ChenYang NdFeB Magnets

Neodymium Iron Boron magnets

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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.

Material Information

- Produced by powder metallurgical method with chemical composition of $Nd_2Fe_{14}B$
- High resistance to demagnetization
- High magnetic values (Br, bH_c, iH_C 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 Ω.cm)	160
Hardness (Hv)	560-580
Density (g/cm^3)	7.40
Relative Recoil Permeability (μ_{rec})	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

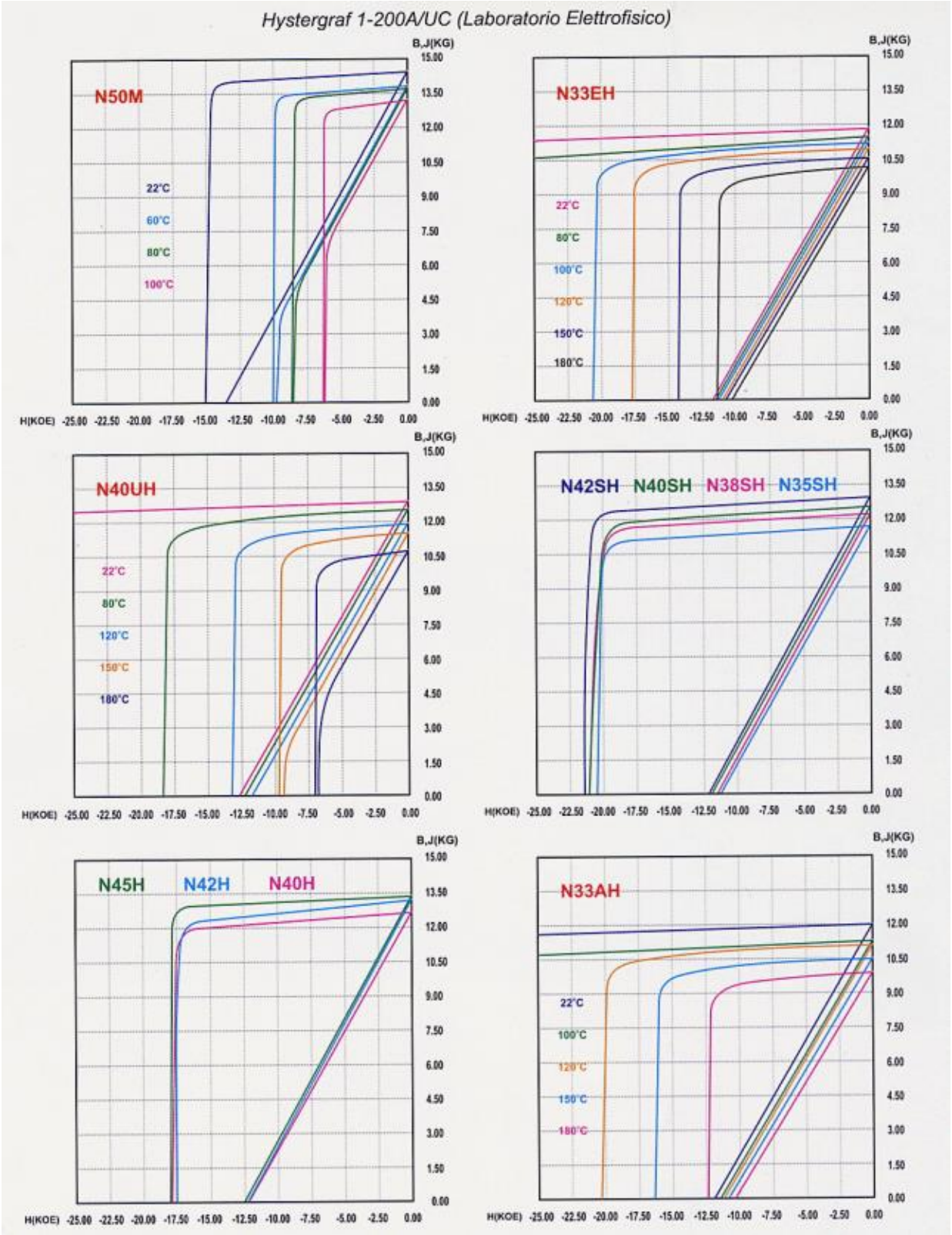
Surface Treatments

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

Magnetic Properties of Sintered NdFeB Magnets

Material Grade	Max. working temp. (°C)	Remanence				Coercivity						Max. Energy Product			
		Br(T)		Br(kGs)		bHc(kA/m)		bHc(kOe)		iHc (kA/m)	iHc (kOe)	(BH)max (KJ/m^3)		(BH)max (MGOe)	
		Nom	Min	Nom	Min	Nom	Min	Nom	Min			Nom	Min	Nom	Min
N35	80	1.22	1.17	12.2	11.7	925	868	11.6	10.9	955	12	279	263	35	33
N38		1.26	1.22	12.6	12.2	925	900	11.6	11.3	955	12	303	279	38	35
N40		1.28	1.26	12.8	12.6	925	908	11.6	11.4	955	12	318	303	40	38
N42		1.33	1.28	13.3	12.8	925	908	11.6	11.4	955	12	334	318	42	40
N45		1.37	1.33	13.7	13.3	925	908	11.6	11.4	955	12	358	334	45	42
N48		1.40	1.37	14.0	13.7	925	908	11.6	11.4	955	12	382	358	48	45
N50		1.43	1.40	14.3	14.0	860	830	10.8	10.4	875	11	398	382	50	48
N52		1.46	1.43	14.6	14.3	860	830	10.8	10.4	875	11	414	398	52	50
N35M	100	1.22	1.17	12.2	11.7	925	871	11.6	10.9	1114	14	279	263	35	33
N38M		1.26	1.22	12.6	12.2	955	908	12.0	11.4	1114	14	303	279	38	35
N40M		1.28	1.26	12.8	12.6	986	938	12.4	11.8	1114	14	318	303	40	38
N42M		1.33	1.28	13.3	12.8	1008	967	12.7	12.1	1114	14	334	318	42	40
N45M		1.37	1.33	13.7	13.3	1039	990	13.1	12.4	1114	14	358	334	45	42
N48M		1.40	1.37	14.0	13.7	1069	1019	13.4	12.8	1114	14	382	358	48	45
N50M		1.43	1.40	14.3	14.0	1069	1019	13.4	12.8	1080	14	398	382	50	48
N52M		1.46	1.43	14.6	14.3	1069	1019	13.4	12.8	1080	14	414	398	52	50
N35H	120	1.22	1.17	12.2	11.7	930	875	11.7	11.0	1353	17	279	263	35	33
N38H		1.26	1.22	12.6	12.2	960	912	12.1	11.5	1353	17	303	279	38	35
N40H		1.28	1.26	12.8	12.6	990	942	12.4	11.8	1353	17	318	303	40	38
N42H		1.33	1.28	13.3	12.8	1013	972	12.7	12.2	1353	17	334	318	42	40
N45H		1.37	1.33	13.7	13.3	1036	994	13.0	12.5	1353	17	358	334	45	42
N48H		1.40	1.37	14.0	13.7	1074	1024	13.5	12.9	1353	17	382	358	48	45
N50H		1.43	1.4	14.3	14.0	1097	1054	13.8	13.2	1353	17	398	382	50	48
N33SH	150	1.17	1.14	11.7	11.4	896	856	11.3	10.8	1592	20	263	239	33	30
N35SH		1.22	1.17	12.2	11.7	934	879	11.7	11.0	1592	20	279	263	35	33
N38SH		1.26	1.22	12.6	12.2	965	916	12.1	11.5	1592	20	303	279	38	35
N40SH		1.28	1.26	12.8	12.6	995	946	12.5	11.9	1592	20	318	303	40	38
N42SH		1.33	1.28	13.3	12.8	1018	976	12.8	12.3	1592	20	334	318	42	40
N45SH		1.37	1.33	13.7	13.3	1041	999	13.1	12.6	1592	20	358	334	45	42
N48SH		1.40	1.37	14.0	13.7	1074	1024	13.5	12.9	1592	20	382	358	48	45
N30UH	180	1.14	1.08	11.4	10.8	862	815	10.8	10.2	1989	25	239	223	30	28
N33UH		1.17	1.14	11.7	11.4	900	860	11.3	10.8	1989	25	263	239	33	30
N35UH		1.22	1.17	12.2	11.7	938	883	11.8	11.1	1989	25	279	263	35	33
N38UH		1.26	1.22	12.6	12.2	969	921	12.2	11.6	1989	25	303	279	38	35
N40UH		1.28	1.26	12.8	12.6	1000	951	12.6	11.9	1989	25	318	303	40	38
N42UH		1.33	1.28	13.3	12.8	1023	981	12.9	12.3	1989	25	334	318	42	40
N45UH		1.37	1.33	13.7	13.3	1041	999	13.1	12.6	1989	25	358	334	45	42
N30EH	200	1.14	1.08	11.4	10.8	862	815	10.8	10.2	2387	30	239	223	30	28
N33EH		1.17	1.14	11.7	11.4	900	860	11.3	10.8	2387	30	263	239	33	30
N35EH		1.22	1.17	12.2	11.7	938	883	11.8	11.1	2387	30	279	263	35	33
N38EH		1.26	1.22	12.6	12.2	969	921	12.2	11.6	2387	30	303	279	38	35
N40EH		1.28	1.26	12.8	12.6	1000	950	12.6	11.9	2387	30	318	303	40	38
N28AH	220	1.08	1.04	10.8	10.4	831	785	10.4	9.9	2787	35	223	199	28	25
N30AH		1.14	1.08	11.4	10.8	862	815	10.8	10.2	2787	35	239	223	30	28
N33AH		1.17	1.14	11.7	11.4	900	860	11.3	10.8	2787	35	263	239	33	30
N35AH		1.22	1.17	12.2	11.7	938	883	11.8	11.1	2787	35	279	263	35	33

Typical Demagnetization Curves of NdFeB Magnets



Dimension Range / Nominal Tolerance

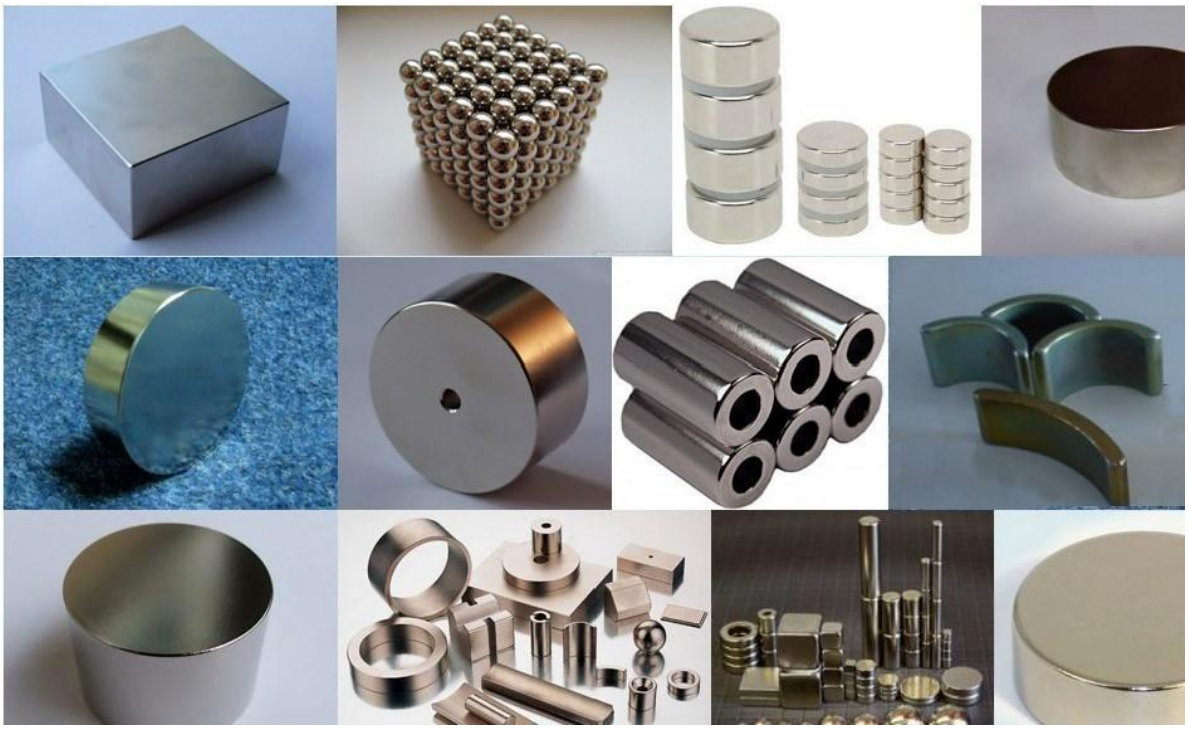
Ring Magnet	Outer Diameter (mm)	Inner Diameter (mm)	Thickness (mm)
Maximum	160	140	50
Minimum	2.6	1.8	0.5
Tolerance	±0.1	±0.1	±0.1

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

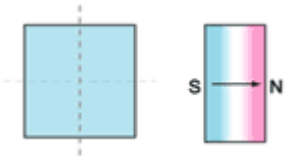
Disc Magnet	Diameter (mm)	Thickness (mm)
Maximum	200	35
Minimum	1.2	0.5
Tolerance	±0.1	±0.1

Segment & other irregular shapes can be manufactured according to customer's sample or blueprint

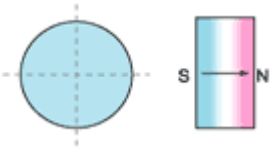
ChenYang Technologies GmbH & Co. KG supplies various kinds of sintered NdFeB magnets in specific sizes and shapes according to the customers' requirements. It also allows its customers to customize characteristics of their magnets. The shapes can be discs, rings, blocks, slabs, cylinders, ball, tiles and other specific shapes.



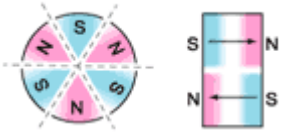
Magnetization Directions of NdFeB Magnets



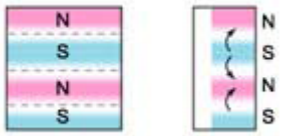
Oriented through thickness



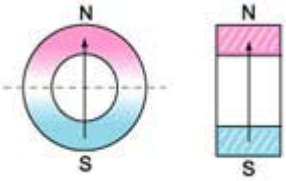
Axially oriented



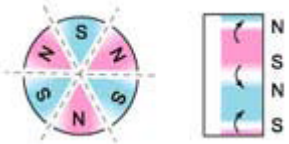
Axially oriented in segments**



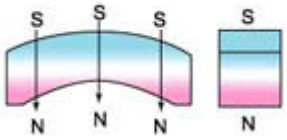
Oriented laterally
multipole on one face **



Oriented through diameter **



Multipole oriented
in segments on one face **



Diametrical oriented

** Spezial magnetization coil is needed

For information about Standard Magnets please see price lists