

FRITSCH · DIVIDING · FEEDING · CLEANING



IDEAL FOR

REPRESENTATIVE
SAMPLE PREPARATION –
THE FOUNDATION FOR
EVERY PRECISE
ANALYSIS!

**ROTARY CONE SAMPLE DIVIDER
VIBRATORY FEEDERS
ULTRASONIC CLEANERS**



LABORETTE 27

THE MOST PRECISE WAY OF SAMPLE DIVISION

- Guaranteed division accuracy of up to 99.9 %
- Dry and wet without conversion
- Representative sample division from just a few ml up to 4,000 ml
- Variable division ratios
- Food-safe materials
- Practical, quick clamping of the sample bottles
- Easy cleaning due to removable dividing head

GUARANTEED REPRESENTATIVE SUBSAMPLES

A perfect sample preparation is the indispensable foundation for every analysis – because any errors will be reflected in the results later on. Therefore the reliable creation of guaranteed representative subsamples plays an absolutely central role.

The FRITSCH Rotary Cone Sample Divider LABORETTE 27 offers the ideal conditions: it is the only sample divider on the market dividing your samples with up to 3,000 dividing steps per minute centred over a rotating dividing cone into up to 30 separate channels. Each individual sample with identical chemical and physical properties – and with 99.9 % accuracy for many more sample materials than any other similar method. The best sample division, possible today.

FRITSCH SOLUTION: CENTRIC SAMPLE FEEDING

Traditional dividing methods such as quartering and coning no longer provide enough accuracy for high-precision modern analytical instruments. Even the use of eccentric rotating sample dividers is problematic, because if the material segregates on the vibratory feeder, it causes falsified results.

The FRITSCH solution: the sample feed funnel of the LABORETTE 27 guides the sample material centred onto the point of the rotating cone. The rapid rotation of the entire system accelerates the sample material outwards along its surface and divides it through up to 30 guiding channels into chemically and physically precisely identical subsamples. Your advantage: greatest division precision during sample division for the best possible accuracy and representative samples. For the division of liquid samples, the funnel is simply repositioned for eccentric division.

OUR SUGGESTION

Always use the LABORETTE 27 together with the Vibratory Feeder LABORETTE 24 for precise work and even more reliable results.

Only available from FRITSCH: the sample delivery funnel guides the sample material exactly centred on the tip of the rotating cone – for even more accuracy during sample division.

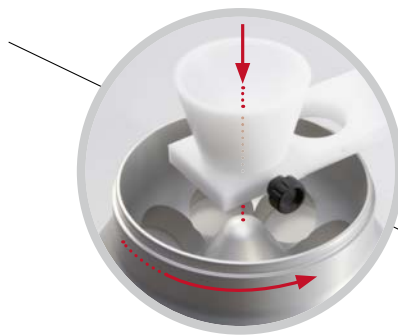
FRITSCH Advantage Division of liquid samples – without modification – by simply repositioning the funnel since suspensions can only be divided eccentrically.

FRITSCH Advantage The LABORETTE 27 is also suitable for the production of specific mixing ratios of dietary supplements, mineral feed mixtures etc. or for mixtures according to the QuEChERS method.

FRITSCH Advantage Specially developed plastic inserts with 25 ml volume for insertion into the 250 ml and 500 ml sample bottles for smallest quantities.

FRITSCH Advantage Practical quick clamping for rapid and safe fixing of sample bottles with 250 ml and 500 ml useful capacity.

Glass collecting vessels in different sizes from 15 ml to 500 ml for up to 4 litres total volume – dishwasher-safe and therefore particularly easy to clean.





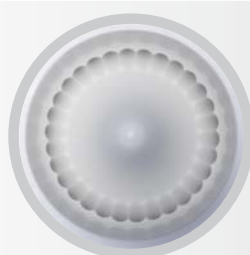
LABORETTE 27



Dividing head 1:8



Dividing head 1:10



Dividing head 1:30

Depending on the dividing head, the LABORETTE 27 creates 8, 10 or 30 chemically and physically identical subsamples at ratios of 1:8, 1:10 or 1:30.

DIVIDING HEADS FOR EVERY

MATERIAL

Select exactly the right dividing head for your LABORETTE 17 as an accessory according to your application in the division ratios of 1:8; 1:10 or 1:30 made of stable POM plastic. Anodised aluminium dividing heads – 1:8 and 1:10 – are available for materials and suspensions with abrasive properties. And for especially aggressive solids and suspensions, the resistant PTFE-coated aluminium dividing head 1:30 is also available.

Special sample delivery funnels for every sample material

Each dividing head of the LABORETTE 27 is delivered with a funnel of 10 mm diameter, the dividing heads with division ratios of 1:30 are additionally supplied with a 5 mm funnel. There are also funnels of 15 mm and 22 mm diameter for perfect adaptation to the respective particle size available. Special funnels for suspensions are also available. Please ask, when you are ordering.





TECHNICAL DATA

Electrical details

230 V/1~, 50-60 Hz, 90 watt

115 V/1~, 50-60 Hz, 90 watt

Weight

Net 7.7 kg, gross 11 kg

Dimensions w x d x h

Bench top instrument 27 x 45 x 46 cm

Packaging w x d x h

Cardboard box 64 x 40 x 52 cm

Emissions value of workplace according to IEC 61672-1

Approx. 37 dB(A)

Order no.

230 V/1~ 115 V/1~

27.1420.00 27.1410.00

FRITSCH ADVANTAGE

Special division accuracy for very small quantities up to 5 ml through identical sample division with the 1:30 dividing head into 3 subsamples.

Features

Dividing heads LABORETTE 27

	Division 1:8	Division 1:10	Division 1:30
Division ratio	Division 1:8	Division 1:10	Division 1:30
Number of possible subsamples	8	10	3
Materials	POM plastic or aluminium	POM plastic or aluminium	POM plastic or PTFE-coated aluminium
Max. feed particle size	10 mm	10 mm	2.5 mm
Max. sample quantity	4,000 ml	2,500 ml	300 ml
Useful capacity of sample bottles	25, 250*, 500* ml	25, 250* ml	15, 20, 30 ml
Division	Dry/wet	Dry/wet	Dry/wet

* Thread of sample bottles: GL 55, other threads for your own sample containers on request.

FACTS AND ADVANTAGES

- Compact basic instrument, combinable with 6 different dividing heads
- Glass collecting vessels from 15 ml to 500 ml
- Quick clamp device for sample bottles 250 ml and 500 ml
- Maintenance-free drive motor with slipping clutch, rotational speed 100 rpm
- Recyclable, heavy-duty cast aluminium housing
- Certified safety CE
- 2-year guarantee



LABORETTE 24

PERFECT SAMPLE FEEDING

- For uniform feeding of free-flowing materials of laboratory instruments
- Suitable for both coarse and fine materials
- Flexible application with and without stand
- Extensive choice of flow rates for smallest and largest quantities
- Precisely controlled by microprocessor control with interface
- V-shaped and U-shaped channels easy to interchange
- Simple to clean due to easily removable components

RELIABLE AUTOMATIC FEEDING

The Vibratory Feeder LABORETTE 24 is ideal for automatic, uniform feeding of free-flowing materials into sample dividers, mills or mixers in your laboratory. The vibration, which is controlled by a microprocessor, conveys the sample material out of the funnel over the V or U-shaped stainless steel channel into the respective equipment. The flow rate can be individually adjusted; the vibration amplitude is precisely controlled – for absolute uniform feed of even smallest quantities. Safe and reliable.



Separate control unit for simple regulation of the sample flow by adjusting the vibration speed.

FRITSCH Advantage The LABORETTE 24 is constructed as an independent instrument – for flexible, versatile use wherever you need it.



Stable stand and flexible operation
Order your LABORETTE 24 with a stable, sturdy stand in which it is fitted slip-resistant – infinitely height-adjustable and rotatable and easily adaptable to any working situation.

OUR SUGGESTION

The LABORETTE 24 is the perfect accessory for the combination with the FRITSCH Rotary Cone Sample Divider LABORETTE 27 and the FRITSCH Variable Speed Rotor Mill PULVERISETTE 14 with automatic control of the channel vibration via the integrated interface – for perfect results and reliable reproducibility!

TECHNICAL DATA

Length of conveyance channel	Channel overlap
330 mm (complete)	215 mm
Min. feed quantity	Max. feed quantity
V-channel: 1 g/min	1,500 g/min
U-channel: 5 g/min	2,500 g/min
Electrical details	
200-240 V/1~, 50-60 Hz, 20 watt	
100-120 V/1~, 50-60 Hz, 20 watt	
Weight	
Net 12 kg, gross 13 kg	
Dimensions w x d x h	
Bench top instrument 44 x 14 x 34 cm	
Packaging w x d x h	
Cardboard box 50 x 36 x 30 cm	
Emissions value of workplace according to IEC 61672-1	
Approx. 34 dB(A)	
<i>(depending on the material to be feed and conveyor speed)</i>	
Order no. Vibratory Feeder	
With V-shaped channel	With U-shaped channel
200-240 V/1~ 100-120 V/1~	200-240 V/1~ 100-120 V/1~
24.0030.00 24.0040.00	24.0020.00 24.0010.00



Funnel made of stainless steel – different funnels for V- and U-shaped feeder channels, individually adjustable in height, simple to remove and easy to clean.

V-shaped feeder channel made of stainless steel for narrow directed material feed between 1 g/min and 1,500 g/min.

U-shaped feeder channel made of stainless steel for uniform, wide material feed between 5 g/min and 2,500 g/min.

FRITSCH Advantage The material bed height is variable and can be regulated simply by adjusting the funnel height according to the material.

FACTS AND ADVANTAGES

- Continuous, uniform sample feeding of free-flowing materials
- As a standard, supplied with polished stainless steel channel and funnel, also available with PTFE-coating on request
- Small footprint
- Separate control unit
- Maintenance-free electromagnetic drive
- Recyclable, compact cast housing
- Maintenance-free components
- Low energy consumption, only 0.1 kW drive power
- Certified safety CE
- 2-year guarantee



LABORETTE 17

GENTLE CLEANING

- Perfect ultrasonic cleaning of sensitive components
- Gentle cleaning of test sieves, mill and laboratory accessories
- Available in two sizes - 5.6 litres and 28 litres
- Even dissolves stubborn soiling of inaccessible areas
- Acceleration of chemical reactions
- Dispersion of suspensions
- Degassing of liquids
- Emulsification of oily and aqueous phases
- Easy handling, flexibly usable

Simple emptying In both LABORETTE 17 models, the cleaning liquid can be easily drained off using the integrated outlet tap.

FAST AND THOROUGH

Every laboratory should have a good Ultrasonic Cleaner for quick and effective cleaning of the various instruments. The LABORETTE 17, which is available in two sizes, guarantees especially gentle and damage-free cleaning of even extremely sensitive parts such as glassware, sieves or valuable micro-precision sieves. Your high-performance ultrasonic bath works quickly and thoroughly, and dissolves stubborn soiling even at inaccessible points. With convincing results.

Interesting additional functions

The LABORETTE 17 is also suitable for external dispersion of suspensions for particle size analysis, and for the acceleration and improvement of process sequence of chemical reactions such as the extraction of plant substances. Two further additional functions are the degassing of liquids and the emulsifying of oily and aqueous phases. For multifunctional use!



Extend the service life and the precisely reproducible work of your valuable test and micro-precision sieves using gentle ultrasonic cleaning in the LABORETTE 17.

TECHNICAL DATA

	Size I	Size II
Useful capacity	5.6 litres	28 litres
Interior bath dimensions	Dia. 24 cm, 13 cm deep	50 x 30 x 20 cm
Filling volume for cleaning	4 litres	19 litres
Ultrasonic output	Max. 2 x 240 watt/period, 35 kHz	Max. 2 x 600 watt/period, 35 kHz
Insert tray	Dia. 21.8 cm, 5 cm high, mesh 5 x 5 mm	45.5 x 24.5 x 5 cm, mesh 5 x 5 mm
Outlet	Ball valve, right-hand side	Ball valve, left-hand side
Input	140 watt	320 watt
Electrical details	230 V/1~ / 115 V/1~, 50-60 Hz, 140 watt	230 V/1~, 50-60 Hz, 320 watt
Weight	Net 4.6 kg, gross 6.5 kg	Net 14.3 kg, gross 21 kg
Packaging w x d x h	Cardboard box 35 x 35 x 35 cm	Cardboard box 65 x 45 x 46 cm
Dimensions w x d x h	Bench top instrument dia. 26.5 cm, 27 cm high	Bench top instrument 53.5 x 32.5 x 40 cm
Emissions value of workplace according to IEC 61672-1	Approx. 60 dB(A) with cover Approx. 65 dB(A) without cover	Approx. 72 dB(A) with cover Approx. 78 dB(A) without cover
Order No.	230 V/1~ 115 V/1~ 17.2020.00 17.2010.00	17.4020.00



LABORETTE 17
Size II

LABORETTE 17
Size I



Simple operation to clean the sieves, they are simply placed or positioned in the cleaning liquid.

Increased cleaning effectiveness and corrosion protection thanks to the special alkaline ultrasonic bath cleaning liquid for dilution at a ratio of 1:33, which can be ordered with the instrument or re-ordered at any time. With reliable protection against corrosion of stainless steel, nickel and bronze.

Practical accessories Depending on the use, for both models of the LABORETTE 17, you can order a stainless steel basket for inserting into the ultrasonic bath for the simple cleaning of glasses or small parts, as well as a stainless steel cover for covering the ultrasonic bath.

FACTS AND ADVANTAGES

- 2 models with different bath volumes – 5.6 litres respectively 28 litres
- High ultrasonic power
- Bath and housing made of stainless steel 1.4301
- Automatic timer 1–15 min and continuous operation possible
- Interference-free
- Fitted with sieve support as standard
- Compact design – bath and completely transistorised generator in a single housing
- Certified safety CE
- 2-year guarantee

ORDERING DATA**Order no. Article****ROTARY CONE SAMPLE DIVIDER****LABORETTE 27****Instrument without dividing head**

27.1420.00 For 230 V/1~, 50-60 Hz
 27.1410.00 For 115 V/1~, 50-60 Hz

Dividing heads including sample bottles and funnel**Division ratio 1:8**

27.1300.00 POM plastic, incl. 8 sample bottles 500 ml with screw lid and funnel 10 mm diameter

27.1150.00 Aluminium, incl. 8 sample bottles 500 ml with screw lid and funnel 10 mm diameter

Division ratio 1:10

27.5150.00 POM plastic, incl. 10 sample bottles 250 ml with screw lid and funnel 10 mm diameter

27.4150.00 Aluminium, incl. 10 sample bottles 250 ml with screw lid and funnel 10 mm diameter

Division ratio 1:30

27.6150.00 POM plastic, incl. 3 sample bottles 15 ml with screw lid and funnel 10 mm diameter as well as 1 funnel each of 5 mm diameter for dry- resp. wet division

27.2150.00 PTFE-coated aluminium, incl. 3 sample bottles 15 ml with screw lid and funnel 10 mm diameter as well as 1 funnel each of 5 mm diameter for dry- resp. wet division

Sample bottles

27.1450.00 Sample bottles 250 ml
 27.1460.00 Sample bottles 500 ml
 83.3190.16 Sample vessel 25 ml with lid for sample bottle 250 ml and 500 ml
 83.3100.00 Sample bottles 15 ml
 83.3110.00 Sample bottles 20 ml
 83.3120.00 Sample bottles 30 ml

Funnels

27.1290.16 Funnel 5 mm diameter
 27.1330.16 Funnel 5 mm diameter (only for the division of suspensions with dividing head, division ratio 1:30)
 27.1200.16 Funnel 10 mm diameter
 27.1210.16 Funnel 15 mm diameter
 27.1220.16 Funnel 22 mm diameter

Further accessories

27.1500.17 Protective device, polyacrylic

Accessories for automatic feeding**Vibratory Feeder LABORETTE 24****Instrument incl. V-shaped channel, funnel and control unit**

24.0030.00 For 200-240 V/1~, 50-60 Hz
 24.0040.00 For 100-120 V/1~, 50-60 Hz

24.9100.00 Stand for feeder

Order no. Article**VIBRATORY FEEDER****LABORETTE 24****Instrument with control unit; without stand**

Incl. V-shaped channel and funnel
 24.0030.00 For 200-240 V/1~, 50-60 Hz
 24.0040.00 For 100-120 V/1~, 50-60 Hz

Incl. U-shaped channel and funnel
 24.0020.00 For 200-240 V/1~, 50-60 Hz
 24.0010.00 For 100-120 V/1~, 50-60 Hz

Accessories

24.9100.00 Stand for feeder

Order no. Article**ULTRASONIC CLEANER****LABORETTE 17****Instrument incl. sieve support and outlet tap; without insert tray, cover and cleaning liquid**

Size I, 5.6 litres
 17.2020.00 For 230 V/1~, 50-60 Hz
 17.2010.00 For 115 V/1~, 50-60 Hz

Size II, 28 litres
 17.4020.00 For 230 V/1~, 50-60 Hz

Accessories for size I

17.3100.00 Insert tray made of stainless steel
 17.3300.00 Cover made of stainless steel
 17.0400.00 Concentrated cleaning liquid, 2.5 litres

Accessories for size II

17.5100.00 Insert tray made of stainless steel
 17.5300.00 Cover made of stainless steel
 17.0400.00 Concentrated cleaning liquid, 2.5 litres



Grinding reports online

At www.fritsch.de, you will find a comprehensive database of grinding reports for various materials and industries in the menu item Sample Preparation/Solutions - it's worth to take a look!



Practical on-site demonstration

If you would like to be convinced of the performance and ease of use of the FRITSCH laboratory instruments, we would be happy to call on you with the FRITSCH mobile laboratory and provide you with on-site practical demonstrations.



Free sample grinding

Send us your sample for a complimentary grinding trial. We will then submit a fully documented grinding report identifying the mill, which is the right one for you.

Information and scheduling

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