many primary crystals are present. Furthermore, when the size of the composition is increased, it becomes difficult to control the crystal texture due to the difference in the cooling rate, and the unevenness of strength becomes large.

[0004] In addition, in Patent Literatures 3 and 4, nothing is mentioned about a system including a large amount of a silicide because the silicide phase is brittle.

Citation List

Patent Literature

[0005] Patent Literature 1: Japanese Unexamined Patent Publication No. 2017-82314

Patent Literature 2: Japanese Unexamined Patent Publication No. 2013-502368 (Translation of PCT International Application Publication)

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

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

Summary

[0005a] In an aspect of the present disclosure, there is provided a Cr-Si-based sintered body comprising Cr (chromium) and silicon (Si), wherein the crystal structure attributed by X-ray diffraction is composed of chromium silicide ($CrSi_2$) and silicon (Si), a $CrSi_2$ phase is present at 60 wt% or more in a bulk, a density of the sintered body is 95% or more, ~~and~~ an average grain size of the $CrSi_2$ phase is ~~60 μm or less~~1 μm to 20 μm, and total of inevitable metal impurities other than Cr and Si in the Cr-Si-based sintered body is 1 wt% or less.

[0005b] In another aspect of the present disclosure, there is provided a

CLAIMS

1. A Cr-Si-based sintered body comprising Cr (chromium) and silicon (Si), wherein the crystal structure attributed by X-ray diffraction is composed of chromium silicide ($CrSi_2$) and silicon (Si), a $CrSi_2$ phase is present at 60 wt% or more in a bulk, a density of the sintered body is 95% or more, ~~and~~ an average grain size of the $CrSi_2$ phase is ~~60~~ 1 μm to 20 μm ~~or less~~, and total of inevitable metal impurities other than Cr and Si in the Cr-Si-based sintered body is 1 wt% or less.

2. The Cr-Si-based sintered body according to claim 1, wherein a flexural strength is 100 MPa or more.

3. The Cr-Si-based sintered body according to claim 1 or 2, wherein an amount of oxygen in the bulk is 1 wt% or less.

4. A sputtering target comprising the Cr-Si-based sintered body according to any one of claims 1 to 3.

5. A method for producing a thin film, the method comprising performing sputtering using the sputtering target according to claim 4.