AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs [0056][0057] appearing on page 12 of the Specification with the following paragraphs presenting the text more clearly:

[0056][0057]

By heating the droplets in a heated atmosphere, it is possible to volatilize the solvent contained in the droplets and to vaporize the reaction product to bring it into a gaseous state.

Further, by heating the reaction product in the gaseous state, it is possible to facilitate the change of bonding between atoms in the reaction product, thereby bringing the reaction product into a more stable atomic state (crystalline state).

Please replace paragraphs [0058] appearing on pages 12 and 13 of the Specification with the following paragraph presenting the text more clearly:

[0058]

The heated atmosphere is not particularly limited, but preferably contains plasma produced by ionization of an ambient gas. The plasma can more evenly apply very high energy to the droplets containing the amorphous reaction product so that the droplets are heated efficiently and evenly.

Please replace paragraph [0076] appearing on pages 17 and 18 of the Specification with the following paragraph presenting the text more clearly:

[0076]

The thus obtained particles mainly composed of a calcium phosphate-based compound preferably has an average particle diameter of about 5 to 300 nm and an average roundness coefficient C represented by the following formula (I) of about 0.8 to 0.99:

$$C= 4\pi S/L^2 \cdots (I)$$

wherein S (nm^2) represents an area of a projection image of a particle as a measuring object, and L (nm) represents a circumferential length of the projection image of the particle as a measuring object.

Please replace paragraph [0082] appearing on page 19 of the Specification with the following paragraph presenting the text more clearly:

[0082]

By setting the average particle diameter to a value within the above range, it is possible to particularly improve the filling properties of the particles, thereby particularly improving the density of a molded body of the particles and the density of a sintered body obtained by sintering the molded body.

Please replace paragraph [0083] appearing on page 19 of the Specification with the following paragraph presenting the text more clearly:

[0083]

Further, according to the present invention, particles are produced by crystal growth of a crystalline calcium phosphate-based compound obtained by crystallizing the amorphous reaction product, and therefore the thus obtained particles are mainly composed of a high-purity calcium phosphate-based compound.

Please replace paragraph [0099] appearing on page 24 of the Specification with the following paragraph presenting the text more clearly:

[0099]

On the other hand, in the chamber 4 provided adjacent to the lower end of the plasma torch 2, spherical fine particles of a calcium phosphate-based compound 8 are produced. More specifically, the slurry fed from the raw material feeding device 3 and atomized (divided into droplets) in the plasma torch 2 is reacted in the plasma flame 7, and is then vaporized into a mixture in a gaseous state. Then, the mixture in a gaseous state is rapidly cooled in the chamber 4 so that spherical fine particles of a calcium phosphate-based compound 8 are produced.

Please replace paragraph [0100] appearing on page 24 of the Specification with the following paragraph presenting the text more clearly:

[0100]

In the upper part of the chamber 4, there is provided a cooling means 10.

Examples of a method for cooling the mixture in a gaseous state by the cooling means 10 include, but are not limited to: bringing the mixture in a gaseous state into contact with a cooling gas 11 (see Fig. 1); and cooling a gas contained in the chamber 4.

Please replace paragraph [0106] appearing on page 26 of the Specification with the following paragraph presenting the text more clearly:

[0106]

First, particles of a crystalline calcium phosphate-based compound are prepared in such a manner as described above. Then, these particles of a crystalline calcium phosphate-based compound are molded into a desired shape to obtain a molded body.

Please replace paragraph [0107] appearing on page 26 of the Specification with the following paragraph presenting the text more clearly:

[0107]

Such a molded body can be produced by, for example, any one of the following various methods I to V: I) charging a slurry containing particles of a calcium phosphate-based compound into a desired mold; II) unevenly distributing the solid matter of the slurry by precipitating or centrifuging the slurry; III) charging the slurry into a desired mold and dehydrating the slurry to leave solid matter in the mold; IV) compression molding; and V) mixing particles of a calcium

phosphate-based compound and watery glue, charging the mixture into a mold, and drying the mixture.

Please replace paragraph [0156] appearing on page 37 of the Specification with the following paragraph presenting the text more clearly:

[0156]

On the other hand, the average roundness coefficient C of the fine particles produced in each of the Comparative Examples was less than 0.8. From the result, it has been confirmed that the fine particles produced in each of the Comparative Examples were very far from perfect spheres in shape.

Please replace paragraph [0157] appearing on pages 37 and 38 of the Specification with the following paragraph presenting the text more clearly:

[0157]

Furthermore, as a result of the analysis of the X-ray diffraction spectra shown in Figs. 8 to 12, it has been found that the impurity content in the fine particles produced in each of the Examples 1 and 7 to 10 was very low, and the fine particles produced in the Examples 1 and 7 to 10 were composed of high-purity hydroxyapatite.