Ca-pantothenate

Protocol number:	M002236
Industry:	Pharmaceuticals
Feed Size:	< 300µm
Desired Fineness:	d50 < 10µm
Quantity:	~ 200 g
Recommendation:	Higher amount can be ground to d50 < 10µm with our Planetary Mill PULVERISETTE 5 classic line .

Result 1

Planetary Mill PULVERISETTE 5 classic line with 4 grinding bowl fasteners
main disk speed: 400 rpm

500 ml grinding bowl made of agate
+ 25x 20 mm agate grinding balls

Feed quantity:	200 g
Feed Size:	<300 µm
Grinding time:	4 min
Final fineness:	d90 < 63 µm d50 < 15,5 µm
Comments:	After 4 minutes of dry grinding, sample does not stick to bowl or balls. A longer dry grinding time is still possible (see following result). After 4 minutes of grinding, a fineness of d50 < 16 µm has been detected with our Laser Particle Sizer ANALYSETTE 22.

Result 2

Planetary Mill PULVERISETTE 5 classic line with 4 grinding bowl fasteners
main disk speed: 400 rpm

500 ml grinding bowl made of agate
+ 25x 20 mm Ø agate grinding balls

Feed quantity:	200 g
Feed Size:	d50 < 15,5 µm (see result 1)
Grinding time:	+ 2 min (∑: 6 min)
Final fineness:	d90 < 59 µm d50 < 12,3 µm
Comments:	After a total of 6 minutes of dry grinding, sample does not stick to bowl or balls. A longer dry grinding time is still possible (see following result). After 6 minutes of grinding, a fineness of d50 < 13 µm has been detected with our Laser Particle Sizer ANALYSETTE 22. A small portion of sample has been packed for demonstration.

Result 3

Planetary Mill PULVERISETTE 5 classic line with 4 grinding bowl fasteners
main disk speed: 400 rpm

500 ml grinding bowl made of agate
+ 25x 20 mm Ø agate grinding balls

Feed quantity:	180 g
Feed Size:	d50 < 12,3 µm (see result 2)
Grinding time:	+ 2 min (∑: 8 min)
Final fineness:	d90 < 45,7 µm d50 < 9,8 µm
Comments:	

After a total of 8 minutes of dry grinding, sample does not stick to bowl or balls. A longer dry grinding time is still possible (see following result). After 8 minutes of grinding, a fineness of d50 < 10 µm has been detected with our Laser Particle Sizer ANALYSETTE 22.

Even longer grinding times are plausible to reduce the particle size.

Result 4

Planetary Mill PULVERISETTE 5 classic line with 4 grinding bowl fasteners
main disk speed: 400 rpm

500 ml grinding bowl made of agate
+ 25x 20 mm Ø agate grinidng balls

Feed quantity:	180 g
Feed Size:	d50 < 9,8 µm (see result 3)
Grinding time:	+ 2 min (∑: 10 min)
Final fineness:	d90 < 36,2 µm d50 < 8,7 µm
Comments:	After a total dry grinding time of 10 minutes, sample starts sticking lightly to bowl and balls. For a further reduction of particle size, we recommend grinding in suspension. The present d50 < 8,7 µm has been detected with our Laser Particle Sizer ANALYSETTE 22.

Contact to our Applications Laboratory: Leos Benes · Phone: 0049 67 84 70 122 · benes@fritsch.de