Task:

Application field: Chemistry / Plastics

Material: Synthetic Diamond

Feed size: 200-500 µm

Feed quantity: 10 g

Material specification(s): hard brittle

Customer requirement(s): < 5 µm in PM 100

Subsequent analysis: not defined

Solution:

Selected instrument(s): Planetary Ball Mill PM 100

Configuration(s): Grinding jar "comfort" stainless steel 50 ml; 3 Grinding balls stainless steel 20 mm ø

Parameter(s): Revolution speed 400 rpm

Time: 80 min.

Achieved result(s): $d_{90} = 5.9 \mu m$  
$d_{50} = 2.5 \mu m$

Remark(s): The yield of 9.3 g after grinding is due to coating of the grinding tools with diamond dust.

Recommendation: The Planetary Ball Mill PM 100 is suitable to grind hard-brittle materials under the above mentioned conditions.
Pictures of the sample

Fig. 1: Grinding Balls Ø 20 mm before and after grinding of diamond

Fig. 2: Lid of 50 ml jar, centrical coating is visible

Fig. 3: 50 ml jar after grinding