

pulverisette 2



Mortar Grinder

- Fine grinding through pressure and friction
- Suitable for medium-hard to soft material also for loss-free grinding in suspension

**milling
grinder**

**sample
preparation**

for your lab

FRITSCH

Application

Field of application

The pulverisette 2 is an essential instrument for the processing laboratory. It is suitable for fine grinding of inorganic and organic samples for analysis, quality control and material testing.

Areas of application include, for example, grinding dry samples and solid materials in suspension, or manufacturing and homogenising pastes and creams to laboratory standards.

Whenever reproducible grinding conditions, short grinding times, precise results, loss-free milling and dust-free operation are required, the pulverisette 2 is the perfect mill.

A final fineness of 10 - 20 μm can be achieved from a material feed size of 6 - 8 mm and feed quantity of 30 - 150 ml (dependent on material).

Examples of application

Mining and metallurgy

Ores, coal, coke, ashes

Chemistry

Fertilisers, dyes, pesticides, salts, detergents, synthetic resins

Geology and mineralogy

Minerals (up to and including a Moh's hardness of 9), calcites, quartz, silicates

Glass

Sand, frits, glass, raw material

Ceramics

Porcelain, fire-clay, sintered ceramics, clay

Agriculture

Soil samples, fertilisers, organic plant materials

Foodstuffs

Confectionery, gelatine, spices, yeast, pasta, sugar

Metallurgy

Bauxite, slags, additives

Pharmacy

Dragées, drugs, tablets, pastes raw materials

Rocks and soils

Gypsum, lime, clinker, sand, cement



grinding
quality control
Mortar Grinder

Features

Advantages

- Fast, uniform comminution
- Reproducible grinding process
- Dust-tight grinding chamber
- Very easy cleaning
- Visual inspection of the grinding process
- Facility to add materials during any ongoing processes
- Wide choice of interchangeable grinding sets
- Safety standard EN 61010 and CE-mark
- 2 year guarantee

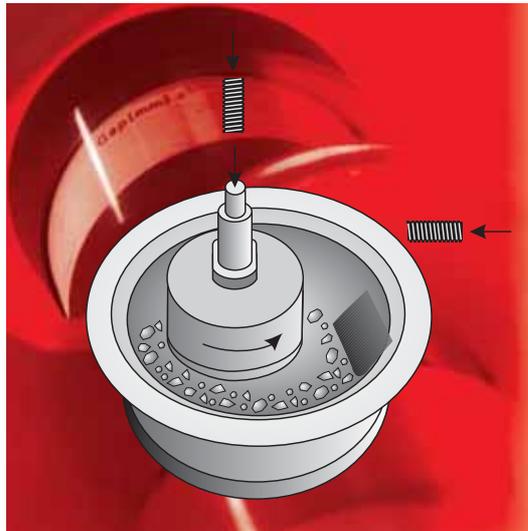
Design Characteristics

- Removal and fitting of mortar bowl and pestle without tools
- Precise adjustment and pestle pressure read-out during grinding
- Pestle setting without tools
- Large pestle ensures large grinding surface
- Safe, rapid bayonet clamping of mortar bowl
- High centralised mortar bowl
- Lid with sealed rim
- Pre-crushing setting for coarse-grained samples
- Large acrylic glass window in the lid
- Tried and tested scraper kinematics
- Splash proof membrane keyboard
- Digital timer switch
- Safety switch for monitoring all operating modes
- Solid plastic housing

wet / dry

pre-crushing

fine grinding



working principle



pulverisette 2 with grinding set in plastic frame



pestle holding device and scraper

Method of operation

The principle involved is similar to a hand mortar, in that the material to be ground is reduced in size between the pestle and the mortar bowl through pressure and friction.

The mortar is rotated by a gear motor and in turn drives the mounted, free-rotating pestle by means of friction. Pressure is applied by the pestle on the mortar wall in the horizontal as well as vertical direction. The pressure resulting from the preloaded springs can be adjusted without tools. It can be read off precisely and is therefore absolutely reproducible. A standard integrated scraper turns the sample and guides it back to the pestle.

Specific pestle settings are provided for pre-crushing the samples, during which the pestle works without any direct contact with the base of the mortar. All parameters for this operating mode can also be set so that a reproducible grinding process is guaranteed.

The mortar bowl has a dust-tight seal, which ensures there is no loss of material during grinding. It is also possible to add liquids (e.g. nitrogen) directly whilst the process takes place.



mortar bowl and pestle made of stainless steel

Accessories

Grinding set with plastic frame

The grinding set consists of a mortar bowl rimmed in a plastic frame, pestle and scraper. Seven different materials are available for mortar and pestle to ensure contamination free sample grinding.

Material	Density g/cm ³	Abrasion resistance	Material to be ground
Agate SiO ₂	2.65	good	soft to medium-hard samples
Sintered corundum Al ₂ O ₃	3.8	fairly good	medium-hard as well as fibrous samples
Hard porcelain SiO ₂	2.4 - 2.5	adequate	soft, fibrous samples
Zirconium oxide ZrO ₂	≤ 5.9	very good	fibrous, as well as abrasive samples
Hardened steel	7.9	good	medium-hard, brittle samples
Hard metal tungsten carbide WC	14.95	very good	medium-hard, abrasive samples

Grinding set made of stainless steel

The mortar bowl totally made of stainless steel can be easily cleaned, assures a defined abrasion of only one material and can be filled with liquid nitrogen for cooling/brittleness the sample to be ground.

Stainless steel Fe-Cr-Ni	7.8	fairly good	medium-hard, brittle samples
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Data

Technical data

working principle	friction
max. feed size (depending on the material)	8 mm
min. sample quantity	30 ml
max. sample quantity	150 ml
final fineness	10 - 20 µm
grinding process	dry / wet
motor bowl speed	50 Hz - 70 rpm, 60 Hz - 80 rpm
diameter grinding set	inner: 130 mm, outer: 200 mm
electrical details	100-120/200-240 V/1~, 50-60 Hz, 250 Watt
motor-shaft-power according to VDE 0530, EN 60034	180 Watt
weight	net: 24 kg, gross: 26 kg
dimensions w x d x h	table top instrument: 31 x 46 x 41 cm
packing details	carton: 63 x 46 x 55 cm

Ordering data

Order no.	Description
	Mortar Grinder pulverisette 2 without grinding set
02.2000.00	for 100-120/200-240 V/1~, 50-60 Hz, 250 Watt The voltage specified on the order form will be set by the factory.
	Grinding sets
46.2050.00	agate
46.2060.00	sintered corundum
46.2110.00	hard porcelain
46.2120.00	zirconium oxide
46.2140.00	stainless steel
46.2090.00	hardened steel
46.2080.00	hardmetal tungsten carbide
	Accessories
02.1340.16	Spare scraper vulkollan (Polyurethane)

