### Task:

**Application field:** Chemistry / Plastics  
**Material:** 6 Plastic samples  
**Feed size:** 0-60 mm  
**Feed quantity:** 10 g (per batch)  
**Material specification(s):** elastic, dry  
**Customer requirement(s):** about 0,5 mm  
**Subsequent analysis:** Dilution Viscosity

### Solution:

**Selected instrument(s):** SM 2000 Heavy-Duty Cutting Mill  
As the SM 2000 was discontinued we recommend to use the SM 300 now  
ZM 200 Ultra Centrifugal Mill

**Configuration(s):**  
SM 2000:  
- Standard hopper;  
- Bottom sieves of stainless steel square holes 2 mm;  
ZM100:  
- Push-fit rotor of stainless steel with 12 teeth;  
- Distance sieve of stainless steel, trapezoid holes 1 mm

**Parameter(s):**  
SM 2000 speed: 750 rpm  
ZM 200 speed: 18000 rpm

**Time:** 5 - 10 min. (per sample)

**Achieved result(s):** Mainly in the range of 1 mm, see samples

**Remark(s):** Dependent on the feeding size and the breaking behaviour, a sample preparation in different steps is necessary:  
1. Pre grinding with SM 2000,
2. Fine grinding with ZM100, distance sieve 1 mm. For higher end fineness the plastic material should be pre cooled with liquid nitrogen.

**Recommendation:** For sample preparation of different plastic materials the Heavy Duty Cutting Mill SM 2000 and the Ultra Centrifugal Mill ZM 200 are suitable under the above mentioned conditions.