

羟磷灰石釉质

行业:	Chemistry
进料尺寸:	< 10mm
最终精度:	d50 <0,6µm
样品量:	
研磨建议:	



PLANETARY MICRO MILL PULVERISETTE 7 PREMIUM LINE

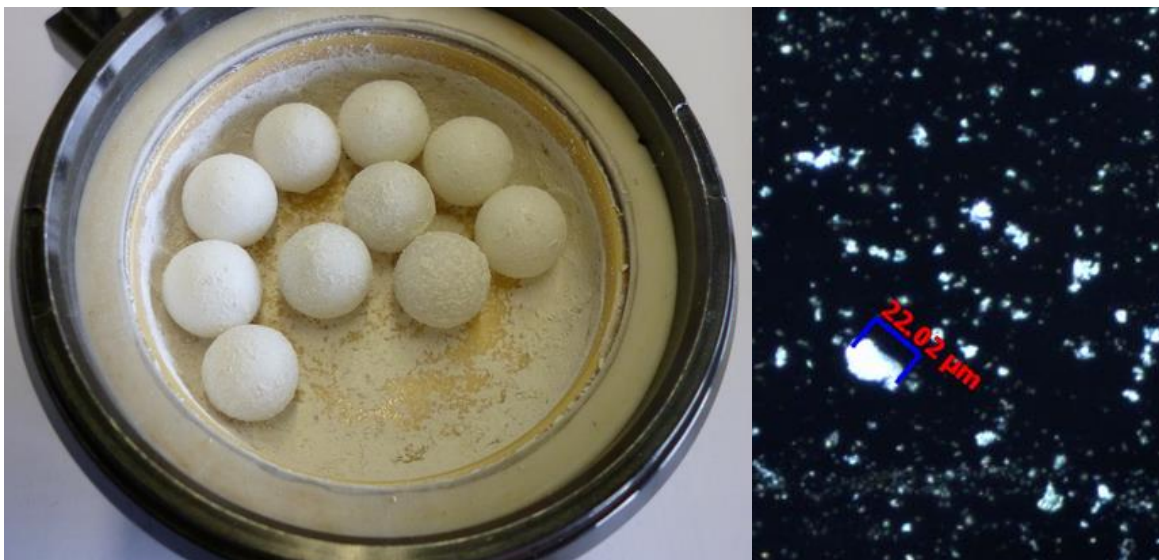
speed: 850 rpm - sample: Esmalte

20 ml bowl made of zirconium oxide (ZrO₂) with 10x 10 mm ZrO₂ balls

Feed quantity:	~0,6 g
Feed Size:	< 2 mm*1
Additive:	+ 2ml H ₂ O*2
Grinding time:	5 min*2
Final fineness:	< 25 µm*3
Comments:	<p>*1: Because of the low amount of sample, only 20ml bowls should be used for grinding. Maximum 10mm diameter balls can be used for the 20ml bowl. For this, the sample needs to be pre ground to < 2mm. Therefore, we took the pieces of up to 8mm, placed them into a plastic bag and used a hammer for pre grinding (see additional photo).</p> <p>*2: After 1 minute of dry grinding, the sample starts sticking to bowl and balls (see additional photo). A longer dry grinding is not recommended. We added 2ml of water for further grinding.</p>

After 5 minutes of grinding, the sample has been ground properly. A change of balls is recommended (see trial 1b).

*3: A measurement with the laser particle sizer needs about 100-200mg of sample, to keep as much sample as possible, we skipped a determination of particle size. Only a small portion of ground sample has been used to check the fineness by optical microscopy.





PLANETARY MICRO MILL PULVERISETTE 7 PREMIUM LINE

speed: 1100 rpm - sample: Esmalte

20 ml grinding bowl made of zirconium oxide (ZrO₂) +
30g of 0,5 mm ZrO₂ balls*1

Feed quantity: ~0,6 g

Feed Size: < 25 µm

Additive: + 8ml H₂O*2
(Σ: 10ml)

Grinding time: 2 h*3

Final fineness: d₅₀ < 0,62 µm*4

Comments: *1: After the first pre grinding trial (1a) with 10mm
balls, we changed the balls to Ø

0,5mm for fine grinding.

*2: To maintain an optimum grinding viscosity (motor
oil like), we added 8ml of water (+ 2ml from trial 1a --
> totally 10ml).

*3: To avoid high temperatures and overpressure, we
ground in steps of 5 minutes, followed by a
programmed pausing time of 10 minutes. After several
cycles, the outside temperature should be checked
(should stay < 85°C), afterwards, grinding time or
pausing time might be readjusted. This counts for all
further wet grinding trials too.

During grinding, the sample use to produce some
foam in water (swimming on the surface); this makes
it more difficult to check for the proper viscosity.

*4: To determine the fineness, we used our
ANALYSETTE 22 NanoTec plus (see Meas. no. 38220
on separate page).

To maintain a better endfineness, a longer grinding or
a change of balls (e.g. 0,1mm Ø) might be possible.