

Magnetic Materials

Material	Form	Apprx % Composition					Permeability at B=20 gauss	Maximum permeability	Saturation flux density B gauss
		Fe	Ni	Co	Mo	Other			
Cold rolled steel	Sheet	98.5	---	---	---	---	180	2,000	21,000
Iron	Sheet	99.91	---	---	---	---	200	5,000	21,500
Purified iron	Sheet	99.95	---	---	---	---	5,000	180,000	21,500
4% Silicon-iron Grain-oriented ¹	Sheet	96	---	---	---	4 Si	500	7,000	19,700
	Sheet	97	---	---	---	3 Si	1,500	30,000	20,000
45 Permalloy	Sheet	54.7	45	---	---	---	2,500	25,000	16,000
45 Permalloy ²	Sheet	54.7	45	---	---	---	4,000	50,000	16,000
Hipernik	Sheet	50	50	---	---	---	4,500	70,000	16,000
Monimax	Sheet	---	---	---	---	---	2,000	35,000	15,000
Sinimax	Sheet	---	---	---	---	---	3,000	35,000	11,000
78 Permalloy	Sheet	21.2	78.5	---	---	0.3 Mn	8,000	100,000	10,700
4-79 Permalloy	Sheet	16.7	79	---	4	0.3 Mn	20,000	100,000	8,700
Mu metal	Sheet	18	---	---	---	---	20,000	100,000	6,500
Supermalloy	Sheet	15.7	---	---	---	---	100,000	800,000	8,000
Permendur	Sheet	49.7	---	---	---	---	800	5,000	24,500
2V Permendur	Sheet	49	---	---	---	---	800	4,500	24,000
Hiperco	Sheet	64	---	---	---	---	650	10,000	24,200
2-81 Permalloy	Insulated powder	17	---	---	---	---	125	130	8,000
Carbonyl iron	Insulated powder	99.9	---	---	---	---	55	132	---
Ferroxcube III	Sintered powder		---	---	---	---	1,000	1,500	2,500

Notes:

1. Properties in direction of rolling.
2. Similar properties for Nicaloi, 4750 alloy, Carpenter 49, Armco 48.
3. At saturation.
4. Q, quench or controlled cooling.

Source: "Electrical Engineering Handbook", edited by Richard C. Dorf, IEEE Press, ©1993, ISBN 0-8493-0185-8.