NdFeB : NEODYMIUM IRON BORON

Rare earth permanent magnet NdFeB is a new kind of magnetic material developed in the 1980's with excellent magnetic characteristics (high energy product and high coercive force etc.) and relatively low cost.

It is getting to replace the traditional magnets of hard ferrite, AlNiCo and SmCo in many fields such as electro-acoustic devices, electric motors, sensors/transducers, instruments and meters, auto industry, petro-chemical industry and magnetic health-care products etc.

Widely used in various electrical appliances, hard disk, generators, magnetic assemblies, etc.

Material Information

- Produced by powder metallurgical method with chemical composition of Nd2Fe14B.
- High resistance to demagnetization.
- High magnetic values (Br, bHc, iHC und (BH)max).
- Excellent cost to performance ratio.
- Reasonable temperature stability.
- Very brittle & hard.
- Poorest corrosion resistance of all commercial magnetic materials.
- Not suitable for application which exposed in high temperature conditions.

Typical Physical Properties

Curie Temperature (°C)	310-370
Maximum Operating Temperature (°C)	80-240
Resistivity (μ ohm.cm)	160
Hardness (Hv)	560-580
Density (g/cm3)	7.40
Relative Recoil Permeability (μrec)	1.05
Saturation Field Strength, kOe (kA/m)	30-40 (2400-3200)
Temperature Coefficient of Br (%/°C)	-0.12 ~ -0.10
Temperature Coefficient of iHc (%/°C)	-0.6

Dimension Range / Nominal Tolerance of NdFeB Magnets

RING MAGNET	OUTER DIA (mm)	INNER DIA (mm)	THICKNESS (mm)
Maximum	160	140	50
Minimum	2.6	1.8	0.5
Tolerance	±0.1	±0.1	±0.1
BLOCK MAGNET	LENGTH (mm)	WIDTH (mm)	THICKNESS (mm)
Maximum	150	50	30
Minimum	2.0	1.5	0.5
Tolerance	±0.1	±0.1	±0.1
DISC MAGNET	DIAMETER (mm)	THICKNESS (mm)	
Maximum	200	35	
Minimum	1.2	0.5	
Tolerance	±0.1	±0.1	

Surface Treatments

Type	Information
Metallic	Zinc, Nickel, Nickel + Nickel, Nickel + Tin, Nickel + Copper + Nickel, Gold
Organic	Epoxy, Nickel + Epoxy Coating
Temporary	Surface Passivation

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Magnetic Properties of Sintered NdFeB Magnets

Grade	Remanence Br		Coercivity Hcb		Intrinsic Coercivity Hcj		Max. Energy Product (BH)max		Max. Working Temperature
	T	kGs	kA/m	kOe	kA/m	kOe	kJ/m3	MGOe	°C
N30	1.08-1.13	10.8-11.3	≥798	≥10.0	≥955	≥12	223-247	28-31	80
N33	1.13-1.17	11.3-11.7	≥836	≥10.5	≥955	≥12	247-271	31-34	80
N35	1.17-1.22	11.7-12.2	≥868	≥10.9	≥955	≥12	263-287	33-36	80
N38	1.22-1.25	12.2-12.5	≥899	≥11.3	≥955	≥12	287-310	36-39	80
N40	1.25-1.28	12.5-12.8	≥907	≥11.4	≥955	≥12	302-326	38-41	80
N42	1.28-1.32	12.8-13.2	≥915	≥11.5	≥955	≥12	318-342	40-43	80
N45	1.32-1.38	13.2-13.8	≥923	≥11.6	≥955	≥12	342-366	43-46	80
N48	1.38-1.42	13.8-14.2	≥923	≥11.6	≥955	≥12	366-390	46-49	80
N50	1.40-1.45	14.0-14.5	≥796	≥10.0	≥876	≥11	382-406	48-51	80
N52	1.43-1.48	14.3-14.8	≥796	≥10.0	≥876	≥11	398-422	50-53	80
N55	1.46-1.52	14.6-15.2	≥796	≥10.0	≥876	≥11	414-430	52-54	80
N35M	1.17-1.22	11.7-12.2	≥868	≥10.9	≥1114	≥14	263-287	33-36	100
N38M	1.22-1.25	12.2-12.5	≥899	≥11.3	≥1114	≥14	287-310	36-39	100
N40M	1.25-1.28	12.5-12.8	≥923	≥11.6	≥1114	≥14	302-326	38-41	100
N42M	1.28-1.32	12.8-13.2	≥955	≥12.0	≥1114	≥14	318-342	40-43	100
N45M	1.32-1.38	13.2-13.8	≥995	≥12.5	≥1114	≥14	342-366	43-46	100
N48M	1.37-1.43	13.7-14.3	≥1027	≥12.9	≥1114	≥14	366-390	46-49	100
N50M	1.40-1.45	14.0-14.5	≥1033	≥13.0	≥1114	≥14	382-406	48-51	100
N52M	1.43-1.48	14.3-14.8	≥1050	≥13.2	≥1114	≥14	398-422	50-53	100
N54M	1.45-1.50	14.5-15.0	≥1051	≥13.2	≥1114	≥14	414-438	52-55	100
N35H	1.17-1.22	11.7-12.2	≥868	≥10.9	≥1353	≥17	263-287	33-36	120
N38H	1.22-1.25	12.2-12.5	≥899	≥11.3	≥1353	≥17	287-310	36-39	120
N40H	1.25-1.28	12.5-12.8	≥923	≥11.6	≥1353	≥17	302-326	38-41	120
N42H	1.28-1.32	12.8-13.2	≥955	≥12.0	≥1353	≥17	318-342	40-43	120
N45H	1.32-1.36	13.2-13.6	≥963	≥12.1	≥1353	≥17	342-366	43-46	120
N48H	1.37-1.43	13.7-14.3	≥995	≥12.5	≥1353	≥17	366-390	46-49	120
N50H	1.40-1.45	14.0-14.5	≥1011	≥12.7	≥1353	≥17	382-406	48-51	120
N52H	1.43-1.48	14.3-14.8	≥1027	≥12.9	≥1353	≥17	398-422	50-53	120
N35SH	1.17-1.22	11.7-12.2	≥876	≥11.0	≥1592	≥20	263-287	33-36	150
N38SH	1.22-1.25	12.2-12.5	≥907	≥11.4	≥1592	≥20	287-310	36-39	150
N40SH	1.25-1.28	12.5-12.8	≥939	≥11.8	≥1592	≥20	302-326	38-41	150
N42SH	1.28-1.32	12.8-13.2	≥987	≥12.4	≥1592	≥20	318-342	40-43	150
N45SH	1.32-1.38	13.2-13.8	≥1003	≥12.6	≥1592	≥20	342-366	43-46	150
N48SH	1.37-1.43	13.7-14.3	≥1027	≥12.9	≥1592	≥20	366-390	46-49	150
N50SH	1.40-1.45	14.0-14.5	≥1003	≥12.6	≥1592	≥20	382-406	48-51	150
N28UH	1.04-1.08	10.4-10.8	≥764	≥9.6	≥1990	≥25	207-231	26-29	180
N30UH	1.08-1.13	10.8-11.3	≥812	≥10.2	≥1990	≥25	223-247	28-31	180
N33UH	1.13-1.17	11.3-11.7	≥852	≥10.7	≥1990	≥25	247-271	31-34	180
N35UH	1.17-1.22	11.7-12.2	≥860	≥10.8	≥1990	≥25	263-287	33-36	180
N38UH	1.22-1.25	12.2-12.5	≥876	≥11.0	≥1990	≥25	287-310	36-39	180
N40UH	1.25-1.28	12.5-12.8	≥899	≥11.3	≥1990	≥25	302-326	38-41	180
N42UH	1.28-1.32	12.8-13.2	≥899	≥11.3	≥1990	≥25	318-342	40-43	180
N45UH	1.32-1.36	13.2-13.6	≥908	≥11.4	≥1990	≥25	342-366	43-46	180
N48UH	1.37-1.43	13.7-14.3	≥908	≥11.4	≥1990	≥25	366-390	46-49	180
N28EH	1.04-1.08	10.4-10.8	≥780	≥9.8	≥2388	≥30	207-231	26-29	200
N30EH	1.08-1.13	10.8-11.3	≥812	≥10.2	≥2388	≥30	223-247	28-31	200
N33EH	1.13-1.17	11.3-11.7	≥836	≥10.5	≥2388	≥30	247-271	31-34	200
N35EH	1.17-1.22	11.7-12.2	≥876	≥11.0	≥2388	≥30	263-287	33-36	200
N38EH	1.22-1.25	12.2-12.5	≥899	≥11.3	≥2388	≥30	287-310	36-39	200
N40EH	1.25-1.28	12.5-12.8	≥899	≥11.3	≥2388	≥30	302-326	38-41	200
N42EH	1.28-1.32	12.8-13.2	≥899	≥11.3	≥2388	≥30	318-342	40-43	200
N45EH	1.32-1.36	13.2-13.6	≥899	≥11.3	≥2388	≥30	342-366	43-46	200
N28AH	1.04-1.08	10.4-10.8	≥787	≥9.9	≥2786	≥35	207-231	26-29	230
N30AH	1.08-1.13	10.8-11.3	≥819	≥10.3	≥2786	≥35	223-247	28-31	230
N33AH	1.13-1.17	11.3-11.7	≥843	≥10.6	≥2786	≥35	247-271	31-34	230
N35AH	1.17-1.22	11.7-12.2	≥876	≥11.0	≥2786	≥35	263-287	33-36	230
N38AH	1.22-1.25	12.2-12.5	≥899	≥11.3	≥2786	≥35	287-310	36-39	230

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