

pulverisette 9



Vibrating Cup Mill

- Variable frequency to suit grinding load
- Extremely fast size reduction
- Improved operation

grinding

wet / dry

sample
preparation

for your lab

FRITSCH

Vibrating Cup Mill

Field of application

Dry and wet grinding of brittle and very hard solids. Achieves analytical fineness in extremely short time.

The maximum feed size up to 12 mm depending on the grinding set used. The final attainable fineness is about 10 - 20 μm . The maximum feed quantity is dependent on the size of the grinding set used, which is either 50 ml, 100 ml or 250 ml.

Examples of application

Mining

for processing coal, ores or minerals for physical or chemical analysis

Metallurgy

for grinding blast furnace slag or cast iron samples to determine additives needed

Ceramic industry

for grinding rock samples to produce raw powder to determine CaCO_3 and MgCO_3 content or clinkers to study the constancy of the mineralogical structure

Agriculture and ecology

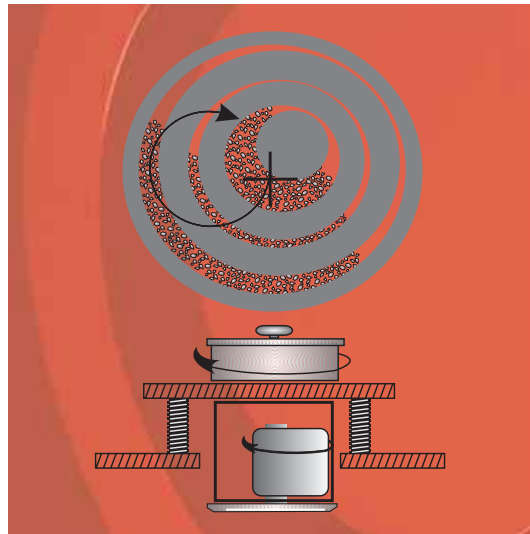
for preparing samples for chemical analysis of soils, sludges or vegetable matter

Infrared- and X-ray fluorescence

for preparing samples in a short grinding time with minimal contamination through abrasion



fine grinding sample preparation
Vibrating Cup Mill



working principle



pulverisette 9 with grinding set and eccentric clamp

Method of operation

The pulverisette 9 operates on the principle of a vibrating cup mill. The rotating flyweight makes the grinding set; clamped on a spring-loaded system, vibrate horizontally. As a result of the centrifugal force created, the tumbling movement accelerates the grinding elements (puck and rings), which make up the grinding set. The sample is ground by the impact and friction effect.

The pulverisette 9 is the only vibrating cup mill in the world with frequency transformer control. With this, the vibrating frequency of the load (grinding set and sample) can be adjusted so that grinding takes place in the shortest possible time.



grinding set and eccentric clamp opened

Vibrating Cup Mill

Advantages

- Easy-to-operate grinding set
- Extremely rapid size reduction (1 to 3 min)
- Dry or wet grinding
- Wide choice of grinding materials and capacities
- Reproducible grinding conditions
- Agate grinding set for metal-free grinding
- Hardmetal tungsten carbide grinding set for hard-tough material
- Loss-free grinding in hermetically sealed vessels
- Easy to clean
- Overload protection
- 2 year guarantee

Design Characteristics

- High grinding energy for high load frequency
- Choice of automatic adjustment of the optimum vibrating frequency to the load
- Eccentric clamping of grinding set
- Guided use of the grinding set with defined end position
- Thrust block for the automatic lifting of the grinding set after loosening the clamp
- Automatic control of the grinding set clamp
- Anti-twist protection of the grinding set
- Grinding set with cooling ribs and handle
- Membrane keyboard
- Speed varied by means of frequency converter and microprocessor
- Insulated mill housing conforms to latest noise reduction standard
- Safety hood protecting the grinding chamber opened by 2 pneumatic lifting devices
- Cooling of the grinding chamber with high air throughput
- Grinding chamber hood interlocked
- High stability
- High rotation up to 1150 rpm for rapid size reduction
- Locator/adaptor for agate grinding sets

wet / dry

analytical
fineness

Vibrating Cup Mill



grinding sets

Accessories

Grinding sets

- Tempered steel for standard applications.
- Hardmetal tungsten carbide for rapid size reduction of extremely hard material samples (e.g. slags, metals, drilling cores, ores, cement clinkers).
- Agate for grinding of medium-hard materials without metallic contamination.

Material for grinding sets	Volume	Grinding elements	Order No.
Tempered steel 1.2080, X210Cr12, HRC63 11-12 % Cr	50 ml	1 puck	48.4105.00
	100 ml	1 puck + 1 ring	48.4110.00
	250 ml	1 puck + 2 rings	48.4125.00
Hardmetal tungsten carbide 90.3 % WC + 9.5 % Co + 0.2 % TaC	50 ml	1 puck	48.4205.00
	100 ml	1 puck + 1 ring	48.4210.00
	250 ml	1 puck + 2 rings	48.4225.00
Agate 99.9 % SiO ₂	50 ml	1 puck	48.4305.00
	100 ml	1 puck + 1 ring	48.4310.00

pulverisette 9

Technical data

working principle	impact force
max. feed size (depending on the material)	12 mm
min. sample quantity	10 - 20 ml
useful capacity	50, 100 or 250 ml
max. throughput per batch	250 ml
final fineness	10 - 20 µm
motor speed	up to 1150 rpm
electrical details	100-240 V/1~, 50-60 Hz, 2000 watt
motor-shaft-power according to VDE 0530, EN 60034	1.1 kW
weight	net: 305 kg, gross: 405 kg
dimensions w x d x h	floor instrument: 60 x 80 x 110 cm
packing details	pallet-case: 85 x 85 x 135 cm

Ordering data

Order no.	Description
	Vibrating Cup Mill pulverisette 9 without grinding set
09.4000.00	for 100-240 V/1~, 50-60 Hz, 2000 watt
	Grinding sets
48.4125.00	tempered steel, useful volume 250 ml
48.4110.00	tempered steel, useful volume 100 ml
48.4105.00	tempered steel, useful volume 50 ml
48.4225.00	hardmetal tungsten carbide, useful volume 250 ml
48.4210.00	hardmetal tungsten carbide, useful volume 100 ml
48.4205.00	hardmetal tungsten carbide, useful volume 50 ml
48.4310.00	agate, useful volume 100 ml
48.4305.00	agate, useful volume 50 ml

