**Application field:** Glass / Ceramics; Medicine / Pharmaceuticals

**Material:** Hydroxyl-Apatite (bio-ceramic);

**Feed size:** 0-1 mm

**Feed quantity:** 8 g + 18 ml iso propane alcohol (IPA) per grinding test

**Material specification:** hard brittle, dry

**Customer requirement:** < 0.5 µm; crystal modification

**Subsequent analysis:** Not defined

**Instrument:** PM 100 Planetary Ball Mill

**Configuration:** Grinding jar, 50 ml ZrO2 (YTZ), type "C"; 105 g (= 30 ml) grinding balls ZrO2 (YTZ) Ø3 mm.

**Parameter:** Rotational speed: 400 rpm; reverse mode (10 min interval)

**Time:** 2 h

1. Starting material: D50 = 2.95 µm; D90 = 5.34 µm;
2. WC grinding jar: D50 = 1.75 µm; D90 = 3.79 µm (greyish discolouration by fine wear debris);
3. ZrO2 grinding jar: D50 = 1.43 µm; D90 = 3.05 µm.

**Remark:** A dry milling process is not possible due to material adhesion to the bottom of the jar and the milling balls. After colloidal grinding in the WC jar (50 ml; 200 g = 22 ml grinding balls Ø3 mm WC; 8 g of sample) a greyish discolouration of the origin white powder appeared.

**Recommendation:** For the fine grinding of hard brittle hydroxy apatite powder our Planetary Ball Mill PM 100 is suitable according to the above mentioned conditions.
Picsures of the sample

**Fig. 1:** Optical micrograph of Hydroxyl Apatite (bio ceramic); Initial particle size

**Fig. 2:** Optical micrograph of Hydroxyl Apatite (bio ceramic); Initial particle size