### Task:

**Application field:** Environment  
**Material:** Refuse derived fuels, dry plastic waste  
**Feed size:** 0-40 mm  
**Feed quantity:** 3 l  
**Material specification(s):** elastic, medium-hard  
**Customer requirement(s):** < 1 mm and < 500 µm  
**Subsequent analysis:** X-ray Fluorescence Analysis

### Solution:

**Selected instrument(s):**  
SM 2000 Heavy-Duty Cutting Mill  
ZM 200 Ultra Centrifugal Mill  

**Configuration(s):**  
SM 2000:  
- Bottom sieve of stainless steel, square holes 6 mm;  
- Ring-type filter with Conidur hole body for collecting receptacle 5 l  
ZM 200:  
- Push-fit rotor of stainless steel with 12 teeth;  
- Ring sieve of stainless steel, Conidur 0.5 mm and 1.5 mm;  
- Cyclone for ZM 200 with holder and receptacle 3 l

**Parameter(s):**  
Revolution speeds:  
- SM 2000 = 750 rpm  
- ZM 200 = 18000 rpm

**Time:** 15 min. (for the complete preparation)

**Achieved result(s):**  
predominantly < 500 µm

**Remark(s):** The sample preparation was done according to following steps:  
- Pre-cutting of the total quantity in SM 2000, bottom sieve 6 mm,
Recommendation: For sample preparation of different refuse derived fuels the Heavy Duty Cutting Mill SM 2000 and the Ultra Centrifugal Mill ZM 200 are suitable under the above mentioned conditions.

Pictures of the sample

Fig. 1: Original sample of different plastic waste

Fig. 2: After pre-cutting in SM 2000 bottom sieve 6 mm

Fig. 3: After fine grinding in ZM 200 ring sieve 1.5 mm

Fig. 4: After fine grinding in ZM 200 ring sieve 0.5 mm

- Fine grinding of a representative single sample in ZM 200, ring sieve 1.5 and 0.5 mm using the cyclone with receptacle 3 l