CLAIMS

1. A soft magnetic alloy for magnetic recording, comprising in at%:

Fe: 0 to 70%;

(A) 5 to 20% of one or two or more elements selected from the group consisting of Ti, Zr, and Hf;

(B) 0 to 30% of one or two or more elements selected from the group consisting of Cr, Mo and W;

(C) 0 to 30% of one or two or more elements selected from the group consisting of V, Nb, and Ta;

(D) 0 to 30% of one or two elements selected from the group consisting of Ni and Mn;

(E) 0 to 5% of one or two elements selected from the group consisting of Al and Cu; and

(F) 0 to 10% of one or two or more elements selected from the group consisting of Si, Ge, P, B, and C; and

the balance Co and unavoidable impurities.

2. The soft magnetic alloy for magnetic recording according to claim 1, consisting of in at%:

Fe: 0 to 70%;

(A) 5 to 20% of one or two or more elements selected from the group consisting of Ti, Zr, and Hf;

(B) 0 to 30% of one or two or more elements selected from the group consisting of Cr, Mo and W;

(C) 0 to 30% of one or two or more elements selected from the group consisting of V, Nb, and Ta;

(D) 0 to 30% of one or two elements selected from the group consisting of Ni and Mn;

(E) 0 to 5% of one or two elements selected from the group consisting of Al and Cu;

(F) 0 to 10% of one or two or more elements selected from the group consisting of Si, Ge, P, B, and C; and

the balance Co and unavoidable impurities.

3. The soft magnetic alloy for magnetic recording according to claim 1 or 2, comprising 5 to 30 at% of the (B) group element, wherein the sum of the (A) group element and the (B) group element is 10 to 35 at%.

4. The soft magnetic alloy for magnetic recording according to any one of claims 1 to 3, comprising more than 0% and 30 at% or less of the (C) group element.

5. The soft magnetic alloy for magnetic recording according to any one of claims 1 to 4, comprising more than 0% and 30 at% or less of the (D) group element.

6. The soft magnetic alloy for magnetic recording according to any one of claims 1 to 5, comprising more than 0% and 5 at% or less of the (E) group element.

7. The soft magnetic alloy for magnetic recording according to any one of claims 1 to 6, comprising more than 0% and 10 at% or less of the (F) group element.

8. A sputtering target material made of the soft magnetic alloy for magnetic recording according to any one of claims 1 to 7.

9. A magnetic recording medium comprising a soft magnetic film made of the soft magnetic alloy for magnetic recording according to any one of claims 1 to 7.

Claims:

1. A soft magnetic alloy for magnetic recording, comprising, in at%, Fe: 0 to 70%; 5 to 20% of one or two or more elements selected from group (A); 5 to 30% of one or two or more elements selected from group (B), wherein the sum of the (A) group element and the (B) group element is 10 to 35 at%; and the balance Co and unavoidable impurities, wherein a crystallization temperature is 773K or more.
(A) Ti, Zr, Hf
(B) Cr, Mo, W

2. The soft magnetic alloy for magnetic recording according to claim 1, further comprising, in at%, 30 % or less of one or two or more elements selected from group (C), the balance Co and unavoidable impurities.
(C) V, Nb, Ta

3. The soft magnetic alloy for magnetic recording according to claim 1 or 2, further comprising, in at%, 30 % or less of a (D) element, the balance Co and unavoidable impurities.
(D) Mn

4. The soft magnetic alloy for magnetic recording according to any one of claims 1 to 3, further comprising, in at%, 5 at% or less of one or two elements selected from group (E), the balance Co and unavoidable impurities.
(E) Al, Cu

5. The soft magnetic alloy for magnetic recording according to any one of claims 1 to 4, further comprising, in at%, 10 at% or less of one or two or more elements selected from group (F), the balance Co and unavoidable impurities.
(F) Si, Ge, P, B, C

6. A sputtering target material comprising the soft magnetic alloy for magnetic recording according to any one of claims 1 to 5.

7. A magnetic recording medium comprising the soft magnetic alloy for magnetic recording according to any one of claims 1 to 5.