

Cr ALLOY AND SPUTTERING TARGET MATERIAL FOR MAGNETIC
RECORDING, AND PERPENDICULAR MAGNETIC RECORDING
MEDIUM USING THE SAME

ABSTRACT

There are provided a Cr-based alloy including a BCC
(body-centered cubic) structure having a lattice constant with a
5 small mismatch with a (001) plane of MgO and a fine, uniform
crystal grain distribution, and a sputtering target material
including the alloy, for an orientation controlling layer for a MgO
film. The alloy according to the present invention is a Cr alloy
for magnetic recording, including in at. %: one or more elements
10 selected from the group consisting of Al, Ti, Mo, W, V, and Ru in
a total amount in which a value of a in Formula (1): $a^3 = N/p \sum(m_n A_n)$ (1) [wherein a represents a lattice constant, N
represents the Avogadro's number, p represents a calculated
density (g/cm^3), m represents the number of elements existing
15 in a unit lattice, and A represents an atomic weight] is $2.919 \text{ \AA}$
or more and $3.037 \text{ \AA}$ or less; 0.1 to 5% in total of one or more
elements selected from the group consisting of B, C, P, Si, and
Sn; and the balance Cr and unavoidable impurities.