LEADERSHIP IN SOFT MAGNETIC ALLOYS

Soft magnetic alloys to meet your design requirements

Choose from high induction, high permeability, corrosion resistant, and low core loss alloys supplied as strip, bar, or powder—all produced to exacting standards of consistency for uniform magnetic response using premium melting vacuum technologies.

Carpenter Electrification soft magnetic alloys have been used across a variety of markets in applications ranging from simple magnetic cores to the most complex electronic circuitry.

AEROSPACE AND DEFENSE

- Electric propulsion systems
- Generators
- Auxiliary power units (APUs)
- Motors

CONSUMER ELECTRONICS

- Electromagnetic shielding
- Current transformers
- Audio transducers
- Haptics
- Circuit protection

AUTOMOTIVE AND INDUSTRIAL

- Valves/injectors/actuators
- Sensors
- Servo motors

SOFT MAGNETIC ALLOY PROPERTIES

ALLOY CATEGORY	ALLOYS	B_{SAT} (kG)	Hc (Oe)	*p* (μ OHM M)	μMAX
High Magnetic Saturation Alloys	Hiperco 50	24.0	0.55	0.40	24,000
	Hiperco 50A	24.0	0.50	0.40	24,000
	Hiperco 50HS	24.0	6.20	0.42	2,500
	Hiperco 27	22.9	2.75	0.19	2,100
	HypoCore	21.0	0.28	0.52	19,000
High Permeability Alloys	High Permeability 49 / Hy Ra 49	16.0	0.04	0.48	150,000
	HyMu 80	7.5	0.014	0.58	>250,000
	HyMu 800	7.5	0.002	0.62	>250,000
Magnetic Iron Alloys	Silicon Core Iron A	21.0	0.44	0.25	14,800
	Silicon Core Iron B	20.6	0.47	0.40	11,200
	Silicon Core Iron B-FM	20.6	0.47	0.40	11,200
	Silicon Core Iron C"	20.0	0.49	0.58	9,000
	Core Iron	18.0	0.50	0.13	9,400
	Electrical Iron	18.0	0.50	0.13	9,400
Corrosion Resistant Magnetic Alloys	CHROME CORE 8 FM	18.6	2.50	0.49	3,100
	CHROME CORE 12 FM	17.7	2.50	0.57	3,100
	CHROME CORE 13 FM	17.0	1.80	0.81	2,900
	CHROME CORE 13 XP	17.0	1.80	0.81	3,200
	CHROME CORE 18 FM	15.0	2.50	0.75	1,500
	430FR	15.2	2.50	0.60	2,500

SOFT MAGNETIC ALLOY POWDER PROPERTIES

ALLOY CATEGORY	ALLOY POWDERS	B_{SAT} (kG)	Hc (Oe)	*p* (μ OHM M)	D50 (μM)	TRUE DENSITY (G/CC)
High Magnetic Saturation Alloys	FeCo 50	23.2	<40	0.40	8.6	8.13
	FeCo 35	24.0	<40	0.40	8.8	7.99
High Permeability Alloys	Fe50Ni	15.3	<22	0.48	D90 < 10	8.17
	HyMu 800	8.7	<5	0.58	15-25	8.70
Low Core Loss Alloys	Amorphous	15.1	<10	1.30	20-25	7.01
	Fe6Si	18.0	<13	0.80	D90 < 22	7.40
	Sendust	8.1	<5	1.00	15-20	6.80
Corrosion Resistant Magnetic Alloys	430L	16.3	<25	0.60	D90 < 31	7.62
	Fe8Cr	19.1	<29	0.49	D90 < 7	7.72
High Strength Alloys	Nimark 300	17.8	<5	0.40	25-35	8.02

Figures are nominal.

Applications specifically suggested for material described herein are made solely for the purpose of illustration to enable the reader to make his/her own evaluation and are not intended as warranties, either express or implied, of fitness for these or other purposes. There is no representation that the recipient of this literature will receive updated editions as they become available.

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Contact us

Contact us to learn how our advanced soft magnetic materials and component solutions are delivering new levels of motor and vehicle performance.

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