

Magnetic Properties of Neodymium Iron Boron

	Residual Induction	Coercive Force	Intrinsic Coercive Force	Max Energy Product	Max Operation Temperature	Temp Coefficient of Br	Temp Coefficient of Hc
Grade	Br	Hc	Hci	BH Max	Max Temp	α_{Br}	α_{Hc}
	kGs	kOe	kOe	MGOe	°C / °F	% / °C	% / °C
NdFeB 28SH	10.2~10.9	≥9.5	≥20	26~29	150 / 302	-0.11	-0.60
NdFeB 28UH	10.2~10.9	≥9.5	≥25	26~29	180 / 356	-0.10	-0.55
NdFeB 28EH	10.2~10.9	≥9.5	≥30	26~29	200 / 392	-0.10	-0.50
NdFeB 28AH	10.2~10.9	≥9.5	≥34	26~29	230 / 446	-0.09	-0.40
NdFeB 30M	10.8~11.3	≥10.0	≥14	28~31	100 / 212	-0.12	-0.65
NdFeB 30H	10.8~11.3	≥10.0	≥17	28~31	120 / 248	-0.11	-0.65
NdFeB 30SH	10.8~11.3	≥10.0	≥20	28~31	150 / 302	-0.11	-0.60
NdFeB 30UH	10.8~11.3	≥10.0	≥25	28~31	180 / 356	-0.10	-0.55
NdFeB 30EH	10.8~11.3	≥10.0	≥30	28~31	200 / 392	-0.10	-0.50
NdFeB 30AH	10.8~11.3	≥10.0	≥34	28~31	230 / 446	-0.09	-0.40
NdFeB 33	11.3~11.7	≥10.2	≥12	31~34	80 / 176	-0.12	-0.70
NdFeB 33M	11.3~11.7	≥10.2	≥14	31~34	100 / 212	-0.12	-0.65
NdFeB 33H	11.3~11.7	≥10.2	≥17	31~34	120 / 248	-0.11	-0.65
NdFeB 33SH	11.3~11.7	≥10.2	≥20	31~34	150 / 302	-0.11	-0.60
NdFeB 33UH	11.3~11.7	≥10.2	≥25	31~34	180 / 356	-0.10	-0.55
NdFeB 33EH	11.3~11.7	≥10.2	≥30	31~34	200 / 392	-0.10	-0.50
NdFeB 33AH	11.3~11.7	≥10.2	≥34	31~34	230 / 446	-0.09	-0.40
NdFeB 35	11.7~12.2	≥10.8	≥12	33~36	80 / 176	-0.12	-0.70
NdFeB 35M	11.7~12.2	≥10.8	≥14	33~36	100 / 212	-0.12	-0.65
NdFeB 35H	11.7~12.2	≥10.8	≥17	33~36	120 / 248	-0.11	-0.65
NdFeB 35SH	11.7~12.2	≥10.8	≥20	33~36	150 / 302	-0.11	-0.60
NdFeB 35UH	11.7~12.2	≥10.8	≥25	33~36	180 / 356	-0.10	-0.55
NdFeB 35EH	11.7~12.2	≥10.8	≥30	33~36	200 / 392	-0.10	-0.50
NdFeB 35AH	11.7~12.2	≥10.8	≥34	33~36	230 / 446	-0.09	-0.40
NdFeB 38	12.2~12.5	≥11.0	≥12	36~39	80 / 176	-0.12	-0.70
NdFeB 38M	12.2~12.5	≥11.0	≥14	36~39	100 / 212	-0.12	-0.65
NdFeB 38H	12.2~12.5	≥11.0	≥17	36~39	120 / 248	-0.11	-0.65
NdFeB 38SH	12.2~12.5	≥11.0	≥20	36~39	150 / 302	-0.11	-0.60
NdFeB 38UH	12.2~12.5	≥11.0	≥25	36~39	180 / 356	-0.10	-0.55
NdFeB 38EH	12.2~12.5	≥11.0	≥30	36~39	200 / 392	-0.10	-0.50

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Grade	Br	Hc	Hci	BH Max	Max Temp	α Br	α Hc
	kGs	kOe	kOe	MGOe	°C / °F	% / °C	% / °C
NdFeB 40	12.5~12.8	≥11.0	≥12	38~41	80 / 176	-0.12	-0.70
NdFeB 40M	12.5~12.8	≥11.2	≥14	38~41	100 / 212	-0.12	-0.65
NdFeB 40H	12.5~12.8	≥11.2	≥17	38~41	120 / 248	-0.11	-0.65
NdFeB 40SH	12.5~12.8	≥11.2	≥20	38~41	150 / 302	-0.11	-0.60
NdFeB 40UH	12.5~12.8	≥11.2	≥25	38~41	180 / 356	-0.10	-0.55
NdFeB 40EH	12.5~12.9	≥11.2	≥30	38~41	200 / 392	-0.10	-0.50
NdFeB 42	12.8~13.2	≥11.0	≥12	40~43	80 / 176	-0.12	-0.70
NdFeB 42M	12.8~13.2	≥11.4	≥14	40~43	100 / 212	-0.12	-0.65
NdFeB 42H	12.8~13.2	≥11.4	≥17	40~43	120 / 248	-0.11	-0.65
NdFeB 42SH	12.8~13.2	≥11.4	≥20	40~43	150 / 302	-0.11	-0.60
NdFeB 42UH	12.8~13.2	≥11.4	≥25	40~43	180 / 356	-0.10	-0.55
NdFeB 42EH	12.8~13.2	≥11.4	≥30	40~43	190 / 374	-0.10	-0.50
NdFeB 45	13.2~13.7	≥11.0	≥12	43~46	80 / 176	-0.12	-0.70
NdFeB 45M	13.2~13.7	≥11.4	≥14	43~46	100 / 212	-0.12	-0.65
NdFeB 45H	13.2~13.7	≥11.4	≥17	43~46	120 / 248	-0.11	-0.65
NdFeB 45SH	13.2~13.7	≥12.0	≥20	43~46	150 / 302	-0.11	-0.60
NdFeB 45UH	13.2~13.7	≥11.0	≥24	43~46	170 / 338	-0.10	-0.55
NdFeB 48	13.6~14.2	≥11.0	≥12	45~49	80 / 176	-0.12	-0.70
NdFeB 48M	13.6~14.2	≥12.5	≥14	45~49	100 / 212	-0.12	-0.65
NdFeB 48H	13.6~14.2	≥12.5	≥17	45~49	120 / 248	-0.11	-0.65
NdFeB 48SH	13.6~14.2	≥12.5	≥20	45~49	150 / 302	-0.11	-0.60
NdFeB 50	13.9~14.4	≥10.5	≥12	47~51	80 / 176	-0.12	-0.70
NdFeB 50M	13.9~14.4	≥13.0	≥14	47~51	100 / 212	-0.12	-0.65
NdFeB 50H	13.9~14.4	≥13.0	≥17	47~51	110 / 230	-0.11	-0.65
NdFeB 50SH	13.9~14.4	≥13.0	≥19	47~51	140 / 284	-0.11	-0.60
NdFeB 52	14.2~14.6	≥10.5	≥12	49~53	80 / 176	-0.12	-0.70
NdFeB 52M	14.2~14.6	≥13.0	≥14	49~53	90 / 194	-0.12	-0.65
NdFeB 52H	14.2~14.5	≥13.0	≥16	49~53	110 / 230	-0.11	-0.65
NdFeB 52SH	14.2~14.5	≥13.0	≥19	48~52	140 / 284	-0.11	-0.60

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	kGs	kOe	kOe	MGOe	°C / °F	% / °C	% / °C
NdFeB 54M	14.4~14.8	≥13.0	≥14	51~55	90 / 194	-0.12	-0.65
NdFeB 54H	14.4~14.8	≥13.0	≥16	51~55	110 / 230	-0.11	-0.65
NdFeB 55	14.5~15.1	≥10.5	≥11	52~55	60 / 140	-0.12	-0.70
NdFeB 56	14.7~15.1	≥10.5	≥11	53~56	60 / 140	-0.12	-0.70

Physical Properties of Neodymium

Bending Strength	250 MPa
Compressive Strength	1000~1100 MPa
Coefficient of Thermal Expansion	-1x10-6/°C(20~100°C ⊥C) 6x10-6/°C(20~100°C C)
Curie Temp	310 -350 °C
Density	7.2-7.8 g/cm ³
Poisson's Ratio	0.24
Relative Permeability	1.05 μ_r
Resistivity	125~155 $\mu\Omega \cdot \text{cm}$
Specific Heat	0.44 J/(g • °C)
Temp Coefficient of Hcj	-0.70~-0.50 %/°C
Thermal Conductivity	6~8 W/m • °C
Vickers Hardness	460~660 HV
Young's Modulus	160000 MPa
Bending Strength	13729 Pa
Compressive Strength	88259 Pa

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