Task:

**Application field:** Geology / Metallurgy

**Material:** Mining material - 15% clay, the rest mainly quartz

**Feed size:** 1 - 130 mm

**Feed quantity:**
- 26 kg for BB 300 and PT 200
- 350 ml (about 480 g) for TG 200
- 150 g for each grinding in RS 200

**Material specification(s):** hard brittle, moist (residual moisture 15-16%)

**Customer requirements(s):** 50 µm, decreasing of the current total time (4 h) for sample preparation.

**Subsequent analysis:** Chemical elemental analysis of Au and Ag

Solution

**Selected Instrument(s):**
- Jaw Crusher BB 300
- Rotating Tube Divider PT 200
- Fluid Bed Dryer TG 200
- Vibratory Disc Mill RS 200

**Configuration(s) Item nos.:**
- 1 x BB 300, 3/N~ 400 V, 50 Hz, manganese steel / stainless steel
- 1 x PT 200 complete unit, 220-240 V, 50 Hz
- 1 x Fluid Bed Dryer TG 200 200-240 V, 50/60 Hz, incl. clamping lid "comfort" with filter bag
- 1 x Drying chamber of glass, 6 litres
- 1 x Vibratory Disc Mill RS 200 220-230 V, 50/60 Hz
- 1 x Grinding set, hardened steel, 250 ml

Please note: Other electrical versions of the instrument(s) are available with different item numbers.

**Parameter(s):**
- BB 300: Gap width 1 mm
- PT 200: Gap width 20 mm
- TG 200: Temperature 80 °C
- RS 200: Revolution speed 1500 rpm

**Time:**
- BB 300: 13 min for crushing 26 kg
- PT 200: 1 hr for dividing a representative part sample of 350 ml from 26 kg crushed material
- TG 200: 10 min for drying a representative part sample of 350 ml
- RS 200: 2 min for each fraction of 150 g (approx 120 ml) dried sample (3 x 2 min)
- Gross process time: 1:30 hr

The application report is based solely on the processing of the available sample material in the indicated amount. No legal claims shall be derived from this test report.

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## Achieved result(s):

- BB 300: predominantly < 5 mm
- TG 200: residual humidity 5%
- RS 200: 80% < 50 µm

## Remark(s):

The whole sample is pre-crushed with the Jaw Crusher BB 300 to less than 5 mm. Due to the humidity the sample may get stuck in the grinding chamber. A short gap increase and subsequent decrease to the previous setting improves the discharge. A representative part of 350 ml of the pre-crushed sample is divided using the Sample Divider PT 200. The part sample is dried to constant weight using the Fluid Bed Dryer TG 200. The dried sample is ground in three fractions of approx. 120 ml each using the Vibratory Disc Mill RS 200. A higher fineness can be achieved by increasing the grinding time by 1-2 min.

## Recommendation:

The mentioned equipment is suitable to process the sample material under the above mentioned conditions.
Pictures of the sample:

Picture 1: Original sample

Picture 2: Sample after pre-crushing with BB 300, gap 1 mm

Picture 3: Pre-crushed sample after drying in TG 200

Picture 4: Sample after grinding in Vibratory Disc Mill RS 200

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