## Task:

**Application field:** Building Materials  

**Material:** 1. Cement clinker; 2. Slag; 3. Mud sediment  

**Feed size:** 3-7 mm  

**Feed quantity:** 30 g (+ 3 tablets "Spectromelt", for each sample)  

**Material specification(s):** hard brittle, dry  

**Customer requirement(s):** < 100 µm; for X-ray fluorescence analysis  

**Subsequent analysis:** X-ray Fluorescence Analysis

## Solution:

**Selected instrument(s):** Planetary Ball Mill PM 100  

**Configuration(s):** Grinding jar "comfort" tungsten carbide 125 ml; 7 x grinding ball tungsten carbide ø 20 mm  

**Parameter(s):** Revolution speed 450 rpm  

**Time:** 5 min. (sample 1 and 2); 2 min. (sample 3)  

**Achieved result(s):**  
1. Cement clinker: 100 % < 100 µm  
2. Slag: 99 % < 100 µm  
3. Mud-sediment: 93 % < 100 µm  

**Remark(s):** To avoid the agglomeration of the powders, 3 tablets "Spectromelt" were added before grinding. Due to its two large initial particle size the mud sediment (sample 3) had to be pre-crushed manually with a hammer.

**Recommendation:** For the grinding of hard brittle clinker and slag samples the Planetary Ball Mill PM 100 is suitable according to the above mentioned conditions.

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. Subject to technical modification and errors. © Retsch GmbH - www.retsch.com - lab@retsch.com
Pictures of the sample

**Fig. 1:** Cement clinker sample before and after grinding in PM 100 for 5 min.

**Fig. 2:** Slag sample before and after grinding in PM 100 for 5 min.

**Fig. 3:** Mud sediment sample before and after manual pre-crushing with a hammer

**Fig. 4:** Mud sediment sample after grinding in PM 100 for 5 min.