

Permendur alloy

Permendur is a cobalt-iron soft magnetic alloy with equal parts of cobalt and iron. It has high permeability with little loss and highest flux densities at saturation point available amongst commercial soft magnetic alloys. Its magnetic transition temperature is 980°C.

Chemical Composition, %

element	Co	Fe	V	Ni	Cr	C	Mn	Si	P	S
min.	47.5	bal.	1.75	0.25	0.15	0.025	0.15	0.15	0.015	0.01
max.	49.5		2.10							

chemical Composition according to ASTM A801, R30005. Some compositional limits of other specifications may vary slightly.

Designation and standards

National Standards	Material designation	Chemical composition	Rod and bar
ASTM	UNS R30005	ASTM A801	ASTM A801
GB/T	1J22	GB/T 15002	GB/T 15002

Density 8.12g/cm³

Corrosion resistance

- corrosion resistant in dry atmospheres at room temperature
- Corrosion can occur in the form of rust in humid or moist atmospheres.

Applications

Typical applications are:

- rotor and stator laminations in motors and generators for aircraft power generation applications
- magnetic cores in electrical equipment requiring high permeability at high magnetic flux densities