



TABLETTENPERS PP 40

Solid, high-quality pellets are an important precondition for reliable and meaningful XRF analysis. With the PP 40, RETSCH offers a pellet press which produces strong pellets with a smooth surface. The PP 40 features individual pressure force regulation in the range of 0 to 40 t. It combines the advantage of a small benchtop unit with high press forces, which are built up automatically in three steps, ensuring that even difficult materials are pressed perfectly.

PRODUCTVOORDELEN

- | tafelmodel op kleine oppervlakte
- | individual pressure force adjustment up to 40 tons
- | persringen, aluminium cups en open
- | perswerktuigen voor meerdere diameters
- | 10 SOPs (parametersets) kunnen opgeslagen worden voor routine toepassingen
- | comfortabele instelling via beeldscherm
- | automatische controle van de drukkracht

STABILIZING PRESSED PELLETS

Applying, for example, forces of 10 tons, 20 tons, and 30 tons in sequential steps, each with a 20-second hold time, proves advantageous for pellet stability as particles have sufficient time to settle. Pressing the pellets in aluminum cups further augments their stability. Should these measures prove inadequate, incorporating a binder, such as Licowax, offers an effective stabilization method for challenging samples, including metal powders. Typically, a mixture of 10-15 g of the sample with 2 g of Licowax, pressed in three stages as outlined above, yields optimum results. For the mixing process, the Mixer Mill MM 400, equipped with an adapter for holding 8 conical centrifuge tubes, is highly effective. It ensures that samples are mixed uniformly, automatically, and reproducibly.



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TOEPASSINGSVOORBEELDEN



Wood 4g
Particle size 0.25 mm
Pressing tool 32 mm
20 s each at 10/20/30 tons



Cellulose 7 g
Particle size 0.15 mm
Pressing tool 40 mm
Aluminum cups 40 mm
30 s each at 10/20/30 tons



Slag 40 g
Particle size 0.25 mm
Pressing tool 40 mm
20 s 20 tons



FeSiMg-Granulate 12 g
plus 2 g licowax
Particle size 0.10 mm
Pressing tool 40 mm
Aluminum cups
60 s 15/25/35 tons

3 RECOMMENDATIONS TO OBTAIN RELIABLE XRF RESULTS

1. Particle size reduction

Pulverize the sample into a fine powder of < 100 µm or less, depending on the element to be detected, before pressing it into a pellet. This size reduction helps mitigate matrix effects, including grain size and texture variations, which can distort XRF results.

2. Uniformity and homogeneity

Press the sample into a pellet to ensure uniformity and homogeneity. This is crucial for XRF analysis which relies on consistent interaction between the X-rays and the sample to produce accurate and reproducible results. Homogeneity guarantees that the results represent the entire sample.

3. Enhanced analytical precision and accuracy

Create a dense and uniform pellet with a smooth and flat surface to enhance precision and accuracy of the XRF analysis. A smooth surface ensures consistent X-ray penetration and reduces the scatter, thereby improving the quality of the analytical results.

BENEFITS OF PELLET PRESSING FOR XRF ANALYSIS

Due to its ability to produce homogeneous, stable, and accurate samples efficiently and cost-effectively, pellet pressing is a widely adopted method for preparing samples for XRF analysis.

1. Stability and handling

Pellets are more stable and easier to handle compared to loose powders. This stability is particularly important for samples that might be hygroscopic or prone to segregation. Once pressed, the pellet can be easily placed into the XRF instrument for analysis without the risk of sample loss or contamination.

2. Minimum use of chemicals

Compared to other sample preparation methods such as fusion, pellet pressing requires no or minimal additional chemicals. This reduces the risk of introducing contaminants that could interfere with the analysis.

3. Cost-Effectiveness

Pellet pressing is a relatively simple and cost-effective method of sample preparation, especially when compared to more complex methods such as fusion. The fact that it requires less specialized equipment and consumables makes it an attractive option for any laboratory.

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TECHNISCHE GEGEVENS

Toepassingen	klaarmaken van tabletten voor spectraal-analyses
Toepassingsdomein	bouwmaterialen, chemie/ kunststoffen, geologie / metallurgie, glas / keramiek, milieu / recycling
Max. druk	40 t, automatische pers
Drukkracht	0 - 40 t (1 - 400 kN)
Drukkracht toename / houden / afname tijd	vaste opbouw / 1 - 99 s / vaste afbouw
Parameterkombinaties	10
Steel rings (external Ø / internal Ø)	40 mm / 32 mm (max. pressure force 15 t) 40 mm / 35 mm (max. pressure force 15 t) 51.5 mm / 35 mm (max. pressure force 30 t)
Aluminium cup (external Ø)	32 mm (max. pressure force 25 t) / 40 mm (max. pressure force 40 t)
Gegevens electriciteit	100-120 V, 50/60 Hz; 220-240 V, 50/60Hz
Aansluiting electriciteit	mono fase
B x H x D	335 x 495 x 570 mm
Netto gewicht	120 kg
Standaarden	CE

PRINCIPE

De stalen ring of aluminium cup wordt in het persgereedschap van de PP 40 gestoken en via een trechter gevuld met het monstermateriaal. De complete slede wordt dan onder de drukplaat geschoven en het persen wordt gestart.

Tijdens drukopbouw neemt de dichtheid van het poeder toe. De maximale drukkracht moet gedurende een bepaalde tijd worden vastgehouden om de volledige ontwikkeling van de adhesiekrachten tussen de deeltjes mogelijk te maken en zo maximale stabiliteit te garanderen. Het persen in maximaal drie instelbare stappen (opbouw-houden-afbouw van druk) resulteert in stabiele pellets.

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BESTELGEGEVENS

(please order pressing tool separately)

20.757.0001



PP 40

110-120 V, 50/60 Hz

EVACUABLE PRESSING TOOLS FOR PELLET PRESS PP 40

22.458.0018		Pressing tool for steel rings 40 mm outer Ø, 32 mm inner Ø
22.458.0019		Pressing tool for steel rings 40 mm outer Ø, 35 mm inner Ø
22.458.0028		Pressing tool for steel rings 51.5 mm outer Ø, 35 mm inner Ø
22.458.0020		Pressing tool for aluminum cups Ø 32 mm (also suitable for free pressing)
22.458.0021		Pressing tool for aluminum cups Ø 40 mm (also suitable for free pressing)

TOEBEHORENPP 40

22.458.0003			Stalen ring 40 mm uitw. Ø, 32 mm inw. Ø, 1 stuk
22.458.0004			Stalen ring 40 mm uitw. Ø, 35 mm inw. Ø, 1 stuk
22.458.0005			Stalen ring 51.5 mm uitw. Ø, 35 mm inw. Ø, 1 piece
22.005.0001			Aluminum cups, sloping walls, for pellets with 32 mm diameter, 1000 pieces
22.005.0002			Aluminum cups, sloping walls, for pellets with 40 mm diameter, 1000 pieces
22.458.0006			Aluminum cups, straight walls, for pellets with 40 mm diameter, 1000 pieces
22.868.0003			Funnel tube with tamper for aluminum cups Ø 32 mm and Ø 40 mm
22.458.0025			Extraction tool 56 x 32 mm
22.440.0001			Licowax® C micropowder, 250 g (not for steel rings)
22.440.0003			Spektromelt® C20, cellulose-tabletten, 5 kg