Task:

Application field: Agriculture

Material: soil samples (see pictures below)

Feed size: 0-2 mm

Feed quantity: 35 g (per sample)

Material specification(s): medium-hard, dry

Customer requirement(s): < 250 µm, for determination of carbon (C) nitrogen (N)

Subsequent analysis: TOC Total Bonded Organic Carbon

Solution:

Selected instrument(s): PM 400 Planetary Ball Mill

Configuration(s): Grind jar 125 ml, Zirconia;
6 Grinding balls Zirkonia 20 mm Ø;
Alternatively: grinding jar 125 ml, Achat
6 Grinding balls Agate 20 mm Ø

Parameter(s): 280 rpm

Time: 10 min. (7 min. with Zirconia jar)

Achieved result(s): < 250 µm, with both grinding sets

Remark(s): Generally it is possible to grind soil samples also in the Mixer Mill MM 400, but the maximum sample quantity for a 35 ml Zirconia jar is approx. 10 - 12 ml.

Recommendation: For sample preparation of soil samples the Planetary Ball Mill PM 400 is suitable under the above mentioned conditions.
Pictures of the sample

Fig. 1: Soil sample with clay fraction

Fig. 2: Soil sample with sand fraction