steps of mixing a molybdenum powder and a silicon powder, and subjecting the obtained powder mixture to a spark plasma sintering process.

[0028]

To obtain the target of the present invention, first, an elemental molybdenum powder and an elemental silicon powder are prepared, and the powders are mixed. From the viewpoint of providing the molybdenum silicide phase with a fine structure, it is preferable to use, for the molybdenum powder, a powder in which the specific surface area as measured by the Brunauer-Emmett-Teller (BET) method is 4.0 m^2/g or greater. From the viewpoint of further enhancing this advantage, it is preferable that the specific surface area of the molybdenum powder is preferably 5.0 m^2/g or greater, more preferably 6.0 m^2/g or greater. The upper limit value of the specific surface area of the molybdenum powder is not particularly determined, but is preferably 8.0 m^2/g or less from the viewpoint of preventing aggregation of the molybdenum powder.

[0029]

On the other hand, it is preferable to use, for the silicon powder, a powder in which the specific surface area as measured by the BET method is 4.0 m^2/g or greater, from the viewpoint of providing the silicon phase and the molybdenum silicide phase with fine structures. From the viewpoint of further enhancing this advantage, it is preferable that the specific surface area of the silicon powder is preferably 5.0 m^2/g or greater, more preferably 6.0 m^2/g or greater. The upper limit value of the specific surface area of the silicon powder is not particularly determined, but is preferably 8.0 m^2/g or less from the viewpoint of preventing aggregation of the silicon powder.

[0030]

The respective specific surface areas of the molybdenum powder and the silicon powder can be measured according to the single-point BET method with, for example, an automatic surface area measurement device (Macsorb (registered trademark) HM model-1210 from Mountech Co. Ltd.) by employing a mixed gas (30 vol% nitrogen and 70 vol% helium) as the adsorption gas. The shapes of the molybdenum powder and the silicon powder are not particularly limited, so long as their specific surface areas are