Task:

Application field: Building Materials

Material: Calcium Phosphate

Feed size: 0-3 mm (after pre crushing in BB 51)

Feed quantity: 100 g (for fine grinding)

Material specification(s): hard brittle, dry

Customer requirement(s): < 10 µm

Subsequent analysis: AAS Atomic Absorption-Spectroscopy

Solution:

Selected instrument(s): BB 51 Laboratory Jaw Crusher
PM 400 Planetary Ball Mill

Configuration(s): BB 51 breaking jaws and wearing sheets of Zirconia ( YTZ)
PM 400 grinding jar 2 x 250 ml, Type "C" Zirconia ( YTZ)
1. Jar 12 grinding balls 20 mm Ø;
2. Jar 5 grinding balls 30 mm Ø

Parameter(s): BB 51 gap size: 2 mm
PM 400 rotation: 320 rpm

Time: 30 min. (for fine grinding in PM 400)

Achieved result(s): < 20 µm, see sample

Remark(s): Pre crushing of the total quantity in jaw crusher BB 51. Two single samples of 100 g each for fine grinding in PM 400. To avoid sticking effects of the material during grinding, 8 - 10 drops of methanol have been added into the jars.
Recommendation:  For sample preparation of hard and brittle material, the jaw crusher BB51 and the planetary mill PM400 are suited for grinding under the above mentioned conditions.