

ALLOY FOR SOFT-MAGNETIC THIN-FILM LAYER ON
PERPENDICULAR MAGNETIC RECORDING MEDIUM, AND
SPUTTERING-TARGET MATERIAL

ABSTRACT

There is provided an alloy for a soft magnetic thin film layer in a perpendicular magnetic recording medium having a low coercive force. The alloy comprises: one or more selected from the group consisting of Ti, Zr, Hf, Nb, Ta, and B; one or two of W and Sn (wherein a part or all of one or two of W and Sn may be substituted by one or two of V and Mn); optionally, one or more selected from the group consisting of Al, Cr, Mo, Si, P, C, and Ge; optionally, one or two of Ni and Cu; and the balance Co and Fe, and satisfies, in at.%, (1) $6 \leq \text{Ti}\% + \text{Zr}\% + \text{Hf}\% + \text{Nb}\% + \text{Ta}\% + \text{B}\% / 2 \leq 24$; (2) $\text{Zr}\% + \text{Hf}\% \leq 14$; (3) $3 \leq \text{W}\% + \text{Sn}\% \leq 19$; (4) $0.20 \leq \text{Fe}\% / (\text{Fe}\% + \text{Co}\%) \leq 0.90$; (5) $3 \leq \text{W}\% + \text{Sn}\% + \text{V}\% + \text{Mn}\% \leq 19$ (wherein $\text{V}\% + \text{Mn}\%$ may be zero (0)); (6) $0 \leq \text{Al}\% + \text{Cr}\% + \text{Mo}\% + \text{Si}\% + \text{P}\% + \text{C}\% + \text{Ge}\% \leq 9$; and (7) $0 \leq \text{Ni}\% + \text{Cu}\% \leq 5$.