

**METAL SPUTTERING TARGET, METAL SPUTTERING
TARGET STRUCTURE, METHOD FOR PRODUCING FILM
USING SAME, AND METHOD FOR PRODUCING METAL
SPUTTERING TARGET**

5

ABSTRACT

A metal sputtering target includes a metal having a body-centered cubic structure or a face-centered cubic structure. In the metal sputtering target, when a cross section perpendicular to a sputtering surface of the metal sputtering target is observed using an electron backscatter diffraction method to analyze crystal orientations in a normal direction (ND direction) of the sputtering surface, the proportion, relative to all measurement points, of measurement points having a plane orientation within 15° from the plane orientation with the highest intensity in an inverse pole figure space obtained from all the measurement points is 35% or more by area, and when a crystal orientation distribution function of the metal sputtering target is represented by Euler angles (ϕ_1 , Φ , ϕ_2), which express a crystal orientation, in orientation groups of ϕ_1 : k° ($0 \leq k \leq 90$), Φ : x° ($0 \leq x \leq 90$), and ϕ_2 : y° ($0 \leq y \leq 90$), for all combinations of (x, y) for which the average value of orientation density in the range of $0 \leq k \leq 90$ is 1.2 or more, the coefficient of variation of the average value is 0.5 or less.

[Fig. 1]

25