LAB & INDUSTRY EQUIPMENT

BUCH * HOLM





Sigma 2-7







High performance in a new design



Sigma is a leading international manufacturer of laboratory centrifuges for diverse sectors, including biotechnology, pharmaceutical, medical and environment analysis. Laboratories, institutions and companies everywhere in the world have been relying on premium Sigma quality – Made in Germany – for more than 40 years. The company stands for innovative products and development of durable, energy-efficient and especially user-friendly devices.

The Sigma 2-7 scores with many new features. One highlight is the blue LED running indicator, which enables operators to see whether the device is still running — even at a distance. Other unique features are the ten program storage locations (unequalled in its class), the patented lid closing damper, and the optional programmable centrifuge wait and start times. This delayed start feature has been specifically developed for clinical in vitro diagnostics (IVD) using blood tubes. The necessary

clotting time can be preset on the device to simplify work processes. The low noise level and ergonomic operation make the device ideal for everyday use in the laboratory environment. The Sigma 2-7 combines high capacity (up to 4 x 100 ml) with exceptional flexibility. The maximum RCF of more than 2,500 x g is suitable for many application areas in clinical diagnostics, veterinary medicine, pharmacy, environmental analysis and industrial production, as well as universities and research facilities.

The performance specifications and accessories are primarily oriented to small to medium-size laboratories. In the area of clinical diagnostics, the Sigma 2-7 sets the standard with the capacity of up to 24 blood collection tubes 16 x 100 mm. The innovative six-fold bucket allows up to 50% more capacity per run to be achieved. That boosts throughput in the laboratory and enables faster patient diagnoses.

Top marks for functionality

Easy operation, convenience and maximum safety

The Sigma 2-7 is equipped with a well organised, clear display at a perfect viewing angle and with large buttons. The intuitive Spincontrol Basic control unit makes entry of operating parameters and programs simple. The centrifuge run time can be selected in seconds, and the LED run time indicator is readily visible at a distance.

The motorised lid lock, which closes automatically to eliminate extra effort, is a nice practical touch. The innovative electronics provide extremely high energy efficiency and low sensitivity to mains voltage fluctuations. Together with a powerful motor, this enables outstanding acceleration and braking times. With two sets of acceleration

and braking profiles, the Sigma 2-7 is also suitable for centrifuging sensitive cells requiring gentle run-up and run-down. With these features, the Sigma 2-7 sets standards for easy operation, convenience and safety.

The compact Sigma 2-7 (just 37.8 cm wide) saves space in the laboratory and is pleasantly quiet. The low noise level of less than 53 dB(A) at maximum speed with the swing-out rotor ensures a quiet work environment.

The Sigma 2-7 is also available as an IVD model.

Sigma 2-7

- High-performance small centrifuge
- Innovative LED running indicator, readily visible at a distance
- Speed range up to 4,000 rpm
- Maximum capacity: 4 x 100 ml / 30 x 15 ml
- Up to 24 blood collection tubes (16 x 100 mm) per run
- Clear and convenient Spincontrol Basic control unit
- User-configurable audible signal for keypress and end of run
- Ten programs
- Two acceleration and braking curves
- Compact device; fits on every lab bench
- Low height for easy loading and unloading
- Short acceleration and braking times
- Automatic imbalance monitoring
- Adjustable start delay (for clotting time, etc.)
- Low noise level
- Motorised lid lock
- Automatic lid opening
- Low temperature rise in continuous operation
- Automatic overspeed monitoring
- Durable, easy-care stainless steel chamber
- Window in lid for external speed monitoring
- Produced in compliance with the latest national and international standards (e.g. EN 61010-2-020)





Rotors and accessories

Large selection and a multitude of applications

The Sigma 2-7 is available with numerous swing-out and fixedangle rotors, various buckets and adapters. The extensive accessories accept tubes from 1.5 ml to 100 ml as well as microtiter plates and deep-well plates.

Special features include the intelligently designed four-fold and six-fold buckets for nearly all commonly used blood collection tubes. The Sigma 2-7 can hold up to 24 blood tubes (16 x 100 mm) in the swing-out rotor, setting a new standard for compact laboratory centrifuges. The innovative bucket design simplifies working with different tube sizes by minimising the need to exchange buckets and adapters. That makes work processes more convenient and helps to reduce operating costs.

Another special feature is the swing-out rotor for microtiter plates. Up to six microtiter plates per run can be centrifuged with RCF exceeding 2,100 x g. These performance specifications and versatility are otherwise only available with larger laboratory centrifuges.

The portfolio is rounded out by general-purpose round buckets with hermetically sealable caps, making them suitable for use with sensitive specimens.

Another unique feature is that custom accessories can be produced upon request. The rotors and accessories are made from certified high-grade materials to withstand the most severe stresses.

Swing-out rotors starting on page 7

Swing-out rotor 11071

- Max. capacity: 4 x 100 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,540 x q

Angle: 90°



Swing-out rotor 11037

- Max. capacity: 8 x 15 ml
- Max. speed: 4,000 rpm Max. RCF: 2,379 x q
- Angle: 90°



MTP swing-out rotor 11123

- Max. capacity: 6 microtiter plates
- Max. speed: 4,000 rpm
- Max. RCF: 2,111 x g
- Angle: 90°



Swing-out rotors starting on page 13

Fixed-angle rotor 12072

- Max. capacity: 20 x 15 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,486 x g
- Angle: 33°



Fixed-angle rotor 12073

- Max. capacity: 30 x 15 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,486 x g
- Angle: 33° (both rows)



Round bucket 13299

- Max. capacity: 4 x 100 ml

- Max. capacity: 4 x 100 ml
 Max. speed: 4,000 rpm
 Max. RCF: 2,540 x g
 Max. tube length in middle of bucket with / without cap: 126 / 117 mm
 Hermetically closable with cap 17299
 Angle: 90°



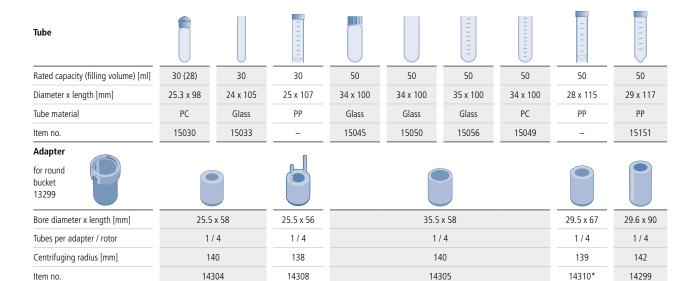
Tube			-							
Rated capacity (filling volume) [ml]	1.5	2	5	5	6 (5)	7	10	10	10	10
Diameter x length [mm]	10.7 x 42	10.7 x 42	17 x 60	12 x 75	12 x 100	12 x 100	16.1 x 81.1	16.1 x 81.1	16.1 x 81.1	16 x 100
Tube material	PP	PP	PPCO	PS	Glass	Glass	PF	PC	PPCO	Glass
Item no.	15008	15040	_	15060	15007	15027	15000	15010	15039	15015
Adapter for round bucket 13299										
Bore diameter x length [mm]	11.1	x 35	17 x 52		13.5 x 52		16.5 x 56			
Tubes per adapter / rotor	4 /	16	3 / 12		5 / 20		4 / 16			
Centrifuging radius [mm]	13	37	139	139						
Item no.	143	301	14309		14302 14303					

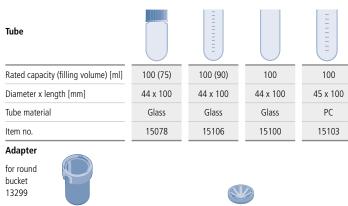
Tube										
Rated capacity (filling volume) [ml]	10	14	14	15 (13)	15	25	25	25	30 (26)	30 (26)
Diameter x length [mm]	16 x 100	17 x 100	17 x 100	17 x 110	16.5 x 120	25 x 90	24 x 100	24 x 100	25.3 x 98	25.3 x 98
Tube material	Glass	PS	PP	Glass	PP	PP	Glass	Glass	PF	PPCO
Item no.	15024	15020	15023	15022	15115	_	15025	15026	15029	15032
Adapter for round bucket 13299			•							
Bore diameter x length [mm]	16.5 x 56		17.5 x 67.5		17 x 76	25.5 x 56		25.5 x 58		
Tubes per adapter / rotor	4 / 16	3 / 12			2/8	1 / 4	1 / 4			
Centrifuging radius [mm]	138	140			126	138		140		
Item no.	14303	14307			14300*	14308		14304		

Round bucket 13299

- Max. capacity: 4 x 100 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,540 x g
- Max. tube length in middle of bucket with / without cap: 126 / 117 mm
- Hermetically closable with cap 17299
- Angle: 90°







Bore diameter x length [mm]	45.1 x 98.5
Tubes per adapter / rotor	1 / 4
Centrifuging radius [mm]	139
Item no.	16051

Round bucket 13299

- Max. capacity: 4 x 100 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,540 x g

 Max. tube length in middle of bucket with / without cap: 126 / 117 mm
- Hermetically closable with cap 17299
- Angle: 90°



Blood and urine tubes















A	
H	
Y	

Rated capacity (filling volume) [ml]
Diameter x length with lid [mm]
Tube material
Item no.

e) [ml]	
m]	
	_

1.1 – 1.4	2.7 – 5		
8 x 82	11 x 82-108		
PP	PP		
-	_		



	4 – 8.5
107	15 x 91 – 10
	PP
	_



1	
10	8 – 9
15 x 118	16 x 108
PP	PP
_	_

Adapter

for round bucket 13299















Bore diameter x length [mm]
Tubes per adapter / rotor
Centrifuging radius [mm]
Item no.

5 / 20	
139	
14302	

16.5 x	56
4 / 1	6
138	
14303	3*

17.5 x 67.5
3 / 12
140
14307



Bucket 13296

- Max. capacity: 24 x 15 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,379 x g
- Angle: 90°



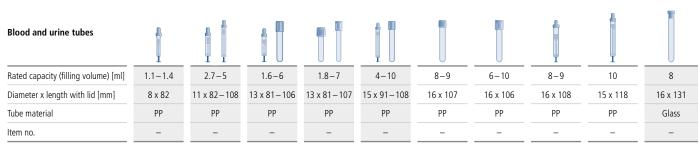
Tube Rated capacity (filling volume) [ml] 10 10 10 10 10 14 14 15 (13) Diameter x length [mm] 16 x 100 16 x 100 16.1 x 81.1 16.1 x 81.1 16.1 x 81.1 17 x 100 17 x 100 17 x 110 Tube material Glass PF PC PPCO PS PP Glass Glass 15015 15000 15010 15039 15020 15023 15022 Item no. 15024

Adapter

for bucket 13296



Bore diameter x length [mm]	17.5 x 64.5	17.5 x 67.5
Tubes per adapter / rotor	6 / 24	6 / 24
Centrifuging radius [mm]	130	133
Item no.	16020	-



Adapter

bucket 13296

Item no.



13296		
Bore diameter x length [mm]	17.5 x 67.5	
Tubes per adapter / rotor	6 / 24	
Centrifuging radius [mm]	133	





17.5 x 67.5	17.5 x 67.5
4 / 16*	2/8*
133	133
-	-

Bucket 13035

- Max. capacity: 8 x 15 ml
- Max. speed: 4,000 rpm
- Max. RCF: 2,379 x g
 Max. tube length in middle of bucket: 120 mm
- Angle: 90°



Tube Rated capacity (filling volume) [ml] 10 10 14 15 (13) 15 10 10 10 14 Diameter x length [mm] 16.1 x 81.1 16.1 x 81.1 16.1 x 81.1 16 x 100 16 x 100 17 x 100 17 x 100 17 x 110 16.5 x 120 Tube material PF PC PPCO Glass Glass PS PP Glass PP 15000 15010 15039 15015 15024 15020 15023 15022 15115 Item no.

Adapter

for bucket 13035



Bore diameter x length [mm]	17.5 x 86
Tubes per adapter / rotor	4/8
Centrifuging radius [mm]	133
Item no.	-

Blood and urine tubes	Î									
Rated capacity (filling volume) [ml]	1.1-1.4	2.7-5	1.6-6	1.8-7	4-10	8-9	6-10	8-9	10	8
Diameter x length with lid [mm]	8 x 82	11 x 82-108	13 x 81 – 106	13 x 81 – 107	15 x 91 – 108	16 x 107	16 x 106	16 x 108	15 x 118	16 x 131
Tube material	PP	PP	PP	PP	PP	PP	PP	PP	PP	Glass
Item no.	-	_	-	-	_	-	-	_	_	_

Adapter

bucket 13035



Bore diameter x length [mm]	17.5 x 86
Tubes per adapter / rotor	4 / 8
Centrifuging radius [mm]	133
Item no.	-

17.5 x 76
4/8
123
13073 [*]

17.5 x 86	
4 / 8	
133	
-	



17.5 x 86 2/4**

133

MTP swing-out rotor 11123

with 1 set (quantity 2) rectangular buckets 13223

- Max. plate height: 50 mm
- Max. speed: 4,000 rpm
- Max. RCF: 2,111 x g
 Max. load per carrier: 346 g
- Angle: 90°



Tube









Description

MTP (without lid) 128 x 86 x 15

MTP (with lid)

128 x 86 x 17.5

 DWP 128 x 86 x 44.5 PCR plate 96-fold

128 x 86 x 20

W x D x H [mm]

rectangular

Item no.

Adapter



bucket 13223 Bore diameter x length [mm Plates per rotor

Centrifuging radius [mm]

n]			_	
	6	4	2	4
		1	18	
			_	



More on the Web more about the Sigma 2-7. Scan the QR code or go directly to the web page:

Fixed-angle rotor 12072

with 20 buckets 13011

- Max. capacity: 20 x 15 ml
 Max. speed: 4,000 rpm
 Max. RCF: 2,486 x g
 Angle: 33°



Tube										
Rated capacity (filling volume) [ml]	5	6 (5)	10	10	10	10	14	14	15 (13)	15
Diameter x length [mm]	12 x 75	12 x 100	16.1 x 81.1	16.1 x 81.1	16 x 100	16 x 100	17 x 100	17 x 100	17 x 110	16.5 x 120
Tube material	PS	Glass	PC	PPCO	Glass	Glass	PS	PP	Glass	PP
Item no.	15060	15007	15010	15039	15015	15024	15020	15023	15022	15115
Adapter										
for fixed-angle rotor										

rotor 12072				
Bore diameter x length [mm]	13.5 x 69	12.5 x 85	17.9 x 77.8	17.9 x 87.8
Tubes per adapter / rotor	1 / 20	1 / 20	1 / 20	-/20
Centrifuging radius [mm]	117	133	129	139
Item no.	13071	13072	13073	-

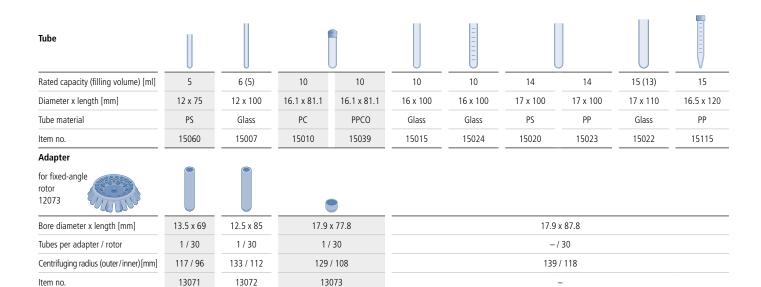
Blood and urine tubes	Î								
Rated capacity (filling volume) [ml]	1.1-1.4	2.7-3.1	1.6-5.3	2.7-5	7.5-8.5	4.9-6	9.5-10	6-10	9-10
Diameter x length with lid [mm]	8 x 82	11 x 82	13 x 81-91	11 x 82 – 108	15 x 108	13 x 106-107	15 x 106-118	16 x 106-107	16 x 108
Tube material	PP	PP	PP	PP	PP	PP	PP	PP	PP
Item no.	-	-	-	_	-	_	_	_	-
Adapter									
for fixed-angle rotor 12072									
Bore diameter x length [mm]		13.8 x 60		12.5 x 85	17.9 x 77.8		17.9 x 87.8		17.9 x 77.8
Tubes per adapter / rotor		1 / 20		1 / 20	1 / 20		-/20		1 / 20
Centrifuging radius [mm]		108		133	129		139		129
Item no.		13070		13072	13073		_		13073

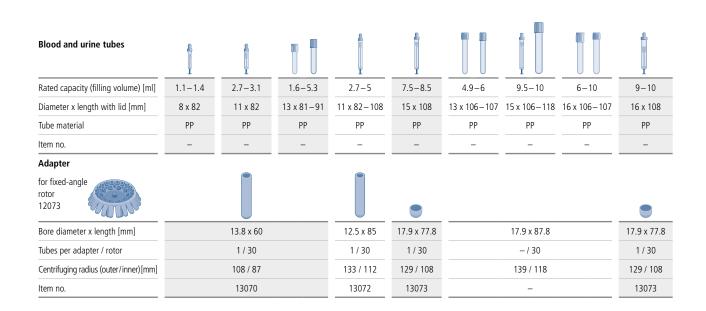
Fixed-angle rotor 12073

with 30 buckets 13011

- Max. capacity: 30 x 15 ml
- Max. speed: 4,000 rpm
- Max. RCF outer row: 2.486 x g
- Max. RCF inner row: 2.111 x g
- Angle: 33° (both rows)







Material properties

Guideline for optimal tube selection

Due to the many factors that influence material properties, this overview is only intended as a general recommendation. There is no guarantee of the stated properties. Users should therefore carefully

test materials for suitability under specific application conditions. Tubes should be discarded as soon as they show any sign of material fatigue.

	Polycarbonate (PC)	Polyvinyl fluoride (PF)	Polystyrene (PS)	Polyethylene (PE)	Polypropylene (PP)
Autoclave resistant	Yes	Yes	No	No	Yes
Elasticity	Not elastic	Not elastic	Not elastic	Good	Not elastic
Transparency	Transparent	Translucent	Transparent	Translucent	Translucent
Recommended temperature range [°C]					
Embrittlement temperature [°C]	≤ -20	≤ -20	≤ -10	≤ -20	≤ -20
Max. working temperature [°C]	≥ +125	≥ +125	≥ +80	≥ +90	≥ +125
Microwave resistant	Moderate	Yes	No	Limited	Moderate
Chemical resistance					
Weak acids	Yes	Yes	Yes	Yes	Yes
Strong acids	No	Yes	Limited	Yes	Yes
Alcohols and alkalis	No	Yes	Yes	Yes	Yes
Salts	Limited	Yes	Limited	Yes	Yes
Note:	Frequent autoclaving leads to loss of strength	Tubes should be completely filled and closed for use at maximum RCF			

	PP copolymer (PPCO)	Glass	High-speed glass (HS glass)	Stainless steel
Autoclave resistant	Yes	Yes	Yes	Yes
Elasticity	Moderate	Not elastic	Not elastic	Not elastic
Transparency	Translucent	Transparent	Transparent	Opaque
Recommended temperature range [°C]				
Embrittlement temperature [°C]	≤ -20	≤ -20	≤ -20	≤ -20
Max. working temperature [°C]	≥ +125	≥ +200	≥ +200	≥ +200
Microwave resistant	Moderate	Yes	Yes	No
Chemical resistance				
Weak acids	Yes	Yes	Yes	Limited
Strong acids	Yes	Yes	Yes	Limited
Alcohols and alkalis	Yes	Yes	Yes	Yes
Salts	Yes	Yes	Yes	Limited
Note:		Max. RCF for all glass tubes approx. 4,000 x g	High-speed glass for maximum RCF of 13,100 x g	

Spincontrol Basic

Advanced control, intuitive operation

Spincontrol Basic is a programmable and user-friendly control unit with a clearly organised and intuitive user interface that simplifies everyday tasks in the lab. Operating parameters are entered using centrally arranged arrow buttons, and parameter settings can be changed during operation. Another clever feature is the optional adjustable automatic lid opening at the end of the run.

Spincontrol Basic can hold up to ten programs — a unique feature in its class. These user-modifiable programs can store standard routines for retrieval at any time.

That makes the control unit ideal for institutions where specimens with different operating parameters must be centrifuged. Quick access to stored programs facilitates enhanced process reliability and quality of analytical results.

Two pairs of acceleration and braking curves help to optimise separation processes. Short or pulsed runs are also possible by pressing and holding the Start/Stop button.

Display	LCD
Speed/RCF display	+
Timer (s; h:min)	10 - 99:59
Short run, Continuous run	+,+
Time increment [s]	1
Speed increment [rpm]	100
RCF increment [x g]	10
Programs	10
Acceleration curves	2 (fast, soft)
Braking curves	2 (fast, soft)
Automatic lid opening at end of run, switchable	+,+
Start delay (clotting time) adjustable, switchable	+,+
Audible signal, switchable	+ , +
Visual standstill indication	+
Lockable controller	+
Microprocessor control	+



Product portfolio

Sigma offers a broad product portfolio with more than 25 laboratory centrifuges. They can be combined with an extensive range of fixed-angle and swing-out rotors and a large variety of accessories to obtain the right device configuration for every application.



Microcentrifuge

Sigma 1-16



36 x 2 ml





Benchtop centrifuge

Sigma 2-7



📱 4 x 100 ml

≥ 2,540 x g



30 x 15 ml

≥ 2,486 x g

Floor-standing centrifuge

Sigma 8KS



12 x 1,000 ml

≥ 8,578 x g



6 x 1,000 ml

≥ 20,461 x q



Benchtop centrifuge

Sigma 3-30KS



4 x 100 ml

≩ 3,969 x g



6 x 94 ml

△ 30,000 rpm ₹ 70,121 x q



Robot centrifuge

Sigma 4-5KRL



100 x 15 ml



4,700 rpm



Legend



Swing-out rotor



Fixed-angle rotor

Premium quality

Made in Germany

The Sigma 2-7 centrifuge meets the highest technical requirements and laboratory standards. Developed and produced at our facility in Osterode, Germany, it is a high-performance, durable and energy-efficient quality product and conforms to the latest safety, emissions and environmental standards. Sigma guarantees the availability of spare parts and wearing parts for at least 10 years.

Furthermore, you benefit from our extensive services portfolio, including commissioning, maintenance, device calibration and more. Our qualified service technicians are ready to provide professional maintenance and repair as well as loaner devices if necessary. All support services are designed to ensure reliability and optimise system availability.

Sigma 2-7

Max. capacity [ml]	
Swing-out rotor	4 x 100
Fixed-angle rotor	30 x 15
Max. RCF	2,540
Maximum speed [rpm]	4,000
Minimum speed [rpm]	100
Noise level at maximum speed (approximate) [dB(A)]	
Fixed-angle rotor 12073	54
Swing-out rotor 11071 with buckets 13299 and caps	53
Max. acceleration time [s]	
Fixed-angle rotor 12073	18
Swing-out rotor 11071 with buckets 13299 and caps	13
Max. braking time [s]	
Fixed-angle rotor 12073	14
Swing-out rotor 11071 with buckets 13299 and caps	10
Power consumption [W]	210
Height x width x depth [mm]	293 x 378 x 535
Height with open lid [mm]	643
Weight without rotor [kg]	23

Sigma Service

Calibration

Documented proof of compliance with essential technical parameters.

Speed or run time (item no. 17713) Speed and run time (item no. 17714) Speed, run time, temperature (item no. 17715)

Device qualification (IQOQ)

This comprehensive device qualification includes installation qualification and metrological checking of all functional parameters with a rotor.

IQOQ package for:

Unrefrigerated centrifuges (item no. 17710) Refrigerated centrifuges (item no. 17711) An additional rotor (item no. 17712)

Sigma 2-7 centrifuge 100–240 V, 50/60 Hz (item no. 10226) **Sigma 2-7** centrifuge, IVD version 100-240 V, 50/60 Hz (item no. 10227)







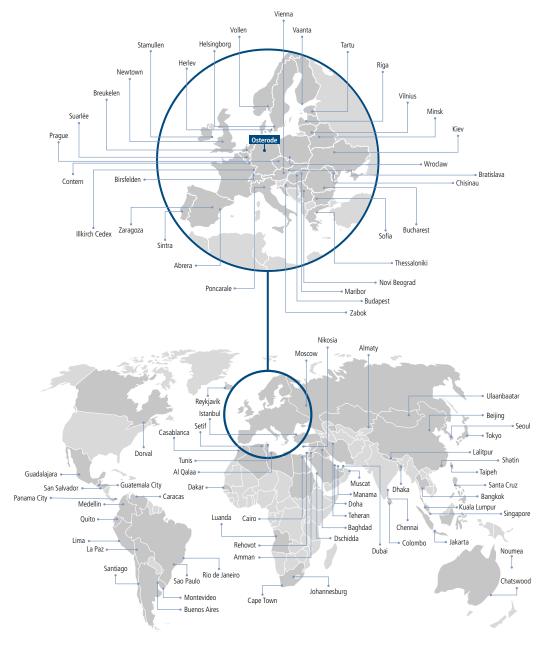




Global service

For local product security

Our trained service partners in over 100 countries ensure consistently high quality in accordance with national regulations. Our specialists can also be engaged quickly around the world, either remotely or on site in person.



Selected locations of our representatives.

An overview of all representatives with detailed contact information can be found at www.sigma-zentrifugen.de/vertriebspartner



Sigma Laborzentrifugen GmbH

An der Unteren Söse 50 37520 Osterode am Harz Tel. +49 (0) 55 22 / 50 07-0 Fax +49 (0) 55 22 / 50 07-12 info@sigma-zentrifugen.de www.sigma-zentrifugen.de