silicide.

[0005] PTL 3 and PTL 4 below also disclose sputtering targets containing Si and a silicide.

Citation List

Patent Literature

[0006] PTL 1: Japanese Unexamined Patent Publication No. 2017-82314

PTL 2: Japanese Unexamined Patent Publication No. 2013-502368

PTL 3: Japanese Unexamined Patent Publication No. 2002-173765

PTL 4: Japanese Unexamined Patent Publication No. 2003-167324

Summary

[0006a] In one aspect of the present disclosure, there is provided a metal-Si based powder comprising a metal-Si based particle including a plurality of crystal phase grains,

wherein the crystal phase grains include a crystal phase containing a compound of a metal and Si.

[0006b] In another aspect of the present disclosure, there is provided a method for producing the metal-Si based powder disclosed herein, the method comprising:

a step of melting a mixture of a metal and Si by heating to form a melt; and

a step of ejecting a gas to the melt.

[0006c] In a further aspect of the present disclosure, there is provided a metal-Si based sintered body obtained by firing the metal-Si based powder disclosed herein.

[0006d] In another aspect of the present disclosure, there is provided a sputtering target comprising the metal-Si based sintered body disclosed

herein.

[0006e] In a further aspect of the present disclosure, there is provided a thin film manufacturing method comprising a step of performing sputtering using the sputtering target disclosed herein to form a thin film on a surface of a base.

Technical Problem

[0007] However, the composition or the sputtering targets of PTL 1 to PTL 4 above have room for improvement in achieving both a low amount of oxygen and high strength.

[0008] An object of the present invention is to provide a metal-Si based powder that enables the production of a sintered body having a low amount of oxygen and high strength, a method for producing the same, a metal-Si based sintered body, a sputtering target, and a metal-Si based thin film manufacturing method.

Solution to Problem

[0009] As a result of extensive studies on silicide-based powders, the inventors of the present invention have found that a plurality of crystal phase grains can be included in a metal-Si based particle contained in a metal-Si based powder by employing, for example, a gas atomization method and that a sintered body obtained by firing the metal-Si based powder has a low amount of oxygen and high strength, and completed