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### 1 Sampling bags, FEP

Made from 5 mil (125 µm) FEP fluoropolymer film, these flexible, sturdy bags are heat sealed on all four sides for complete chemical resistance and leak-proof operation.

*Saint Gobain*

They are inert to most chemicals and have low permeability which limits sample loss. Available with either a nickel-plated, brass on/off valve that accepts 6.4 mm I.D. flexible tubing or with PTFE/silicone septum in polypropylene housing for use with a hypodermic needle. These FEP bags are easy to use. They can be stored for an unlimited period prior to use. Applications include gas sample analysis, extracting air samples from smokestack exhaust systems, monitoring air quality or calibrating instruments in the field. The bags are individually packaged.

- Chemically resistant
- Flexible
- Will not contaminate sample

Capacity L	Size mm	Connection	PK	Cat. No.
1.2	150 x 250	on/off	1	6.267 484
0.5	150 x 150	on/off	1	6.267 485
4.7	300 x 300	on/off	1	6.267 486
50.0	600 x 900	on/off	1	6.267 487
0.5	150 x 150	Septum	1	6.267 488
1.2	150 x 250	Septum	1	6.267 489
4.7	300 x 300	Septum	1	6.267 490
50.0	600 x 900	Septum	1	6.267 491



### 2 Sampling bags, PVDF

Reusable bags made of 2 mil (50 µm) PVDF fluoropolymer film, Chemware® Gas Bags offer an economical alternative for analysis of noncorrosive gases. Durable, heat-sealed seams ensure leak-proof operation.

*Saint Gobain*

Available with either a nickel-plated, brass on/off valve that accepts 6.4 mm I.D. flexible tubing or with a PTFE/silicone septum in a polypropylene housing for use with a hypodermic needle.

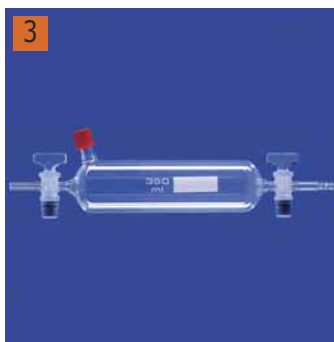
Applications include sampling carbon monoxide, sulfur dioxide, hydrogen sulfide, radon and mercaptan.

The bags are individually packaged. When used for liquid samples, bags should be supported with a tray.

Custom sizes and configurations available on request.

- Flexible
- Will not contaminate sample
- Choice of fitting style: on/off or septum
- For use in gas sampling trains
- Use for gas or liquid sample containment

Capacity L	Size mm	Connection	PK	Cat. No.
0.3	150 x 150	on/off	1	6.267 492
1.6	230 x 230	on/off	1	6.267 493
3.8	300 x 300	on/off	1	6.267 494
8.1	380 x 380	on/off	1	6.267 495
20.3	460 x 460	on/off	1	6.267 496
37.7	600 x 600	on/off	1	6.267 497
0.3	150 x 150	septum	1	6.267 498
3.8	300 x 300	septum	1	6.267 499
1.6	230 x 230	septum	1	6.267 600
8.1	380 x 380	septum	1	6.267 601
20.3	460 x 460	septum	1	6.267 602
37.7	600 x 600	septum	1	6.267 603



9.110 236

### Gas sampling tubes, DURAN® tubing

Made of DURAN® tubing. Available with or without nozzle (with thread GL and septa), with two one-way stopcocks NS14 (with retaining device), connections: capillary tube (outer dia. 8 mm, inner dia. 2.7 mm), glass olive (outer dia. 8 mm), with inscription label. Also available with PUR coating.

*Lenz*

Type	Capacity ml	External body diam. mm	Length* mm	PK	Cat. No.
Without sampling connections	150	42	155	1	9.110 215
Without sampling connections	350	54	200	1	9.110 220
Without sampling connections	500	65	220	1	9.110 225
Without sampling connections	1000	85	260	1	9.110 230
With sampling connections, GL 14	150	42	155	1	6.243 069
With sampling connections, GL 14	350	54	200	1	9.110 236
With sampling connections, GL 14	500	65	220	1	9.110 237
With sampling connections, GL 14	1000	85	260	1	7.623 930

\* Body length (mm)

### 1 Core Sampler Quick Picker, Stainless steel V4A or PP



Suitable for removing bulk materials from sacks or large bags and depositing them directly into sample bottles. Simple to use and clean. Crevice-free to prevent sample residues causing cross-contamination which could affect subsequent sample results. Complete with cleaning brush and two 250 ml sample bottles.

Lock seal close-it and close-it food & pharma please order separately.

Capacity	Length	Imm. depth	Material	PK	Cat. No.
ml	cm	mm			
75	50	300	PP clear	1	6.205 458
75	50	300	V4A	1	9.303 850

Bürkle



### 2 LLG Sample bottles for QuickPicker Sampler

Type A: round, natural colored, with screw cap

Type B: easy to fill and clean, transparent, compact form, unbreakable

Type	Capacity	Material	PK	Cat. No.
	ml			
A	250	LDPE	10	9.073 512
B	250	LDPE	1	9.303 854
B	250	PP	1	9.001 062



### 3 4 Sampler Silo Drill, aluminium or stainless steel V2A



If bulk goods are transported over long distances (e.g. in trucks, railway goods wagons), separation may occur. Taking the sample just from the surface therefore leads to the wrong result. Representative samples from all layers of the silo can be taken with the SiloDrill. The SiloDrill fits through all standard openings with its diameter of 90 mm.

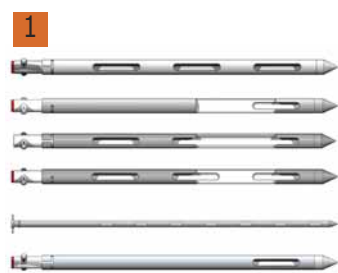
- Of stainless steel AISI 304 (1.4301) or aluminium
- Standard length 150 cm, extendable in increments of 100 cm, max. 350 cm
- Scraper edge for cohesive substances
- Drill tip with drilling blades for easy boring

Type	Length	PK	Cat. No.
	cm		
Silo drill, aluminium	150	1	9.303 858
Silo drill, V2A	150	1	9.303 868
Extension rods, V2A	100	1	9.303 859

Bürkle



➔ For wide neck bottles with screw cap see page 70.



### 1 2 Zone samplers, Multi/All-layer/Jumbo/Uno, steel V4A or aluminium

Bürkle



For sampling bulk goods of all types. Available in various different lengths and materials:

**Multi-sampler:** With several closed chambers for multi-point sampling from several predetermined sampling depths. Available in stainless steel V4A/PTFE, stainless steel V4A/V4A or aluminium. Tube diameter: 25 mm.

**All-layer-sampler:** with open inner tubes for cross-sectional sampling through all layers of the sample. Emptied via the open tube end of the sampler. Available in stainless steel V4A or aluminium. Tube diameter: 25 mm.

**Jumbo-sampler:** generally as the All-layer-sampler with open tube end. With a tube diameter of 50 mm, ideal for coarse grains and larger quantities. For multi point sampling the chambers can be separated by PTFE separators.

**Uno-sampler:** With a closed chamber, for target samples from a pre-determined sample depth.

Easy emptying with the emptying device.

Lock seal close-it and close-it food & pharma please order separately.



Type	Chamber Capacity ml	Length cm	Imm. depth mm	Number openings	Material	PK	Cat. No.
Multi-Sampler	14	55	430	3	Stainless steel (V4A )/PTFE	1	9.303 860
Multi-Sampler	17	85	710	3	Stainless steel (V4A )/PTFE	1	9.303 862
Multi-Sampler	17	150	1355	5	Stainless steel (V4A )/PTFE	1	9.303 864
Multi-Sampler	14	55	430	3	V4A/V4A	1	7.631 201
Multi-Sampler	17	85	710	3	V4A/V4A	1	7.653 124
Multi-Sampler	17	150	1355	5	V4A/V4A	1	9.303 866
Multi-Sampler	14	55	430	3	Aluminium	1	9.303 870
Multi-Sampler	17	85	710	3	Aluminium	1	9.303 872
Multi-Sampler	17	150	1355	5	Aluminium	1	9.303 874
Cross-section sampler	70	55	430	3	Aluminium	1	9.303 875
Cross-section sampler	130	85	710	3	Aluminium	1	9.303 876
Cross-section sampler	260	150	1355	5	V4A/V4A	1	9.303 865
Cross-section sampler	260	150	1355	5	Aluminium	1	9.303 877
Cross-section sampler	70	55	430	3	V4A/V4A	1	6.232 190
Cross-section sampler	130	85	710	3	V4A/V4A	1	6.234 598
Jumbo sampler	880	85	710	3	Aluminium	1	9.303 878
Jumbo sampler	1700	150	1355	5	Aluminium	1	9.303 879
Jumbo sampler	2900	250	2355	7	Aluminium	1	9.303 883
Jumbo sampler	390	85	710	3	Aluminium/PTFE	1	6.240 956
Jumbo sampler	650	150	1355	5	Aluminium/PTFE	1	7.625 884
Jumbo sampler	910	250	2355	7	Aluminium/PTFE	1	6.236 850
Uno-Sampler	17	55	430	1	Stainless steel (V4A )/PTFE	1	9.303 886
Uno-Sampler	17	85	710	1	Stainless steel (V4A )/PTFE	1	9.303 887
Uno-Sampler	17	150	1355	1	Stainless steel (V4A )/PTFE	1	9.303 888



### 3 Emptying device, stainless steel

Bürkle



Emptying zone samplers were often a matter of patience and a steady hand.

Now it's easier and faster with Bürkle's emptying device. Just lay the zone sampler onto the stainless steel stand, adjust the funnels along the sample chambers, and, after turning the sampler, the media will directly flow into the containers below. Quality materials ensure that the emptying device is autoclavable.

Description	PK	Cat. No.
Emptying device	1	6.236 050



### 4 Zone sampler, accessory cleaning brush, PVC/stainless steel

For thoroughly cleaning of Zone samplers.

Bürkle

Diam. mm	Length cm	PK	Cat. No.
25	40	1	6.223 345
25	60	1	9.303 880
25	80	1	9.303 882
25	100	1	9.303 884
50	100	1	9.303 885
50	300	1	6.284 633

### 1 Sampler Tubes, V4A stainless steel, according to ISTA



Bürkle



Sampler for free flowing, bulk goods up to approx. 1cm diameter. This makes it possible, for example, to remove hazel nuts, blends of tea, grain or similar items from large sacks.  
Operation: Insert Tubes into a sack to the desired sampling depth, while keeping the collection tube closed using your hand. When you take away your hand, the sample flows directly through the open tube into the container or sampling bag beneath it.

- choice of 2 lengths, 40 cm and 80 cm
- also for coarse-grained bulk goods
- AISI 316 stainless steel
- corresponds to ISTA standard for seed lengths of 10 mm and 5 mm

Lock seal close-it and close-it food & pharma please order separately.

Diam. mm	Length cm	PK	Cat. No.
40	40	1	6.200 394
40	80	1	6.204 492

### 2 Sampling lance milky, stainless steel V4A, acc. to EN ISO 707



Bürkle



Universal powder and granules sampler collector made of AISI 316 stainless steel. Developed especially for milk powder samples, conforms to standards of DIN and IDF (Int. Dairy Federation). The collector is inserted into bags or casks and the sample is removed using a semi-circular profile lance. Autoclavable.

Lock seal close-it and close-it food & pharma please order separately.

Capacity ml	Length cm	Imm. depth mm	Ext. diam. mm	PK	Cat. No.
150	48	385	28	1	6.051 629

### 3 Sampler ice borer, stainless steel



Bürkle



The sampler is suitable for deep-frozen products in the food industry and semi-solid substances. With the robust hollow borer, with sharp sawing crown, a cross-sectional sample of up to 20 cm length can be cut out.

- Stainless steel V4A (1.4404/1.4571)
- Sterilisable
- Food-safe

**Scope of supply:** Borer, borer head for use in conventional drills and rod for pressing the cylindrical sample out of the borer head

Int. diam. mm	Ext. diam. mm	PK	Cat. No.
8	10 *	1	4.670 758
16	21	1	6.236 498
50	54	1	7.626 965

\* Drilling depth 100 mm



6.282 439



6.282 452



6.282 458

### Disposable samplers for solids, HDPE

Bürkle



In numerous situations, rapid and contamination-free samples have to be taken. DispoSamplers are perfect for this application. They are cleanroom manufactured, individually packed and always ready to use. Avoid expensive decontamination or cleaning of soiled samplers. Gamma sterilised versions are also available.

**MultiDispo:** For free-flowing powders and small-grain granulates. Easy emptying through opening in the handle.

**ZoneDispo:** For free-flowing powders and small-grain granulates. Collected sample can be transported in closed sampler.

**TargetDispo:** For taking target-point samples from powders and granulates.

**PowderDispo:** For taking cross-section samples of powdery or slightly cohesive substances.

**DispoPicker:** For taking cross-section samples from powders and small-grain granulates. With closed tip.

**DispoLance:** For direct removal and filling of free-flowing powders and small-grain granulates.

**MicroDispo:** For free-flowing powders and small-grain bulk materials. For small sample quantities (10 ml).

Type	Description	Capacity ml	Length mm	PK	Cat. No.
MultiDispo	sterile	100	500	20	6.282 440
MultiDispo	non-sterile	100	500	20	6.282 439 1
MultiDispo	sterile	200	1000	20	6.282 442
MultiDispo	non-sterile	200	1000	20	6.282 441
ZoneDispo	sterile	100	500	20	6.269 015
ZoneDispo	non-sterile	100	500	20	7.655 427
ZoneDispo	sterile	200	1000	20	6.282 438
ZoneDispo	non-sterile	200	1000	20	6.257 764
TargetDispo	sterile	100	500	20	6.282 444
TargetDispo	non-sterile	100	500	20	6.282 443
TargetDispo	sterile	200	1000	20	6.282 446
TargetDispo	non-sterile	200	1000	20	6.282 445
PowderDispo	sterile	60	300	20	6.282 453
PowderDispo	non-sterile	60	300	20	6.282 452 2
PowderDispo	sterile	100	500	20	6.259 428
PowderDispo	non-sterile	100	500	20	9.303 736
DispoPicker	sterile	60	300	20	6.282 455
DispoPicker	non-sterile	60	300	20	6.282 454
DispoPicker	sterile	100	500	20	6.282 457
DispoPicker	non-sterile	100	500	20	6.282 456
DispoLance	sterile		300	20	6.282 459
DispoLance	non-sterile		300	20	6.282 458 3
DispoLance	sterile		500	20	6.282 461
DispoLance	non-sterile		500	20	6.282 460
MicroDispo	sterile	10	500	20	9.303 729
MicroDispo	non-sterile	10	500	20	9.303 728
MicroDispo	sterile	10	1000	20	9.303 731
MicroDispo	non-sterile	10	1000	20	9.303 730



### 4 Disposable spatulas LaboPlast®/SteriPlast®, PS

Bürkle



White. Due to their long, ergonomic and solid handles and pointed blades they can be easily pierced into paper and plastic bags. The spatulas are ideal for sampling of powder, granules and pastes. The spatulas are also available with a transparent sheath to close them immediately after the sampling procedure to secure a sterile and contamination-free sample.

- Individually packed
- SteriPlast® additionally gamma-sterilized
- Production, assembling and packaging acc. to Cleanroom class 7 (10000)
- According to EU food and FDA guidelines

Type	Sterile	Length mm	Imm. version depth mm	Material	PK	Cat. No.
LaboPlast®	-	263	150 without sheath	PS	10	6.265 035
LaboPlast®	-	268	150 with sheath	PS	10	6.265 036
SteriPlast®	+	263	150 without sheath	PS	10	6.265 047
SteriPlast®	+	268	150 with sheath	PS	10	6.265 048

### 1 Disposable spatulas LaboPlast® Bio/SteriPlast® Bio, Green PE



Bürkle



White. Due to their long, ergonomic and solid handles and pointed blades they can be easily pierced into paper and plastic bags. The spatulas are ideal for sampling of powder, granules and pastes. The LaboPlast® Bio/SteriPlast® Bio products are entirely made of renewable resources.

Not only with regard to quality but also with regard to its characteristics for high-quality sampling, it is perfectly comparable with conventional polyethylene.

- Individually packed in organic PE foil
- SteriPlast® Bio additionally gamma-sterilized
- Production, assembling and packaging acc. to Cleanroom class 7 (10000)
- According to EU food and FDA guidelines

Type	Sterile	Length mm	Imm. depth mm	Material	PK	Cat. No.
LaboPlast® Bio	-	263	150	Green PE	10	6.265 062
SteriPlast® Bio	+	263	150	Green PE	10	6.265 061

### 2 Disposable spatulas for foodstuffs SteriPlast®, PS



Bürkle



Blue. As a result of the long, ergonomically-shaped, stable handle and a sharp blade, it is possible to even penetrate directly into containers such as paper or plastic sacks. The spatula for foodstuffs is ideal for sampling powders, granulates and pastes.

The shade of blue that is used does not occur in a natural form in foodstuffs. Because of this, the spatulas or parts of them can be quickly found and easily identified in a visual check if they are ever mixed into production. The detectable spatulas have a special additive in the material that makes them visible to metal detectors or X rays. They can therefore be rejected with standard systems for checking for foreign objects, even though they are made of plastic.

- Individually packed, gamma-sterilized
- Production, assembling and packaging acc. to Cleanroom class 7 (10000)
- According to EU food and FDA guideline

Description	Length mm	Imm. depth mm	PK	Cat. No.
visual identification	263	150	10	6.284 559
detectable	263	150	10	6.284 570

### 3 Anti-tamper seal-it, self-adhesive roll

Bürkle



If a container opening is closed with Seal-it, then the container cannot be opened without destroying the seal-it label. Seal-it is additionally provided with several cross-perforations which immediately tear when manipulated like a motorcar tax disc. Seal-it can be used to securely seal bottles, sample bags, sacks, specimen bags, envelopes, etc. The white labelling field on the seal-it can be written on with all conventional writing tools with, for example contents information, sampling date, name of operator, etc.

- Clear identification via numbers in sequence
- Integrated control label with the same number, for accompanying documents
- 500 consecutively numbered labels in each roll
- Format 178 mm long, 30 mm wide
- Tear-off perforation for each label

Type	PK	Cat. No.
Seal-it	500	7.622 477



**1**


### 1 | 2 Control seals for sampling close-it

White/plain or coloured with labelling field. close-it has a sandwich-type structure (aluminium/ paper) and seals the container hermetically (vapour barrier).

*Bürkle*

The rear of the label is coated with a powerful adhesive. This means that close-it sticks firmly to most commercial containers, even to surfaces coated with fine powder, slightly moist or even frozen surfaces where conventional labels or adhesive tape will not stick.

close-it food & pharma ensures aswell the necessary success when resealing sample openings, as it reliably prevents products from escaping after sampling. The adhesive complies with the European guidelines for foodstuffs and FDA guidelines. Just like the original, close-it food & pharma has a barrier layer of aluminium foil, which makes the close-it food & pharma perfectly suited to sampling foodstuffs, pharmaceuticals, cosmetics, food additives, even frozen goods - any applications in which the product must not be contaminated by contact with the adhesive.

**2**


Type	Description	Colour	PK	Cat. No.
close-it	Printed, 95 x 95 mm	Red	500	<b>9.303 910</b>
close-it	Printed, 95 x 95 mm	Green	500	<b>9.303 911</b>
close-it	Printed, 95 x 95 mm	Yellow	500	<b>9.303 912</b>
close-it	Printed, 95 x 95 mm	Blue	500	<b>9.303 913</b>
close-it	Printed, 95 x 95 mm	Black	500	<b>9.303 914</b>
close-it	Plain, 95 x 95 mm	White	500	<b>9.303 915</b>
Roller for close-it	-	-	1	<b>9.303 919</b>
close-it Maxi	Printed, 150 x 150 mm	Red	250	<b>9.303 980</b>
close-it Maxi	Printed, 150 x 150 mm	Green	250	<b>9.303 981</b>
close-it Maxi	Printed, 150 x 150 mm	Yellow	250	<b>9.303 982</b>
close-it Maxi	Printed, 150 x 150 mm	Blue	250	<b>9.303 983</b>
close-it Maxi	Printed, 150 x 150 mm	Black	250	<b>9.303 984</b>
close-it Maxi	Plain, 150 x 150 mm	White	250	<b>9.303 985</b>
Roller for close-it Maxi	-	-	1	<b>9.303 989</b>
close-it food & pharma	Printed, 95 x 95 mm	Red	500	<b>6.228 255</b>
close-it food & pharma	Printed, 95 x 95 mm	Green	500	<b>9.303 998</b>
close-it food & pharma	Printed, 95 x 95 mm	Yellow	500	<b>9.303 996</b>
close-it food & pharma	Printed, 95 x 95 mm	Blue	500	<b>9.303 997</b>
close-it food & pharma	Printed, 95 x 95 mm	Black	500	<b>9.303 999</b>
close-it food & pharma	Plain, 95 x 95 mm	White	500	<b>9.303 986</b>
close-it food & pharma Maxi	Printed, 150 x 150 mm	Red	250	<b>9.303 990</b>
close-it food & pharma Maxi	Plain, 150 x 150 mm	White	250	<b>9.303 991</b>
close-it food & pharma Maxi	Printed, Roll, 150 mm x 150 mm	yellow	250	<b>9.304 000</b>
close-it food & pharma Maxi	Printed, Roll, 150 mm x 150 mm	blue	250	<b>9.304 001</b>
close-it food & pharma Maxi	Printed, Roll, 150 mm x 150 mm	green	250	<b>9.304 002</b>
close-it food & pharma Maxi	Printed, Roll, 150 mm x 150 mm	black	250	<b>9.304 003</b>
close-it tape	Roll, 95 mm x 50 m	White	50	<b>9.303 992</b>
close-it tape Maxi	Roll, 150 mm x 50 m	White	50	<b>9.303 993</b>
close-it tape food & pharma	Roll, 95 mm x 50 m	White	50	<b>9.303 994</b>
close-it tape food & pharma Maxi	Roll, 150 mm x 50 m	White	50	<b>9.303 995</b>

**3**


### 3 Dispensing scoops, Aluminium

Capacity ml	Length Scoop mm	Overall length mm	PK	Cat. No.
42	80	135	1	<b>9.201 113</b>
105	113	185	1	<b>9.201 118</b>
140	120	210	1	<b>9.201 121</b>
260	145	250	1	<b>9.201 125</b>
340	155	265	1	<b>9.201 126</b>
555	185	310	1	<b>9.201 131</b>
675	220	350	1	<b>9.201 135</b>
1510	270	400	1	<b>9.201 140</b>
3000	300	430	1	<b>9.201 143</b>

➔ For sample containers - please see page 563



#### 1 Scoops FoodScoop, Stainless steel



Very stable hand scoop for various applications, particularly suited for the food industry. Seamless connection of scoop and hollow handle, therefore without crevices and edges. Especially smooth, highly polished surface.

- Especially sturdy model
- Stainless steel V2A (1.4301)
- With handy suspension eyelet

Capacity ml	Width Scoop mm	Length Scoop mm	Overall length mm	PK	Cat. No.
100	60	120	215	1	6.254 785
200	75	140	230	1	6.252 363
250	85	155	245	1	6.254 786
350	100	180	290	1	6.242 476
500	130	220	350	1	6.072 181

1

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#### 2 Dispensing scoops, stainless steel

Made from stainless steel Remanit® 4301.

Capacity ml	Diam. mm	Length Scoop mm	Overall length mm	PK	Cat. No.
120	50	100	190	1	9.201 219
450	75	145	250	1	9.201 222
1000	105	190	320	1	9.201 232
1500	120	240	350	1	9.201 235
2000	150	250	370	1	6.080 286

2



#### 3 Sampling scoops and spoons, PS, sterile

White or red high-impact polystyrene plastic. Red colored scoops reduces the chance of residual sample staying in the scoop or the scoop being accidentally left behind in a sample. The spatula has a sturdy point for taking sterile samples and for piercing paper bags or similar packages.

Bel-Art Products

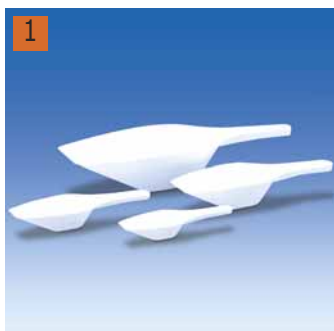
- Individually sealed and sterilised in a polyethylene bag
- Long handle increases the distance between the hand and the sample
- Scoop is suitable for use as weighing boat
- Food-safe
- Lot stamped for accurate lot tracing
- Shipped with a Certificate of Processing for Sterilization
- Made from FDA grade materials

Type	Capacity ml	Colour	PK	Cat. No.
Spatula, v-shaped	15	white	100	6.201 657
Scoop	60	white	100	4.675 626
Scoop	125	white	100	4.675 627
Scoop	250	white	100	4.675 628
Scoop	60	red	100	4.675 629
Scoop	125	red	100	4.675 625
Scoop	250	red	100	4.675 630
Spoon	1.25	white	200	4.675 631
Spoon	2.46	white	200	4.675 632
Spoon	4.93	white	200	4.675 633
Spoon	14.79	white	200	4.675 634

Other sampling devices are available on request.

3





### 1 Measuring scoops, PP

VITLAB



White measuring scoops which are also suitable as weighing scoops. With precision formed filling edge and comfortable, stable handle. Easily readable volume quantities on the upper side of the handle. Food-safe product according to regulation (EU) No. 10/2011.

Capacity ml	Length mm	PK	Cat. No.
2	60	12	9.201 042
5	82	12	9.201 043
10	100	12	9.201 045
25	135	12	9.201 047
50	160	12	9.201 048
100	200	12	9.201 049
250	260	6	4.678 198
250	315	6	4.678 197
1000	385	6	9.201 050



### 2 Measuring scoops, HDPE

VITLAB



Natural colouring. Conical in shape with tapered filling edge. Food-safe product according to regulation (EU) No. 10/2011.

Capacity ml	Length mm	Colour	PK	Cat. No.
15	115	Natural	1	7.008 959
25	135	Natural	1	7.008 960
65	185	Natural	1	7.008 961
110	215	Natural	1	7.008 962
150	250	Natural	1	9.201 025
350	310	Natural	1	9.201 030
750	350	Natural	1	9.201 035
750	350	Ultramarin	1	6.310 292
750	350	Black	1	4.671 820
1250	400	Natural	1	9.201 040
1250	400	Ultramarin	1	6.310 293
1250	400	Black	1	4.671 821



#### 1 Disposable scoops LaboPlast®/SteriPlast®, PS

White. They are ideal for sampling of powder, granules and pastes. The scoops are also available with transparent cover to close them immediately after the sampling procedure to secure a sterile and contamination-free sample.

Bürkle



- Individually packed
- SteriPlast® additionally gamma-sterilized
- Production, assembling and packaging acc. to Cleanroom class 7 (10000)
- According to EU food and FDA guidelines

Type	Sterile	Capacity ml	Length mm	Version	Material	PK	Cat. No.
LaboPlast®	-	25	141	without lid	PS	10	6.265 025
LaboPlast®	-	25	142	with lid	PS	10	6.265 026
LaboPlast®	-	50	160	without lid	PS	10	6.265 027
LaboPlast®	-	50	161	with lid	PS	10	6.265 028
LaboPlast®	-	100	205	without lid	PS	10	6.265 029
LaboPlast®	-	100	206	with lid	PS	10	6.265 030
LaboPlast®	-	150	216	without lid	PS	10	6.265 031
LaboPlast®	-	150	218	with lid	PS	10	6.265 032
LaboPlast®	-	250	232	without lid	PS	10	6.269 508
LaboPlast®	-	250	235	with lid	PS	10	6.269 509
LaboPlast®	-	500	280	without lid	PS	10	6.269 510
LaboPlast®	-	500	283	with lid	PS	10	6.269 511
LaboPlast®	-	1000	332	without lid	PS	10	6.284 541
SteriPlast®	+	25	141	without lid	PS	10	6.265 037
SteriPlast®	+	25	142	with lid	PS	10	6.265 038
SteriPlast®	+	50	160	without lid	PS	10	6.265 039
SteriPlast®	+	50	161	with lid	PS	10	6.265 040
SteriPlast®	+	100	205	without lid	PS	10	6.265 041
SteriPlast®	+	100	206	with lid	PS	10	6.265 042
SteriPlast®	+	150	216	without lid	PS	10	6.265 043
SteriPlast®	+	150	218	with lid	PS	10	6.265 044
SteriPlast®	+	250	232	without lid	PS	10	6.269 512
SteriPlast®	+	250	235	with lid	PS	10	6.269 513
SteriPlast®	+	500	280	without lid	PS	10	6.269 514
SteriPlast®	+	500	283	with lid	PS	10	6.269 515
SteriPlast®	+	1000	332	without lid	PS	10	6.284 542

#### 2 Disposable scoops LaboPlast® Bio/SteriPlast® Bio, Green PE



Bürkle



White. They are ideal for sampling of powder, granules and pastes. The LaboPlast® Bio/SteriPlast® Bio products are entirely made of renewable resources. Not only with regard to quality but also with regard to its characteristics for high-quality sampling, it is perfectly comparable with conventional polyethylene.

- Individually packed in organic PE foil
- SteriPlast® Bio additionally gamma-sterilized
- Production, assembling and packaging acc. to Cleanroom class 7 (10000)
- According to EU food and FDA guidelines

Type	Sterile	Capacity ml	Length mm	Material	PK	Cat. No.
LaboPlast® Bio	-	25	141	Green PE	10	6.265 055
LaboPlast® Bio	-	50	160	Green PE	10	6.265 056
LaboPlast® Bio	-	100	205	Green PE	10	6.265 057
LaboPlast® Bio	-	150	216	Green PE	10	6.265 058
SteriPlast® Bio	+	25	141	Green PE	10	6.265 049
SteriPlast® Bio	+	50	160	Green PE	10	6.265 050
SteriPlast® Bio	+	100	205	Green PE	10	6.265 051
SteriPlast® Bio	+	150	216	Green PE	10	6.265 052

We can supply this  
**manufacturer's whole  
 product range !**





1

### 1 Disposable scoops for foodstuffs SteriPlast®, PS

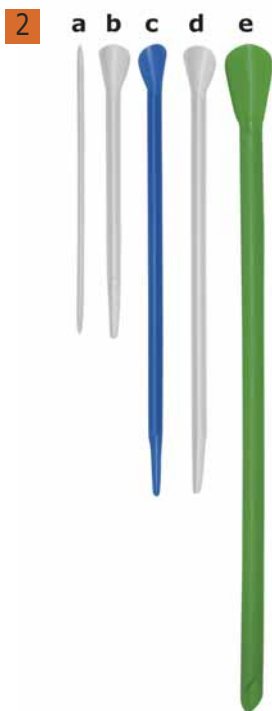
Bürkle



Blue. The food scoop is ideal for powders, granulates and pastes. The shade of blue that is used does not occur in a natural form in foodstuffs. Because of this, the scoops or parts of them can be quickly found and easily identified in a visual check if they are ever mixed into production. The detectable scoops have a special additive in the material that makes them visible to metal detectors or X rays. They can therefore be rejected with standard systems for checking for foreign objects, even though they are made of plastic.

- Individually packed, gamma-sterilized
- Production, assembly and packaging according to clean room class 7 (10000)
- According to EU food and FDA guideline

Description	Capacity	Overall length	PK	Cat. No.
	ml	mm		
visual identification	25	141	10	6.284 552
visual identification	50	160	10	6.284 553
visual identification	100	205	10	6.284 554
visual identification	150	216	10	6.284 555
visual identification	250	232	10	6.284 556
visual identification	500	280	10	6.284 557
visual identification	1000	332	10	6.284 558
detectable	25	141	10	6.284 563
detectable	50	160	10	6.284 564
detectable	100	205	10	6.284 565
detectable	150	216	10	6.284 566
detectable	250	232	10	6.284 567
detectable	500	280	10	6.284 568
detectable	1000	332	10	6.284 569



2

### 2 Powder spatula smartSPATULAS®, PP

Heathrow Scientific



Single use polypropylene lab tools reduce costly contamination errors.

- Size related designs to fit perfectly with standard 0.2, 1.5/2.0, 15 and 50 mL tubes
- Ideal for dispensing or sample collection of powders or soft solids
- Shatter-resistant in liquid nitrogen, resistant to diluted acids and bases, and can be used with hot liquids
- Anti-static, sterile and Eco-friendly versions available
- Autoclavable and complies with FDA standards for food contact

For tubes ml	Description	Colour	Diam.	Length	Figure	PK	Cat. No.
			mm	mm			
0.2	Micro Antistatic	Natural	3.5	140	a	300	6.256 896
15/1.5/2.0	Eco	Natural	7.0	140	b	300	6.256 894
15/1.5/2.0	Standard	Blue	7.0	210	c	300	6.256 893
15/1.5/2.0	Standard	Natural	7.0	210	d	300	6.256 895
15/1.5/2.0	Standard sterile	Natural	7.0	210	d	100	6.256 898
50	Macro	Green	1.0	310	e	150	6.256 897



### 1 2 Sampling Dippers DispoDipper LaboPlast®/SteriPlast®, PP, blue transparent



Bürkle

Scaled sampling tube manufactured in a clean room specially designed for disposable use. Due to the blue colour, it is also perfect for use in the food, animal feed and pharmaceutical industries. After sampling, the container can be closed and is leakproof. DispoDipper is completely manufactured in one piece and can be used for sampling and subsequent transport of the sample in one device. In this way, cross-contamination or sample impurities are almost impossible. For sampling, first remove the cover at the predetermined breaking point. Then take the sample with the sample container and close it securely. After sampling, the handle at the predetermined breaking point can be detached from the sample container. This allows for easy and space-saving transport of the sample.

- Individually packaged and optionally sterilised by gamma rays (SteriPlast®)
- Production and packaging according to clean room class 7
- Complies with EU food requirements and FDA regulations

Description	Capacity	Diam.	Height	Overall length	PK	Cat. No.
	ml	mm	mm	mm		
LaboPlast®	50	40	98	417	20	6.290 524
SteriPlast®	50	40	98	417	20	6.290 525
LaboPlast®	100	53	98	415	20	4.662 230
SteriPlast®	100	53	98	415	20	4.662 231
LaboPlast®	250	72	116	429	20	4.662 232
SteriPlast®	250	72	116	429	20	4.662 233



### 3 Sampling Dippers DispoLadle, HDPE



Bürkle

The DispoLadle is a sampling scoop specially designed for disposable use. The scaled scoop with embossing can be used for measuring. It shows contents in increments of 10 ml, up to 200 ml. An ergonomic handle and a spout on both sides for right or lefthand operation make handling simple and easy.

- Cleanroom manufactured
- Individually packaged
- Optionally sterilised by gamma rays

Description	Capacity	Length	PK	Cat. No.
	ml	mm		
standard	200	500	20	6.284 537
sterile	200	500	20	6.284 538
standard	200	1000	20	6.284 539
sterile	200	1000	20	6.284 540



### 4 Chemistry scoop, PP, with rod handle

For aggressive liquids, complete with strong handle made of polypropylene.

Bürkle

Capacity	Stem diam.	Stem	PK	Cat. No.
ml	mm	mm		
250	20	1000	1	9.303 840
600	20	1000	1	9.303 842
1000	20	1000	1	9.303 844



### Liquid-Sampler, single hand operation, stainless steel

Sampler for thin to viscous liquids. Easy use with one-handed operation. With discharge funnel for safe filling of sample bottles. Material V4A (1.4404).

Bürkle

Description	Capacity	Length	Diam.	PK	Cat. No.
	ml	mm	mm		
open with thumb	50	460	32	1	6.072 639
open with thumb	100	540	32	1	6.092 997 5
place onto bottle	50	455	32	1	6.253 634
place onto bottle	100	535	32	1	7.622 377 6



6.092 997

7.622 377



### Sample Taking System INGENIOUS

A new, easy-to-handle sample taking system for manual sampling.

Windaus-Labortechnik

General purpose thanks to

- quick and easy exchange of the sample taking equipment
- simple change by pressing the spring mechanism
- extremely strong fiber glass telescopic poles, non-corrosive
- for up to 20 different sample taking devices
- four different fiber glass telescopic poles extensible from 1.5 m up to 6.00 m in length

Please order telescopic poles separately.



#### 1 Fiber glass telescopic pole INGENIOUS

Very robust telescopic pole, ideal for sample taking. Fiber glass makes it almost indestructible and non-corrosive. Comfortable to carry even at low temperatures.

Windaus-Labortechnik

Simple extension and adjustment mechanism. You can change the length easily by a quarter rotation. (Pic. 3).

At telescope poles of 3.85 to 6 meter the length could be easily changed by using the clamp. (Pic. 2).

Comfortable use of spring mechanism. This type can take all samplers and catchers with universal connecting part.

Length m	PK	Cat. No.
1.45 - 2.75	1	6.801 684
1.50 - 3.85	1	6.241 444
1.50 - 5.00	1	6.263 282
1.50 - 6.00	1	6.263 283



#### 2 Waterlanding net

Very robust, with nylon net, for catching flees, bugs, floating particles and water insects.

Windaus-Labortechnik

Mesh width 0.8 mm. With robust aluminium ring of 200 mm diameter.

Double-stitched version. With universal connecting part.

Type	Aperture size mm	Material	PK	Cat. No.
Waterlanding net	0.8	nylon	1	6.263 284



#### 3 Pendulum beaker, stainless steel

Nothing can be spilt because beaker automatically swings into a vertical position.

Windaus-Labortechnik

Dimension of the beaker: 100 mm diameter, 130 mm height, 1 liter volume.

With universal connecting part.

Type	Capacity Litres	Material	PK	Cat. No.
Pendulum beaker	1	stainless steel	1	6.263 290



7.621 456

#### 4 Angled sample beaker, PP

With exchangeable beaker made of PP. The construction of the beaker holder

Windaus-Labortechnik

(stainless steel tension band) makes it possible to turn the beaker around in order to change the pouring direction as well as the adjustment of the click-in angle construction (0 to 180°).

Type	Capacity Litres	Material	PK	Cat. No.
Angled sample beaker	1	PP	1	7.621 456 4



#### 5 Angled sample beaker, stainless steel

Especially suitable for mud-sampling. Stainless steel beaker with reinforced rim.

Windaus-Labortechnik

With adjustable click-in angle from 0 to 180°.

Type	Material	Capacity Litres	Dimensions (dia. x H) mm	PK	Cat. No.
Angled sample beaker	stainless steel	1	100 x 130	1	7.658 408



#### 6 Angled sample beaker, stainless steel

Completely made of stainless steel. Holder and the beaker can be sterilised.

Windaus-Labortechnik

With adjustable click-in angle from 0 to 180°.

Type	Material	Capacity Litres	Dimensions (dia. x H) mm	PK	Cat. No.
Angled sample beaker	stainless steel	1	100 x 130	1	6.313 766

**1** All purpose clamp for sample bottles, stainless steel **NEW**

For various bottles with neck diameters from 10 to 80 mm and volumes of max. 1000 ml. With adjustable click-in angle from 0 to 180°. *Windaus-Labortechnik*

Type	Material	PK	Cat. No.
All purpose clamp for sample bottles	stainless steel	1	6.228 232



**2** All purpose clamp, stainless steel with silicon coating **NEW**

For bottles or containers with a diameter of up to 110 mm. With 3 holder elements coated with a silicone tube for a very safe grip. With adjustable click-in angle from 0 to 180°. *Windaus-Labortechnik*

Type	Material	PK	Cat. No.
All purpose clamp	stainless steel/silicone	1	6.313 765



### Sampling system TeleScoop

TeleScoop is a versatile sampling system with exchangeable tools for a wide range of applications. The tools (angular beaker, pendulum beaker, bottle holder, stainless steel beaker and dip net e.g. for taking solid and organic samples from water courses) are attached to the rod by a practical snap-in joint. Ideal for sampling from baths, tanks, shafts, open water courses etc. Sampling depths down to 6 M can be reached with the adjustable telescopic aluminum rod. *Bürkle*

**3** TeleScoop Telescopic Rods, aluminium *Bürkle*

The individual rods have been provided with an end stop. This means that one rod cannot accidentally slip out of another rod. The telescopic rods cannot be rotated radially.

- Increased rigidity by using cold-rolled profile rod
- Springs made of stainless steel

Description	Length m	PK	Cat. No.
Telescopic rod	0,65 - 1,20	1	9.303 800
Telescopic rod	0,70 - 1,80	1	6.266 590
Telescopic rod	0,95 - 2,80	1	9.303 801
Telescopic rod	1,25 - 2,50	1	9.303 802
Telescopic rod	1,15 - 3,00	1	9.303 804
Telescopic rod	1,65 - 4,50	1	9.303 806
Telescopic rod	1,75 - 6,00	1	9.303 807



**4** Angular, sample beakers, angled for TeleScoop, PP *Bürkle*

With individually variable angle adjustment.

Capacity ml	Material	PK	Cat. No.
600	PP	1	9.303 810
1000	PP	1	9.303 812
2000	PP	1	9.303 814



**5** Pendulum beaker for TeleScoop, PP *Bürkle*

Automatically swings into a vertical position. Nothing can be spilled. Ideal for deep and narrow shafts.

Capacity ml	Material	PK	Cat. No.
600	PP	1	9.303 820
1000	PP	1	9.303 822
2000	PP	1	9.303 824





1



### 1 Bottle holder for TeleScoop, PP/PA

Holds bottles up to max. 88 mm diameter incl. 750 ml bottle (Spare bottle Cat. No. 9.072 987). Suitable for plastic and glass bottles. With universal quick-action clamping strap.

Bürkle

Type	PK	Cat. No.
Bottle holder	1	9.303 830

2



### 2 Beaker for TeleScoop, stainless steel V2A

Beaker with scraper for pasty or powdery materials

Bürkle

- With lip for scraping
- Sterilisable

Capacity ml	PK	Cat. No.
1000	1	9.303 846

3



9.303 828

### 3 Catch nets for TeleScoop, PVC/PA - PP/PA

Ideal for sampling from basins, tanks, shafts, open waters etc. The telescopic aluminium rods TeleScoop allow sampling up to 6 m depth.

Bürkle

- For industries and water treatment
- Mesh width: 2 mm up to 5 mm
- Depth cath net, net depth: 250 mm

Type	Dimensions (W x D) mm	Material	PK	Cat. No.
Surface catch net	310 x 280	PVC / PA	1	9.303 828 3
Depth catch net	190 x 430	PP / PA	1	9.303 829 4

4



9.303 829

5



### 5 Scoop, stainless steel V2A, sterilisable

Without openings, undercuts or crevices in which residues could collect. Pore-free finishing produced by high-quality laser welding seams. The dip sampler is sterilisable by flame sterilisation or steam sterilisation and can therefore be made completely germ-free. Complete with rod.

Bürkle

Capacity ml	Overall length mm	PK	Cat. No.
1000	1150	1	6.233 131

6



### 6 Liquid sampler MiniSampler, PE



Bürkle

Taking samples is quick, easy, clean and practical.

With the MiniSampler, the sample liquid only comes into contact with the suction hose and the sample bottle. Cross contamination is largely prevented. Bottles can be tightly sealed immediately after the sample is taken with a tamper-evident cap.

The single use, PE suction hose can be quickly replaced, ensuring that samples are never contaminated. A new hose can be used for each sample if required. Because of its small diameter (8 mm) and flexibility the hose can reach sampling areas that are otherwise inaccessible. Also suitable for viscous oils.

#### Included:

Supplied with ten 100 ml PE bottles, 10 m of PE suction hose (6 x 8 mm), 1 hose cutter, 1 hose weight (V2A/nickel-plated brass) and 20 seal-it safety seal labels in a carrying case.

Type	PK	Cat. No.
MiniSampler	1	9.303 970

### 1 2 Vampire Sampler

The self-priming peristaltic pump is also suitable for dirty or particle-containing substances with a viscosity of max. 500 mPas. Ideal for sampling from barrels, tanks, wells, water separators, waste water and sewage treatment plants. The samples are fed directly into the sample container via the closed hose system.

Bürkle

- Battery-powered hose pump
- Easy cleaning and exchangeable hoses prevent impurities
- Suction depth up to 5 metres

**Scope of supply:** Drive unit, pump head, pump hose (30 cm, Marprene), suction hose (5 m, PE), hose connector (PP), sample bottle (250 ml, LDPE), bottle basket, two rechargeable batteries, battery charger

Type	PK	Cat. No.
Vampire sampler, complete	1	9.303 851

Suitable accessories can be found in our online shop.



### 3 Disposable liquid samplers, HDPE



Bürkle

In numerous situations, rapid and contamination-free samples have to be taken. DispoSamplers are perfect for this application. They are cleanroom-manufactured, individually-packed and always ready-to-use. Avoid expensive decontamination or cleaning of soiled samplers. Gamma-sterilised versions are also available.

**ViscoDispo:** For high viscosity-media up to 100000 mPas.

**LiquiDispo:** For liquids and slightly viscous media.

**DispoPipette:** For taking all-layer and target-point samples from low viscosity-media.

**DispoTube:** For taking all-layer and target-point samples from liquids.

Type	Description	Capacity ml	Length mm	PK	Cat. No.
ViscoDispo	non-sterile	100	500	20	9.303 732
ViscoDispo	sterile	100	500	20	9.303 733
ViscoDispo	non-sterile	200	1000	20	9.303 734
ViscoDispo	sterile	200	1000	20	9.303 735
LiquiDispo	non-sterile	100	500	20	9.303 720
LiquiDispo	sterile	100	500	20	9.303 721
LiquiDispo	non-sterile	200	1000	20	9.303 722
LiquiDispo	sterile	200	1000	20	9.303 723
DispoPipette	non-sterile	100	500	20	6.282 451
DispoPipette	sterile	100	500	20	7.971 434
DispoPipette	non-sterile	200	1000	20	6.281 402
DispoPipette	sterile	200	1000	20	6.281 401
DispoTube	non-sterile	100	500	20	6.282 447
DispoTube	sterile	100	500	20	6.282 448
DispoTube	non-sterile	200	1000	20	6.282 449
DispoTube	sterile	200	1000	20	6.282 450



### 4 Sampler LiquiSampler, PTFE/FEP or PP



Bürkle

DIN EN ISO 15528. For liquids. Made of ultra pure and chemically inert PTFE/FEP or PP for contamination-free sampling. Practical push button, single-handed operation. Suitable for point, cross-sectional, and bottom sampling. Ideal for sampling from open and closed drums, kegs, tanks, silos, water sources (ponds, lakes, streams, rivers). Suitable for all commercial kegs and drums with openings of at least 32 mm diameter. All surfaces are non-porous and crevice-free preventing accumulation of dirt. Only round-profile screwthreads, suitable for food hygiene applications, are used. Simple to dismantle and clean.

Nominal capacity ml	Length mm	Diam. mm	Colour	Material	PK	Cat. No.
150	600	32	highly transparent	PTFE/FEP	1	6.255 307
250	1000	32	highly transparent	PTFE/FEP	1	9.303 950
500	2000	32	highly transparent	PTFE/FEP	1	9.303 951
150	600	32	transparent	PP	1	6.901 807
250	1000	32	transparent	PP	1	9.303 955
500	2000	32	transparent	PP	1	9.303 956





### 1 Sampler ViscoSampler, PTFE/FEP or PP

Bürkle



Ultra-pure sampler with powerful suction for viscous media. Specially developed for viscous substances, such as slurries, silt, wet clay and soil samples, sediments, oils, emulsions and creams.

The suction flask sucks up and discharges the material. All surfaces are non-porous and crevice-free, preventing dirt accumulation. Only round-profile threads, suitable for food hygiene applications, are used. Allow easy dismantling and cleaning.

Nominal capacity ml	Length mm	Diam. mm	Colour	Material	PK	Cat. No.
160	600	32	highly transparent	PTFE/FEP	1	6.803 102
300	1000	32	highly transparent	PTFE/FEP	1	9.303 960
650	2000	32	highly transparent	PTFE/FEP	1	9.303 961
160	600	32	transparent	PP	1	6.253 163
300	1000	32	transparent	PP	1	9.303 965
650	2000	32	transparent	PP	1	9.303 966

### 2 Manually-operated reels and lowering cables

#### Manually-operated reels

Bürkle

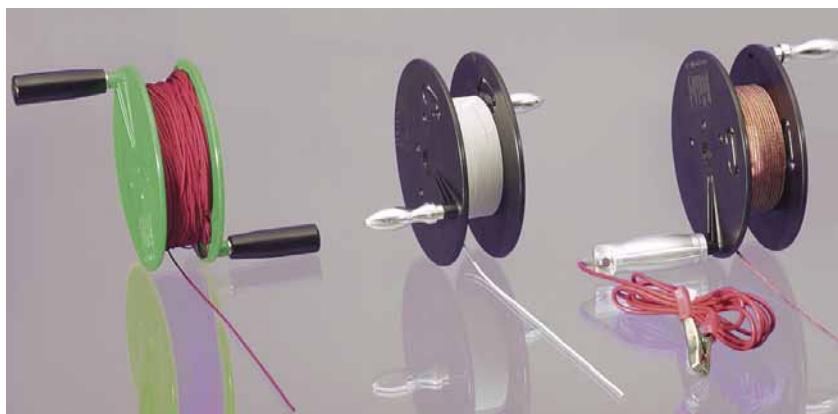
- High winding capacity of up to 150 m for cable 2 mm dia.
- Reel width: inner 44 mm, outer 55 mm, reel diameter: inner 100 mm, outer 180 mm
- Please order the required lowering cable separately

#### Lowering cables

- For dipping bottles and immersion cylinders, matching manually-operated drum reels made of various materials
- Tensile load max. up to 10 kg

Description	Length m	Diam. mm	PK	Cat. No.
Manually-operated reel, PP green	-	-	1	6.200 263
Manually-operated reel, black PA, electrically conductive	-	-	1	9.303 941
Manually-operated reel EX with grounding cable, black	-	-	1	6.234 815
Stainless steel lowering cable, PTFE-coated	10	2.00	1	6.087 044
Stainless steel lowering cable, PTFE-coated	25	2.00	1	7.602 596
Stainless steel lowering cable, PTFE-coated	50	2.00	1	7.602 110
Stainless steel lowering cable	10	1.25	1	9.303 943
Stainless steel lowering cable	25	1.25	1	6.801 844
Stainless steel lowering cable	50	1.25	1	6.233 996
Lowering cable made of PP cord	10	2.00	1	7.620 817
Lowering cable made of PP cord	25	2.00	1	6.222 677
Lowering cable made of PP cord	50	2.00	1	6.223 438
Copper lowering cable EX with loops	10	4.50	1	6.235 904
Copper lowering cable EX with loops	25	4.50	1	6.253 137
Copper lowering cable EX with loops	50	4.50	1	6.286 530
Stainless steel chains	10	2.30	1	7.615 523
Stainless steel chains	25	2.30	1	6.902 362
Snap hooks V4A	-	5.00	1	7.637 496
Shackle	-	4.50	1	7.637 495

2



### 1 Sample bags SteriBag, PE, sterile



Transparent. For samples from chemistry, pharmaceutical, food technology applications etc.

- Sterile, RNase, DNase and pyrogen-free
- Leakproof

Type A: Without write-on panel

Type B: With write-on panel.

Nominal capacity ml	Width mm	Length mm	Description	PK	Cat. No.
60	76	127	A	500	9.404 114
60	76	127	B	500	9.404 119
150	76	178	A	500	9.404 115
150	76	178	B	500	9.404 120
450	114	229	A	500	9.404 116
450	114	229	B	500	9.404 121
650	140	229	A	500	9.404 117
650	140	229	B	500	9.404 122
800	114	305	A	500	9.404 118
800	114	305	B	500	9.404 123
1650	178	305	A	250	6.223 094
1650	178	305	B	250	6.223 093

1

Bürkle



### 2 Sample bags SteriBag StandUp, PE, sterile, with write-on panel



Transparent. For samples from chemistry, pharmaceutical, food technology applications etc. SteriBag StandUp stable and able to stand on its own without a separate stand or support, leaving both your hands free to take the sample and fill the bag.

- Sterile, RNase, DNase and pyrogen-free
- Leakproof

Nominal capacity ml	Width mm	Length mm	PK	Cat. No.
400	114	229	500	9.404 124
600	152	229	500	9.404 125

2

Bürkle



### 3 Sample bags SteriBag Premium, tamper-proof



The SteriBag Premium sample bags uniquely combine a high degree of security, sterility, tamper evident closure and traceability, they are used to securely transport and for the storage of samples. After sampling, the sample can be filled directly into the sterile sample bag. The tamper-evident closure seals the bag liquid-tight and secure. When trying to open the closure again, the word "STOP" appears clearly visible. Both the sample bag and the tear-off field are labeled with a unique tracking number, this allows complete documentation and traceability.

SteriBag Premium is suitable for many demanding applications in the food, pharmaceutical, medical area as well as in cleanroom or biotechnology sectors.

- Sterilised by gamma rays ( $10^{-6}$ )
- With integrated tamper-proof closure for manipulation evidence
- Unique identification via tracking number
- Food-safe

Nominal capacity ml	Width mm	Length mm	PK	Cat. No.
300	145	200	100	9.404 126

3

Bürkle



➔ Adhesive Labels - please see page 168

**1**


### 1 Sample bags Whirl-Pak®, PE, sterile

Whirl-Pak® bags are sterile polyethylene laboratory sample bags used to transport samples for biological testing and other applications. Available with or without write-on label. With integrated wire closing system. Temperature range: -210 to 82 °C.

Nasco

Nominal capacity ml	Dimensions (D x W) mm	Thickness mm	Description	PK	Cat. No.
29	65 x 125	0,057	with write-on label	500	7.080 208
58	75 x 125	0,057	with write-on label	500	7.058 005
118	75 x 185	0,057	with write-on label	500	7.077 212
207	95 x 180	0,064	with write-on label	500	6.286 123
532	115 x 230	0,064	with write-on label	500	7.058 120
710	150 x 230	0,076	with write-on label	500	6.242 083
5441	380 x 508	0,102	with write-on label	100	6.257 989
2721	254 x 380	0,102	with write-on label	250	6.266 304
3637	254 x 508	0,102	with write-on label	250	6.266 305
58	75 x 125	0,057	with write-on label	500	6.091 055
118	75 x 185	0,057	without write-on label	500	9.404 234
207	95 x 180	0,076	without write-on label	500	7.981 345
1242	150 x 380	0,076	without write-on label	500	6.266 302
532	115 x 230	0,064	without write-on label	500	9.404 235
710	150 x 230	0,076	without write-on label	500	6.228 639
1065	125 x 380	0,076	without write-on label	500	9.404 236
2041	190 x 380	0,076	without write-on label	500	6.305 117
798	127 x 305	0,076	without write-on label	500	6.280 246

**2**


### 2 Sample bags Whirl-Pak® Stand-Up, PE, sterile, free standing

Easy sample handling due to the specially gusseted bottom which flattens out when the sample is placed inside, allowing the bag to stand up on its own. It works just like a bottle or beaker, however it cost less, is shatterproof and uses a fraction of the storage space. The integrated wire closing system ensures the tightness of the sample bag. With write-on label for clean and easy identification. Temperature range: -210 to 82 °C.

Nasco

Nominal capacity ml	Dimensions (D x W) mm	Thickness mm	PK	Cat. No.
118	75 x 185	0,064	500	9.404 231
532	115 x 230	0,076	500	9.404 232
710	150 x 230	0,076	500	6.266 303
1242	150 x 380	0,102	250	7.970 886
1065	125 x 380	0,102	250	6.260 542
2041	190 x 380	0,102	250	6.260 543

**3**


### 3 Sample bags/Homogenising bags Whirl-Pak®, PE, sterile

- Sterile, solid bags for the homogenisation of liquids and solids
- With and without labelling strips

Nasco

Nominal capacity ml	Dimensions (D x W) mm	Thickness mm	Description	PK	Cat. No.
384	130 x 190	0,076	without label	500	6.052 018
710	150 x 230	0,102	without label	500	9.404 233
710	150 x 230	0,102	with label	500	7.059 854
1627	190 x 300	0,102	with label	500	7.059 855

**4**


### 4 Filter bags Whirl-Pak®, PE, sterile

All the bags use the same filter material. These special bags contain a third layer of finely perforated polyethylene, which filters out the solids in the sample when used in a homogeniser blender. This allows for easy pipetting of the sample. The hole diameter in the filter layer measures 0.33 mm and there are 285 holes per square cm. The filter is sealed into the perimeter of the bag on the sides and bottom, allowing the sample to be placed in the bag on either side. The liquid will transfer through the filter, but the solids stay on one side. With write-on label. Temperature range: -210 to 82 °C.

Nasco

Nominal capacity ml	Dimensions (D x W) mm	Thickness mm	PK	Cat. No.
710	150 x 230	0,102	250	7.970 783
1627	190 x 300	0,102	250	6.263 368

Pressure-seal bags please see page 193.



### Special sample bags Whirl-Pak®, PE, sterile

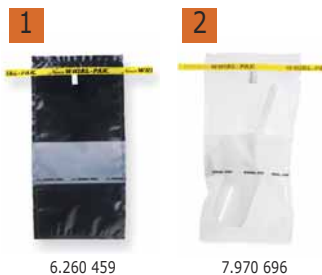
Whirl-Pak® bags are sterile polyethylene laboratory sample bags used to transport samples for biological testing and other applications.

Temperature range -210 to 82 °C.

**Available versions:**

- With outside pocket for paperwork. Keeps important paperwork dry, clean, and separate from the sample
- Made of black pigmented PE-film providing maximum protection for samples that are sensitive to light
- With white or blue sterile scoop or sterile teaspoon

Nasco



6.260 459

7.970 696

Nominal capacity ml	Dimensions (D x W) mm	Thickness mm	Description	PK	Cat. No.
710	150 x 230	0.064	with document bag	500	<b>6.260 544</b>
532	115 x 230	0.064	with light protection, black, write-on lable, white	500	<b>6.260 459</b> 1
532	115 x 230	0.064	with scoop (60 ml), sterile, white	50	<b>7.970 696</b> 2
532	115 x 230	0.064	with scoop (60 ml), sterile, blue	50	<b>6.276 054</b>
532	115 x 230	0.064	with tea spoon, sterile, white	100	<b>6.269 250</b>

### Sample bags Whirl-Pak® Thio-Bags®

These bags are specially designed for sampling chlorinated water for example for Legionella testing. Each sterile bag contains a nontoxic, nonnutritive tablet containing active sodium thiosulfate to neutralise chlorine at the time of collection.

The bag is EPA approved and has the additional benefits of saving time, utility costs, storage space, disposal costs, and replacing sample containers. With Write-On strip for clean and easy identification. Temperature range: -210 to 82 °C.

Nasco

### Sample bags Whirl-Pak® Stand-Up Thio-Bags®, sterile, free-standing



Nominal capacity ml	Dimensions (D x W) mm	Thickness mm	PK	Cat. No.
100	75 x 185	0.064	100	<b>6.290 643</b>
300	115 x 230	0.076	100	<b>6.263 139</b>
500	115 x 230	0.102	100	<b>6.276 042</b>
1000	150 x 380	0.102	100	<b>4.668 520</b> 3
2000	190 x 380	0.102	100	<b>6.276 044</b>

Nasco



4.668 520

### Sample bags Whirl-Pak®, PE with sponge, dry, Cellulose

For environmental surface sampling of work areas and equipment. The natural cellulose dry sponge is free of bactericides and has been tested to be non-inhibitory.

Nasco

Nominal capacity ml	Dimensions (D x W) mm	Thickness mm	Description	PK	Cat. No.
532	115 x 230	0.064	Speci-Sponge® with glove, sterile	100	<b>7.970 688</b>
532	115 x 230	0.064	Speci-Sponge®	100	<b>7.970 873</b> 4
1627	190 x 300	0.102	Speci-Sponge®	100	<b>6.281 268</b>
710	150 x 230	0.076	Sponge with detachable handle	50	<b>6.281 269</b>



7.970 873

### 5 Sponge-Stick

Sponges and swabs designed specifically for microbial surface sampling. 3M™ Sponge-Sticks are available in wet or dry formats, to fit many applications. The 1.5" x 3" 3M Sponge-Stick allows sampling without directly handling the sponge.

3M Deutschland



Type	Package contents	PK	Cat. No.
Sponge stick, 1.5 x 3 sponge with 10 ml buffered peptone water broth	4 bags of 25	100	<b>6.238 511</b>
Sponge stick moistened with 10 ml neutralization buffer	1 bag of 100	100	<b>6.266 542</b>
Sponge stick	5 bags of 20	100	<b>7.970 470</b>

## Sampling/Sample containers-Sample transport, storage

**1**


### 1 Aluminium Zipper bags, sealable

- Stand-up pouches
- 5 layers of film of PET, SPE, AL, SPE, and PE
- High barrier properties against oxygen and water vapour
- Protection against the effects of UV radiation
- Temperature range: -40 °C ... 90 °C

*AS ONE*

Thickness mm	Dimensions (D x W) mm	PK	Cat. No.
0,11	90 x 115	50	<b>4.665 050</b>
0,11	100 x 160	50	<b>4.665 051</b>
0,11	120 x 180	50	<b>4.665 052</b>
0,11	140 x 200	50	<b>4.665 053</b>
0,15	300 x 420	25	<b>4.665 054</b>
0,15	340 x 480	25	<b>4.665 055</b>
0,11	160 x 230	50	<b>4.665 056</b>
0,11	180 x 260	50	<b>4.665 057</b>
0,11	200 x 280	50	<b>4.665 058</b>
0,15	220 x 300	50	<b>4.665 059</b>
0,11	110 x 170	50	<b>4.665 060</b>
0,11	130 x 190	50	<b>4.665 061</b>
0,11	150 x 210	50	<b>4.665 062</b>
0,15	240 x 340	50	<b>4.665 063</b>

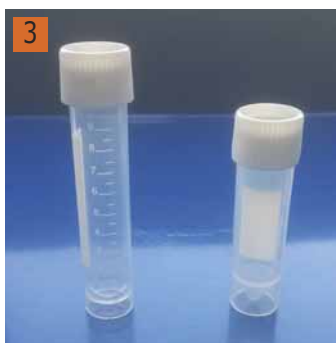
**2**


### 2 Aluminium Zipper bags

- 5 layers of film of PET, SPE, AL, SPE, and PE
- Excellent light resistance and sealing properties
- 2 bags with 50 pieces per bag

*AS ONE*

Dimensions (D x W) mm	PK	Cat. No.
85 x 120	100	<b>4.665 064</b>
100 x 140	100	<b>4.665 065</b>
120 x 170	100	<b>4.665 066</b>
140 x 200	100	<b>4.665 067</b>
170 x 240	100	<b>4.665 068</b>
200 x 280	100	<b>4.665 069</b>
240 x 340	100	<b>4.665 070</b>
280 x 400	100	<b>4.665 071</b>

**3**


### 3 LLG-Transport tubes, PP, with screw cap

- For convenient storage and dispatch of samples.
- Conical bottom
  - Free standing
  - Printed graduation
  - 1 1/4 turn thread design for super fast screwing

Capacity ml	Outer diam. mm	Height with cap mm	PK	Cat. No.
5	16	60	100	<b>6.265 667</b>
10	16	80	100	<b>6.265 668</b>

**4**


### 4 Transport tubes, PS with cap

- Outer case available in transparent or opaque material
- Made of polystyrene with polyethylene caps
- Available sterile or nonsterile, and with or without a spoon for handling of solid and semi-solid samples
- Some available with writing area
- Max. RCF tested: 4000

*Thermo Scientific*

Capacity ml	Description	PK	Cat. No.
25	with spoon, sterile, PS, with writing area	300	<b>4.008 669</b>
25	without spoon, sterile, PS, without writing area	50	<b>6.086 178</b>
25	without spoon, sterile, PS, with writing area	300	<b>6.091 843</b>
25	without spoon, not sterile, PS, with writing area	300	<b>6.201 453</b>



### 1 LLG-Sample containers, PP, Heavy Duty, with screw cap, HDPE

Ideal for liquid specimen collection, transportation and storage.

- Ideally suited for liquid histological samples
- Container made of non-cytotoxic polypropylene
- Very solid quality
- Top and bottom gripping assures easy opening and closing when wearing gloves
- Half-transparency containers
- With graduation
- With label
- Leak proof

Nominal capacity ml	Grad. up to ml	Ø with Cover mm	Height mm	PK	Cat. No.
20	15	37	42	1000	6.265 649
40	30	50	40	500	6.265 650
60	50	50	58	500	6.265 651
80	70	50	77	300	6.265 652
120	120	58	77	300	6.265 653
160	160	57	100	200	6.282 108
250	150	97	52	154	6.265 654
450	350	97	110	132	6.265 655
900	700	120	138	64	6.265 656
250*		63	121	70	6.267 972
900*	700	120	138	64	6.270 049

\* without label.

### 1



### 2 LLG-Sample containers, PS/PP, with tamper-evident cap, LDPE/PP



White with tamper-evident cap. Multi-purpose containers e.g. for storage or transport of samples.

Nominal capacity ml	Ø with Cover mm	Height mm	Material	Material Lid	PK	Cat. No.
40	36	52	PS	LDPE	10	9.402 350
100	58	58	PP	PP	10	9.402 353
250	64	95	PS	LDPE	10	9.402 356
1000	116	116	PP	PP	5	9.402 359

### 2



### 3 LLG-Sample containers, PP, with screw cap, PP



White, with screwed-on lid.

Nominal capacity ml	Ø with Cover mm	Height mm	PK	Cat. No.
30	58	19	10	9.402 310
75	58	47	10	9.402 313
310	81	81	10	9.402 318
600	119	67	10	9.402 321
1250	119	130	5	9.402 324

### 3



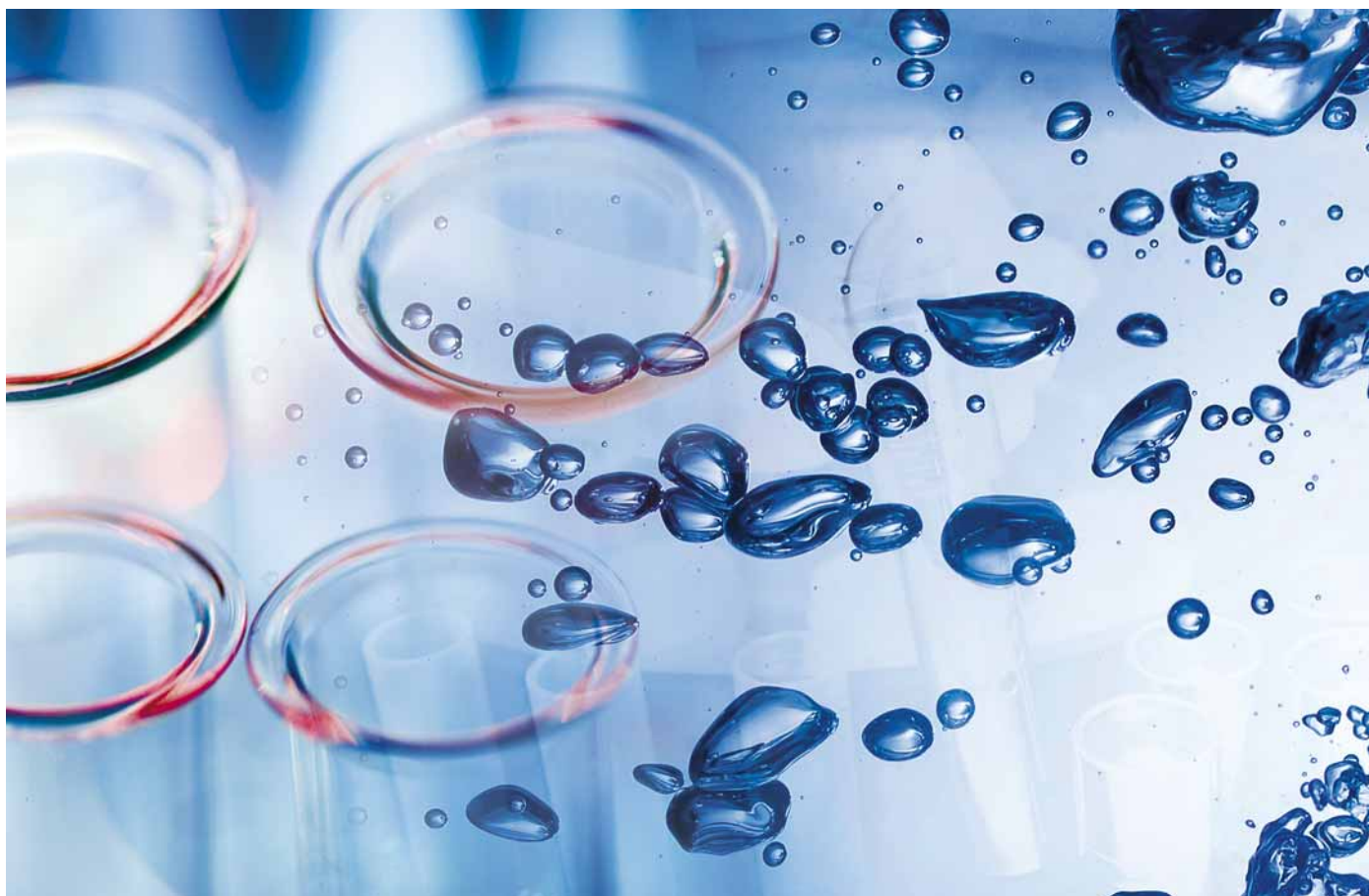


### 1 Sample bottles, PP, for water sampling, sterile

ISOLAB

These gamma sterilised bottles are specially designed for taking, handling, transporting and storing water samples. Manufactured either as clear or amber colour from polypropylene. Clear bottles are manufactured from glass-like transparent special grade polypropylene. Amber bottles are manufactured from an amber coloured clear polypropylene which is highly translucent but still preventing the UV light penetrating inside the bottle. Square body form offers easy handling, and optimum space saving solutions during storage period. Wide bottle neck (GL 50) provides easy filling and pouring. Cap is made from PE with self sealing lock with integral security ring. Unique cap inner design ensures hermetical closure and guarantees an excellent leak and contamination proof bottle. Embossed graduation ( precision of  $\pm 2\%$  ) on side wall enables volume verifications. Each bottle is labelled specifying e.g. sample and source descriptions, code and lot numbers and expiry date. Bottles with liquid sodium thiosulfate (20 mg/lit - acc to ISO/FIS 19458:2006 ) are ideal to analyse water meant for human consumption, swimming pools, and any other water where chlorine may modify the composition of the sample. Empty bottles, without sodium thiosulfate ; ideal to sample water for physical and chemical analysis, as well as for other sample requirements that demands sterile bottles. Single packed bottles available on request.

Description	Capacity ml	PK	Cat. No.
clear, sterile, without sodium thiosulfate	125	180	4.678 042
clear, sterile, without sodium thiosulfate	250	108	9.001 075
clear, sterile, without sodium thiosulfate	500	84	9.001 076
clear, sterile, without sodium thiosulfate	1000	30	9.001 077
amber, sterile, without sodium thiosulfate	125	180	4.678 043
amber, sterile, without sodium thiosulfate	250	108	9.001 078
amber, sterile, without sodium thiosulfate	500	84	9.001 079
amber, sterile, without sodium thiosulfate	1000	30	9.001 080
clear, sterile, with sodium thiosulfate	125	180	4.666 052
clear, sterile, with sodium thiosulfate	250	108	9.001 081
clear, sterile, with sodium thiosulfate	500	84	9.001 082
clear, sterile, with sodium thiosulfate	1000	30	9.001 083
amber, sterile, with sodium thiosulfate	125	180	4.678 044
amber, sterile, with sodium thiosulfate	250	108	9.001 084
amber, sterile, with sodium thiosulfate	500	84	9.001 085
amber, sterile, with sodium thiosulfate	1000	30	9.001 086



## 1 LLG-Mortars only, porcelain

Capacity ml	Ext. diam. mm	Height mm	DIN	Description	PK	Cat. No.
25	51	32		rough inside	1	9.164 410
70	63	41	12906	rough inside	1	6.227 149
75	76	45		rough inside	1	9.164 411
110	83	50		rough inside	1	6.232 577
160	90	56	12906	rough inside	1	6.243 865
220	105	64		rough inside	1	9.164 412
400	125	71	12906	rough inside	1	9.164 413
2250	224	127		rough inside	1	6.252 383
110	83	50		glazed inside	1	6.227 289
220	105	64		glazed inside	1	6.234 591



## 2 LLG-Pestle only, porcelain

Head diam. mm	Length mm	DIN	Description	PK	Cat. No.
14	54		rough	1	6.227 150
24	115	12906	rough	1	9.164 420
30	135	12906	rough	1	6.232 574
36	150	12906	rough	1	9.164 421
42	175	12906	rough	1	9.164 422
74	250	12906	rough	1	6.252 384
42	175	12906	glazed	1	6.227 292
36	150	12906	glazed	1	6.234 592



## 3 Mortars only, porcelain

To DIN 12906. With spout, pestle not supplied. Glazed externally. Inside rough.

Haldenwanger

Capacity ml	Int. diam. mm	Height mm	Acc. to	PK	Cat. No.
70	65	40	DIN 12906	1	9.164 206
170	90	55	DIN 12906	1	9.164 209
400	130	65	DIN 12906	1	9.164 212
700	150	70	DIN 12906	1	9.164 215
1000	180	80	DIN 12906	1	9.164 218
2600	240	100	DIN 12906	1	9.164 225



## 4 Pestles only, porcelain

To DIN 12906. With glazed handle. Unglazed grinding surface.

Haldenwanger

Head diam. mm	Length mm	Acc. to	Nominal diam. mm	PK	Cat. No.
24	115	DIN 12906	50 / 63	1	9.164 306
30	135	DIN 12906	90	1	9.164 309
36	150	DIN 12906	125	1	9.164 312
42	175	DIN 12906	150	1	9.164 315
55	210	DIN 12906	180	1	9.164 318

Nominal size = mortar internal diameter



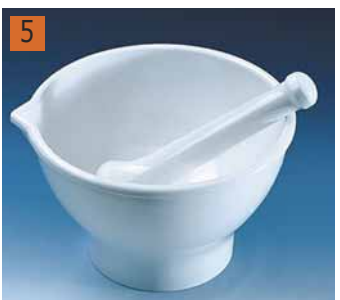
## 5 Mortars and pestles, MF



BRAND

White. Melamine formaldehyde (MF). With spouted mortar. Resistant to boiling. Autoclavable at 121 °C.

Diam. mm	Height mm	PK	Cat. No.
125	80	1	9.164 355
150	90	1	9.164 357





1

### 1 Mortars and pestles, Agate

Agate. Polished. Standard quality. Other sizes available on request.

Capacity ml	Ext. diam. mm	Int. diam. mm	PK	Cat. No.
10	50	40	1	9.164 050
25	75	60	1	9.164 075
50	100	85	1	9.164 100
100	125	100	1	9.164 125



2

### 2 Mortar, stainless steel

Mortar and pestle head are both made from stainless steel.

Bochem

Description	Capacity ml	PK	Cat. No.
Mortar	250	1	6.900 119
Mortar	500	1	6.802 078
Mortar	750	1	6.087 581
Mortar	1000	1	6.076 504
Mortar	1500	1	6.237 850
Mortar	2000	1	6.802 079
Pestle, 140 mm		1	6.079 568



3

### Laboratory Blender Waring® 8010/8011

Versatile laboratory mixer ideally suited for general laboratory work. Supplied either with a 1 L stainless steel container or a 1.2 L glass container. Models 8010 EG/ES with mechanical timer (3 minutes).

WARING®

- Two velocity settings (18000 or 22000 rpm)
- Epoxy coated motor housing
- Two-piece lid vinyl/styrene

**Scope of supply:** Mixer, container (stainless steel or glass) with handle and lid.

Type	With	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
8010EG	Glass container, 1.2 l	18000	22000	1200	1	9.571 436
8010ES	Stainless steel container, 1 l	18000	22000	1000	1	9.571 437
8011EG	Glass container, 1.2 l	18000	22000	1200	1	6.284 693 3
8011ES	Stainless steel container, 1 l	18000	22000	1000	1	6.284 694

6.284 693



4

### Laboratory Blender Waring® LB20 EG/ES

Versatile laboratory mixer ideally suited for general laboratory work. Supplied either with a 1 L stainless steel container or a 1.2 L glass container.

WARING®

- Variable velocity settings (500 or 22000 rpm)
- Epoxy coated motor housing
- Two-piece lid vinyl/styrene

**Scope of supply:** Mixer, container (stainless steel or glass) with handle and lid.

Type	With	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
20EG	Glass container, 1.2 l	500	22000	1200	1	6.229 881
20ES	Stainless steel container, 1 l	500	22000	1000	1	6.240 222 4

6.240 222

### Accessories for Laboratory Blender Waring®

WARING®

Description	PK	Cat. No.
1 L stainless steel container complete with two-piece lid	1	9.571 453
1.2 L glass container complete with two-piece lid	1	9.571 450
Spare blending assembly for 1 L blender	1	9.571 461
Spare blade	1	6.284 695



## Mixers MICROTRON® MB 550/MB 800

The systems MICROTRON® MB 550 and MB 800 are specially designed for mixing, dispersing, homogenizing, emulsifying and size reduction of cuttable materials. Four different attachments made from glass with volumes of 125 ml, 250 ml, 500 ml and 1000 ml are available for the MICROTRON® MB 550. Attachments made from stainless steel with volumes of 2000 ml and 4000 ml are available for the MICROTRON® MB 800. Both systems are safety laboratory devices: grounded, double safety isolated, radio screened. A safety system prevents uncontrolled starting and therewith personal injuries: the mixer can only be started with well attached safety hood or lid. In case the hood or lid will be removed during operation the device will be stopped automatically. Both systems are designed to withstand high loads; they are space saving and always ready to use. KINEMATICA

**Mixing jars and protective hoods - please order separately. Mixer MICROTRON® MB 550 can only be started with attached safety hood.**

### Specifications

Motor input power	
MB 550:	550W
MB 800:	800W
Speed range	
MB 550:	Stepless, 1000 to 15.000 rpm
MB 800:	Stepless, 1000 to 17.000 rpm
Dimensions (Ø x H):	190 x 245 mm

Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
MB 550	1000	15000	1000	1	6.241 879 <sup>1</sup>
MB 800	1000	17000	4000	1	6.259 416

## Accessories for Mixer MICROTRON® MB 550/MB 800

The mixing attachments MBA 125 to 1000 ml made of glass can be dismantled completely and easily. The mixing attachments MBA 2000 and MBA 4000 are made of stainless steel. Their robust safety lids have an integrated feed opening for dosing. Knife unit with 4 blades made of stainless steel, easy to dismantle for easy cleaning. For the operation of the mixer 550 MB MICROTRON a safety hood is mandatory, please order separately. KINEMATICA

Type	For	Description	Volume ml	Material	PK	Cat. No.
MBA 125	MB 550	Mixing attachment	125	Glass	1	6.257 342
MBA 250	MB 550	Mixing attachment	250	Glass	1	6.260 922
MBA 500	MB 550	Mixing attachment	500	Glass	1	6.241 880
MBA 1000	MB 550	Mixing attachment	1000	Glass	1	6.260 923 <sup>2</sup>
MBA 2000	MB 800	Mixing attachment with safety lid	2000	Stainless steel	1	6.260 924 <sup>3</sup>
MBA 4000	MB 800	Mixing attachment with safety lid	4000	Stainless steel	1	6.259 417
MBH 125	MB 550	Safety hood for MBA 125	-	Acrylic glass	1	6.257 343
MBH 250	MB 550	Safety hood for MBA 250	-	Acrylic glass	1	6.260 925
MBH 500	MB 550	Safety hood for MBA 500	-	Acrylic glass	1	6.241 881
MBH 1000	MB 550	Safety hood for MBA 1000	-	Acrylic glass	1	6.260 926 <sup>4</sup>

1



6.241 879

2



6.260 923

3



6.260 924

4



6.260 926

### Dry Mill POLYMIX® PX-MFC 90 D

The PX-MFC 90 D is suitable for dry sample grinding in the laboratory. It's possible to change the hammer and cutting mill sets. KINEMATICA

- The blade grinding attachment is used for processing of dried, stringy and fibrous and grease-free materials.

Application: Wood, straw, dried grease-free meat, leather, paper, carbon, synthetics etc.

- The hammer grinding attachment is used for processing of dried, brittle and grease-free materials.

Application: Dried grain, dried beans, bones, rock, ceramics etc.

- Sieves 0.2 mm up to 6 mm diameter

- Safety system prevents start when lid is open

- Powerful three-phase motor

- Milling chamber with interchangeable inserts

- LED display

- Working volume of 300 ml (Funnel volume)

- 1000 Watt, 3-phase motor provides a low noise level during operation, with 230 Volt connection

- Sieves from 0.2 to 6 mm mesh size

- Integrated speed control with LED display for speed and status messages

- Speeds from 50 to 6.000 rpm for maximum grinding efficiency

- The motor cannot be operated when the chamber door is open

- Integrated overheating, overload and rotor blocking protection

- Safety stopper for certain grinding materials

**Scope of supply:** Mill with Hammer or Cutting Mill sets, 2 mm sieve, tool set and wooden stand with 12 collection tubes.

#### Specifications

Application volume:	Hopper 300 ml
Sieves:	0.2, 0.5, 0.8, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 6.0 mm
Motor input power:	1000W
Speed range:	speeds up to 6000 min <sup>-1</sup>
Drive Dimensions (L x W x H):	251 x 325 x 480 mm
Tested to:	IEC/EN 61000-6-2/EN 61000-6-3 IEC/EN 61010-2-51

Type	With	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	Plug type	PK	Cat. No.
POLYMIX® PX-MFC 90 D	Hammer grinding attachment	50	6000	300	EU	1	6.241 371 <b>1</b>
POLYMIX® PX-MFC 90 D	Hammer grinding attachment	50	6000	300	CH	1	6.258 266
POLYMIX® PX-MFC 90 D	Hammer grinding attachment	50	6000	300	UK	1	6.312 152
POLYMIX® PX-MFC 90 D	Blade grinding attachment	50	6000	300	EU	1	6.252 048
POLYMIX® PX-MFC 90 D	Blade grinding attachment	50	6000	300	CH	1	6.258 267
POLYMIX® PX-MFC 90 D	Blade grinding attachment	50	6000	300	UK	1	6.312 153

Sieves 0.2 to 6.0 mm also available.

**Suitable accessories can be found in our online shop.**

1



6.241 371

E & OE.

## 1 Planetary Ball Mill BM40



1

For rapid grinding of soft, hard, brittle and fibrous materials down to a final fineness of less than 1 µm in laboratories and pilot plants. Also suitable for colloid grinding. Suitable for use in geology, mineralogy, metallurgy, ceramics, materials research, mechanical alloying, pharmacy, chemistry, biology and analysis preparation.

- Grinding platform with 4 stations for up to 8 grinding bowls
- Suitable for continuous operation
- Grinding time digitally adjustable from 0 to 999 minutes
- Variable speed of the sun wheel from 30 to 400 min<sup>-1</sup>
- For dry and wet grinding
- Programmable grinding parameters
- Automatic reversal of direction to avoid agglomerations
- Ventilated grinding chamber for cooling the grinding bowl
- Control via 7" LCD display with one-button operation
- Safety interlock
- Grinding bowls made of different materials and with different capacities available as accessories



**Grinding bowls and balls are not included in the scope of supply and must be ordered separately.**

### Specifications

Feed size:	<10 mm
Final fineness:	<1 µm, <0.1 µm (colloidal grinding)
Speed range:	30 ... 400 min <sup>-1</sup> (sun wheel)
Effective sun wheel diameter:	360 mm
Performance:	1500 W
Dimensions (W x D x H):	645 x 768 x 621 mm
Weight:	170 kg
Power supply:	220 V, 50 Hz

Type	PK	Cat. No.
Planetary Ball Mill BM40	1	4.669 543

## 2 Grinding jars and accessories for Planetary Ball Mill BM40



Grinding jars made of agate, sintered aluminium oxide, zirconium oxide and tungsten carbide have a stainless steel casing for safety reasons.

Type	PK	Cat. No.
Grinding jar 50 ml, stainless steel	1	4.669 544
Grinding jar 125 ml, stainless steel	1	4.669 545
Grinding jar 250 ml, stainless steel	1	4.669 546
Grinding jar 500 ml, stainless steel	1	4.669 547
Grinding jar 50 ml, agate	1	4.669 548
Grinding jar 80 ml, agate	1	4.669 549
Grinding jar 125 ml, agate	1	4.669 550
Grinding jar 250 ml, agate	1	4.669 551
Grinding jar 500 ml, agate	1	4.669 552
Grinding jar 50 ml, zirconium oxide	1	4.669 553
Grinding jar 125 ml, zirconium oxide	1	4.669 554
Grinding jar 250 ml, zirconium oxide	1	4.669 555
Grinding jar 500 ml, zirconium oxide	1	4.669 556
Grinding jar 50 ml, sintered aluminium oxide	1	4.669 557
Grinding jar 125 ml, sintered aluminium oxide	1	4.669 558
Grinding jar 250 ml, sintered aluminium oxide	1	4.669 559
Grinding jar 500 ml, sintered aluminium oxide	1	4.669 560
Safety closure device for 80 ml jars made of stainless steel	1	4.669 567
Safety closure device for 125 ml jars made of stainless steel	1	4.669 565
Safety closure device for 250 ml jars made of stainless steel	1	4.669 563
Safety closure device for 500 ml jars made of stainless steel	1	4.669 561
Safety closure device for 125 ml jars made of stainless steel, zirconium oxide, agate, tungsten carbide and aluminium oxide	1	4.669 566
Safety closure device for 250 ml jars made of stainless steel, zirconium oxide, agate and aluminium oxide	1	4.669 564
Safety closure device for 500 ml jars made of zirconium oxide	1	4.669 562
O-ring for 500 ml jars made of agate, aluminium oxide and zirconium oxide (big)	1	4.669 586

2





### 1 Centrifugal Mill FM200

**NEW**

For fine grinding, homogenising and mixing of soft, brittle, fibrous and hard samples in the laboratory and pilot plant. The high grinding efficiency is ensured by the high speed rotor and the ring sieve used. A final fineness of less than 100 µm can be achieved. The mill guarantees a high sample throughput and low-noise operation.

- Exchangeable ring sieves
- Variable speed control from 6000 to 18000 min<sup>-1</sup>
- Simple operation via touch control panel
- Efficient sample cooling
- Ground samples are collected in a pan
- Feed hopper with anti-blocking device
- Motor with overload protection
- Easy cleaning
- No tools required to dismantle the parts in contact with the sample
- Electronic and mechanical safety interlocks
- Comprehensive range of ring sieves and rotors available

**Ring sieves and rotors are not included in the scope of supply and must be ordered separately.**

#### Specifications

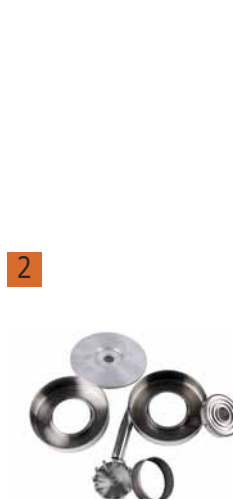
Feed size:	<10 mm
Final fineness:	<100 µm
Speed range:	6000 ... 18000 min <sup>-1</sup>
Rotor diameter:	95 mm
Performance:	760 W
Dimensions (W x D x H):	400 x 456 x 490 mm
Weight:	33 kg
Power supply:	220 V, 50 Hz

Type	PK	Cat. No.
Centrifugal Mill FM200	1	4.669 533

### 2 Accessories for centrifugal mill FM200

**NEW**

Type	PK	Cat. No.
Rotor with 6 teeth, stainless steel	1	4.669 534
Rotor with 12 teeth, stainless steel	1	4.669 535
Rotor with 24 teeth, stainless steel	1	4.669 536
Collecting pan, stainless steel	1	4.669 537
Ring sieve with trapezoid holes 0.12 mm, stainless steel	1	4.669 538
Ring sieve with trapezoid holes 0.2 mm, stainless steel	1	4.669 539
Ring sieve with trapezoid holes 0.5 mm, stainless steel	1	4.669 540
Ring sieve with trapezoid holes 1.0 mm, stainless steel	1	4.669 541
Ring sieve with trapezoid holes 2.0 mm, stainless steel	1	4.669 542



## 1 Ultra Centrifugal Mill ZM 200

Retsch

**Application:**

Extremely rapid and gentle size reduction of soft to medium-hard and fibrous materials. Ideal for grinding, e.g., chemicals, foods and feeds, washing powder, plastics, fertilizers, pharmaceutical raw materials and finished products. Also suitable for cryogenic grinding.

**Features:**

- gentle on the material thanks to 2-step rotor/screen system
- wide speed range, adjustable from 6 000 to 18 000 min<sup>-1</sup>
- patented cassette system for maximum sample recovery and easy cleaning
- defined final fineness due to ring sieves with aperture sizes from 0.08 to 10 mm
- comfortable safety housing with automatic cover closure
- motor compartment and electronics protected against dust and material penetration
- wide range of accessories with different rotors, ring sieves and cassettes

**Specifications:**

- Feed size: up to 10 mm
- Final fineness: down to 40 µm
- Batch: up to 300/4500 ml (with cyclone)
- Size (W x D x H): 410 x 365 x 515 mm
- Weight: approx. 38 kg
- Mains connection: 230 V, 50/60 Hz

**Supplied with:**

ZM 200 with cassette 900 ml.  
Rotors and ring sieves have to be ordered separately.

Further rotors and ring sieves on request (e.g. for grinding without heavy metal contamination).

Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
ZM 200	6000	18000	5000	1	9.738 970

## 2 Accessories for Ultra Centrifugal Mill ZM 200

Retsch

Description	PK	Cat. No.
Rotor, stainless steel, 6 teeth	1	9.739 064
Rotor, stainless steel, 12 teeth	1	9.739 065
Rotor, stainless steel, 24 teeth	1	9.739 066
Ring sieve, trapezoid holes 0.20 mm	1	9.738 974
Ring sieve, trapezoid holes 0.50 mm	1	9.738 976
Ring sieve, trapezoid holes 0.75 mm	1	9.738 977
Ring sieve, trapezoid holes 1.00 mm	1	9.738 978
Ring sieve, trapezoid holes 2.00 mm	1	9.738 980
Feeder kit, DR 100, drive unit for 220-240 V, 50 Hz, with feed attachment, with 40 mm push-fit feed chute, funnel and stand	1	9.738 971

Further Ring sieves and rotors available on request.





### 1 Cross beater mill SK 300

The cross beater mill SK 300 is used for batch-wise or continuous preliminary and fine size reduction. This robust mill is suited for laboratories as well as for the rough conditions of a production environment. Thanks to the powerful drive and rotor speed up to 4000 rpm it is often possible to achieve a final fineness <100 microns in one process. Retsch

#### Features:

- High throughput for batch-wise size reduction of large sample volumes
- Suitable for feed sizes up to 25 mm
- Adjustable speed from 2000 to 4000 rpm
- Defined final fineness due to bottom sieves with aperture sizes from 0.12 to 10 mm
- Rapid cleaning thanks to easily removable cassette, hopper and push fit rotor
- Ring filter and collecting vessel with convenient, dust-tight bayonet catch
- Quick-action door lock safety lock and electric brake

#### Function principle:

Size reduction in the SK 300 takes place by impact and shearing effects. The air drawn in through the hopper by the cross beater accelerates the discharge of the ground material. The airborne fine fraction is separated off by a downstream filter system.

**Supplied with:** Cross Beater Mill with grinding insert, cross beater, baffle plates, filter hose and 5 l collecting vessel.

Bottom sieves and base frame, please order separately.

Feeders and bottom sieves in further sizes are available on request.

#### Specifications

Feed size:	up to 25 mm
Final fineness:	approx. 0.1 mm
Speed range:	2000 to 4000 rpm
Dimensions (W x D x H) with base frame:	600 x 700 x 1200 mm
Weight:	approx. 57 kg
Power supply:	220-240 V, 50/60 HZ

Type	Material	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
SK 300	hardened steel	2000	4000	5000	1	6.268 112
SK 300	cast iron	2000	4000	5000	1	6.268 113
SK 300	stainless steel	2000	4000	5000	1	6.268 114

### Accessories for Cross Beater Mill SK 300

Retsch

Description	PK	Cat. No.
Bottom sieve trapezoid holes 0.12 mm	1	6.268 116
Bottom sieve trapezoid holes 0.20 mm	1	6.268 117
Bottom sieve trapezoid holes 0.25 mm	1	6.268 118
Bottom sieve trapezoid holes 0.50 mm	1	6.268 119
Bottom sieve trapezoid holes 0.75 mm	1	6.268 120
Bottom sieve trapezoid holes 1.00 mm	1	6.268 121
Bottom sieve trapezoid holes 1.50 mm	1	6.268 122
Bottom sieve trapezoid holes 2.00 mm	1	6.268 123
Bottom sieve round holes 3.00 mm	1	6.268 124
Bottom sieve round holes 4.00 mm	1	6.268 125
Bottom sieve round holes 5.00 mm	1	6.268 126
Bottom sieve round holes 6.00 mm	1	6.268 127
Bottom sieve round holes 8.00 mm	1	6.268 128
Bottom sieve round holes 10.00 mm	1	6.268 129
Ring filter for 5 l collecting vessel	1	6.268 130

We can **supply** this  
**manufacturer's**  
**whole product**  
**range !**



## 1 Mortar Grinder RM 200

Suitable for dry and wet grinding of soft, brittle, hard and paste-like samples. Depending on the sample, amounts from approx. 10 ml up to 190 ml can be reduced in size, triturated and homogenised. With beech wood scraper (special accessory) for pharmaceutical and homeopathic applications. The RM 200 is exceptionally easy to operate and clean. With digital time control and performance display, scale for reproducible pestle setting, built-in automatic switch-off and rapid motor-stop.

Retsch

**Please order mortar and pestle separately.**

### Specifications

Feed size*:	max. 8 mm
Batch size/Feed volume:	10 to 190 ml
Final fineness*:	approx. 10µm
Dimensions (W x D x H):	400 x 370 x 480 mm
Weight: approx:	approx. 24 kg (without grinding set)
Supply requirements:	220 - 240 V 50 HZ



Type	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
RM 200	100	190	1	9.738 170

\*depending on feed material

## Accessories for Mortar Grinder RM 200

Retsch

Description	PK	Cat. No.
Mortar, hard porcelain	1	9.738 151
Mortar, agate	1	9.738 172
Pestle, hard porcelain	1	9.738 173
Pestle, agate	1	9.738 174

Mortars and pestles made from zirconium oxide, sintered corundum, steel and tungsten carbide are available on request.

## 2 Cutting Mill CM100M1



2

For crushing soft, tough, fibrous and hard grinding materials. The mill guarantees a high sample throughput of more than 30 kg/h and can be operated batchwise or continuously. The samples are crushed by the strong cutting and shearing forces. The crushed sample passes through a bottom sieve into the collection bucket.

- Variable speed control from 500 to 3000 min<sup>-1</sup>
- Simple operation
- Rotor chamber can be quickly locked and easily cleaned
- Low sample heating due to rapid grinding process
- Various bottom sieves and rotors available as accessories
- High work safety due to motor protection switch and motor brake
- Electric safety switch to prevent the mill from starting when rotor chamber is open
- Extensive range of rotors, bottom sieves and further accessories available

**Bottom sieves and rotors are not included in the scope of supply and must be ordered separately.**

### Specifications

Feed size:	<25 mm
Final fineness:	<100 µm
Speed range:	500 ... 3000 min <sup>-1</sup>
Throughput:	>30 kg/h
Performance:	1500 W
Dimensions (W x D x H):	590 x 705 x 1400 mm
Weight:	120 kg
Power supply:	220 V, 50/60 Hz



Type	PK	Cat. No.
Cutting Mill CM100M1	1	4.669 630

**Suitable accessories can be found in our online shop.**

### 1 Cutting Mill SM 100/200/300

Rapid and gentle size reduction of bulky, soft, medium-hard, fibrous, elastic and thermally sensitive materials. The most powerful model, the SM 300, is especially suitable for cutting heterogeneous mixtures such as household waste, plastic materials, computer and electronic scrap. The mills are also used for organic materials like wood, roots, bones, plants and feed pellets. They can be equipped with various rotors and hoppers. The SM 300 features a variable speed which makes it perfectly adaptable to the particular application requirements.

*Retsch*

#### Features:

- powerful size reduction thanks to 3kW drive with high torque and RES technology (SM 300)
- perfect adaptation to application requirements by variable speed from 100 rpm to 3000 rpm (SM 300)
- optimum cutting effects thanks to double acting cutting bars (SM 200, SM 300)
- quick and easy cleaning without tools due to fold-back housing with smooth surfaces and push-fit rotor and sieves (SM 200, SM 300)
- defined final fineness due to bottom sieves with aperture sizes from 0.25 mm to 20 mm
- wide range of accessories including various hoppers, collection systems, rotors and sieves

#### Supplied with:

**SM 100** with 5 L collecting receptacle (Please order rotor, hopper, bottom sieve and base frame separately)

**SM 200/SM 300** with 5 L collecting receptacle, base frame (Please order rotor, hopper and bottom sieve separately)

Accessories available on request.

#### Specifications

Feed size:

Final fineness:

Retractable hopper:

Push-fit rotor:

Speed at 50 Hz:

Drive power:

Mains connection:

#### SM 100/200/300

up to 60 x 80 mm

0.25 to 20 mm

-/ yes/yes

yes/ yes/yes

1500 rpm

(SM 300) variable 100 to 3000 rpm

1.5/2.2/3kW

3/N~ 400 V, 50 HZ

(SM 300) 220-230 V, 50/60 HZ

Type	Min. speed	Max. speed	Max. Feed quantity/ Flow rate	PK	Cat. No.
	rpm	rpm	ml		
SM 100	1500	1500	30000	1	9.739 069
SM 200	1500	1500	30000	1	9.739 067
SM 300	100	3000	30000	1	9.739 083

Further voltages and versions for heavy-metal free grinding on request.

**Suitable accessories can be found in our online shop.**

1



## Batch mills Tube Mill control/Tube Mill 100 control

1

Suitable for disposable and reusable grinding chambers. By using the disposable grinding chambers the possibility of cross-contamination and the effort of cleaning is eliminated. The mills can be used for hard (Mohs hardness up to 5), dry and brittle materials. They are especially suitable for grinding seeds, such as corn and wheat. Increased safety, the operation of the mill is only possible with properly closed grinding chamber and closed lid.

- Clearly arranged, multilingual OLED-display
- USB interface for control and documentation of all the parameters
- Interval operation available
- Stepless adjustable speed
- Adjustable safety speed and time
- Programmable and storable test conditions
- Reproducible test results
- Timer
- Easy operation with touch keypad
- Dust proof sealed housing
- Quiet operation

IKA



9.737 790

### Scope of supply:

**Tube Mill control:** incl. 1 x grinding chamber MT 40 and MMT 40.1 each

**Tube Mill 100 control:** incl. 1 x grinding chamber MT 40, MT 100 and MMT 40.1 each

### Specifications

Operating principle:	cutting/impact
Motor rating input/output:	100/80 W
Speed:	5000 to 25000 rpm
Chamber volume:	40 ml // 100 ml
Timer:	5 s to 3 min
Interval timer:	5 s to 60 s
Overload protection:	yes
Circumferential speed:	65 m/s
Max. feed hardness:	5 Mohs
Dimensions (W x D x H):	180 x 300 x 170 mm // 180 x 300 x 212 mm
Weight:	2.7 kg // 2.8 kg
IP code:	IP 30
Power supply:	220-240 V, 50/60 Hz

Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
Tube Mill control	5000	25000	40	1	9.737 790 1
Tube Mill 100 control	5000	25000	100	1	7.644 727

## Accessories for batch mill Tube Mill control/Tube Mill 100 control

IKA

Description	For	PK	Cat. No.
Disposable grinding chamber, 40 ml	Tube Mill control, Tube Mill 100 control	10	9.737 791
Disposable grinding chamber, 40 ml, sterile	Tube Mill control, Tube Mill 100 control	10	4.652 716
Disposable grinding chamber, 40 ml, big pack	Tube Mill control, Tube Mill 100 control	100	6.260 495
Disposable grinding chamber, 100 ml	Tube Mill 100 control	10	6.285 802
Disposable grinding chamber, 100 ml, sterile	Tube Mill 100 control	10	6.310 247
Disposable grinding chamber, 100 ml, big pack	Tube Mill 100 control	50	7.644 728
Grinding chamber, multi use, 40 ml	Tube Mill control, Tube Mill 100 control	1	7.639 994
Grinding chamber, multi use, 100 ml	Tube Mill 100 control	1	6.273 032
Spare parts set for grinding chambers, multi use*	Tube Mill control, Tube Mill 100 control	1	4.653 944
Disposable grinding chamber, 40 ml, 45° bended beater	Tube Mill control, Tube Mill 100 control	10	4.668 552
Disposable grinding chamber, 40 ml, 45° bended beater, big pack	Tube Mill control, Tube Mill 100 control	100	6.274 501

\*Supplied with: 100 x sealing, 10 x beater, 10 x coupling

### 1 Grinding mill, A 10 basic

Newly designed batch mill for grinding of hard, brittle, soft and fibrous materials for volumes up to 50 ml. Because samples may be embrittled directly in the grinding chamber; tough, oily and aqueous samples can also be grinded. During development of the mill, particular emphasis was placed on safety. The mill will only start when the lid is closed and it can only be opened at standstill. A quick stop feature further increases the safety of user.

IKA

- Digital timer
- Counter: Display of grinding time
- Interval operation
- Brushless motor for long life and low noise
- Integrated cooling connections
- Error Code Display
- Easy handling with keypads
- Easy exchangeable beater/cutter for a variety of applications
- Grinding chamber reduction for small sample amounts ( included with delivery)
- Easy opening and closing of the lid with a bayonet lock

#### Specifications

Motor rating input/output:	300/240 W
Speed:	25 000 rpm
Chamber vol.:	50 ml
Power-on time ON/OFF:	5/10 min
Auto power off:	yes
Tangential speed:	73m/s
Max. sample granule size:	6 mm
Dimensions (W x D x H):	130 x 145 x 250 mm
Weight:	2.9 kg
IP code:	IP 41
Supply requirements:	220 - 240 V 50/60 Hz

Type	Max. speed rpm	Max. Feed quantity/ Flow rate ml	Plug type	PK	Cat. No.
A 10 basic	25000	50	EU	1	4.653 943
A 10 basic S2	25000	50	UK	1	6.265 902
A 10 basic S3	25000	50	CH	1	6.265 903

### 2 Accessories for Grinding mill, A10 basic

**A 10.1 Cutter, stainless steel:** For most brittle materials with a Mohs hardness up to 5.

IKA

**A 10.3 Cutter, hard metal:** Made from tungsten carbide for hard materials with a Mohs hardness up to 9.

**A 10.2 Star-shaped Cutter, stainless steel:** For specific lightweight materials like paper, dried plant parts, plastics and for smooth-elastic materials.

**A 10.4 Grinding chamber reduction:** For small grinding volumes.

Type	Description	PK	Cat. No.
A 10.1	Cutter, stainless steel	1	6.265 588
A 10.3	Cutter, hard metal	1	6.265 589
A 10.2	Star-shaped cutter, stainless steel	1	6.265 590
A 10.4	Grinding chamber reduction	1	6.265 591

1



2





## 1 Grinding mill, A11 basic

Batch mill for 2 different grinding procedures:

IKA

- Impact grinding of hard, brittle or non-elastic grinding materials with high-grade stainless steel beater. This beater can be used for a Mohs hardness up to 6 (incl. with delivery). Cutting grinding for pulverizing soft, fibrous materials with a cutting blade (not incl. with delivery).
- Moist and gluey materials can be pulverized by adding water
- Grinding chamber made of Tefcel (PTFE, glass fibre-reinforced) with stainless steel inlet (1.4571), useful volume 80 ml (incl. with delivery).  
For embrittlement of grinding materials with liquid nitrogen in the grinding chamber
- Optionally, a 250 ml grinding chamber is available

### Specifications

Motor rating input/output:	160/100 W
Speed:	28000 rpm (off load)
Chamber vol.:	80 ml
Power-on time ON/OFF:	1/10 min
Auto power off:	yes
Tangential speed:	53 m/sec.
Max. sample granule size:	10 mm
Dimensions (W x D x H):	85 x 85 x 240 mm
Weight:	1.5 kg
IP code:	IP 43
Supply requirements:	230 V 50/60 HZ
Tested to DIN EN IEC 61010-1.	

Type	Max. speed rpm	Max. Feed quantity/ Flow rate ml	Plug type	PK	Cat. No.
A 11 basic	28000	80	EU	1	9.737 801
A 11 basic	28000	80	UK	1	6.202 305

Accessories please order separately.

## Accessories for Grinding mill, A11 basic

**A 11.1 Spare beater:** For pulverising substances with a Mohs hardness up to 6.

IKA

**A 11.2 Cutter:** For pulverising soft, fibrous grinding materials.

**A 11.3 Beater, hard metal:** For pulverising substances with a Mohs hardness up to 9, chrome-carbide coated

**A 11.4 Grinding container, 250 ml:** Made of polycarbonate with stainless steel inlet. Not suitable for cooling with N<sub>2</sub>, only applicable with double beater A 11.6.

**A 11.5 Spare grinding container, 80 ml:** Made of Tefcel (PTFE, glass faser-reinforced) with stainless steel inlet. Excellent resistance to chemicals and low temperatures (- 200 °C).

**A 11.6 Dubbel beater:** For use up to Mohs hardness 3. Only applicable with grinding chamber A 11.4.

**A 11.7 Funnel:** Prevents splashing by pouring in liquid nitrogen in the grinding chamber A 11.5.

Type	Description	PK	Cat. No.
A 11.1	Spare beater	1	9.737 815 <sup>2</sup>
A 11.2	Cutter	1	9.737 806
A 11.3	Beater	1	9.737 807
A 11.4	Grinding container, 250 ml	1	9.737 805
A 11.5	Spare grinding container, 80 ml	1	9.737 816 <sup>3</sup>
A 11.6	Double beater	1	9.737 817
A 11.7	Funnel	1	9.737 818

1



2



9.737 815

3



9.737 816

1



### 1 Universal mill M20

Batch mill suitable for dry grinding of hard and brittle substances.

IKA

- Double-walled grinding chamber can be cooled with water through two hose adapters
- Removable grinding chamber, easy to clean
- Two grinding chambers can be alternately operated using one drive
- M 21 blade incl. with delivery

#### Specifications

Motor rating input/output:	440/225W
Speed:	max. 20000 rpm. off load
Overload protection:	current limiter
Throughput/Charge max:	250 ml
Material:	stainless steel (AISI 304)
Feed size:	max. 5 to 7 mm
Dimensions (W x D x H):	170 x 170 x 350 mm
Weight:	6.6 kg
Supply requirements:	230 V 50/60 HZ
IP code:	IP 21
Tested to DIN EN IEC 61010-1.	

Type	Max. speed rpm	Max. Feed quantity/ Flow rate ml	Plug type	PK	Cat. No.
M 20	20000	250	EU	1	9.737 828
M 20	20000	250	UK	1	4.007 942

2



4.664 746

### Universal mill MultiDrive basic/control

Universal mill for the pre- and fine comminution of hard, soft or fibrous samples.

IKA

- Adjustable interval operation
- Integrated cooling in the grinding bowl
- Ground product and coolant remain disconnected
- USB interface

#### MultiDrive control additionally with:

- Temperature measurement and vessel recognition using RFID
- Temperature limit can be set for temperature-sensitive materials, or for specific planned reactions
- Integrated weighing function for weighing without transferring the material
- Dispersion vessel and a disposable tube are available as accessories

Please order vessels separately.

#### Specifications

Motor rating input/output:	1.000/800 W
Speed:	3.000 ... 20.000 rpm
Throughput/Charge max:	250 ... 2000 ml
Feed size:	7 mm
Feed material hardness:	5 Mohs
Feed material hardness with hard metal beater:	9 Mohs
Dimensions (W x D x H):	300 x 250 x 450 mm
Weight:	10 kg
Power supply:	220 ... 240 V
IP code:	IP 31

3



4.664 747

Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
MultiDrive basic	3000	20000	2000	1	4.664 746 2
MultiDrive control	3000	20000	2000	1	4.664 747 3

## Vessels for Universal mill MultiDrive basic/control

1

2

IKA



4.664 751



4.664 754

Type	Description	Nominal capacity	Material feed size	Material	For	PK	Cat. No.
		ml	mm				
BL 2000	Blender vessel with knife	2000	50.0	PCTG	basic/control	1	<b>4.664 748</b>
BL 2000 T	Blender vessel with knife*	2000	10.0	PCTG	control	1	<b>4.664 749</b>
MI 250	Milling chamber with beater	250	7.0	stainless steel	basic/control	1	<b>4.664 750</b>
MI 400	Milling chamber with beater	400	7.0	stainless steel	basic/control	1	<b>4.664 751</b> 1
MI 250 T	Milling chamber with beater*	250	10.0	PCTG	control	1	<b>4.664 752</b>
MI 400 T	Milling chamber with beater*	400	10.0	PCTG	control	1	<b>4.664 753</b>
DI 2000 T	Dispersing vessel*	2000		PCTG	control	1	<b>4.664 754</b> 2

\*temperature sensor

## 3 Knife mill HM100

NEW

3

The HM100 knife mill is used for grinding soft, medium-hard, brittle and fibrous materials. Especially suitable for samples with a high water, oil or fat content. The 2 knives are driven by a 900 W motor to achieve a reliable grinding result. Suitable for applications in agriculture, biology, medicine and food technology.

- For soft, elastic, fibrous, aqueous, oily or fatty samples
- Electronically controlled speed
- Samples are grinded in only 10 to 30 seconds
- Up to 700 ml sample volume
- Autoclavable grinding vessels
- Grinding vessels available in various materials
- Cutting knives with 2 stainless steel and titanium blades available
- Easy operation
- Quick start
- Coarse and fine grinding in one step
- Interval, reverse and manual mode available

**Scope of supply:** Knife mill, 1 l grinding vessel made of plastic (autoclavable), lid, stainless steel knife



### Specifications

Feed size:	40 mm
Feed quantity:	50 ... 700 ml
Ult. fineness:	<300 µm
Timer:	1 s ... 10 min
Motor speed:	2000 ... 10000 min <sup>-1</sup>
Power consumption:	900 W
Dimensions (W x D x H):	260 x 343 x 454 mm
Weight:	16 kg
Power supply:	220 V, 50 Hz

Type	PK	Cat. No.
HM100	1	<b>4.669 516</b>

## Accessories for knife mill HM100

NEW

Grinding vessels, lids, blades and scrapers for use with knife mill HM100.

Description	PK	Cat. No.
Grinding vessel 1 l, transparent plastic, autoclavable	1	<b>4.669 517</b>
Grinding vessel 1 l, stainless steel	1	<b>4.669 518</b>
Grinding vessel 1 l, PP	1	<b>4.669 519</b>
Grinding vessel 1 l, PP	10	<b>4.669 520</b>
Grinding vessel 1 l, glass	1	<b>4.669 521</b>
Standard lid for all grinding vessels 1 l, PP	1	<b>4.669 522</b>
Gravity lid for PP/plastic grinding vessel 1 l, PP	1	<b>4.669 523</b>
Gravity lid for PP/plastic grinding vessel 1 l, with overflow channels, PP	1	<b>4.669 524</b>
Reduction lid for chamber reduction of PP/plastic vessels to 0.3 l, polycarbonate	1	<b>4.669 525</b>
Reduction lid for chamber reduction of PP/plastic vessels to 0.5 l, polycarbonate	1	<b>4.669 526</b>
Gravity lid for stainless steel grinding vessels, PP	1	<b>4.669 527</b>
Gravity lid for stainless steel grinding vessels, with overflow channels, PP	1	<b>4.669 528</b>
Stainless steel knife	1	<b>4.669 529</b>
Titanium knife	1	<b>4.669 530</b>
Stainless steel knife with serrated blades	1	<b>4.669 531</b>
Scraper	1	<b>4.669 532</b>

### 1 Knife mill PULVERISETTE 11

**NEW**

Fritsch

For reproducible homogenisation of all common samples in food or feed testing, pharmaceuticals, chemicals and many other applications. The quietly operating knife mill is ideal for gentle grinding and homogenisation of moisty, oily and greasy as well as dry, soft, medium-hard and fibrous samples within seconds.

- Motor power up to 1250 Watt
- Variable speed setting with turbo function
- Standard, reverse and interval operation
- Knife blades with 4 cutting edges, up to 56000 cuts per minute
- Feed quantity up to 1400 ml (depending on material)
- Average grinding time only 30 seconds (depending on material)
- Fast cryogenic grinding
- 20 SOPs can be stored, USB interface for SOP management and generation of grinding reports
- Easy cleaning
- Sample-contacting parts such as grinding containers, lids and knives can be autoclaved

**Scope of supply:** Knife mill, grinding container 1.4 l made of polycarbonate, standard lid, standard knife made of stainless steel

#### Specifications

Max. feed size:	40 mm
Final fineness:	<300 µm
Speed range:	2000 ... 10000 min <sup>-1</sup> , turbo function up to 14000 min <sup>-1</sup> for 6 s
Performance:	1250 W
Dimensions (W x D x H):	320 x 430 x 480 mm
Weight:	17.6 kg
Power supply:	200 ... 240 V, 50/60 Hz

Type	PK	Cat. No.
PULVERISETTE 11	1	6.275 093

### 2 Accessories for knife mill PULVERISETTE 11

**NEW**

Fritsch

Type	PK	Cat. No.
Standard grinding vessel, polycarbonate, 1.4 l, autoclavable	1	4.671 954
Grinding vessel, stainless steel, 1.4 l, autoclavable	1	4.671 955
Standard lid for grinding vessel, silicone, autoclavable	1	4.671 956
Vario-Lid system for moist, liquid and viscous samples, incl. plunger and reduction sample pusher, autoclavable	1	4.671 957
Reduction sample pusher for dry, solid samples for Vario-Lid system, incl. plunger, autoclavable	1	4.671 958
Special lid, for cryogenic comminution with single-use sieve insert for grinding vessel made of stainless steel, autoclavable	1	4.671 959
Single use sieve inserts for special lid, set of 10	1	4.671 960
Standard knife, stainless steel, autoclavable	1	4.671 961
Sickle knife with serrated blades, stainless steel, autoclavable	1	4.671 962

Grinding vessels in further materials, sickle knives with different cutting edges and various materials, single-use grinding vessel as well as further accessories are available.



## 1 Knife Mills GRINDOMIX GM 200/GM 300



Retsch

The Knife Mills Grindomix GM 200 and GM 300 are suitable for the rapid and reproducible size reduction and homogenisation of food and feed materials. They can process substances with a high water, oil or fat content just as quickly and reliably as dry, soft and medium-hard products.

Features:

- Very fast and reproducible grinding and homogenisation of foodstuffs, final fineness < 300 µm
- Speed-controlled industrial motor
- Autoclavable grinding tools
- Boost function allows short-term increase of speed up to 14.000 rpm (GM 200)
- For sample volumes up to 700 ml (GM 200) or 4500 ml (GM 300)
- Digital display of grinding time and speed
- Interval operation possible
- Optional gravity lid for automatic adjustment of grinding chamber volume
- Storage of 4 program sequences possible (GM 200)
- 8 or 10 parameter combinations can be stored (GM 200/GM 300)
- Drive power: ~ 1000 W (GM 200); continuous 1.1 kW, short term peak 3 kW (GM 300)
- Electrical supply data: 220-240 V, 50-60 Hz

Supplied with:

- GM 200** complete with 1 L plastic container, standard lid and stainless steel knife.
- GM 300** complete with 5 L plastic container, standard lid, stainless steel knife and scraper.

1



Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
GM 300	500	4000	5000	1	9.738 500
GM 200	2000	14000	700	1	6.310 086

## 2 Disc Mill DM 200

Retsch

For preliminary and fine grinding of medium-hard and hard-brittle substances in batches. Grinding discs are available in 4 different materials. **Please order grinding discs separately.**

- Accurate gap width setting
- Connector for dust extraction

Specifications

Feed size:	up to 20 mm
Ultimate fineness:	up to 0.1 mm
Capacity:	2.5 l
Dimensions (W x D x H):	440 x 400 x 870 mm
Weight:	140 kg
Power supply:	3/N~ 400 V, 50/60 Hz

2



Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
DM 200	440	528	2500	1	9.739 030

## Accessories for Disc Mill DM 200

Retsch

Type	PK	Cat. No.
Grinding discs - hardened steel	1	9.739 031
Grinding discs - manganese steel	1	9.739 032
Grinding discs - tungsten carbide	1	9.739 033
Grinding discs - zirconium oxide	1	9.739 034

### 1 Micro Ball Mill GT300

**NEW**

For grinding and mixing of hard, medium-hard, soft, elastic and fibrous samples. Also suitable for cell disruption and DNA/RNA extraction. The mill is designed for very short processing times and high sample throughput. The grinding containers carry out horizontal, circular-arc-shaped oscillations and the grinding balls ensure effective grinding and mixing of the sample.

- Only 30 seconds average processing time
- 2 grinding stations for bowls with a volume of 5 to 50 ml
- Multifunctional clamping device, which also holds adapters for reaction vessels
- Grinding time digitally adjustable from 1 second to 100 minutes
- Variable speed from 180 to 1800 min<sup>-1</sup>
- Control via LCD display
- Programmable grinding parameters, up to 10 programs can be stored
- Transparent cover
- Safety interlock
- Grinding chamber, clamping system and swivel arm made of stainless steel
- Maintenance-free direct drive
- Grinding bowls made of different materials with volumes up to 50 ml available as accessories

**Grinding bowls and balls are not included in the scope of supply and must be ordered separately.**

#### Specifications

Feed size:	<10 mm
Sample volume:	0.2 ... 50 ml
Final fineness:	<5 µm
Timer:	1 s ... 99:59 min
Grinding programs:	10
Vibration frequency:	180 ... 1800 min <sup>-1</sup>
Number of grinding stations:	2
Performance:	200 W
Dimensions (W x D x H):	380 x 480 x 281 mm
Weight:	34 kg
Power supply:	220 V, 50 Hz

Type	PK	Cat. No.
Micro Ball Mill GT300	1	4.669 587

### 2 Accessories for Micro Ball Mill GT300

**NEW**

Type	PK	Cat. No.
Grinding jar 25 ml, hardened steel	1	4.669 588
Grinding jar 5 ml, stainless steel	1	4.669 589
Grinding jar 10 ml, stainless steel	1	4.669 590
Grinding jar 25 ml, stainless steel	1	4.669 591
Grinding jar 35 ml, stainless steel	1	4.669 592
Grinding jar 50 ml, stainless steel	1	4.669 593
Grinding jar 10 ml, agate	1	4.669 594
Grinding jar 10 ml, zirconium oxide	1	4.669 595
Grinding jar 25 ml, zirconium oxide	1	4.669 596
Grinding jar 35 ml, zirconium oxide	1	4.669 597
Jar wrench	1	4.669 598
Gasket for 25 ml grindig jars made of stainless steel	1	4.669 599
Gasket for 35 ml grindig jars made of stainless steel	1	4.669 600
Gasket for 50 ml grindig jars made of stainless steel	1	4.669 601
Gasket for 25 ml grindig jars made of zirconium oxide	1	4.669 602
Gasket for 35 ml grindig jars made of zirconium oxide	1	4.669 603

**1**

**2**




## Mixer Mills MM 400/500

The mixer mills are true laboratory "all-rounders". They have been developed specially for grinding, homogenising and mixing of small amounts of sample in only a few seconds. They are also perfectly suitable for the disruption of biological cells as well as for DNA/RNA recovery.

Retsch

### 1 Mixer Mills MM 400



The MM 400 can also be used for cryogenic and wet grinding.

- Grinding by impact and friction, for up to 20 samples per run
- 3 different grinding modes: dry, wet or cryogenic (MM 400)
- Screw-top grinding jars for leak-proof grinding (MM 400)
- 9 Standard Operating Procedures can be stored

#### Specifications

Feed size: ≤ 8 mm  
 Ultimate fineness: approx. 5 µm  
 Charge: max. 2 x 20 ml  
 Digital preselection of vibrational frequency: 3 ... 30 Hz (180 ... 1800 rpm.)  
 Power supply: 100 ... 240 V, 50/60 Hz



Type	Min. speed	Max. speed	Max. Feed quantity/ Flow rate	No. of grinding stations	PK	Cat. No.
	rpm	rpm	ml			
MM 400	180	1500	40	2	1	9.739 091

### 2 Grinding Jars for Mixer Mill MM 400

With screw cap.

Retsch

#### Advantages:

- simple and safe handling
- dust and air-tight
- Suitable for wet and cryogenic grinding

Material	Capacity ml	PK	Cat. No.
Stainless steel	1.5	1	9.738 848
Stainless steel	5.0	1	9.738 849
Stainless steel	10.0	1	9.738 960
Stainless steel	35.0	1	9.738 875
Stainless steel	50.0	1	9.738 885
Agate	5.0	1	9.738 852
Agate	10.0	1	9.738 961
Zirconium oxide	10.0	1	9.738 962
Zirconium oxide	25.0	1	9.738 965
Zirconium oxide	35.0	1	9.738 880
Tungsten carbide	10.0	1	9.738 963
Tungsten carbide	25.0	1	9.738 864
Hardened steel	25.0	1	9.738 869
PTFE	25.0	1	9.738 874
PTFE	35.0	1	9.738 966



### 3 Mixer Mills MM 500



The MM 500 is suitable for efficiently wet-mill samples to nanosized particles with only minor warming effects.

Retsch

- Suitable for long-term grinding processes up to 99 h
- Memory for 12 SOPs
- 4 program cycles with up to 99 repetitions
- 4.3" touch display

#### Specifications

Feed size: ≤ 10 mm  
 Ultimate fineness: approx. 0.1 µm  
 Charge: max. 2 x 45 ml  
 Digital preselection of vibrational frequency: 3 ... 35 Hz (180 ... 2100 min<sup>-1</sup>)  
 Power supply: 100 ... 230 V, 50/60 Hz



Type	Min. speed	Max. speed	Max. Feed quantity/ Flow rate	No. of grinding stations	PK	Cat. No.
	rpm	rpm	ml			
MM 500	180	2100	90	2	1	6.313 123

### Grinding Jars for Mixer Mill MM 500

**NEW**

Retsch

- With screw cap
- Screw-Lock jars in sizes up to 125 ml, pressure-tight up to 5 bar

Material	Capacity ml	PK	Cat. No.
Hardened steel	50	1	6.313 125
Hardened steel	80	1	6.313 126
Hardened steel	125	1	6.313 127
Stainless steel	50	1	6.313 128
Stainless steel	80	1	6.313 129
Stainless steel	125	1	6.313 130
Tungsten carbide	50	1	6.313 131
Tungsten carbide	80	1	6.313 132
Zirconium oxide	50	1	4.669 258
Zirconium oxide	80	1	6.313 133
Zirconium oxide	125	1	6.313 134



### 1 Mixer Mill CryoMill

Retsch

The CryoMill is designed for the cryogenic size reduction of materials which cannot be ground at room temperature or whose composition would be changed by it. The grinding jar is cooled before and during the grinding process with liquid nitrogen through an integrated cooling system. Thus the sample is embrittled and its volatile components are preserved. The size reduction principle is the same as that of the well-proven Mixer Mill MM 400. The CryoMill can also be operated without the cooling system which makes it suitable for a wide range of applications.

- Powerful cryogenic grinding by impact and friction, up to 30 Hz
- Closed LN<sub>2</sub>-system (autofill) for enhanced safety, avoids any contact of the user with LN<sub>2</sub>
- Screw-top grinding jars for convenient, leak-proof operation
- Clearly structured user interface, memory for 9 SOPs
- Wide range of accessories including LN<sub>2</sub>-feeding systems, various jar and ball sizes, adapter racks, materials

#### Specifications

Feed size	up to 8 mm
Ultimate fineness	< 5µm
Charge	max. 1 x 20 ml
Adjustable frequency range	5 to 30 HZ (300 to 1800 rpm.)
Dimensions (W x D x H)	385 x 675 x 370 mm
Weight	40 kg
Power supply:	100 - 240 V, 50/60 HZ

Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
CryoMill	300	1800	20	1	9.739 299

Please order Autofill, grinding jars and grinding balls separately.



### 2 Grinding Jars for CryoMill

Retsch

Material	Capacity ml	PK	Cat. No.
Stainless steel (to be used with adapter)	5	1	9.739 281
Stainless steel	10	1	9.739 609
Stainless steel	25	1	9.739 611
Stainless steel	35	1	9.739 612
Stainless steel	50	1	9.739 613
Hardened steel (to be used with adapter)	5	1	9.739 287
Hardened steel	25	1	9.739 614
Hardened steel	35	1	9.739 615
Hardened steel	50	1	9.739 616
Zirconium oxide	25	1	9.739 610
PTFE	25	1	9.739 617

## 1 Planetary Ball Mills PM 100/100 CM/200/400

Planetary Ball Mills are suitable for mixing and grinding soft, medium-hard, extremely hard, brittle and fibrous materials. They are used whenever high degrees of fineness down to the submicron range are to be achieved in a very short time. In addition to dry and wet grinding, they are also suitable for colloidal grinding and mechanical alloying. Typical materials are minerals, ores, chemicals, ceramics, soils, household and industrial waste etc.

Retsch

Features:

- extremely high ultimate fineness down to submicron range
- 1, 2 or 4 grinding stations
- grinding jar volumes from 12 ml to 500 ml
- suitable for long-term trials and continuous use
- programmable starting time
- power failure back-up ensures storage of remaining grinding time
- reproducible results due to digital parameter setting
- 10 parameter combinations can be stored
- single button operation with graphic display
- automatic grinding chamber ventilation for cooling the grinding jars
- grinding jars in 7 sizes and 8 different materials available

**Supplied with:** Planetary Ball Mill only. Grinding jars and grinding balls have to be ordered separately.

The PM 100 CM is a Planetary Ball Mill with a speed ratio of 1:-1.

Size reduction is not so much achieved by impact but by pressure and friction which is more gentle on the material.

**Specifications**

Ultimate fineness:	< 1µm
Dimensions (WxDxH):	630 x 415 x 468 mm
PM 400	836 x 780 x 1220 mm
Supply requirements:	230 V, 50-60 HZ

Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	No. of grinding stations	PK	Cat. No.
PM 100	100	650	220	1	1	9.739 270
PM 100 CM	100	650	220	1	1	9.739 275
PM 200	100	650	100	2	1	9.739 271
PM 400	30	400	880	4	1	9.739 274

Please order grinding jars and grinding balls separately.

## 2 Grinding Jars for Planetary Ball Mills PM 100/100 CM/200/400

Retsch

Material	Capacity ml	PK	Cat. No.
Hardened steel*	500	1	9.738 222
Stainless steel	125	1	9.738 340
Stainless steel*	500	1	9.738 223
Tungsten carbide	50	1	9.738 311
Tungsten carbide*	250	1	9.738 218
Agate	125	1	9.738 345
Sintered aluminium oxide	50	1	9.738 327
Sintered aluminium oxide*	500	1	9.738 226
Zirconium oxide	50	1	9.738 325
Zirconium oxide*	250	1	9.738 221
Zirconium oxide*	500	1	9.738 227
Silicon nitride	125	1	9.738 343
Silicon nitride	250	1	9.738 354
Silicon nitride	500	1	6.267 315

\*not suitable for PM 200.

Further grinding jars on request





1

### 1 Mortar grinder PULVERISETTE 2

For wet and dry grinding of hard, medium-hard, soft, brittle and temperature-sensitive samples for analysis, quality control and materials testing. It even grinds difficult samples with a moist, fibrous or elastic structures using liquid nitrogen. And it's also excellently suited for mixing or homogenisation of organic and inorganic solids or liquids.

Fritsch

- Reproducible and accurate grinding results
- Precise adjustment and readout of the pestle pressure
- Short grinding and mixing times
- Loss and dust free

Max. feed size:	8 mm
Max. sample quantity:	up to 190 ml
Final fineness:	10 ... 20 µm
Supply requirements:	100-120/200-240 V/1~, 50/60 Hz, 300 W
Dimensions (W x D x H):	310 x 460 x 410 mm
Net weight:	24 kg

Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
PULVERISETTE 2	70	80	190	1	9.738 200

Mortars and pestles must be ordered additionally.



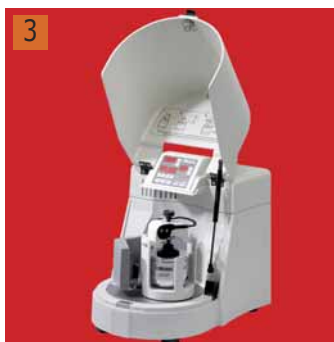
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### 2 Accessories for mortar grinder PULVERISETTE 2

Fritsch

Material	PK	Cat. No.
Grinding set agate	1	9.738 211
Grinding set stainless steel	1	9.738 235
Grinding set hard porcelain	1	9.738 240

Mortars and pestles are also available in sintered corundum, hardmetal tungsten carbide and zirconium oxide.



3

### Planetary ball mills PULVERISETTE 5/6 classic line

Fritsch

Ideal for fast, loss-free fine grinding of hard, medium-hard, brittle and fibrous materials - dry or in suspension in the areas of geology, mineralogy, metallurgy, ceramics, materials research, mechanical alloying, pharmaceuticals, chemistry, biology, sample preparation for analysis. Sample can be processed from a few mg to several kg at a wide range of fineness levels down to less than 1 µm. They are especially easy to operate and fast and easy to clean. Suitable for continuous, heavy duty usage and guarantee safe clamping of the grinding bowls.

Matching grinding parts of 7 different materials are available to provide max. protection against undesired contamination. In addition to size-reduction, planetary ball mills can also be used for mixing and homogenising of emulsions and pastes or for mechanical alloying and activation.

FRITSCH also offers a Planetary Mill Generation *premium line*, for fast high-tech grinding down to the nano range, worldwide unique in operation, performance and safety, a new reference class. Information on the Planetary Mill PULVERISETTE 5 *premium line* and Planetary Micro Mill PULVERISETTE 7 *premium line* can be found in the LLG Online Shop.

9.738 300



4

Max. feed size:	10 mm
Final fineness:	< 1 µm
Grinding bowl sizes:	80, 250, 500 ml
Supply requirements:	100-120/200-240 V/1~, 50-60 Hz
Dimensions (W x D x H):	370 x 530 x 500 mm PULVERISETTE 6 classic line 580 x 670 x 570 mm PULVERISETTE 5 classic line

9.738 255

Type	Min. speed rpm	Max. speed rpm	Max. Feed quantity/ Flow rate ml	No. of grinding stations	PK	Cat. No.
Planetary Mill PULVERISETTE 5 classic line - Model I	50	400	900	4	1	9.738 255 4
Planetary Mill PULVERISETTE 5 classic line - Model II	50	400	450	2	1	9.738 257
Planetary Mono Mill PULVERISETTE 6 classic line	100	650	225	1	1	9.738 300 3

Grinding bowls and grinding balls must be ordered additionally.  
Further models of planetary mills on request.

### 1 Grinding bowls for planetary ball mills PULVERISETTE 5/6 classic line

Fritsch

Material	Volume ml	PK	Cat. No.
Hardened, stainless steel	80*	1	9.738 515
Hardened, stainless steel	250	1	9.738 525
Hardened, stainless steel	500	1	9.738 535
Sintered corundum	80*	1	9.738 512
Sintered corundum	250	1	9.738 522
Sintered corundum	500	1	9.738 532
Zirconium oxide	80*	1	9.738 518
Zirconium oxide	250	1	9.738 528
Zirconium oxide	500	1	9.738 538
Hardmetal tungsten carbide**	80*	1	9.738 514
Hardmetal tungsten carbide**	250	1	9.738 524
Adapter for grinding bowls	80	1	9.738 315

\* One grinding bowl holder can hold either 2 x 80 ml bowls or 1 x 80 ml bowl together with a grinding bowl adapter mounted one on top of the other.

\*\* Grinding bowl in a steel casing.

Grinding bowls are also available in agate and silicon nitride. Special gassing lids for grinding in an inert atmosphere and for mechanical alloying as well as the GTM-system (Gas pressure and temperature measuring system) for continuous measurement of gas pressure and temperature are available.



### 2 Grinding balls for grinding bowls PULVERISETTE 5/6 classic line

Fritsch

Material	Ball diam. mm	PK	Cat. No.
Hardened, stainless steel	10	1	9.738 555
Hardened, stainless steel	20	1	9.738 565
Hardened, stainless steel	30	1	9.738 575
Hardened, stainless steel	40	1	9.738 585
Sintered corundum	10	1	9.738 552
Sintered corundum	20	1	9.738 562
Sintered corundum	30	1	9.738 572
Sintered corundum	40	1	9.738 582
Zirconium oxide	10	1	9.738 558
Zirconium oxide	20	1	9.738 568
Zirconium oxide	30	1	9.738 578
Zirconium oxide	40	1	9.738 588
Hardmetal tungsten carbide	10	1	9.738 554
Hardmetal tungsten carbide	20	1	9.738 564
Hardmetal tungsten carbide	30	1	9.738 574
Hardmetal tungsten carbide	40	1	9.738 584

Grinding bowls are also available in agate and silicon nitride.

Grinding balls are also offered in the diameters 0.1 mm to 3 mm (to achieve a fineness down to the nanometer-range) as well as in 5 mm and 15 mm.



### 3 Disk mill PULVERISETTE 13 classic line

Fritsch

Ideal for intermittent and continuous fine grinding within the medium particle size range of soft to hard, tough and temperature-sensitive solids in the areas of mining and metallurgy, glass industry, ceramics industry, soil research, rocks and soils.

Max. feed size:	20 mm
Throughput:	up to 150 kg/h
Final fineness:	0.1 to 12 mm
Supply requirements:	400 V/3~, 50 Hz, 1790 W
Dimensions (W x D x H):	440 x 870 x 400 mm
Net weight:	140 kg

Type	Min. speed rpm	Max. speed rpm	Max. throughput kg/h	PK	Cat. No.
PULVERISETTE 13 classic line	440	440	150	1	9.739 001

Instrument also available in other voltages.

Fixed and movable grinding disks must be ordered additionally.

The Disk Mill is also available as *premium line* model: even more powerful, safer and easier to operate due to easy reproducible gap width setting via display.







### 1 Accessories for disk mill PULVERISETTE 13 classic line

Fritsch

Type	Description	PK	Cat. No.
Fixed grinding disk	hardened steel cast	1	9.739 002
Mobile grinding disk	hardened steel cast	1	9.739 003
Fixed grinding disk	zirconium oxide	1	9.739 006
Mobile grinding disk	zirconium oxide	1	9.739 007

Grinding disks are also in manganese steel and hardmetal tungsten carbide available.



### 2 Variable Speed Rotor Mill PULVERISETTE 14 classic line

Fritsch

Ideal for fast, effective comminution of soft to medium-hard, brittle, fibrous materials, as well as difficult-to-mill and temperature-sensitive samples. Cryogenic grinding, dispersion and homogenisation are also one of the areas of operation. The variable speed rotor mill is an ultra-centrifugal mill with variable speed settings between 6.000 rpm and 20.000 rpm and automatic speed regulation for constant milling in the areas of analytic, biology, chemistry, agriculture and forestry, foodstuffs, plastics and textiles, pharmaceuticals, environment, RoHS. For optimal material feeding the Vibratory Feeder LABORETTE 24 (optional) is recommended.

Max. feed size:	10 mm
Throughput:	up to 5 L/h
Sieve inserts:	0.08 to 6 mm
Final fineness (d <sub>50</sub> ):	40 µm
Rotor speed:	6.000 to 20.000 rpm
Dimensions (W x D x H):	310 x 480 x 470 mm
Net weight:	23 kg

Type	Min. speed rpm	Max. speed rpm	Max. throughput l/h	Rated capacity kW	Type of auxiliary energy	PK	Cat. No.
PULVERISETTE 14 classic line	6000	20000	5	1.1	200 ... 240 V, 50-60 Hz	1	9.738 277
PULVERISETTE 14 classic line	6000	20000	5	1.1	100 ... 120 V, 50-60 Hz	1	9.738 276

Impact rotor and sieve ring must be ordered additionally.

FRITSCH also offers a Variable Speed Rotor Mill PULVERISETTE 14 premium line with impact, shearing and cutting comminution in one instrument. The premium line version is especially powerful with up to 22.000 rpm, a max. feed size of up to 15 mm and a sample throughput of up to 15 l/h and more. This mill offers significantly better cooling, absolutely safe operation and fast, residue-free cleaning.



### 3 Accessories for variable speed rotor mill PULVERISETTE 14 classic line

Fritsch

Type	Material	PK	Cat. No.
Impact rotor with 8 ribs	Stainless steel	1	9.738 282
Impact rotor with 12 ribs	Stainless steel	1	9.738 283
Impact rotor with 24 ribs	Stainless steel	1	9.738 284
Sieve ring, trapezoidal perforation 0.08 mm	Stainless steel 316 L	1	9.738 286
Sieve ring, trapezoidal perforation 0.12 mm	Stainless steel 316 L	1	9.738 287
Sieve ring, trapezoidal perforation 0.2 mm	Stainless steel 316 L	1	9.738 288
Sieve ring, trapezoidal perforation 0.5 mm	Stainless steel 316 L	1	9.738 289
Sieve ring, trapezoidal perforation 0.75 mm	Stainless steel 316 L	1	9.738 285
Sieve ring, trapezoidal perforation 1 mm	Stainless steel 316 L	1	9.738 290
Sieve ring, trapezoidal perforation 1.5 mm	Stainless steel 316 L	1	9.738 278
Sieve ring, trapezoidal perforation 2 mm	Stainless steel 316 L	1	9.738 279
Sieve ring, square perforation 2 mm	Stainless steel 316 L	1	4.671 963
Sieve ring, square perforation 4 mm	Stainless steel 316 L	1	4.671 964
Sieve ring, square perforation 6 mm	Stainless steel 316 L	1	4.671 965
Conversion kit for large quantities	-	1	9.738 329
Vibratory feeder LABORETTE 24 for continuous feeding	-	1	9.738 299
Stand for vibratory feeder LABORETTE 24	-	1	9.738 298

Rotors and sieve rings are also available in others designs and materials. An extensive accessory programme with impact bar, pin insert, sample exhauster with Cyclone separators and much more is available for your specific application.



## Cutting mills PULVERISETTE 15 and Universal Cutting mills PULVERISETTE 19

Ideal for pre and fine comminution of soft to medium-hard as well as fibrous or brittle, tough materials. They are essential for the areas of plastics, textiles, agriculture and forestry, environmental, construction materials, chemistry and foodstuffs. All cutting parts can be removed for cleaning in just a few seconds without tools, unbeatable fast, simple and efficient. Variable rotational speeds, different rotors, various knife geometries and replaceable blades ensure maximum flexibility and durability. For controlling the abrasion properties, the cutting tools are offered in different materials. The optimum airflow ensures fast comminution and secure protection against clogging. The FRITSCH Cyclone separators (optional) for sample exhaustion enable simple feeding due to the strong airflow, increase throughput, and reduce the thermal load of the samples.

Fritsch



9.738 421

Instruments also available in other voltages.

Funnels, rotors, sieve inserts/sieve cassettes and collecting vessels must be ordered separately.

FRITSCH also offers a Cutting Mill Combination which consists of the Universal Cutting Mill PULVERISETTE 19 and Power Cutting Mill PULVERISETTE 25.

The important effect is that samples with feed particle size of 120 mm max. can be ground to a few 100 µm within a short time and in a single operation. Ordering data on request.

The Universal Cutting Mills PULVERISETTE 19 are also available completely in stainless steel.



4.671 967

NEW: Universal Cutting Mill PULVERISETTE 19 now with variable rotational speed for optimal adjustment of the cutting speed to your sample material

Variable 300-3000 rpm is ideal for fine comminution of dry soft to medium-hard sample materials as well as fibrous materials and plastics.

Variable 50-700 rpm for powerful comminution of hard, tough-elastic and temperature-sensitive samples or an excessively high fine share need to be avoided.

### Specifications

Max. feed size:	70 x 80 mm*
Rotation speed:	50 ... 3400 min <sup>-1</sup>
Sieve inserts:	0.2 ... 20 mm*

Type	Min. speed	Max. speed	Max. throughput	Feed size	Type of auxiliary energy	Dimensions (W x D x H)	PK	Cat. No.
	rpm	rpm	l/h	mm		mm		
PULVERISETTE 15	2800	3400	50	70	400 V, 50 Hz	420 x 480 x 690	1	9.738 421 1
PULVERISETTE 19	50	700	60	80	380 ... 460 V, 50/60 Hz	440 x 790 x 560	1	4.671 967 2
PULVERISETTE 19	300	3000	60	80	380 ... 460 V, 50/60 Hz	440 x 790 x 560	1	6.314 060

\* depending on the instrument type

## 3 Accessories for cutting mill PULVERISETTE 15

Fritsch

Type	PK	Cat. No.
Rotor with straight cutting edges and fixed knives made of tool steel	1	9.738 424
Protected funnel with sample pusher	1	7.900 140
Collecting vessel, 3.5 L	1	6.231 269
Collecting vessel, 60 L with filter hose	1	9.738 449
Universal support stand for the free mounting of the cutting mills	1	9.738 429
Sieve insert*, trapezoidal perforation 0.25 mm	1	9.738 432
Sieve insert*, trapezoidal perforation 0.5 mm	1	9.738 433
Sieve insert*, trapezoidal perforation 1 mm	1	9.738 435
Sieve insert*, trapezoidal perforation 2 mm	1	9.738 437
Sieve insert*, square perforation 4 mm	1	9.738 441
Sieve insert*, square perforation 6 mm	1	9.738 442

\*made of stainless steel

Alternative funnels as well as sieve inserts are also available in other perforations. Rotors as well as the sieve inserts are also offered in chromium-free steel.



## 4 Accessories for Universal Cutting mills PULVERISETTE 19

Fritsch

Type	PK	Cat. No.
Standard cutting tool with V-cutting edges and fixed knives made of hardened stainless steel	1	9.739 321
Standard funnel for long and bulk solids	1	6.510 319
Collecting vessel, 3 L	1	9.739 350
Large collecting vessel, 10 L	1	9.739 351
Universal support stand for the free mounting of the cutting mills	1	9.738 429
Sieve cassette*, trapezoidal perforation 0.5 mm	1	9.739 331
Sieve cassette*, trapezoidal perforation 1 mm	1	9.739 333
Sieve cassette*, trapezoidal perforation 2 mm	1	9.739 335
Sieve cassette*, square perforation 4 mm	1	9.739 340
Sieve cassette*, square perforation 6 mm	1	9.739 341

\*made of stainless steel

Alternative funnels, cutting tools in other materials and designs, sieve cassettes in other perforations and materials as well as further stands and Cyclone separators in various configurations for sample exhaustion are available.





### 1 Jaw Crusher, BB 50

Benchtop Jaw Crusher for the rapid and gentle, coarse and preliminary size reduction of hard, brittle and ductile materials. Continuous digital gap width adjustment with scale, enhanced ultimate fineness up to 0.5 mm.

Retsch

- Large fold-back hopper
- Removable crusher arm for easy cleaning
- Adjustable speed allows adaptation to sample characteristics
- Convenient operating keypad with digital display
- Memory for gap width setting
- Wear compensation with zero-point adjustment

#### Features:

- Throughput/charge: single items, charges to 3000 ml
- Supply requirements: 220-240 V, 50 HZ

Type	Max. Feed quantity/ Flow rate ml	Material breaking jaws	PK	Cat. No.
BB 50	3000	Manganese steel	1	9.738 770
BB 50	3000	Stainless steel	1	9.738 771
BB 50	3000	Tungsten carbide	1	9.738 772
BB 50	3000	Zirconia	1	9.738 773
BB 50*	3000	Steel 1.1750	1	9.738 774

\* for heavy metal free grinding.  
Other power supply variants are available on request at the same price.



### 2 Jaw Crushers, BB 100, BB 200, BB 300

For rapid and gentle coarse grinding and crushing of hard, brittle and tough materials.

Retsch

Continuous gap adjustment with scale and zero-point adjustment for wear compensation. Excellent performance with enhanced final fineness, robust construction, fitted with quick-release hopper, receiver with safety switch and casing. Standard model is supplied with manganese steel breaking jaws.

#### Features:

- High throughput
- Continuous gap width adjustment
- Braking motor with safety switch
- Final fineness approx. 2 to 5 mm
- Easy cleaning of grinding chamber
- Supply requirements 400 V 3-ph, 50 Hz

Type	Max. Feed quantity/ Flow rate ml	PK	Cat. No.
BB 100	2000	1	9.739 098
BB 200	5000	1	9.519 120
BB 300	35400	1	9.739 093



### 3 Jaw crushers PULVERISETTE 1 classic line (2 Models)

Ideal for fast batchwise or continuous pre-crushing of very hard to medium-hard, brittle and tough materials in the areas of mining and metallurgy, chemistry, geology and mineralogy, glass industry, ceramics industry, rocks and soils. The final fineness can be easily set from the outside (10 different stages are possible).

Fritsch

#### Scope of supply:

With crushing jaws and lateral support walls made of tempered steel. Crushers are also available in other voltages and with crushing jaws and lateral support walls made of stainless steel, chromium-free steel, hardmetal tungsten carbide, zirconium oxide and manganese steel

Max. feed size:	<b>Model I // Model II</b> approx. 60 mm // approx. 95 mm
Throughput:	up to 140 kg/h // up to 200 kg/h
Gap widths (final fineness):	1 to 15 mm // 1 to 15 mm
Supply requirements:	400 V/3~, 50 Hz // 400 V/3~, 50 Hz
Dimensions (W x D x H):	400 x 800 x 800 mm // 400 x 800 x 800 mm
Net weight:	177 kg // 205 kg

Type	Rating W	PK	Cat. No.
PULVERISETTE 1 classic line, Modell I	1340	1	9.519 213
PULVERISETTE 1 classic line, Modell II	2600	1	9.519 223

The Jaw Crushers PULVERISETTE 1 are also available as *premium line* models with increased performance, even easier to operate and fast cleaning.

### 1 Analytical Sieve Shakers AS 200 basic/digit/control, AS 300 control, AS 450 basic, AS 450 control

Sieve shakers are used in research & development, quality control of raw materials, interim and finished products as well as in production monitoring.

Retsch

Features:

- Sieving with 3D effect
- For wet and dry sieving
- Short sieving times
- Low-noise, maintenance-free

**Please order clamping device, test sieves and collecting pan separately.**

**AS 200 basic:** favourably priced basic model.

**AS 200 digit cA:** powerful comfort model with touch-sensitive keypad, digital display, interval sieving.

**AS 200 control:** like AS 200 digit, but microprocessor-controlled, with freely selectable intervals and digital vibration amplitude setting. It can be calibrated and, for the first time, allows 100 % reproducible sieving results worldwide, even if different instruments are used. The AS 200 control has an integrated interface for the evaluation software EasySieve®. At the same time it also offers all the requirements for test materials monitoring according to ISO 9000.

**AS 300 control:** like AS 200 control; also suitable for sieves up to 315 mm diameter and for higher loads.

**AS 450 basic:** budget-priced basic model for sieving up to 15 kg of material.

**AS 450 control:** with CET technology, It is the first Sieve shaker which operates with a three-dimensional sieving motion

#### Specifications

Max. number of fractions (depending on sieve size):

AS 200, AS 300:	9/17
AS 450 basic:	11/7
Movement of sample:	orbital with vibration
Height of sievetower	
AS 200, AS 300:	up to approx. 510 mm
AS 450 basic:	up to approx. 830 mm
Max. charge/quantity of sample:	
AS 200:	3 kg
AS 300:	6 kg
AS 450 basic:	15 kg
Timer:	
AS 200, AS 300, AS 450:	digital

Type	max. sample amount	min. measuring range	max. measuring range	Dimensions (W x D x H)	PK	Cat. No.
	g	mm	mm	mm		
AS 200 basic	3000	0.02	25	417 x 384 x 212	1	6.282 597
AS 200 digit cA	3000	0.02	25	417 x 384 x 212	1	6.282 666
AS 200 control	3000	0.02	25	417 x 384 x 212	1	6.282 965
AS 300 control	6000	0.02	40	417 x 384 x 212	1	6.283 846
AS 450 basic	15000	0.03	125	680 x 680 x 280	1	6.272 964
AS 450 control	25000	0.03	125	714 x 658 x 435	1	9.739 277





9.739 242

### Analytical Sieve Shakers AS 400 control, AS 200 tap/ jet

Retsch

#### AS 400 control:

- The AS 400 control is used for the sieving of dry goods with test sieves of a diameter up to 400 mm. The uniform, horizontal circular motion ensures exact separation of the product to be sieved.
- Sieving with circular sieving motion according to DIN 53477
  - Free digital adjustment of all process parameters (time, speed, interval)
  - Memory for up to 9 SOPs
  - Integrated interface for evaluation software EasySieve®
  - Electrical supply data: 100-240 V, 50/60 Hz

#### Please order clamping device, test sieves and collecting pan separately.

The clamping devices of AS 200 and AS 300 are also suitable for the AS 400.

#### AS 200 tap:

For sieve analysis of certain products such as activated carbon, abrasives, coal, spices and diamonds, as specified in the corresponding standards.

- Horizontal, circular sieving motion with vertical taps
- Suitable for dry sieving
- Robust and maintenance-free
- Electrical supply data: 230 V, 50 Hz

#### Please order test sieves and collecting pan separately.

#### AS 200 jet:

The air jet sieving machine AS 200 jet is particularly suitable for light materials with particle sizes in the lower micron range which tend to agglomerate.

- Open Mesh Function to reduce the number of near-mesh particles
- Operation with standard Retsch sieves, 203 mm (8") diameter, 1" or 2" high
- Adapter for 200 mm sieves optional
- Free manual (standard) or automatic (accessory) pressure regulation
- High flexibility through adjustable nozzle speed
- Memory for up to 9 SOPs, additional Quick Start mode
- Electrical supply data: 230 V, 50/60 Hz

#### Please order test sieve and vacuum cleaner separately.



6.238 239

#### Specifications

Max. number of fractions (depending on sieve size):

AS 400 control:	7/9/17
AS 200 tap:	7/13
AS 200 jet:	1 (2 with cyclone)

Movement of sample:

AS 400 control:	circular
AS 200 tap:	circular with taps
AS 200 jet:	dispersion by air jet

Height of sievetower

AS 400 control:	up to approx. 450 mm
AS 200 tap:	up to approx. 350 mm
AS 200 jet:	up to approx. 50 mm

Max. charge/quantity of sample:

AS 400 control:	5 kg
AS 200 tap:	3 kg
AS 200 jet:	0.3 to 100 g
Timer:	digital

Type	max. sample amount g	min. measuring range mm	max. measuring range mm	PK	Cat. No.
AS 400 control	5000	0.04	63	1	9.739 242 <b>1</b>
AS 200 tap	3000	0.02	25	1	9.739 276
AS 200 tap*	3000	0.02	25	1	6.238 947
AS 200 jet	100	0.01	10	1	6.238 239 <b>2</b>

\*with sound protection cabinet

### 1 Vibratory sieve shaker ANALYSETTE 3 PRO and SPARTAN

For quantitative particle size analysis of dry samples and suspensions of all kind by dry and wet sieving with woven test sieves. FRITSCH Sieve Shakers satisfy all requirements for accurate and reproducible sieving analysis and perform automatic sieve analysis with the control and evaluation software AUTOSIEVE, which is delivered as trial version for 90 days. The top model ANALYSETTE 3 PRO guarantees absolutely reproducible sieving results due to automatic amplitude control, programme selection, can be integrated as testing device into any quality management systems, has an RS232-interface, to mention only some of its innovative and practical features.

Fritsch

Sieving: dry or wet  
 Sieve diameters: 100 mm, 200 mm or 8"  
 Maximum number of sieves: 10 x 50 mm (full) or 16 x 25 mm (half) height  
 Sieves: woven mesh metal sieves  
 Measuring range: Dry sieving: 20 µm to 63 mm  
 Wet sieving: 20 µm to 10 mm  
 Sample quantity: Dry sieving: up to 2 kg (depending on the sample material and sieve used)  
 Wet sieving: 20 to 100 g  
 Sieving time: Dry sieving: 3 to 20 min  
 Wet sieving: 3 to 10 min  
 Power supply: 100-240 V/1~, 50-60 Hz, 50 W  
 Dimensions (W x D x H): 370 x 400 x 200 mm  
 Net weight: 21 kg



Type	max. mass of sieve stack	min. measuring range	max. measuring range	PK	Cat. No.
	g	mm	mm		
ANALYSETTE 3 PRO	3000	0.02	63	1	9.826 402
ANALYSETTE 3 SPARTAN	3000	0.02	63	1	9.826 403

Clamping lid, sieve pan and sieves must be ordered separately.  
 Further sieve shakers available on request.

**Suitable accessories can be found in our online shop.**

### 2 Grindometer

For sieving. Acc. to ISO 1524. Further measuring ranges available on request.

TQC

Measuring range	Increments	Width	PK	Cat. No.
µm	µl	mm		
0-15	1,5	2 groove: 2 x 12 mm	1	6.229 382
0-25	2,5	2 groove: 2 x 12 mm	1	9.149 842
0-50	5	2 groove: 2 x 12 mm	1	9.149 843
0-100	10	2 groove: 2 x 12 mm	1	9.149 844





### Test Sieves

**Features:**

- Previously unattained product quality owing to advanced manufacturing processes and continuous optical inspection.
- High quality joining technology guarantees permanently taut wire mesh.
- High level of corrosion resistance and easy to clean owing to the use of high-alloy stainless steel.
- "one-piece cast" sieve frame and seamless mesh joint prevent cross contamination.
- Maximum stability and optimum density of the sieve stack.
- 15 % lighter than traditional sieves whilst at the same time having larger sieving area.
- Clear sieve marking and traceability by individual laser engraving on each sieve.

*Retsch*


### 1 Test Sieves, 200 x 50 mm

*Retsch*

Mesh size $\mu\text{m}$	PK	Cat. No.
20	1	9.226 650
25	1	9.226 651
32	1	9.226 652
36	1	9.226 653
38	1	9.226 654
40	1	9.226 655
45	1	9.226 656
50	1	9.226 657
53	1	9.226 658
56	1	9.226 659
63	1	9.226 660
71	1	9.226 661
75	1	9.226 662
80	1	9.226 663
90	1	9.226 664
100	1	9.226 665
106	1	9.226 666
112	1	9.226 667
125	1	9.226 668
140	1	9.226 669
150	1	9.226 670
160	1	9.226 671
180	1	9.226 672
200	1	9.226 673
212	1	9.226 674
224	1	9.226 675
250	1	9.226 676
280	1	9.226 677
300	1	9.226 678
315	1	9.226 679
355	1	9.226 680
400	1	9.226 681
425	1	9.226 682
450	1	9.226 683
500	1	9.226 684
560	1	9.226 685
600	1	9.226 686
630	1	9.226 687
710	1	9.226 688
800	1	9.226 689
850	1	9.226 690
900	1	9.226 691



### 2 Sieving aids

For difficult to separate materials which require dry sieving. Different aids are used according to mesh size.

*Retsch*

Type	PK	Cat. No.
Steatite ball, 6 mm dia., 150g	1	9.739 238
Nylon brushes (pack of 3)	1	9.826 131
Vulkollan cube 12 x 12 x 12 mm	10	9.826 132
Rubber ball, 20 mm dia.	5	9.826 133
Agate ball, dia. 10 mm	10	9.826 134
Test sieve rack for max. 10 sieves up to 203 mm dia., 50 mm height	1	9.739 243



### 1 Test Sieves, 200 x 50 mm

DIN ISO 3310-1. Dimensions (dia. x h): 200 mm x 50 mm.  
**Test sieves with height 25 mm available on request.**

Retsch

Aperture size mm	PK	Cat. No.
1.00	1	9.226 692
1.12	1	9.226 693
1.18	1	9.226 694
1.25	1	9.226 695
1.40	1	9.226 696
1.60	1	9.226 697
1.70	1	9.226 698
1.80	1	9.226 699
2.00	1	9.226 700
2.24	1	9.226 701
2.36	1	9.226 702
2.50	1	9.226 703
2.80	1	9.226 704
3.15	1	9.226 705
3.35	1	9.226 706
3.55	1	9.226 707
4.00	1	9.226 708
4.50	1	9.226 709
4.75	1	9.226 710
5.00	1	9.226 711
5.60	1	9.226 712
6.30	1	9.226 713
6.70	1	9.226 714
7.10	1	9.226 715
8.00	1	9.226 716
9.00	1	9.226 717
9.50	1	9.226 718
10.00	1	9.226 719
11.20	1	9.226 720
12.50	1	9.226 721
13.20	1	9.226 722
14.00	1	9.226 723
16.00	1	9.226 724
18.00	1	9.226 725
19.00	1	9.226 726
20.00	1	9.226 727
22.40	1	9.226 728
25.00	1	9.226 729
26.50	1	9.226 730
28.00	1	9.226 731
31.50	1	9.226 732
35.50	1	9.226 733
37.50	1	9.226 734
40.00	1	9.226 735
45.00	1	9.226 736
50.00	1	9.226 737
53.00	1	9.226 738
56.00	1	9.226 739
63.00	1	9.226 740
71.00	1	9.226 741
75.00	1	9.226 742
80.00	1	9.226 743
90.00	1	9.226 744
100.00	1	9.226 745
106.00	1	9.226 746
112.00	1	9.226 747
125.00	1	9.226 748



### 2 Analytical Sieve Test Sand

Test materials can be used to check analytical sieves between the scheduled calibration dates and to demonstrate the presence of the required properties, as well as the suitability of analytical sieves. A test material for analytical sieves with frequent mesh widths (2.0 mm - 1.0 mm - 0.5 mm - 0.25 mm - 0.125 mm ).

- Pack of 3 bottles, 202 g each
  - Grain size : from 0.125 mm to 2.00 mm
  - Data sheet for the use of traceability for analytical sieves
- Each bottle contains a mixture of different sizes.

Normensand

Description	PK	Cat. No.
Analytical Sieve Test Sand	3	9.739 500



### Ultrasonic Baths, SONOREX SUPER

Heavy duty ultrasonic baths for cleaning or sample treatment in aqueous liquids. Bandelin  
 Suitable for laboratory and respiratory protection area, industry, workshop and service area.  
 - Stainless steel tank and housing  
 - Drip water protected  
 - With integral tank drain tap (G 1/2) for easy emptying (RK 106 with G 1/4)  
 - Radio shielded

**Models with Type addition H with adjustable temperature range.**

#### Specifications

HF-Frequency: 35 kHz, SweepTec®  
 Temperature range: 30 ... 80 °C  
 Timer: 1 ... 15 min or continuous  
 Power supply: 230 V~, 50/60 Hz  
 IP code: IP 32

**1**


### 1 Ultrasonic sieve-bath SONOREX SUPER RK 106

Ultrasonic bath for cleaning of 1 test sieve with 200 mm diameter. Bandelin  
**Please order sieve holder SH 7 separately.**

Type	Capacity of the bath litres	Width of the interior mm	Depth of the interior mm	Height of the interior mm	Plug type	PK	Cat. No.
RK 106	5.6	240	240	130	EU	1	9.877 106
RK 106	5.6	240	240	130	UK	1	9.877 105
RK 106	5.6	240	240	130	CH	1	9.877 107

**2**


### 2 Ultrasonic sieve-bath SONOREX SUPER RK 1040

Ultrasonic bath for cleaning of 1 test sieve with 500 mm diameter. Bandelin  
**Please order sieve holder GH 28 separately.**

Type	Capacity of the bath litres	Width of the interior mm	Depth of the interior mm	Height of the interior mm	Plug type	PK	Cat. No.
RK 1040	39.5	500	500	195	EU	1	9.877 108

**NEW**
**3**


### 3 Ultrasonic sieve-bath Sonorex Super ultrasonic bath RK 1028 C

For 5 test sieves with 200 mm diameter. With handles on both sides. Bandelin  
**Please order sieve holder SH 28 C separately.**

Type	Capacity of the bath litres	Width of the interior mm	Depth of the interior mm	Height of the interior mm	Plug type	PK	Cat. No.
RK 1028 C	45	500	300	300	EU	1	9.877 528
RK 1028 C	45	500	300	300	UK	1	9.877 538
RK 1028 C	45	500	300	300	CH	1	9.877 539
RK 1028 CH	45	500	300	300	EU	1	9.877 530

➔ Accessories please see page 1189.

**1 2 Mesh, polyester**

Thermo-fixed PE mesh with temperature resistance from -75 °C to +150 °C (short).  
For long term heating max. 125 °C. Resistant to acids but not alkalis.  
Dimensions: Minimum width 102 cm, Length 100 cm.

Other sizes available on request.

Mesh size µm	PK	Cat. No.
1	1	9.068 210
5	1	9.068 211
6	1	9.068 212
10	1	9.068 213
15	1	9.068 214
20	1	9.068 215
30	1	9.068 216
50	1	9.068 218
60	1	9.068 220
100	1	9.068 224
105	1	9.068 225
150	1	9.068 226
200	1	9.068 227
250	1	9.068 228
300	1	9.068 229

**3 4 Mesh, Polyamide**

Thermo-fixed Polyamide (Nylon) mesh is temperature stable from -40 °C to +115 °C. In water from 95 °C to 100 °C. Stability in acids is limited and dependant on concentration and temperature. Nylon exhibits outstanding stability in alkalis, including sodium and potassium solutions. Its chemical behaviour with respect to organic solvents is moderate to good. Minimum mesh width: 102 cm, Length: 1 m

Other sizes available on request.

Mesh size µm	PK	Cat. No.
1	1	9.068 276
5	1	9.068 277
10	1	9.068 279
20	1	9.068 281
30	1	9.068 282
40	1	9.068 283
50	1	9.068 284
60	1	9.068 285
80	1	9.068 287
90	1	9.068 288
100	1	9.068 289
125	1	9.068 290
150	1	9.068 291
200	1	9.068 292
250	1	9.068 293
300	1	9.068 294
400	1	9.068 295
500	1	9.068 296





### 1 Sample Splitters, RT series

To provide separation of pourable powders and bulk materials on site and in the laboratory. Operates independently of mains supply. Available in 6 sizes. Number of samples: 2.

Retsch

Type	max. sample size	max. Material feed size	Dimensions (W x D x H)	Net weight	PK	Cat. No.
	ml	mm	mm	kg		
RT 6.5	3000	4	300 x 270 x 250	3.5	1	9.739 200
RT 12.5	3000	8	300 x 270 x 250	3.5	1	9.739 201
RT 25	16000	16	620 x 420 x 260	21.5	1	9.739 202
RT 37.5	16000	25	620 x 420 x 260	21.5	1	9.739 203
RT 50	16000	33	620 x 420 x 260	21.5	1	9.739 204
RT 75	16000	50	620 x 420 x 260	21.5	1	9.739 205



### 2 Sample Divider PT 100 with vibratory feeder DR 100

Rotary tube divider for the representative sample division with an extremely high division accuracy. Rapid and easy handling of sample vessels thanks to quick-release clamps.

Retsch

**Scope of delivery:** PT 100 incl. dividing head with 8 quick-release sample outlets, vibratory feeder DR 100/40 and 10 sample bottles (250 ml).

#### Specifications PT 100

Feed size:	up to 10 mm
Number of samples:	8 (6 or 10 heads also available on request)
Throughput/charge:	up to 5000 ml
Dimensions (W x D x H):	580 x 420 x 910 mm
Weight: approx.:	34 kg
Supply requirements:	230 V, 50 Hz

Type	max. sample size	max. Material feed size	PK	Cat. No.
	ml	mm		
PT 100	5000	10	1	9.739 147



### 3 Rotary cone sample divider LABORETTE 27

For reliable, representative sample division of solids and suspensions without conversion. Divides the samples at up to 3000 graduations per minute into up to 30 partial streams via a rotating cone head. Dividing accuracy up to 99.9 %. Can be combined with 6 different dividing heads.

Fritsch

- Compact basic unit with robust cast aluminium housing
- Easy cleaning due to removable dividing head
- variable partition ratios
- Maintenance-free drive motor with slipping clutch
- Quick clamping device for sample tubes 250 and 500 ml
- For optimum sample allocation, the vibratory feeder LABORETTE 24 (optional) is recommended.

#### Specifications

Division ratio:	1:8, 1:10, 1:30
Number of subsamples:	8, 10, 3
Max. feed particle size:	10 mm, 2.5 mm
Max. sample quantity:	4000 ml, 2500 ml, 300 ml
Sample bottle capacities:	15, 20, 30, 32, 250, 500 ml
Power supply:	230 V/1~, 50-60 Hz, 90 W
Dimensions (W x D x H):	270 x 450 x 460 mm
Net weight:	7.7 kg

Type	max. sample size	max. Material feed size	PK	Cat. No.
	ml	mm		
LABORETTE 27	4000	10	1	9.738 310

Instrument also available in other voltages. Dividing heads must be ordered separately.

**Suitable accessories can be found in our online shop.**

### Laboratory presses MP150

With pressure gauge (MP150) or digital pressure display (MP150D).  
Press for up to 15 tons pressure. Recommended for press dies up to 18 mm.

Maassen GmbH

**Please order press dies separately.**

**Specifications**

Pressure gauge Ø:	80 mm
Pressure:	15 t
Resolution:	0.5 t/0.01 t
Width between pistons:	150 mm
Clear width min./max.:	52 mm/142 mm
Spindle diam.:	36 mm
Spindle path:	90 mm
Piston diameter/Stroke:	107 mm/22 mm
Dimensions (H min./max. x W x D):	436/526 x 370 x 300 mm
Weight:	approx. 43 kg
Power supply MP150D:	ext. power adapter, 12 V



6.290 214

Type	PK	Cat. No.
MP150	1	6.290 214 1
MP150D	1	6.290 215

### 2 Accessories for Laboratory Presses

- The 13 mm press die is supplied in a wooden box (for 32 and 40 mm: optional)
- The 32 and 40 mm press die can be combined to save costs, since the same parts can be used
- All press dies from 10 mm have a vacuum connection with a special self-locking tubing adapter, which makes it easier to connect and disconnect

Maassen GmbH

**Further diameters available on request.**



Description	Pressure max. t	PK	Cat. No.
Press die set for Alucups, 40 mm	40	1	4.672 207
Press die set for rings, 40/32 mm (OD/ID)	40	1	4.672 208
Press die set for rings, 40/35 mm (OD/ID)	40	1	4.672 209
Press die set for rings, 51.5/35 mm (OD/ID)	40	1	4.672 210
Press die set, 13 mm in wooden box	10	1	6.290 219
Press die set, 13 mm with hard metal pellets (KXF) in wooden box	14	1	6.290 220
Press die set, 32 mm	30	1	6.290 221

### Dispersing unit OV5

For dispersing, homogenising and stirring of biological samples, pharmaceutical products, cosmetics and food.

Velp Scientifica

- Fast assembly of the appropriate rotor/stator combination
- With overload protection, soft start and safety switch
- Large selection of rotors and stators
- Distance between feet: 200 mm

**Also available as set:**

- Dispersing unit OV5
- Stand with mounting for disperser and sample vessel
- Dispersing tool VSS2CSR2 for dispersing solid/liquid systems. Suitable for the ceramic, pharmaceutical and petrochemical industry as well as for waste water treatment

**Specifications**

Motor rating:	500 W
Working volume (homogenisation):	8 l
Working volume (high speed stirring):	40 l
Viscosity max.:	10000 mPas
Speed display:	Scale
Speed range:	10000 ... 30000 min <sup>-1</sup>
Dimensions:	70 x 70 x 255 mm
Weight:	1.3 kg
Power supply:	230 V, 50 Hz
Warranty:	3 years



4.666 710

Type	PK	Cat. No.
OV5	1	4.666 710 3
OV5 set	1	4.666 728 4



4.666 728





### 1 Homogeniser, handheld, POLYTRON® PT 1200 E (Eco Line)

KINEMATICA

This ergonomic handheld homogeniser is ideal for quick processing of small sample quantities and volumes. The ergonomic design and low weight of the PT 1200 E makes it easy for repeated usages. There are many different styles of aggregates available from 3 mm in diameter for volumes down to 0.01 ml to 12 mm for volumes up to 250 ml. If cross contamination from sample to sample is a concern, we offer single use synthetic aggregates in 7 and 12 mm diameters. One of the more recent additions to our line is the PT-DA 20/2 X EC aggregate which was specifically designed for tablets.

- 24Volt, 100 Watt low-voltage motor with safety transformer
- Analogue motor speed control up to 25.000 rpm
- Aggregate tips speeds up to 12 m/s to produce the finest particles possible
- Soft start prevents splashing of homogenate from sample vessel
- Thermal fuse for overload protection
- Ergonomic, user-friendly design
- Aggregate replacement using one-handed quick-release coupling (type E)
- Various models of EasyClean dispersing aggregates
- Height-adjustable stand (optionally available)

**Applications:** General homogenisation applications, 5. Sample preparation for subsequent extraction of pharmaceutical agents (API), Cell disruption, RNA/DNA isolation from tissue, Dispersion of small quantities from plants, animals or human tissue

**Dispersing heads must be ordered separately.**

#### Specifications

Application volume:	0.05 to 250 ml
Motor input power:	100 W
Dispersing heads:	diam. 3, 5, 7 and 12 mm and diam. 20 mm X EC-E116
Speed range:	Stepless up to 25.000 rpm
Drive Dimensions (L x W x H):	220 x 44 x 55 mm
Weight drive:	440 g
Power supply:	90-250 V ±10 %, 50/60 Hz
IP code:	IP 20
Tested to:	EN/IEC 61010, 61326-1

Type	Plug type	PK	Cat. No.
POLYTRON® PT 1200 E	EU	1	9.571 492
POLYTRON® PT 1200 E	CH	1	6.258 268



### 2 Homogeniser, stand, POLYTRON® PT 2500 E (Ecoline)

KINEMATICA

The PT 2500 E is the ideal solution for cost-conscious laboratories. It is able to perform homogenisations with volumes from 0.05 to 2500 ml. The electronic control system continuously monitors the speed and automatically adjusts it, keeping it constant with changing viscosity. The speed is easily seen on the large digital display. Dispersing heads with a variety of styles and diameters are available to provide optimum particle size reduction when using this drive. There are many different styles of aggregates available from 3 mm up to 25 mm

- Aggregate tip speeds up to 32 m/s
- Soft start prevents splashing of homogenate from sample vessel
- Thermal fuse for overload protection
- Speed remains constant even when viscosity changes
- Aggregate replacement using one-handed quick-release coupling
- Insulated motor housing keeps motor noise to a safe, approved level
- Various models of EasyClean dispersing aggregates
- Digital display

**Stand and dispersing heads must be ordered separately.**

#### Specifications

Application volume:	0.05 ... 2500 ml
Motor input power:	500 W
Dispersing heads:	diam. 3, 5, 7 and 12 mm and diam. 20 mm and 25 mm
Speed range:	Stepless 500 to 30.000 rpm
Dimensions Drive (W x D x H):	76 x 157 x 236 mm
Weight Drive:	1.8 kg
Power supply:	90 ... 230 V ±10 %, 50/60 Hz
Protection class acc. to DIN:	IP 20
Tested to:	IEC/EN61326-1/IEC/EN 61000-6-2/EN 61000-6-4 IEC/EN 61010-2-51

Type	Plug type	PK	Cat. No.
POLYTRON® PT 2500 E	EU	1	7.981 185
POLYTRON® PT 2500 E	CH	1	6.263 341

➔ Suitable tools please see page 602



### 1 Stand Homogenisers POLYTRON® PT 10-35 GT (Ecoline)

KINEMATICA

Cost effective dispersing unit for applications with operating volumes up to 10 liters. The powerful motor is useful for sample preparation and also for formulation in scale-up matters. More than 30 dispersion aggregates with different geometries, designs, sizes, materials and coatings are available for selection. The electronic control system continuously compares the pre-selected rpm speed with the actual speed and adjusts it so that the speed remains constant even as the viscosity increases.

- Aggregate tip speeding up to 34 m/s
- Soft start to prevent splashing of homogenate from sample vessel
- Integrated overheating, overload and blocking protection
- Speed remaining constant even when viscosity changes
- Aggregate replacement using one-handed quick-release coupling (type F)
- Insulated motor housing keeps motor noise to a safe, approved level during operation
- Various models of EasyClean dispersing aggregates

**Applications:** General homogenisation applications (dispersion and emulsification), Formulation of lotions, creams and food, Production of oil-water emulsions, Dispersion of small quantities from plants, animals or human tissue

**Stand and Dispersing heads must be ordered separately.**

**Specifications**

Application volume (water):	0.1 ... 10000 ml
Motor input power:	1200 W
Speed range (stepless):	500 ... 30000 rpm
Dimensions Drive (W x D x H):	95 x 210 x 247 mm
Weight Drive:	3.2 kg
Power supply:	90 ... 230 V ±10 %, 50/60 Hz
IP code acc. to DIN:	IP 20
Tested to:	IEC/EN 61000-6-2/EN 61000-6-3/IEC/EN 61010-2-51



Type	Plug type	PK	Cat. No.
POLYTRON® PT 10-35 GT	EU	1	4.012 988
POLYTRON® PT 10-35 GT	CH	1	6.286 773

### 2 Stand Homogenisers POLYTRON® PT 45-80 GT (Ecoline)

**NEW**

KINEMATICA

High performance dispersing unit with powerful drive, stepless speed control, high tip speed and a variety of interchangeable dispersion aggregates for a wide range of dispersing and mixing applications.

- Aggregate tip speeding up to 32 m/s
- Easy operation with an on-off switch, speed control and membrane keypad
- Intelligent variable speed control for long equipment life
- Integrated overheating, overload and blocking protection
- Speed remaining constant even when viscosity changes
- Aggregate replacement using one-handed quick-release coupling (type F)
- Easy cleaning of the unit thanks to EasyClean design

**Applications:** General homogenisation applications (dispersion and emulsification), Formulation of lotions, creams and food, Production of oil-water emulsions, Dispersion of small quantities from plants, animals or human tissue

**Dispersing heads must be ordered separately.**

**Specifications**

Application volume (water):	0.1 ... 30000 ml
Motor input power:	1700 W
Speed range (stepless):	500 ... 21000 min <sup>-1</sup>
Dimensions Drive (W x D x H):	140 x 240 x 305 mm
Weight Drive:	6.8 kg
Power supply:	110 ... 230 V ±10 %, 50/60 Hz
IP code acc. to DIN:	IP 20
Tested to:	IEC/EN 61000-6-2/EN 61000-6-3/IEC/EN 61010-2-51

2



Type	Plug type	PK	Cat. No.
POLYTRON® PT 45-80 GT	EU	1	6.312 147
POLYTRON® PT 45-80 GT	CH	1	6.312 148
POLYTRON® PT 45-80 GT	UK	1	6.312 149



4.013 062



6.312 151

### Stands for Homogenisers POLYTRON®

**HS 1200 E:** Holder for the support of drive, transformer, four dispersing aggregates and two tools. KINEMATICA

**ST-P 13/320:** Stainless steel plate stand with anti-slip mat made of silicone, with height-adjustable holder for the drive and for fastening the base station.

**ST-P 01/200:** Stainless steel joint stand (gas spring) with two rivet plugs for safe fixing of the basic station. The drive holder can be rotated in any direction, raised and lowered.

**ST-P 15/320:** Stainless steel plate stand with height-adjustable holder for drive support and for safe fixing of the basic station.

**ST-P 20/600:** Plate stand with two rod design. Height adjustable.

**ST-P 10/600:** Plate stand with one rod design. Allows easy and safe height adjustment of the drive unit.

Material: Aluminum

**ST-F 10/600:** H-foot stand made of anodized aluminum and the height adjustable, swiveling PTFE-coated work table with vessel holder. Material: Aluminum

**ST-P 14/590+500:** Electric plate stand with lifting telescopic bar for more ease of use. Incl. up/down button and mat to prevent slipping. Stroke 500 mm. The electronics are designed for ambient temperatures of +5 °C to +40 °C and were tested per EN 60335-1 and UL 962.

**ST-P 21/700:** Stainless steel plate stand with two rod design. Height adjustable. For more safety, the drive unit cannot be twisted sidewise or rotated.

Type	For	Weight g	PK	Cat. No.
HS 1200 E	PT 1200 E	680	1	6.260 509
ST-P13/320	PT 1200 E	1000	1	4.013 055
ST-P01/200	PT 1300 D	360	1	4.013 056
ST-P15/320	PT 1300 D	1000	1	4.013 057
ST-P20/600	PT 2500 E	370	1	4.013 060
Vessel holder ST-P20	PT 2500 E / ST-P20/600		1	7.981 189
Positioning ring ST-P20	PT 2500 E / ST-P20/600		1	7.981 188
ST-P10/600	PT 10-35 GT	290	1	4.013 061
Vessel holder ST-P10	PT 10-35 GT / ST-P10/600		1	4.013 069
Positioning ring ST-P10	PT 10-35 GT / ST-P10/600		1	4.013 072
ST-F10/600	PT 3100 D	550	1	4.013 062 1
ST-P14/590+500, with EU cable	PT 2500 E / PT 10-35 GT / PT 3100 D* / PT 6100 D	1100	1	4.013 065
ST-P14/590+500, with CH cable	PT 2500 E / PT 10-35 GT / PT 3100 D* / PT 6100 D	1100	1	4.013 064
Vessel holder ST-P14	PT 2500 E / PT 10-35 GT / PT 3100 D* / ST-P14/590+500		1	4.013 070
ST-P21/700	PT 3100 D / PT 6100 D / PT 45-80 GT	8000	1	6.312 151 2

\*with optional adapter



6.258 273



9.570 225

### Dispersing heads for Homogeniser POLYTRON®

**Type addition EC (STANDARD DISPERSING HEADS):** The universal geometry uses two rows of teeth, is suitable for a large spectrum of laboratory applications, and it is reliable and efficient. KINEMATICA

**Type addition BEC:** High-turbulence mixing head, suitable for suspension of solid particles and for high viscosity applications.

**Type addition W:** Dispersing head for fibrous and tough materials.

**Type addition SYN (SYNTHETICS):** Disposable dispersing heads for the processing of multiple samples per day, where the required sterilization of stainless steel dispersing heads represents a significant time limitation.

Available in PES/Special POM. Sterile packed.

**Type addition E:** Coupling type E

**Type addition F:** Coupling type F

Type	For model	Length mm	Diam. mm	Working volume ml	PK	Cat. No.
PT-DA 03 / 2EC-E050	PT 1200 E / PT 1300 D / PT 2500 E	50	3	0.05 ... 2	1	6.258 269
PT-DA 05 / 2EC-E085	PT 1200 E / PT 1300 D / PT 2500 E	85	5	0.1 ... 5	1	9.570 223
PT-DA 07 / 2EC-E107	PT 1200 E / PT 1300 D / PT 2500 E	107	7	0.3 ... 10	1	6.258 271
PT-DA 07 / 2SYN-E082*	PT 1200 E / PT 1300 D / PT 2500 E	82	7	0.3 ... 10	25	6.258 273 3
PT-DA 07 / 2SYN-E082	PT 1200 E / PT 1300 D / PT 2500 E	82	7	0.3 ... 10	25	4.012 995
PT-DA 12 / 2EC-E157	PT 2500 E	157	12	2 ... 250	1	9.570 225 4
PT-DA 12 / 2SYN-E126*	PT 1200 E	126	12	2 ... 250	10	6.261 033
PT-DA 12 / 2SYN-E126	PT 1200 E / PT 1300 D / PT 2500 E	126	12	2 ... 250	10	4.012 999
PT-DA 20 / 2EC-E192	PT 2500 E	192	20	100 ... 2500	1	6.258 234
PT-DA 20 / 2WEC-E192	PT 2500 E	192	20	100 ... 2500	1	4.013 004
PT-DA 20 / 2EC-F193	PT 10-35 GT / PT 3100 D / PT 6100 D	193	20	100 ... 2000	1	4.013 016
PT-DA 20 / 2XEC-E116	PT 1200 E / PT 1300 D / PT 2500 E	116	20	10 ... 250	1	9.570 226
PT-DA 25 / 2EC-E192	PT 2500 E	192	25	100 ... 2500	1	9.570 227
PT-DA 30 / 2EC-F250	PT 10-35 GT / PT 3100 D / PT 6100 D	250	30	100 ... 4000	1	9.570 228

\*sterile

### Disperser System Ultra-Turrax® Tube Drive IKA

Disperse, stir and grind using a single drive unit. Patented disposable disperser system for volumes from 2 to 50 ml with hermetically sealable, disposable sample tubes. Provides protection and safety from: Infectious samples, toxic substances, strong-smelling materials.

- no possibility of cross-contamination
- suitable for individual or serial operations
- increased safety due to low voltage (24V) power
- chemically resistant plastic containers
- anti-locking function

**Dispersing tubes (20 and 50 ml) with pierceable membrane and  $\gamma$ -sterilised are available on request.**

**Specifications**

Viscosity max.: 5000 mPas  
 Noise without element: 50 dB(A)  
 Power supply: 100 ... 240 V, 50/60 Hz  
 Protection class according to DIN EN 60529: IP 20  
 Tested to DIN EN IEC 61010-1.

### Disperser System Ultra-Turrax® Tube Drive IKA

**Scope of delivery:**  
**ULTRA-TURRAX® Tube Drive:** Device incl. removal hook for removing the rotor-stator unit  
**ULTRA-TURRAX® Tube Drive Workstation:** Device incl. 2 x DT-20 dispersing tubes incl. hook for removing the rotor-stator unit, 2 x ST-20 stirring tubes, 2 x BMT-20 G/S Ball-mill-tubes with glass balls/stainless steel balls, removal hook for removal of the rotor-stator unit and power supply.

**Specifications**

Motor rating input/output: 20/17 W  
 Volume: 2 ... 50 ml  
 Speed range: 300 ... 6000 rpm  
 Timer: 1 ... 59 s (300 ... 6000 rpm)  
 1 ... 29 min (300 ... 4000 rpm)  
 Dimensions (W x D x H): 100 x 160 x 40 mm  
 Weight: 0.75 kg



9.570 500

Type	Plug type	PK	Cat. No.
ULTRA-TURRAX® Tube Drive	EU	1	9.570 500 <b>1</b>
ULTRA-TURRAX® Tube Drive Workstation	EU	1	9.570 506

### Dispergiersystem ULTRA-TURRAX® Tube Drive P control IKA

- USB interface for experiment control and documentation
- Collecting tray for protection against leaking liquids
- Simple, precise and multilingual menu navigation with OLED display
- Programmable sample conditions (library)
- Turbo button for short-term, intensive mixing, dispersing and grinding
- Adjustable reverse operation

**Scope of delivery:**  
**ULTRA-TURRAX® Tube Drive P control:** Device incl. removal hook for removing the rotor-stator unit  
**ULTRA-TURRAX® Tube Drive P control Workstation:** Device incl. 1 x ST-20, 1 x DT-20 incl. 1 removal hook for removal the rotor-stator unit, 2 x BMT-20 G/S, power supply.

**Specifications**

Motor rating input/output: 36/28 W  
 Volume: 2 ... 300 ml  
 Speed range: 400 ... 8000 rpm  
 Timer: 10 s ... 30 min. (continuously adjustable)  
 Dimensions (W x D x H): 122 x 178 x 54 mm  
 Weight: 0.9 kg



9.729 919

Type	PK	Cat. No.
Tube Drive P control	1	9.729 919 <b>2</b>
Tube Drive P control Workstation	1	9.729 917

**1**

**1**

### Dispersing tube for Dispersing system ULTRA-TURRAX® Tube Drive

IKA

Type	Description	PK	Cat. No.
DT-20	with dispersing unit, 20 ml	25	<b>9.570 507</b>
DT-20 eco	with dispersing unit, 20 ml	25	<b>6.265 701</b>
DT-50-M-gamma	with dispersing unit, 50 ml, sterile	10	<b>6.236 446</b>
ST-20	with stirring unit, 20 ml	25	<b>9.570 508</b>
ST-20-M-gamma	with stirring unit, 20 ml, sterile	20	<b>6.237 479</b>
ST-50	with stirring unit, 50 ml	10	<b>6.237 478</b>
ST-50-M-gamma	with stirring unit, 50 ml, sterile	10	<b>6.237 482</b>
BMT-20 G	with glass balls, 20 ml	25	<b>9.570 509</b>
BMT-20-G-M-gamma	with glass balls, 20 ml, sterile	20	<b>7.911 101</b>
BMT-20 S	with stainless steel balls, 20 ml	25	<b>9.570 510</b>
BMT-20-S-M-gamma	with stainless steel balls, 20 ml, sterile	20	<b>6.274 088</b>

**2**

**2**

### Homogeniser T 10 basic ULTRA-TURRAX®

IKA

Small dispersing instrument for volumes from 0.5 ml to 100 ml (H<sub>2</sub>O).

It offers a wide speed range from 8000 rpm to 30000 rpm that enables users to work at high circumferential speeds even with small rotor diameters. A broad choice of dispersing elements guarantees a wide range of applications.

- Quick-connect coupling for changing dispersing elements easily
- Ideal for manual operation due to its light weight and ergonomic design
- Extremely mobile due to direct line power (no transformer required)
- Stainless steel dispersing elements can be cleaned quickly and easily as they can be dismantled without tools
- Plastic disposable dispersing elements are available in two sizes, particularly suitable for PCR analysis
- High performance drive ensures immense speed stability
- Quiet operation

**Dispersing heads must be ordered separately.**

#### Specifications

Motor rating input/output:	125 W/75 W
Working volume range (H <sub>2</sub> O):	0.5 ml to 100 ml
Viscosity max.:	5000 mPas
Speed range:	8000 rpm to 30000 rpm
Speed display:	scale
Speed control:	stepless
Noise without element:	65 db(A)
Extension arm diam./length:	8 mm/130 mm
Dimensions (W x D x H):	56 x 66 x 178 mm
Weight:	0.5 kg
Power supply:	230 V, 50/60 HZ
Protection class DIN EN 60529:	IP 30

Type	Plug type	PK	Cat. No.
T 10 basic ULTRA-TURRAX®	EU	1	<b>9.570 940</b>
T 10 basic S2 ULTRA-TURRAX®	UK	1	<b>9.570 941</b>
T 10 basic S3 ULTRA-TURRAX®	CH	1	<b>9.570 942</b>

**3**


6.225 477

### Dispersing heads Ultra Turrax® for T 10 basic



IKA

Dispersing heads, plastic: Autoclavable. Dispersing heads, stainless steel: Ultimate fineness: emulsions 1 to 10µm and suspensions 5 to 25µm, sterilisable by all methods. ST tools are recommended for use with tissue and other fibrous materials.

Type	Working volume	Diam. rotor / stator	Max. immersion depth	Material	PK	Cat. No.
	ml					
S 10 D-7 G-KS - 65	1 - 20	4.8 / 7	65	PC, PSU	24	<b>6.262 140</b>
S 10 D-7 G-KS - 110	1 - 40	4.8 / 7	110	PC, PSU	24	<b>9.570 878</b>
S 10 N - 5 G	0.5 - 10	3.8 / 5	75	PTFE, AISI 316 L	1	<b>7.631 964</b>
S 10 N - 8 G	1 - 50	6.1 / 8	95	PTFE, AISI 316 L	1	<b>6.225 614</b>
S 10 N - 8 G ST	1 - 50	6.1 / 8	95	PTFE, AISI 316 L	1	<b>4.656 091</b>
S 10 N - 10 G	1 - 100	7.6 / 10	100	PTFE, AISI 316 L	1	<b>6.225 477</b>
S 10 N - 10 G ST	1 - 100	7.6 / 10	100	PTFE, AISI 316 L	1	<b>7.670 460</b>

### 1 Homogeniser T 18 digital ULTRA-TURRAX®

1

Competitively priced dispersing instrument for volumes from 1 ml to 1500 ml (H<sub>2</sub>O) with digital speed display. It offers a wide speed range from 500 rpm to 25000 rpm that enables users to work at high circumferential speeds even with small rotor diameters. A broad choice of dispersing elements guarantees a wide range of applications.

IKA

- Digital speed display
- Electronic speed control
- Electronic overload protection
- Stainless steel dispersing elements can be cleaned quickly and easily
- Plastic disposable dispersing elements are available in two sizes
- Error code display
- Quiet operation

**Dispersing heads must be ordered separately.**

**Specifications**

Motor rating input/output:	500 W/300 W
Working volume range (H <sub>2</sub> O):	1ml to 1500 ml
Viscosity max.:	5000 mPas
Speed range:	500 rpm to 25000 rpm
Speed display:	LED
Speed control:	stepless
Noise without element:	75 db(A)
Extension arm diam./length:	13 mm/160 mm
Dimensions (W x D x H):	87 x 106 x 271 mm
Weight:	2.5 kg
Power supply:	200-240 V, 50/60 HZ
Protection class DIN EN 60529:	IP 20



Type	Plug type	PK	Cat. No.
T 18 digital ULTRA-TURRAX®	EU	1	9.570 943
T 18 digital S2 ULTRA-TURRAX®	UK	1	9.570 944
T 18 digital S3 ULTRA-TURRAX®	CH	1	9.570 945
T 18 digital ULTRA-TURRAX® Package	EU	1	9.570 946
T 18 digital S2 ULTRA-TURRAX® Package	UK	1	9.570 947
T 18 digital S3 ULTRA-TURRAX® Package	CH	1	9.570 948

### 2 Dispersing heads for Ultra Turrax® T18 digital

2



Plastic dispersing heads: Autoclavable  
 Stainless steel dispersing heads: Ultimate fineness emulsions 1 to 10 µm and suspensions 10 to 50 µm, sterilisable by all methods.

IKA



Type	Working volume	Diam. rotor / stator	Max. immersion depth	Material	PK	Cat. No.
	ml	mm	mm			
S 18 D-10 G-KS	10 to 100	6.75 / 10	85	PC, PEEK	12	9.570 855
S 18 D-14 G-KS	10 to 500	9.5 / 14	85	PC, PEEK	12	9.570 857
S 18 N - 10 G	1 to 100	7.5 / 10	70	PTFE, AISI 316 L	1	9.570 841
S 18 N - 19 G	10 to 1500	12.7 / 19	170	PTFE, AISI 316 L	1	9.570 842

➔ Stands and fittings please see page 610

We can supply this  
 manufacturer's  
 whole  
 product range !





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### 1 Homogeniser T 25 digital ULTRA-TURRAX®

High-performance dispersing instrument for volumes from 1 to 2000 ml (H<sub>2</sub>O) with digital speed display. It offers a wide speed range from 3000 to 25000 rpm that enables users to work at high circumferential speeds even with small rotor diameters. A broad choice of dispersing elements adds versatility. Applications ranges from homogenizing waste water samples, use in laboratory reactors, dispersion tasks under vacuum/pressure and sample preparation in medical diagnostics.

IKA

- Digital speed display
- Electronic speed control
- Electronic overload protection
- Stainless steel dispersing elements can be cleaned quickly and easily
- Plastic disposable dispersing elements are available in two sizes
- Error code display
- Quiet operation

**Dispersing heads must be ordered separately.**

#### Specifications

Motor rating input/output:	800/500 W
Working volume range (H <sub>2</sub> O):	1... 2000 ml
Viscosity max.:	5000 mPas
Speed range:	3000... 25000 rpm
Speed display:	LED
Speed control:	stepless
Noise without element:	75 db(A)
Extension arm diam./length:	13 mm/160 mm
Dimensions (W x D x H):	87 x 106 x 271 mm
Weight:	2.5 kg
Power supply:	200-400 V, 50/60 HZ
Protection class DIN EN 60529:	IP 20

Type	Plug type	PK	Cat. No.
T 25 digital ULTRA-TURRAX®	EU	1	<b>9.570 949</b>
T 25 digital S2 ULTRA-TURRAX®	UK	1	<b>9.570 950</b>
T 25 digital S3 ULTRA-TURRAX®	CH	1	<b>9.570 951</b>

1



### Dispersing heads for T25 basic Ultra-Turrax®



Plastic dispersing heads: Autoclavable. Stainless steel dispersing heads: Ultimate fineness: emulsions 1 µm to 10 µm and suspensions 5 µm to 50 µm, sterilisable by all methods. ST tools are recommended for use with tissue and other fibrous materials.

IKA

2



9.570 861

Type	Diam. rotor / stator	Max. immersion depth	Working volume	Material	PK	Cat. No.
	mm	mm	ml			
S 25 D-10 G-KS	6,75 / 10	85	10 - 100	PC, PEEK	12	<b>9.570 859</b>
S 25 D-14 G-KS	9,5 / 14	85	10 - 500	PC, PEEK	12	<b>9.570 861</b>
S 25 N - 8 G	6,1 / 8	85	1 - 50	PTFE, AISI 316 L	1	<b>9.571 098</b>
S 25 N - 8 G - ST	6,1 / 8	85	1 - 50	PTFE, AISI 316 L	1	<b>7.981 562</b>
S 25 N - 10 G	7,5 / 10	85	1 - 100	PTFE, AISI 316 L	1	<b>9.571 207</b>
S 25 N - 10 G - ST	7,5 / 10	85	1 - 100	PTFE, AISI 316 L	1	<b>7.970 905</b>
S 25 N - 18 G	12,7 / 18	165	10 - 1500	PTFE, AISI 316 L	1	<b>9.571 119</b>
S 25 N - 18 G - ST	12,7 / 18	165	10 - 1500	PTFE, AISI 316 L	1	<b>7.970 906</b>
S 25 N - 25 G	17,0 / 25	165	50 - 2000	PTFE, AISI 316 L	1	<b>9.571 200</b>
S 25 N - 25 G - ST	17,0 / 25	165	50 - 2000	PTFE, AISI 316 L	1	<b>6.257 274</b>
S 25 N - 25 F	18,0 / 25	165	100 - 2000	PTFE, AISI 316 L	1	<b>9.571 201</b>
S 25-KD-25 F	18,0 / 25	185	100 - 2000	FKM, PTFE, AISI 316 L	1	<b>4.653 935</b>
S 25 KV-18 G	12,7 / 18	225	10 - 1500	FFPM / SIC, AISI 316 L	1	<b>9.571 117</b>
S 25 KV - 25 F	18,0 / 25	225	100 - 2000	FFPM / SIC, AISI 316L	1	<b>9.571 199</b>
S 25 KV 2802	39 / 30	225	100 - 2000	FFPM / SIC, AISI 316L	1	<b>4.672 743</b>

Further dispersing heads are available on request.

3



9.571 200

**1**


4.665 087

### Homogenisers T 25 easy clean digital/T 25 easy clean control

High-performance homogeniser with electronic speed control and a large variety of dispersing heads for many fields of applications. In combination with an IKA laboratory reactor it is also possible to conduct dispersion tasks under vacuum or pressure.

IKA

- Quick and easy cleaning of the dispersing tools, no disassembling required
- Brushless motor guarantees dust-free and silent operation
- USB interface for control and documentation via labworldsoft®
- Timer/counter function
- Increased safety through tool recognition and IP-Code

#### T 25 easy clean control, additionally:

- Integrated temperature measurement for permanent monitoring of the medium temperature
- Remote control with WiCo

#### Dispersing heads must be ordered separately.

All existing S 25 dispersing elements are compatible with T 25 easy clean digital.

#### Specifications

Motor rating input/output:	500/400 W
Working volume range (H:O):	1 ... 2000 ml
Viscosity max.:	5000 mPas
Speed range:	3.000 ... 25.000 rpm
Speed display:	LED
Speed control:	stepless
Noise without element:	70 dB(A)
Extension arm diam.:	13 mm
Dimensions (W x D x H):	89 x 161 x 270 mm
Weight:	3.0 kg
Power supply:	220 ... 240 V, 50 ... 60 Hz
Protection class DIN EN 60529:	IP 30

Type	PK	Cat. No.
T 25 easy clean digital	1	6.291 622
T 25 easy clean control	1	4.665 087 <b>1</b>

### Dispersing heads for T 25 easy clean digital/T 25 easy clean control

Easy to clean dispersing head made of stainless steel (AISI 316) and ceramic.

IKA

Ultimate fineness: emulsions 1µm to 10 µm and suspensions 10 µm to 50 µm, sterilisable by all methods.

S 25 EC-T-C-18G-ST, S 25 EC-T-C-25G-ST, S 25 EC-T-C-25F with integrated temperature sensor.

Type	Diam. rotor / stator mm	Min. Immersion depth mm	max. Workspace volume ml	Material	PK	Cat. No.
S 25 EC-C-18 G-ST	13,4 / 18	35	1500	AISI 316L, ceramic	1	6.291 623 <b>2</b>
S 25 EC-T-C-18 G-ST	13,4 / 18	50	1500	AISI 316L, ceramic	1	4.665 610 <b>3</b>
S 25 EC-C-25 F	18 / 25	35	2000	AISI 316L, ceramic	1	4.672 775
S 25 EC-T-C-25 F	20 / 25	35	2000	AISI 316L, ceramic	1	4.672 777
S 25 EC-C-25 G-ST	20 / 25	35	2000	AISI 316L, ceramic	1	4.672 774
S 25 EC-T-C-25 G-ST	20 / 25	45	2000	AISI 316L, ceramic	1	4.672 776

**2**


6.291 623

**3**


4.665 610

### 1 High-power homogeniser T 50 digital ULTRA-TURRAX®

Powerful dispersing instrument for volumes from 0.25 to 30 l (H<sub>2</sub>O) with digital speed display. IKA  
 It offers a wide speed range from 500 to 10000 rpm that enables users to work at high circumferential speeds even with small rotor diameters. A broad choice of dispersing elements guarantees a wide range of applications. Reproducible operations due to constant speed even with changes in viscosities.

- Digital speed display
- Electronic speed control
- Electronic overload protection
- Stainless steel dispersing elements can be cleaned quickly and easily
- Smooth start
- Error code display

**Dispersing heads must be ordered separately.**

**Specifications**

Motor rating input/output:	1100W/700W
Working volume range (H <sub>2</sub> O):	0.25 to 30 l
Viscosity max.:	5000 mPas
Speed range:	500 to 10000 rpm
Speed display:	LED
Speed control:	stepless
Noise without element:	72 db(A)
Extension arm diam./length:	16 mm/220 mm
Dimensions (W x D x H):	115 x 139 x 355 mm
Weight:	5.76 kg
Power supply:	200-240 V, 50/60 HZ
Protection class DIN EN 60529:	IP 20



Type	Plug type	PK	Cat. No.
T 50 digital ULTRA-TURRAX®	EU	1	9.570 952
T 50 digital S2 ULTRA-TURRAX®	UK	1	9.570 953
T 50 digital S3 ULTRA-TURRAX®	CH	1	9.570 954

### Dispersing heads for T50 digital ULTRA-TURRAX®

Stainless steel dispersing heads

IKA

Type	Diam. rotor / stator	Max. immersion depth	Working volume	Ult. fineness suspensions / emulsions	Material	PK	Cat. No.
	mm	mm	l	µm			
S 50 KG - HH - G 45 F	40.0 / 45	250	0.25 - 10	10 - 30 / 1 - 10	FFPM/SIC, AISI 316L	1	9.570 898
S 50 N - G 45 G*	36.0 / 45	250	0.5 - 20	40 - 100 / 10 - 30	PTFE, AISI 316L	1	9.570 882 2
S 50 N - G 45 M*	40.5 / 45	250	0.5 - 15	25 - 50 / 5 - 20	PTFE, AISI 316L	1	9.570 886 3
S 50 N - G 45 F*	40.0 / 45	250	0.25 - 10	10 - 30 / 1 - 10	PTFE, AISI 316L	1	9.570 896 4
S 50 KD - G 45 G	36.0 / 45	260	0.5 - 20	40 - 100 / 10 - 30	FFKM, PTFE, AISI 316L	1	4.656 096
S 50 KD - G 45 G - ST	38.0 / 45	300	0.5 - 20	40 - 100 / 10 - 30	FFKM, PTFE, AISI 316L	1	4.656 097
S 50 KD - G 45 M	40.0 / 45	300	0.5 - 15	25 - 50 / 5 - 20	FFKM, PTFE, AISI 316L	1	4.656 098
S 50 KD - G 45 F	40.0 / 45	300	0.25 - 10	10 - 30 / 1 - 10	FFPM, PTFE, AISI 316L	1	4.656 099
S 50 KG - HH - G 45 G - ST	38.0 / 45	260	0.5 - 20	40 - 100 / 10 - 30	FFPM, WC, AISI 316L	1	4.656 100
S 50 N - G 45 G - ST	38.0 / 45	300	0.5 - 20	40 - 100 / 10 - 30	PTFE, AISI 316L	1	6.262 646
S 50 KG-HH-G 45 G	36.0 / 45	260	0.5 - 20	40 - 100 / 10 - 30	FFPM/SIC, AISI 316L	1	9.570 884
S 50 KG-HH-G 45 M	40.5 / 45	250	0.5 - 15	25 - 50 / 5 - 20	FFPM/SIC, AISI 316L	1	9.570 888

\* sterilisable by all methods

Further dispersing heads are available on request.



9.570 882



9.570 886



9.570 896

### Stands and fittings for Dispersers T 10/T 18/T 25/T 50

IKA

Type	For model	Description	Rod diam.	Height	PK	Cat. No.
			mm	mm		
R 104	T 10	Stand	10	370	1	7.631 971 <b>1</b>
H 44	T 10	Boshead			1	9.232 994 <b>2</b>
R 200	T 10	Clamp			1	6.225 158 <b>3</b>
R 1825	T 18 / T 25	Stand with baseplate	16	560	1	9.224 031 <b>4</b>
RH 5	T 50	Strap clamp			1	9.224 762
R 1826	T 18 / T 25	Stand with baseplate	16	800	1	9.224 032
R 1827	T 18 / T 25	Stand with baseplate	16	1000	1	9.224 033
R 182	T 18 / T 25	Boshead			1	9.224 292 <b>5</b>
RH 3	T 18 / T 25	Strap clamp			1	9.224 761 <b>6</b>
R 2722	T 50	H-stand	34	1010	1	9.224 026
R 2723	T 50	Telescopic stand	34	620 - 1010	1	9.224 028
R 271	T 50	Boshead			1	9.224 266



### 7 Ultrasonic Homogeniser SONOPULS mini20

Bandelin



For volumes from 0.1 to 25 ml. With LC display for amplitude, pulse level, time and energy input, RS 232 interface. Time setting up to 59 min : 59 s. Ready-to-operate set for volumes from 0.5 to 25 ml consisting of:

- Generator GM mini20
- Ultrasonic converter UW mini20
- Microtip MS 2.5, diam. 2.5 mm

Further Titanium probes with diam. 1.5 mm and 2.0 mm available on request.

#### HF generator

Dimensions (W x D x H):

#### Converter

Dimensions (diam. x L):

Ultrasonic nominal power:

#### GM mini20

256 x 154 x 250 mm

#### UW mini20

50 x 160 mm

max. 20 W

Type	min. sample volume ml	max. sample volume ml	Pulsation	PK	Cat. No.
SONOPULS mini20	0.50	25	ON cycles 0.1 ...60 s OFF cycles 0.2 ...60 s	1	9.650 160

### 8 Probes for Sonopuls Ultrasonic homogenisers, titanium

Titanium probes.

For connection to stepped horns/booster horns.



Type	For	For volume ml	For	Diam. mm	Tip	PK	Cat. No.
MS 1.5	UW mini20	0,1 - 10	Sonpuls mini20	1.5	microtip	1	9.650 165
MS 2.0	UW mini 20	0,25 - 20	Sonpuls mini20	2.0	microtip	1	6.251 521
MS 2.5	UW mini20	0,5 - 25	Sonpuls mini20	2.5	microtip	1	9.650 166

Suitable accessories can be found in our online shop.

### Ultrasonic homogenisers SONOPLUS HD 2000

Suitable for homogenising, deagglomerating, emulsifying, suspending, accelerating chemical reactions or disruption of cells, bacteria, fungi or spores. The devices of the SONOPLUS HD 2000 series are characterised by optimised process times and quickly available reproducible results. Bandelin

- LC display for amplitude, pulse level and time
- Pulse mode, AMPLICHRON®-circuit
- Batch mode/sequencing
- Interference suppression

Also available for medicine products according to the guideline for in-vitro-diagnostics 98/79/EG.

### 1 Ultrasonic homogeniser, SONOPULS HD 2070.2

For volumes 1 to 200 ml. Ready-to-operate set for volumes from 2 to 50 ml consisting of: Bandelin

- HF generator GM 2070.2
- Ultrasonic converter UW 2070
- Standard horn SH 70 G
- Microtip MS 73, diam. 3 mm

Further Titanium probes with diam. 2 mm, 6 mm and 13 mm available on request.

<b>HF generator</b>	<b>GM 2070.2</b>
Dimensions (W x D x H):	240 x 210 x 140 mm
<b>Converter</b>	<b>UW 2070</b>
Dimensions (diam. x L):	70 x 150 mm
Ultrasonic nominal power:	max. 70 W



Type	min. sample volume ml	max. sample volume ml	Pulsation	PK	Cat. No.
SONOPULS HD 2070.2	2.00	50	ON cycles: 1 ...60 s OFF cycles: 1 ...60 s	1	6.274 342

Stand and vessel are not included.

### 2 Ultrasonic homogeniser, SONOPULS HD 2200.2

For volumes 2 to 1000 ml. Ready-to-operate set for volumes from 20 to 900 ml consisting of: Bandelin

- HF generator GM 2200.2
- Ultrasonic converter UW 2200
- Standard horn SH 213 G
- Titanium flat tip TT 13, diam. 13 mm

Further Titanium probes with diam. 2 mm, 3 mm, 6 mm, 19 mm and 25 mm available on request.

<b>HF generator</b>	<b>GM 2200.2</b>
Dimensions (W x D x H):	240 x 210 x 140 mm
<b>Converter</b>	<b>UW 2200</b>
Dimensions (diam. x L):	70 x 150 mm
Titanium probes (diam.):	2/3/6/13/19/25 mm (not supplied)
Ultrasonic nominal power:	max. 200 W



Type	min. sample volume ml	max. sample volume ml	Pulsation	PK	Cat. No.
SONOPULS HD 2200.2	20.00	900	ON cycles: 1 ...60 s OFF cycles: 1 ...60 s	1	6.273 768

Stand and vessel are not included.

### Probes for Sonopuls Ultrasonic homogenisers, titanium

Titanium probes.

*Bandelin*

For connection to stepped horns/booster horns.

Type	For	For volume ml	For	Diam. Tip mm	PK	Cat. No.
MS 72	SH 70 G SH 213 G	1 - 25 2 - 30	HD 2070.2 / 2200.2	2 microtip	1	9.650 244
MS 73	SH 70 G SH 213 G	2 - 50 5 - 90	HD 2070.2 / 2200.2	3 microtip	1	9.650 245
KE 76	SH 70 G SH 213 G	5 - 100 10 - 350	HD 2070.2 / 2200.2	6 tapered tip	1	9.650 246
TT 13	SH 70 G SH 213 G	10 - 200 20 - 900	HD 2070.2 / 2200.2	13 titanium flat tip	1	9.650 250
TT 13 FZ	FZ 5 G FZ 7 G	-	HD 2070.2 / 2200.2	13 titanium flat tip with hole	1	9.650 247
TT 25	SH 225 G	30 - 1000	HD 2200.2	25 titanium flat tip	1	9.650 249
VS 70 T	SH 70 G SH 213 G	10 - 200 20 - 900	HD 2070.2 / 2200.2	13 probe long	1	9.650 239
VS 190 T	SH 219 G	25 - 900 500 - 1500	HD 2200.2	19 probe long	1	9.650 243
VS 200 T	SH 225 G	30 - 1000 500 - 2500	HD 2200.2	25 probe long	1	9.650 240

### Ultrasonic homogeniser SONOPLUS HD 4000

Suitable for homogenising, desagglomerating, emulsifying, suspending, accelerating chemical reactions or disruption of cells, bacteria, fungi or spores. The devices of the SONOPLUS 4000 series are characterised by optimised process times and quickly available reproductive results.

*Bandelin*

- LC display for amplitude, pulse level, time and power
- Pulse mode, AMPLICHRON®-circuit
- Data memory
- Batch mode/sequencing
- Temperature display and measurement
- Remote control via PC RS 232
- Interference suppression

Also available as medicine product according to the guideline for in-vitro-diagnostics 98/79/EG.

1



### 1 Ultrasonic homogeniser, SONOPULS HD 4050

For volumes from 0.5 to 100 ml. Ready-to-operate set for volumes from 0.5 to 20 ml consisting of:

*Bandelin*

- HF generator GM 4200
- Ultrasonic converter UW 50
- Titanium probe TS 102, diam. 2 mm

Further Titanium probes with diam. 3 mm, 4.5 mm and 6 mm available on request.

<b>HF generator</b>	<b>GM 4200</b>
Dimensions (W x D x H):	150 x 335 x 220 mm
<b>Converter</b>	<b>UW 50</b>
Dimensions (diam. x L):	45 x 175 mm
Ultrasonic nominal power:	max. 50 W

Type	min. sample volume ml	max. sample volume ml	Pulsation	PK	Cat. No.
SONOPULS HD 4050	0.50	20	ON cycles: 0.2 ...600 s OFF cycles: 0.3 ...600 s	1	9.650 151

Stand and vessel are not included.

We can **supply** this  
**manufacturer's whole**  
**product range !**



# BANDELIN



### 1 Ultrasonic homogeniser, SONOPULS HD 4100

For volumes 2 to 200 ml. Ready-to-operate set for volumes from 3 to 50 ml consisting of:

- HF generator GM 4200
- Ultrasonic converter UW 100
- Standard horn SH 100 G
- Titanium probe TS 103, diam. 3 mm

Bandelin

Further Titanium probes with diam. 2 mm, 4.5 mm, 6 mm, 9 mm and 13 mm available on request.

**HF generator** **GM 4200**  
 Dimensions (W x D x H): 150 x 335 x 220 mm  
**Converter** **UW 100**  
 Dimensions (diam. x L): 70 x 150 mm  
 Ultrasonic nominal power: max. 100 W

Type	min. sample volume ml	max. sample volume ml	Pulsation	PK	Cat. No.
SONOPULS HD 4100	3.00	50	ON cycles: 0.2 ...600 s OFF cycles: 0.3 ...600 s	1	9.650 152

Stand and vessel are not included.



### 2 Ultrasonic homogeniser, SONOPULS HD 4200

For volumes 5 to 1000 ml. Ready-to-operate set for volumes from 20 to 900 ml consisting of:

- HF generator GM 4200
- Ultrasonic converter UW 200
- Standard horn SH 200 G
- Titanium probe TT 213, diam. 13 mm

Bandelin

Further Titanium probes with diam. 4.5 mm, 6 mm, 9 mm, 16 mm and 25 mm available on request.

**HF generator** **GM 4200**  
 Dimensions (W x D x H): 150 x 335 x 220 mm  
**Converter** **UW 200**  
 Dimensions (diam. x L): 70 x 150 mm  
 Ultrasonic nominal power: max. 200 W

Type	min. sample volume ml	max. sample volume ml	Pulsation	PK	Cat. No.
SONOPULS HD 4200	20.00	900	ON cycles: 0.2 ...600 s OFF cycles: 0.3 ...600 s	1	7.971 467

Stand and vessel are not included.



### 3 Ultrasonic homogeniser, SONOPULS HD 4400

For volumes 100 to 3000 ml. Ready-to-operate set for volumes from 500 to 2000 ml consisting of:

- HF generator GM 4400
- Ultrasonic converter UW 400
- Standard horn SH 400 G
- Titanium probe TS 425, diam. 25 mm

Bandelin

Further Titanium probes with diam. 13 mm, 16 mm, 19 mm, 32 mm and 38 mm available on request.

**HF generator** **GM 4400**  
 Dimensions (W x D x H): 150 x 335 x 220 mm  
**Converter** **UW 400**  
 Dimensions (diam. x L): 86 x 180 mm  
 Ultrasonic nominal power: max. 400 W

Type	min. sample volume ml	max. sample volume ml	Pulsation	PK	Cat. No.
SONOPULS HD 4400	500.00	2000	ON cycles: 0.2 ...600 s OFF cycles: 0.3 ...600 s	1	6.274 619

Stand and vessel are not included.



### 4 Ultrasonic homogenisers, SONOPULS, accessories

The stand is used for the correct and variable positioning of the ultrasonic transducers.

**NEW**  
Bandelin

Type	For	PK	Cat. No.
HG 40	HD 2000 / HD 2000.2 / HD 3000 / HD 4000	1	4.672 126



## Mixing, Homogenisation/Ultrasonic homogenisers-Homogenisers



### Glass sample vessels, Borosilicate glass 3.3 for Ultrasonic homogenisers SONOPULS

For direct ultrasonic irradiation.

Bandelin



Type	For probes up to Ø mm	Volume ml	PK	Cat. No.
KG 3 cooling vessel	2 ... 13	15	1	<b>9.650 235</b> 1
KG 5 cooling vessel	13 ... 25	70	1	<b>9.650 223</b>
DG 3 flow-through vessel with cooling jacket	2 ... 13	max. 5,6 l/h	1	<b>9.650 236</b> 2
DG 5 flow-through vessel with cooling jacket	13 ... 25	max. 30 l/h	1	<b>9.650 224</b>
DG 6 flow-through vessel with cooling jacket	25 ... 38	max. 30 l/h	1	<b>6.284 689</b>
RZ 1 rosett cell	2 ... 3	25	1	<b>9.650 267</b>
RZ 2 rosett cell	2 ... 6	40	1	<b>9.650 268</b>
RZ 3 rosett cell	3 ... 13	110	1	<b>9.650 261</b> 3
RZ 4 rosett cell	13 ... 25	390	1	<b>9.650 260</b>
RZ 5 rosett cell	19 ... 25	660	1	<b>9.650 264</b>



### 4 Sound proof box LS 40

**NEW**

Bandelin

To reduce the noise level when sonicating samples with an ultrasonic homogeniser. The lower part of the interior and the removable bottom tray are made of stainless steel and are therefore chemically resistant and easy to clean.

- Noise reduction of up to 30 dB-AU
- LED interior lighting
- Acrylic glass window
- With effective ventilation system
- With opening (40 x 70 mm) for cooling tubing, sample circulation or the SONOPULS temperature sensor on the back
- Removable bottom tray
- Easy retrofitting for use with sonotrodes or cup booster possible

**The stand HG 40 is required to attach the ultrasonic converter. Please order separately.**

Type	For	PK	Cat. No.
LS 40	HD 2000.2 / HD 3000 / HD 4000	1	<b>4.672 127</b>



### 5 Gravimetric dilutor DiluFlow®, 1 or 2 pumps

All stainless steel with a new design, ultra-low profile for easy use under laminar flow. USB port.

interscience

- Available in 1 or 2 pumps.
- Quick and accurate
  - Compact and user-friendly
  - RS232 output for LIMS and printer, USB

#### Supplied with

1 BagOpen® 400 DiluFlow®, 1 fixed arm, 1 power cord, 1 ø 6.4 mm tubings set per pump for GL45 bottle, 1 drip tray, 1 user's manual, guarantee

#### Specifications

Range:	from 0.1 g to 3000 g
Dilution Precision:	> 98 %
Dimensions (W x L x H):	310 x 415 x 400 mm
Weight:	10.5 kg

Type	PK	Cat. No.
DiluFlow® with single pump	1	<b>9.569 991</b>
DiluFlow® with double pump	1	<b>9.569 992</b>

### Laboratory mixer, BagMixer® 400

For sample preparation with easily adjustable paddle system. The BagMixer® is available in 3 sizes and blends all sample types prior to their microbial analysis. Thanks to their unique adjustable paddle system the blending chamber can be adjusted to the sample volume. Combined with the variable speed, a higher bacterial recovery rate is achieved. All BagMixer® units are fitted with a timer. Constructed in stainless steel. The fully opening door enables easy cleaning.

interscience

BagMixer® 400 P with stainless steel door.  
 BagMixer® 400 W and 400 CC with see through glass door.

Click & clean® System (only BagMixer® 400 CC): removable and autoclavable paddles.

All units have a 3-year warranty and life guarantee for shock absorbers and window door.

Type	Volume ml	Width mm	Depth mm	Height mm	PK	Cat. No.
BagMixer® 400 P	50 to 400	260	390	290	1	6.204 551
BagMixer® 400 W	50 to 400	260	390	290	1	6.224 287
BagMixer® 400 CC	50 to 400	260	420	265	1	9.570 098 <sup>1</sup>



9.570 098

### Laboratory mixer, BagMixer® 400Series S

BagMixer® 400 S/400 SW are a new generation of lab blenders, silent, easy-to-use and with sturdy design.

interscience

With a significantly lower noise level during mixing, it is suitable for all types of laboratory applications. For high bacterial extraction. No cross contamination with sterile homogenizer filter bags.

**BagMixer® 400 S** without viewing window, **BagMixer® 400 SW** with viewing window.

- Silent mixing with less than 48 db
- Homogenization of the samples in 60 sec.
- LiquidSensor detects leaking bags
- 4 adjustable speeds
- Digital operating display
- LightCode system indicates the mixed state by coloured light
- White LED light illuminates the mixing chamber

All units have a 3-year warranty and life guarantee for shock absorbers and window door.

**Starter Pack:** 1 BagMixer® 400 S/SW, 500 BagFilter® filter bags, 500 BagLight® plain bags, 50 BagClip® closing clips, 1 BagOpen® bag opener/holder and 1 BagRack® storage rack.

**Classic Pack:** 1 BagMixer® 400 S/SW, 500 BagFilter® filter bags, 500 BagPage® filter bags, 500 BagLight® plain bags, 50 BagClip® closing clips, 1 BagOpen® bag opener/holder, 1 BagRack® storage rack, 1 PetriPile® Petri dish storage rack, 1 BagPipet® pipette and tips and 1000 BagTips® Regular tips for BagPipet®.

**Premium Pack:** 1 BagMixer® 400 S/SW, 1 DiluFlow® gravimetric dilutor, 1000 BagFilter® filter bags, 1000 BagPage® filter bags, 2000 BagLight® plain bags, 50 BagClip® closing clips, 1 BagOpen® bag opener/holder, 2 BagRack® storage rack, 2 PetriPile® Petri dish storage rack, 1 BagPipet® pipet and tips and 1000 BagTips® Regular tips for BagPipet®.



6.261 704



6.261 705

Type	Volume ml	Width mm	Depth mm	Height mm	PK	Cat. No.
BagMixer® 400 S	50 ... 400	450	290	370	1	6.261 704 <sup>2</sup>
BagMixer® 400 SW	50 ... 400	450	290	370	1	6.261 705 <sup>3</sup>
BagMixer® 400 S + Starter Pack	50 ... 400	450	290	370	1	4.668 229
BagMixer® 400 S + Classic Pack	50 ... 400	450	290	370	1	4.669 399
BagMixer® 400 S + Premium Pack	50 ... 400	450	290	370	1	4.669 400
BagMixer® 400 SW + Starter Pack	50 ... 400	450	290	370	1	4.669 401
BagMixer® 400 SW + Classic Pack	50 ... 400	450	290	370	1	4.669 402
BagMixer® 400 SW + Premium Pack	50 ... 400	450	290	370	1	4.669 403

### Laboratory paddle blender MiniMix® 100

MiniMix® 100 paddle blenders, from the BagMixer® range, guarantees a quick and accurate blending of small samples. Thanks to the adjustable paddle system, blending is at its best. MiniMix® 100 is ideal for medical, veterinary and microbiological analysis.

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Type	Volume ml	PK	Cat. No.
MiniMix® 100 P CC®	80-100	1	6.240 509
MiniMix® 100 W CC®, with window door	80-100	1	6.241 090 <sup>4</sup>



6.241 090

### Blender bags, BagSystem®

These gamma-ray sterilized bags have a high mechanical stability and ensure safety for the samples. The filters inserted in the bags filter the liquid during sample preparation (washing process) and retain sample particles.

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**BagLight®:** Bag without filter, for all microbiological laboratory applications.

**BagLight® Multilayer:** Like BagLight® with strong multilayer film.

**BagLight® Multilayer U:** Like BagLight® with strong multilayer film and U-bottom.

**BagPage® and BagPage®+:** Homogenizer bag with a micro-perforated filter that extends over the entire width of the sample bag (full-size filter).

**BagPage® R:** Like BagPage® with non-woven filter.

**BagPage® F:** Like BagPage® for flow cytometry.

**BagPage® XR:** Like BagPage® extra resistant.

**BagFilter® P:** Bag with non-woven filter (side filter). Removal of the filtered solvent with BagPipet®. With pre-cut for pipetting.

**BagFilter® Roll:** Bag with non-woven filter (side filter). With waterproof quick-closure by resealable sticker.

**BagFilter® Pipett:** Bag with non-woven filter (side filter). With resealable pipette access for micropipettes.

**BagFilter® Pipet & Roll:** Bag with non-woven filter (side filter). Combines the resealable Pipette access with waterproof quick-closure.

Type	Description	Pore size µm	Width mm	Height mm	PK	Cat. No.
BagLight® PolySilk 100	plain bag, sleeve 25		110	185	500	<b>9.570 075</b> 1
BagLight® PolySilk 400	plain bag, sleeve 25		175	300	500	<b>4.662 244</b>
BagLight® PolySilk 400	plain bag, sleeve 50		175	300	500	<b>4.662 937</b>
BagLight® PolySilk 3500	plain bag, sleeve 25		380	510	500	<b>9.570 077</b>
BagLight® Multilayer® 400	plain bag, sleeve 25		190	300	500	<b>6.231 427</b>
BagLight® Multilayer® U 400	plain bag, sleeve 25		190	300	500	<b>6.264 470</b>
BagPage® 100	full-size filter bag, sleeve 25	280	180	95	500	<b>9.570 080</b>
BagPage® + 400	full-size filter bag, sleeve 25	280	190	300	500	<b>9.570 081</b>
BagPage® + 3500	full-size filter bag, sleeve 10	280	380	510	100	<b>9.570 082</b>
BagPage® R 400	full-size filter bag, sleeve 25	250	190	300	500	<b>6.230 760</b>
BagPage® F 400	full-size filter bag, sleeve 25	63	190	300	500	<b>6.257 162</b>
BagPage® XR 400	full-size filter bag, sleeve 25	280	190	300	400	<b>6.239 230</b>
BagFilter® P 400	side filter bag, sleeve 25	250	190	300	500	<b>9.570 078</b> 2
BagFilter® P 3500	side filter bag, sleeve 10	250	380	510	100	<b>9.570 079</b>
BagFilter® Roll	side filter bag, sleeve 25	250	190	300	500	<b>6.292 087</b>
BagFilter® Pipet	side filter bag, sleeve 25	250	190	300	500	<b>6.292 088</b>
BagFilter® Pipet & Roll	side filter bag, sleeve 25	250	190	300	500	<b>4.666 496</b> 3

1



9.570 075

2



9.570 078

3



4.666 496

### 4 5 6 7 Accessories for blender BagSystem®

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Type	Description	PK	Cat. No.
BagOpen® 80/100	bag opener	1	<b>9.570 083</b>
BagOpen® 400	bag opener	1	<b>9.570 084</b>
BagOpen® 3500	bag opener	1	<b>9.570 085</b>
BagRack® 80/100	bag storage for 11 bags	1	<b>9.570 086</b>
BagRack® 400	bag storage for 10 bags	1	<b>9.570 087</b>
BagRack® Slide	bag storage for 12 bags	1	<b>4.665 797</b>
BagClip® 80/100	bag closure clip	50	<b>9.570 088</b>
BagClip® 400	bag closure clip	50	<b>9.570 089</b>
BagClip® 3500	bag closure clip	50	<b>9.570 090</b>
BagPipet®	pipette with 3 fixed graduations: 0.1, 0.9, 1.0 ml	1	<b>9.570 091</b>
BagTips® Regular	straws for BagPipet®, 19 cm, sterile	1000	<b>9.570 092</b>
BagTips® Jumbo	straws for BagPipet®, 24 cm, sterile	1000	<b>9.570 093</b>

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➔ Adhesive Labels - please see page 168