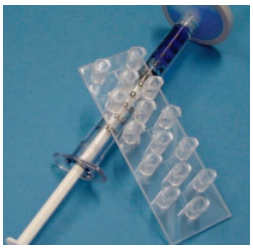


Fig. 41 & Fig. 42: Luer Lok compatible adapter

Product Number	Material	Price [€/10 pieces] 1+	5+	10+	20+
09-0500-0000-01	PMMA	30	25	20	15

5.2 Mini Luer Fluidic Interface

In order to cope with minimized footprint a merger of the miniaturization with well proven fluidic interfaces from the medical world have been realized resulting in our Mini Luer connectors. These Mini Luer connectors allow to connect *microfluidic ChipShop's* Mini Luer fluidic platforms with tubes or, integrated in an instrument, directly with the instrument.

Product Number	Material	Price [€/10 pieces] 1+	5+	10+	20+
09-0540-0000-01	PP	28.00	22.00	16.40	11.40

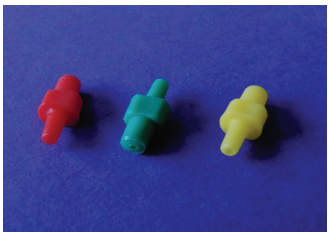


Fig. 43: Mini Luer Interfaces

5.3 Mini Luer Plugs

Mini Luer Plugs allow to close *microfluidic ChipShop's* Mini Luer Platforms. Together with the Mini Luer Connectors they enable a comfortable use with the features of *microfluidic ChipShop's* Mini Luer Platforms.

Product Number	Material	Price [€/10 pieces] 1+	5+	10+	20+
09-0550-0000-01	PP	28.00	22.00	16.40	11.40

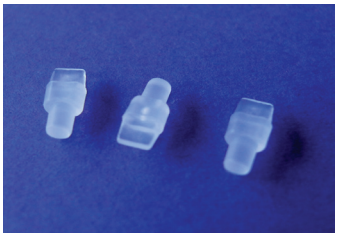
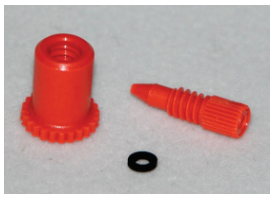
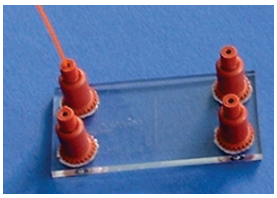


Fig. 44: Mini Luer Plugs

5.4 Upchurch Nanoports

The **Upchurch Nanoports N-126H** allow for chip holes up to 1/16'' (1.57 mm) and for tubings with an outer diameter of 1/32'' (0.79 mm). They can be used with capillary peek tubings with an outer diameter of 1/32''. Please be aware when you make your fluidic design that the footprint of these Nanoports is 8.4 mm.





Product Number	Comment	Price [€/piece] 1+	20+
09-0510-0000-00	Upchurch Nanoports N-126H	16.90	15.80

Fig. 45: Upchurch Nanoports (left) and fluidic chip with mounted Nanoports (right).

5.5 Capillary PEEK tubing

The capillary PEEK tubings are intended to be used with the Upchurch Nanoports but are also suited for various other applications.

Product Number	Description	Price [€/10 pieces] 1+
09-530-0000-00	Capillary PEEK tubing 1575-12x	60.10

One package contains 10 capillaries with a length of 12'' (30.48 cm).

6 substrates

plate materials for you

Some interesting materials that are useful in microfluidics, in particular a range of different polymers, either are not readily available as plate materials or are commonly of insufficient quality. If you should need plain plate material, e.g., as substrate for your hot embossing experiments or as unstructured platform, we can provide you with substrates in our standard microscopy-slide format or in the form of disks with a diameter of 115 mm.

Pure materials that are not available as plate material or not available in the necessary quality are available in slide or wafer format: E.g., Topas or Zeonex, that are not available as raw materials, or PC, when additives of the plate materials do not allow, e.g., fluorescence detection.

Wafers, to be used, for instance, as substrates for hot embossing, come in several units in one package. If surface quality matters, each wafer is separately packaged.

The dimensions of the substrates may differ in the range of 0.5% depending on the material.

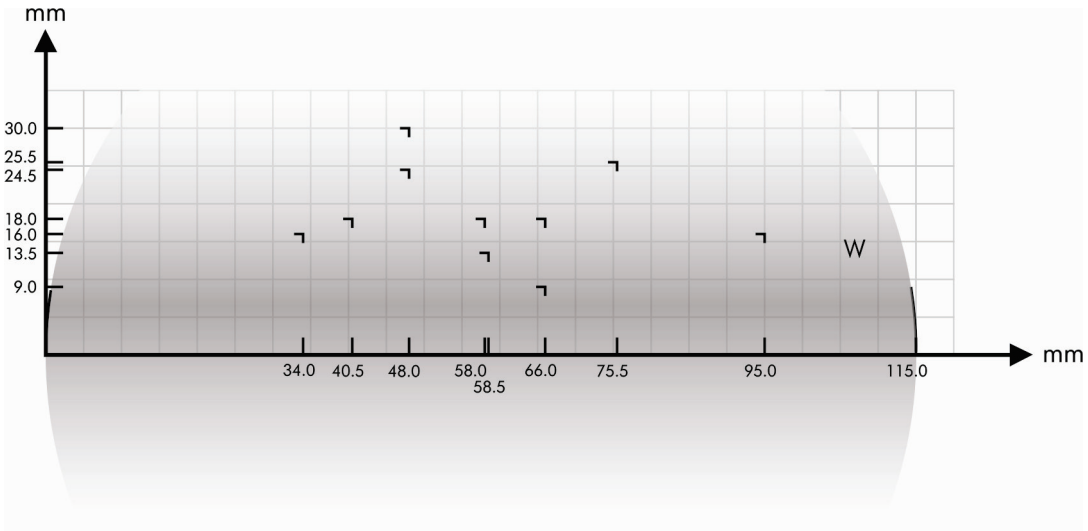
If you should be interested in other materials then listed or different dimensions (thickness, diameter, etc.) of the substrates, please ask for a quote.

6.1 Substrate: Wafer Format

Fig. 46: Wafer format

Product Number	Format	Material	Comment	Price [€ / per unit*] 1+	10+	50+
10-0650-0000-02	W	Topas	thickness 1.5 mm	70	60	35
10-0651-0000-03	W	PC		70	60	35
10-0652-0000-04	W	Zeonex		70	60	35
10-0660-0000-05	W	Zeonor		70	60	35
10-0653-0000-02	W	Topas	thickness 2.0 mm	70	60	35
10-0654-0000-03	W	PC		70	60	35
10-0655-0000-04	W	Zeonex		70	60	35
10-0661-0000-05	W	Zeonor		70	60	35
10-0656-0000-02	W	Topas	thickness 1.5 mm, individually wrapped	75	62	36
10-0657-0000-03	W	PC		75	62	36
10-0658-0000-04	W	Zeonex		75	62	36
10-0659-0000-05	W	Zeonor		75	62	36

*1 unit consist of 10 wafers



6.2 Substrate: Microscopy Slide Format

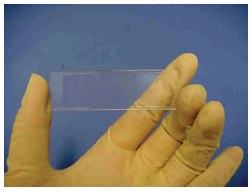
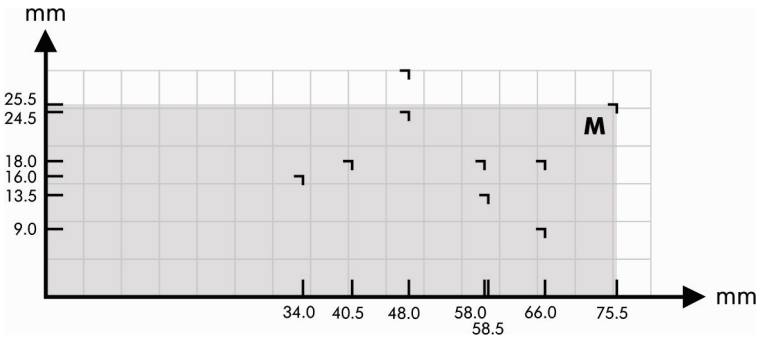


Fig. 47: Polymer substrate in microscopy slide format

Product Number	Format	Material	Comment	Price [€ / per unit*] 1+	10+	50+
10-0671-0000-01	M	PMMA		55	30	22
10-0662-0000-02	M	Topas		55	30	22
10-0663-0000-03	M	PC	thickness 1.0 mm, individually wrapped	55	30	22
10-0664-0000-04	M	Zeonex		55	30	22
10-0672-0000-05	M	Zeonor		55	30	22
10-0673-0000-01	M	PMMA		55	30	22
10-0675-0000-02	M	Topas		55	30	22
10-0666-0000-03	M	PC	thickness 1.5 mm, individually wrapped	55	30	22
10-0667-0000-04	M	Zeonex		55	30	22
10-0674-0000-05	M	Zeonor		55	30	22
10-0668-0000-02	M	Topas		75	35	26
10-0669-0000-03	M	PC	thickness 4.0 mm, individually wrapped	75	35	26
10-0670-0000-04	M	Zeonex		75	35	26

*1 unit consist of 10 chips



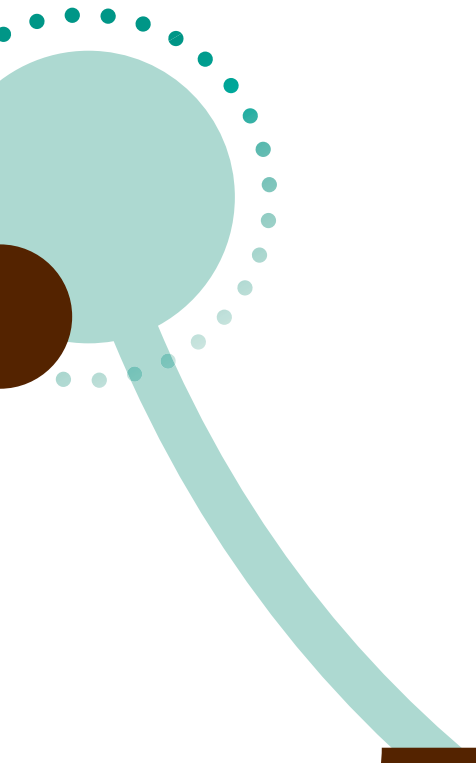
microfluidic ChipShop

7 kits & hardware

kits & pumps for easy use

In order to allow for an easy use of our microfluidic chips, we offer support kits that include tubing to connect the chips for fluid handling, forceps, oil to drive a PCR solution, etc.

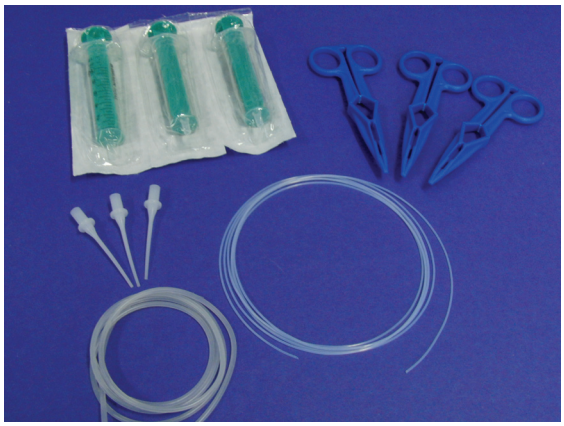
Furthermore, we offer you well-proven pumps to drive your microsystems that have been evaluated in-house.



7.1 Microfluidic Support Kits

The **Microfluidic Support Kits** comprise different components necessary to run microfluidic systems. This includes tubes to bring the fluid into the chip, silicone tubes to enable the interconnection between, e.g., a *microfluidic ChipShop* fluidic platform chip and tubing or between tubing and a syringe. Forceps can be used to stop a flow by clamping a silicone tube and syringes to fill chips manually.

These little kits allow you to directly start with your microfluidic experiments without losing time for searching suitable components.

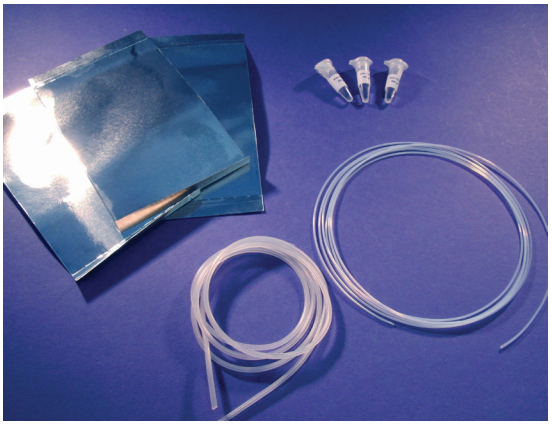


Product Number	Comment	Price [€/kit]
11-0800-0000-00	Microfluidic support kit 1 - Silicone tube (ID: 0.5 mm, 1 m) - PTFE tube (ID: 0.5 mm, 2 m) - forceps (3) - single use syringes (3) - syringe adapter (3)	27.80

Fig. 48: Microfluidic support kit

7.2 Chip-PCR Support Kits

Comparable to the **Microfluidic Support Kits** the **Chip-PCR Support Kits** enable you to directly start with your continuous flow PCR from the fluidic side. They include tubes and mineral oil to drive the PCR. Besides this and the PCR system consisting of chip and thermocycler just your biology is needed to start the PCR.



Product Number	Description	Price [€/kit]
11-0850-0000-00	*ChipGenie edition T* support kit - Silicon tube (ID: 0.5 mm, 1 m) - PTFE tube (ID: 0.5 mm, 2 m) - mineral oil (3 ml) - mcs foil 007 – Adhesive Al-Tape (3 sheets)	28.90

Fig. 49: PCR support kit

7.3 Syringe Pumps – cetoni neMESYS Starter Unit with Valve

The cetoni neMESYS syringe pump is a high-end syringe pump for extreme precise dosing and pumping of fluids. The pump can be easily controlled by the user-friendly software with a comfortable user-interface.

Major benefits are that a) fluids can be pumped and sucked, b) the valve allows switching between sample taking and sample dosing, and c) the pump operates nearly pulsation free.

With these pumps, microfluidic set-ups can be realized where sample plugs of some few microliter or even less have to be pumped back and forth and need to always reach the same point in the microfluidic chip.

Fig. 50: cetoni neMESYS syringe pump, starter unit with valve.

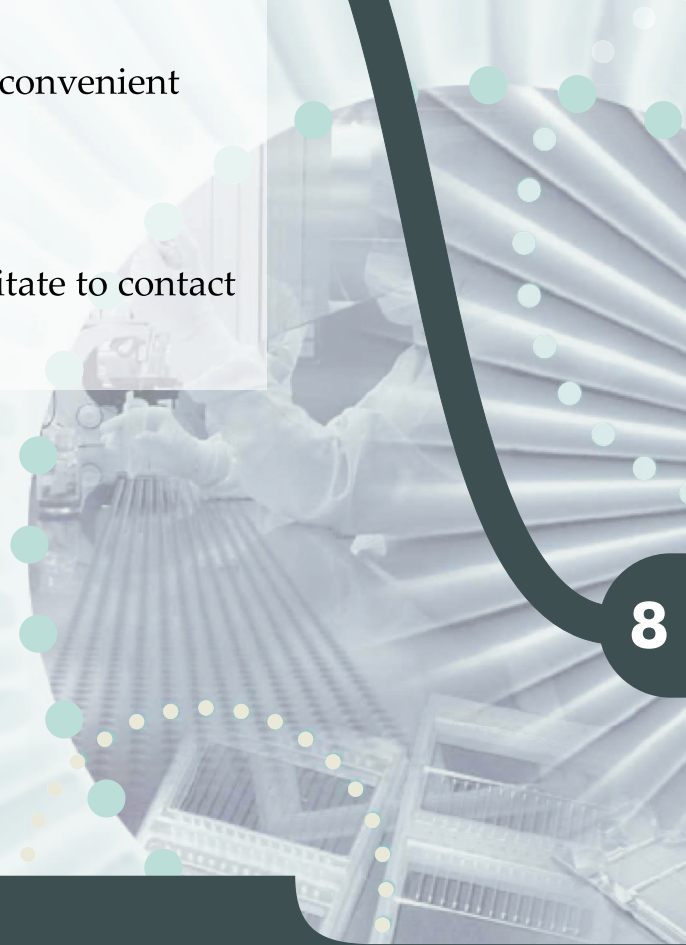
Product Number	Comment	Price [€/instrument]
11-0900-0000-00	cetoni neMESYS syringe pump, starter unit, valve	3,852.90

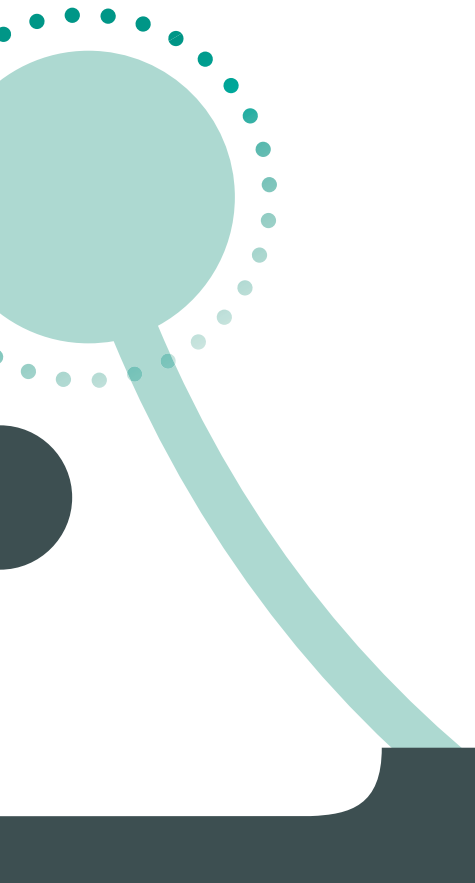
8 documents

To order from our catalogue via fax, please use the enclosed Order Form.

Alternatively, please check our website for convenient online-ordering or order simply by email (catalogue@microfluidic-ChipShop.com).

In case of any further enquiries, do not hesitate to contact us by email or phone.





Order Form FAX: + 49 (0) 36 41 – 347 05 90

Company Information

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City, State: ..... **Zip Code:** ..... **Country:** .....
Phone Number: ..... **Fax Number:** .....
VAT-Number (EU only): ..... **Order Number:** .....

Product Number	Product Description	Material	Quantity	Unit Price	Total Price
Total amount:					*
Shipping charges (please choose): □ Provide courier account number: ..... □ *microfluidic ChipShop* prepay and add to invoice (see estimation below**)					**Not included**

*** Minimum order volume: 250 € (below this amount we charge 15 € small order fee)**
****Estimated shipping charges: Germany: 15 – 30 € / EU: 20 – 60 € / RoW: 60 – 120 €**

- **The above quoted Prices are net amounts and do not include packaging, transport, and tax.**
- **For larger quantities, other materials, or custom designs please ask for quote.**
- **Slight variations in the microstructures by 3 – 4 µm may occur.**

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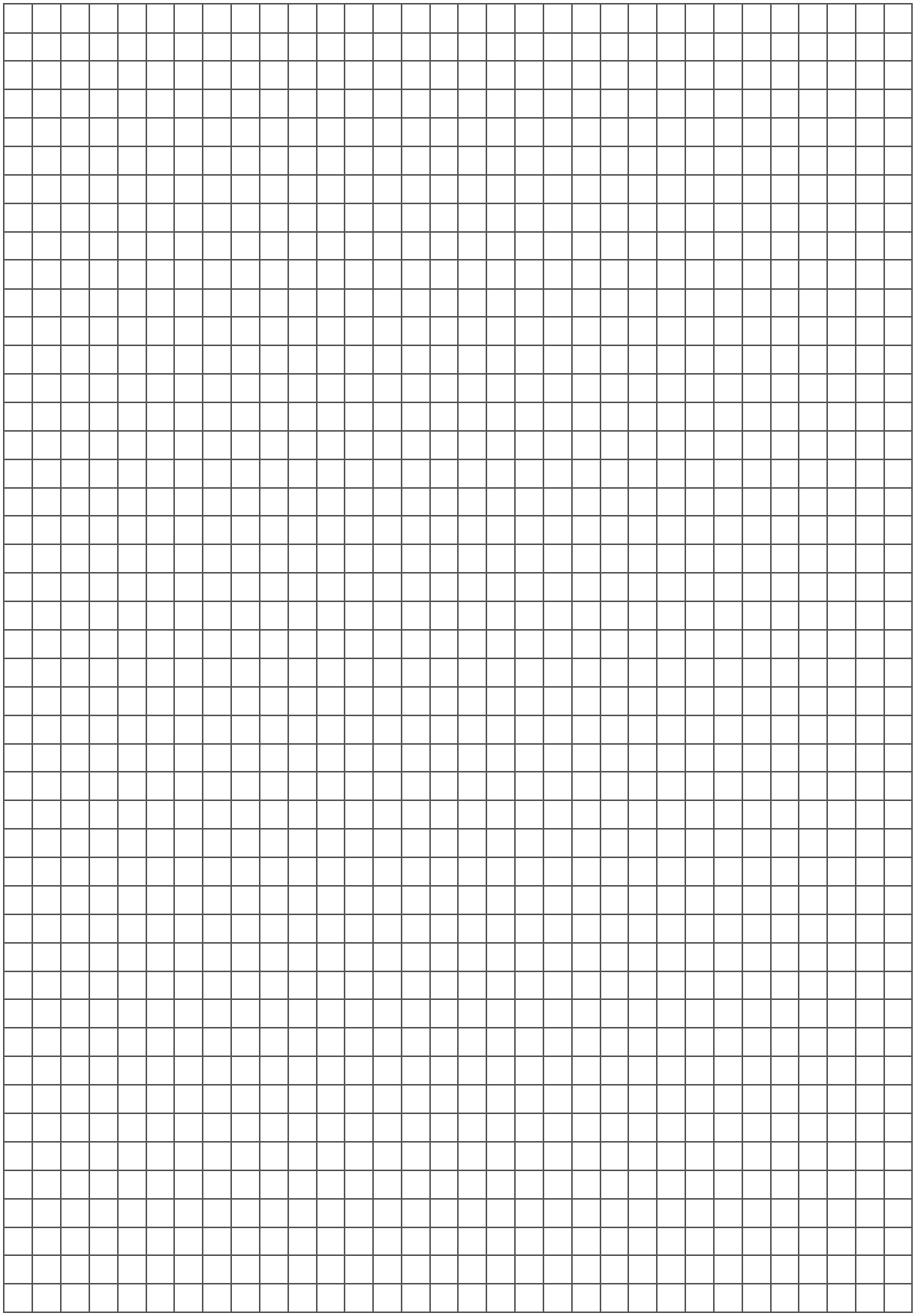
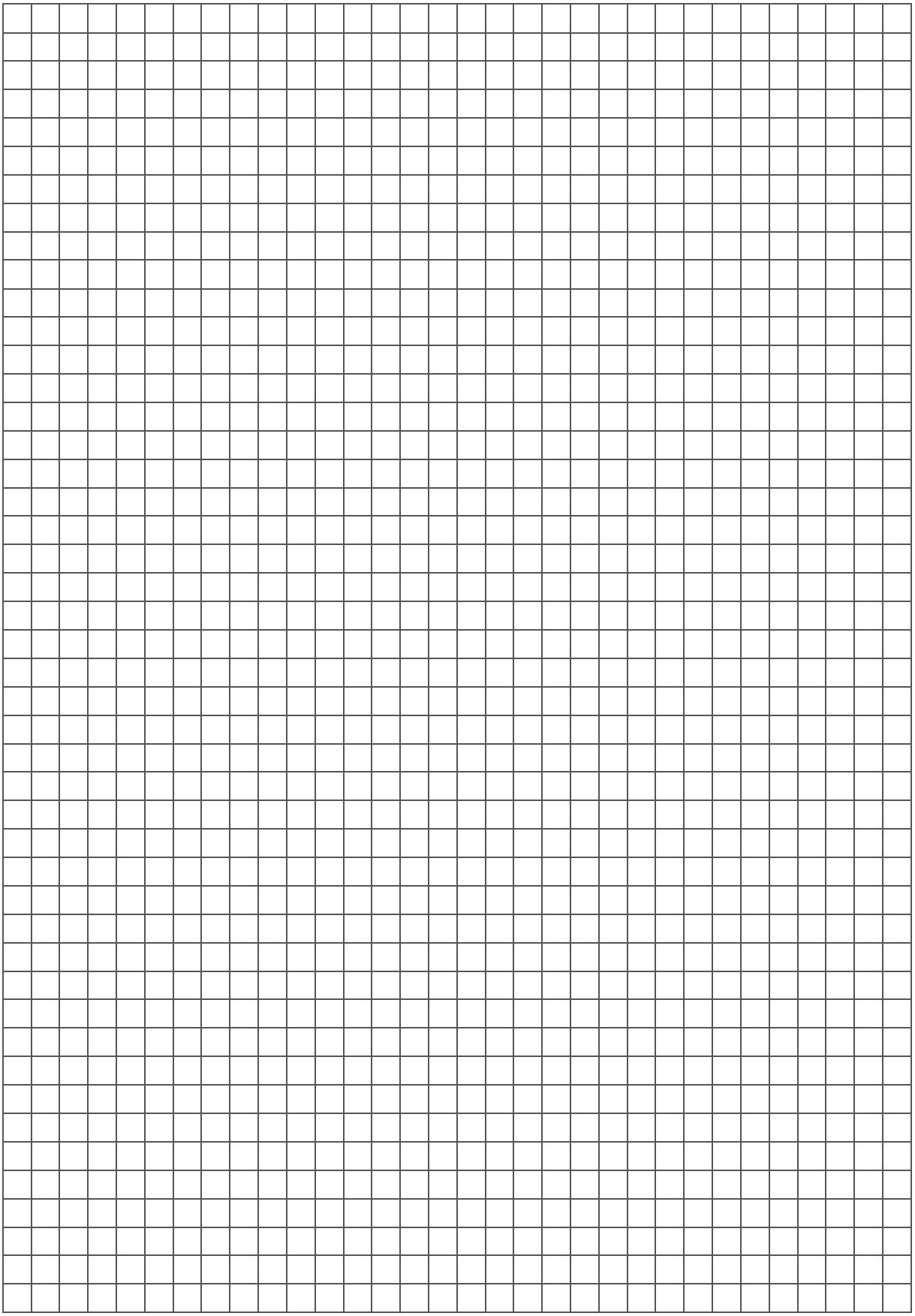
date, name in block letters, signature





microfluidic ChipShop GmbH

Carl-Zeiss-Promenade 10
07745 Jena, Germany

Phone +49 (0) 3641 - 347 05 0
Fax: +49 (0) 3641 - 347 05 90

info@microfluidic-ChipShop.com
www.microfluidic-ChipShop.com