Task:

Application field: Environment

Material: PC circuit boards, mixture of PC boards and cables, line cords and Cables

Feed size: 20-80 mm

Feed quantity: 600 g

Material specification(s): abrasive, elastic

Customer requirement(s): Pre grinding < 2 mm
determination of heavy metals (Cd, Hg, Pb. Cr) acc. to the restriction of RoHS and Weee

Subsequent analysis: X-ray Fluorescence Analysis

Solution:

Selected instrument(s): SM 2000 Heavy-Duty Cutting Mill

Configuration(s): Standard hopper for SM 100 / SM 2000;
Bottom sieves of stainless steel, square holes 6/4/2 mm;
Ring-type filter with trapezoid hole body for collecting receptacle 5 l

Parameter(s): Revolution speed 750 min\(^{-1}\)

Time: 5 min. (per sample)

Achieved result(s): predominantly < 2 - 3 mm
depending on the breaking behaviour of the different samples

Remark(s): Before grinding, steel and iron parts have been separated, also the power plugs.
The disintegration, especially of the circuit boards, should be done in two working steps:
1. Pre cutting with using bottom sieve of 6 mm
2. Fine grinding of a representative single sample using bottom sieve 4 or 2 mm
Recommendation: For sample preparation of electrical and electronic equipment the Heavy-Duty Cutting Mill SM 2000 is suitable under the above mentioned conditions.

Pictures of the sample

Fig. 1: Original sample of line cords and Cables (11189)

Fig. 2: (11189) SM 2000 bottom sieve 4 mm

Fig. 3: Original sample of PC circuit boards (11187)

Fig. 4: (11187) SM 2000 bottom sieve 6 and 2 mm