Task:

Application field: Chemistry / Plastics

Material: Plastic tubes (PET preforms)

Feed size: 3 x 16 cm

Feed quantity: 110 g (pre-grinding); 15 g (fine grinding)

Material specification(s): medium-hard, electrostatical

Customer requirement(s): 850 µm (20 mesh) or finer

Subsequent analysis: melt viscosity

Solution:

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

Configuration(s): SM 2000: Standard hopper; 6-disc rotor; bottom sieve square holes 4 mm, stainless steel
ZM 200: Push-fit rotor, 12 teeth, stainless steel; ring sieve trapezoid holes 1 mm, stainless steel

Parameter(s): SM 2000: 700 rpm
ZM 200: 18000 rpm

Time: 2 min. (per each grinding process)

Achieved result(s): approx. 85 % < 800 µm

Remark(s): Before fine grinding the sample is embrittled in liquid nitrogen for 2 - 3 minutes.
To reduce electrostatic charge antistatic spray can be used.

Recommendation: For pre-crushing of PET preforms the Heavy-Duty Cutting Mill SM 2000 and for fine grinding the Ultra Centrifugal Mill ZM 200 are suitable under 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.
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Pictures of the sample

Fig. 1: Original sample

Fig. 2: After pre-grinding in SM 2000

Fig. 3: After fine grinding in ZM 200