the resistivity is reduced), a sputtering target using a sintered body provided by adding, to a Cr-Si-based sintered body, the third element such as carbon or boron. However, it is difficult to form such a sintered body so as to have high density. Thus, use of, as a sputtering target, such a sintered body to which the third element is added causes generation of a large amount of particles, so that film products are obtained at low yield, namely, productivity.

Citation List

Patent Literature

[0005]

PTL 1: Japanese Unexamined Patent Application Publication No. 2017-82314

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

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

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

Summary

[0005a]

In an aspect of the present disclosure, there is provided a Cr-Si-C-based sintered body comprising chromium (Cr), silicon (Si) and carbon (C), wherein the sintered body has a relative density of 90% or more and a porosity of 13% or less.

[0005b]

In another aspect of the present disclosure, there is provided a method for producing the Cr-Si-C-based sintered body disclosed herein, the method comprising a step of mixing together a gas atomization powder of chromium and silicon and a carbon source containing at least one of chromium or silicon and carbon to obtain an alloy-raw-material powder and a baking step of hot-pressing the alloy-raw-material powder in a vacuum atmosphere, at a pressure of 50 MPa or less and a baking temperature of 1350°C or more and 1800°C or less.

[0005c]

In a further aspect of the present disclosure, there is provided a sputtering target comprising the Cr-Si-C-based sintered body disclosed herein.

[0005d]

In another aspect of the present disclosure, there is provided a method for producing a film by sputtering using the sputtering target disclosed herein.

Technical Problem

[0006]

An object of the present invention is to provide a high-density Cr-Si-C-based sintered body comprising chromium (Cr), silicon (Si) and carbon (C) and is furthermore to