

NI-B-SI + 纳米碳管

行 业:	Chemistry
进料尺寸:	~ 45µm
最终精度:	two sample bags of badly segregated sample mixtures.
样 品 量:	homogeneous mixture (no grinding)
研磨建议:	4g

For mixing of both kinds of sample, the Mini-Mill PULVERISETTE 23 is capable. With the 15ml zirconium oxide bowl, 5mm Ø (for Al-sample) and 10mm Ø balls (for Ni-B-Si sample) are needed. Probably adding a few drops of solvents like isopropyl alcohol can improve the mixing (see result 4 /7).



MINI-MILL PULVERISETTE 23

speed: 50 Hz

15 ml grinding bowl made of zirconium oxide (ZrO₂)

+45x 5 mm ZrO₂ balls

Material attributes:	sample: Ni-B-Si + CNT
Feed quantity:	4 g mixed sample
Feed Size:	~ 45 µm
Grinding time:	30 min
Final fineness:	not mixed properly
Comments:	With the second sample, we started "mixing" with 5mm Ø balls similar to result 2 & 3. But after 30 minutes of mixing, carbon nano tubes still seems to be above the rest of sample. The mixing has been aborted.

Probably bigger balls might be able to mix the sample without a further comminution (see result 5).



after 30 minutes with 5mm Ø balls, the carbon nano tubes use to lie on top of the Ni-B-Si sample (below the balls).



MINI-MILL PULVERISETTE 23

speed: 50 Hz

15 ml grinding bowl made of zirconium oxide (ZrO₂)

+5x 10 mm ZrO₂ balls

Material attributes:	sample: Ni-B-Si + CNT
Feed quantity:	4 g mixed sample
Feed Size:	~ 45 µm
Grinding time:	30 min
Final fineness:	mixed sample
Comments:	By using 10mm Ø the mixing seems to happen slowly. After 10 minutes, the color of the Ni-B-Si has darkened a bit (coated with carbon nano tubes). After 30 minutes of mixing, everything appears to be homogeneous mixed.



Sample after 30 minutes of mixing with our Mini-Mill PULVERISETTE 23 (5x 10mm zirconium oxide balls in 15ml bowl).



MINI-MILL PULVERISETTE 23

speed: 50 Hz

15 ml grinding bowl made of zirconium oxide (ZrO₂)

+5x 10 mm ZrO₂ balls

Material attributes:

Feed quantity:

Feed Size:

Additive:

Grinding time:

Final fineness:

Comments:

sample: Ni-B-Si + CNT

4 g mixed sample

~ 45 µm

+ 5 drops of IPA

3 min

mixed sample

Analogue result 4, the Ni-B-Si sample has been dripped with a few droplets of isopropyl alcohol. Afterwards, the carbon nano tubes use to stick to the metal pieces and can be homogeneously mixed in short time.

Eventually the sample will becomes unmixed later on.