Task:

Application field: Chemistry / Plastics  
Material: Polyethylene (PE-) and polyvinyl chloride (PVC) standards for XRF  
Feed size: 3-5 mm (pellets)  
Feed quantity: 2 g (per batch approx.)  
Material specification(s): elastic, temperature-sensitive  
Customer requirement(s): Particle size < 300 µm; Determination of Cd / Pb / Hg  
Subsequent analysis: X-ray Fluorescence Analysis

Solution:

Selected instrument(s): MM 400 Mixer Mill  
Configuration(s): Screwable grinding jar 35 ml stainless steel; 1 grinding ball Ø 20 mm stainless steel  
Parameter(s): Frequency: 20 Hz  
Time: 2 min. (per grinding test)  
Achieved result(s): Particle sizes of: PE standards: 300 - 500 µm PVC standards: < 100 µm  
Remark(s): Before grinding, pre-cool filled closed jars by liquid nitrogen (LN2) using the cryo kit. After 2 – 3 min. of cooling the jars remove it out of the basin and start grinding in the mill. If the jars are difficult to open after milling, put them into warm water for 1-2 min.

Recommendation: For grinding of elastic and temperature-sensitive PE and PVC standards für the XRF analysis our Mixer Mill MM 400 is suitable under the above mentioned conditions.