

CoFe-BASED ALLOY FOR SOFT MAGNETIC FILM LAYER IN
PERPENDICULAR MAGNETIC RECORDING MEDIUM AND
SPUTTERING TARGET MATERIAL

ABSTRACT

There is provided a CoFe-based alloy and a sputtering target material for a soft magnetic thin film layer in a perpendicular magnetic recording medium. The alloy is an alloy for a soft magnetic film layer in a perpendicular magnetic recording medium, wherein the alloy includes: one or more selected from Ge, Ru, Rh, Pd, Re, Os, Ir, and Pt; one or more selected from Sc, Y, lanthanoids (atomic numbers 57 to 71), Ti, Zr, Hf, V, Nb, Ta, Mo, W, and B; and the balance of Co and Fe with unavoidable impurities; and satisfies, in atomic%, all of the following formulae (a) to (d): (a) $0.1\% \leq \text{TCR} \leq 10\%$; (b) $5\% \leq \text{TAM} \leq 25\%$; (c) $13\% \leq \text{TCR}/2 + \text{TAM} + \text{TNM} \leq 25\%$; and (d) $0 \leq \text{Fe\%}/(\text{Fe\%} + \text{Co\%}) \leq 0.80$.

FIGURE 1