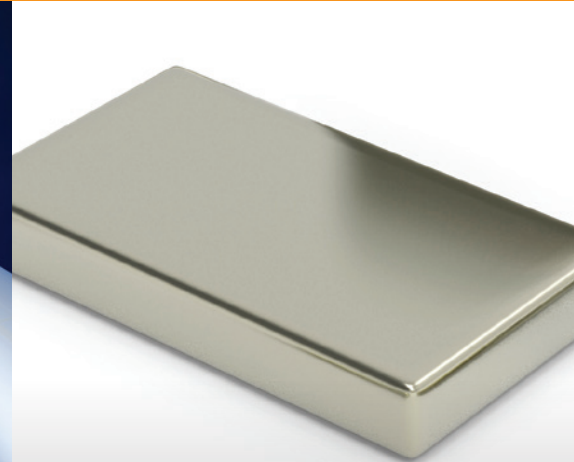


The Highest Energy Product Available



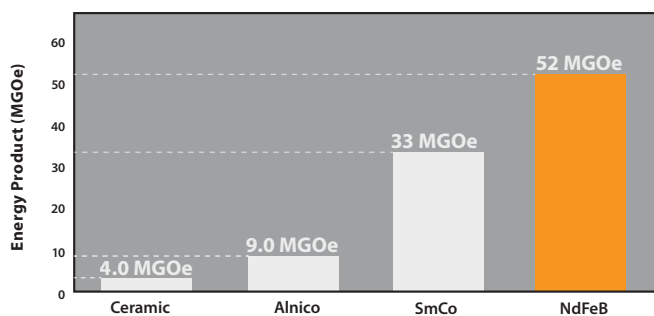
High-Performance Neodymium Iron Boron Magnets

Electron Energy Corporation (EEC) is a preferred supplier of Neodymium Iron Boron (NdFeB), or “neo” magnets, for a variety of markets and applications. NdFeB magnets offer the highest energy product of any permanent magnet material on the market today. The various grades of EEC’s NdFeB offer customers many options when selecting materials based on operating temperature and energy product requirements. NdFeB magnet applications include high-performance motors, brushless DC motors, sensors, and magnetic resonance imaging equipment. EEC’s NdFeB magnets provide a cost-effective solution for high-performance requirements.

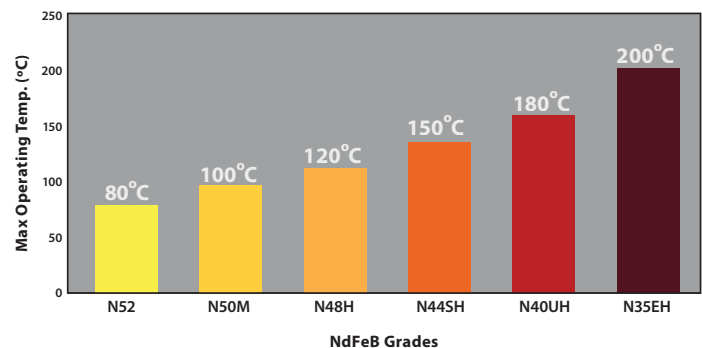
More Than Just Your Supplier

As a producer of permanent magnet materials, EEC has a deep understanding of the science behind the materials. This insight separates EEC from competitors and allows its engineering team to provide best-in-class service to customers. EEC’s applications engineering team works closely with customers to develop magnetic solutions and optimize design performance. In addition to applications engineering, EEC also provides magnetic circuit design and research and development services.

NdFeB Provides the Highest Energy Product Available



Operating Temperatures by NdFeB Grade



Neodymium Iron Boron (NdFeB)

- Most powerful commercially available magnets
- Available in a variety of grades with different magnetic properties
- Multipole magnet rings available

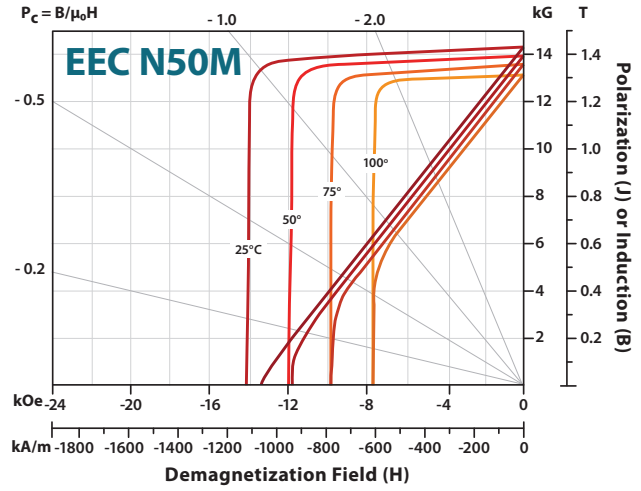
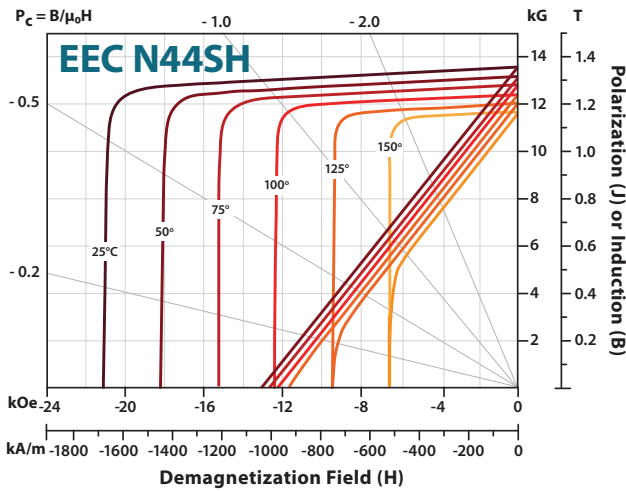
EEC Grades of NdFeB:

- Options for operating temperatures up to 200°C
- Variety of coating options for corrosion resistance
- Maximum Energy Product (BH)_{max} from 35 to 52 MGOe

EEC’s NdFeB products are used in a variety of applications including:

- Actuators and Motors
- Drive Motors in Hybrid and Electric Vehicles
- Electric Wind Turbine Generators
- Magnetic Resonance Imaging (MRI)
- Electronic Medical Devices
- Magnetic Bearings

NEODYMIUM IRON BORON MAGNETS



Magnetic Properties of NdFeB Magnets

Magnet Grade	Maximum Energy Product (BH) _{max}				Residual Induction B _r				Coercivity H _c				Intrinsic Coercivity iH _c		RTC of B _r (1)	Max. Operating Temp. ⁽²⁾
	MGOe		kJ/m ³		kG		T		kOe		kA/m		kOe	kA/m	%/°C	°C
	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Min	Min	Typ	L/D>0.7
N																
EEC N52	52	49	413.9	390.0	14.4	14.2	1.44	1.42	10.5	10.0	835.8	796.0	11	875.6	-0.11	70
EEC N50	50	47	398.0	374.1	14.2	13.9	1.42	1.39	10.5	10.0	835.8	796.0	11	875.6	-0.11	70
EEC N48	48	45	382.1	358.2	14.0	13.5	1.4	1.35	11.5	11.0	915.4	875.6	12	955.2	-0.11	80
EEC N45	45	43	358.2	342.3	13.6	13.2	1.36	1.32	11.5	11.0	915.4	875.6	12	955.2	-0.11	80
EEC N42	42	40	334.3	318.4	13.3	13.0	1.33	1.30	11.5	11.0	915.4	875.6	12	955.2	-0.11	80
EEC N40	40	38	318.4	302.5	12.9	12.6	1.29	1.26	11.5	11.0	915.4	875.6	12	955.2	-0.11	80
M																
EEC N50M	50	47	398.0	374.1	14.2	13.9	1.42	1.39	12.5	11.8	995.0	939.3	13	1034.8	-0.11	90
EEC N48M	48	45	382.1	358.2	13.9	13.6	1.39	1.36	12.9	12.3	1026.8	979.1	14	1114.4	-0.11	100
EEC N45M	45	43	358.2	342.3	13.6	13.3	1.36	1.33	12.9	12.3	1026.8	979.1	14	1114.4	-0.11	100
EEC N42M	42	40	334.3	318.4	13.3	13.0	1.33	1.30	12.4	12.0	987.0	955.2	14	1114.4	-0.11	100
EEC N40M	40	38	318.4	302.5	12.9	12.6	1.29	1.26	12.1	11.6	963.2	923.4	14	1114.4	-0.11	100
EEC N38M	38	36	302.5	286.6	12.6	12.3	1.26	1.23	12.0	11.3	955.2	899.5	14	1114.4	-0.11	100
H																
EEC N48H	48	45	382.1	358.2	13.9	13.6	1.39	1.36	13.5	12.9	1074.6	1026.8	16	1273.6	-0.11	120
EEC N46H	46	44	366.2	350.2	13.7	13.4	1.37	1.34	13.2	12.6	1050.7	1003.0	17	1353.2	-0.11	120
EEC N44H	44	43	350.2	342.3	13.5	13.2	1.35	1.32	12.9	12.3	1026.8	979.1	17	1353.2	-0.11	120
EEC N42H	42	40	334.3	318.4	13.1	12.8	1.31	1.28	12.6	12.0	1003.0	955.2	17	1353.2	-0.11	120
EEC N40H	40	38	318.4	302.5	13.0	12.6	1.30	1.26	12.5	11.8	995.0	939.3	17	1353.2	-0.11	120
EEC N38H	38	36	302.5	286.6	12.6	12.3	1.26	1.23	12.2	11.6	971.1	923.4	17	1353.2	-0.11	120
SH																
EEC N44SH	44	42	350.2	334.3	13.5	13.2	1.35	1.32	12.9	12.4	1026.8	987.0	20	1592.0	-0.11	150
EEC N42SH	42	40	334.3	318.4	13.1	12.8	1.31	1.28	12.6	12.1	1003.0	963.2	20	1592.0	-0.11	150
EEC N40SH	40	38	318.4	302.5	12.9	12.6	1.29	1.26	12.5	12.0	995.0	955.2	20	1592.0	-0.11	150
EEC N38SH	38	36	302.5	286.6	12.6	12.3	1.26	1.23	12.1	11.7	963.2	931.3	20	1592.0	-0.11	150
EEC N35SH	35	33	278.6	262.7	12.0	11.7	1.20	1.17	11.6	11.1	923.4	883.6	20	1592.0	-0.11	150
UH																
EEC N40UH	40	38	318.4	302.5	13.0	12.6	1.30	1.26	12.5	11.8	995.0	939.3	25	1990.0	-0.11	180
EEC N38UH	38	36	302.5	286.6	12.6	12.3	1.26	1.23	12.1	11.5	963.2	915.4	25	1990.0	-0.11	180
EEC N35UH	35	33	278.6	262.7	12.0	11.7	1.20	1.17	11.6	10.8	923.4	859.7	25	1990.0	-0.11	180
EEC N33UH	33	31	262.7	246.8	11.6	11.1	1.16	1.11	11.0	10.6	875.6	843.8	25	1990.0	-0.11	180
EEC N30UH	30	28	238.8	222.9	11.2	10.8	1.12	1.08	10.6	10.2	843.8	811.9	25	1990.0	-0.11	180
EH																
EEC N35EH	35	33	278.6	262.7	12.0	11.7	1.20	1.17	11.6	11.1	923.4	883.6	30	2388.0	-0.11	200
EEC N33EH	33	31	262.7	246.8	11.6	11.1	1.16	1.11	10.9	10.5	867.6	835.8	30	2388.0	-0.11	200
EEC N30EH	30	28	238.8	222.9	11.1	10.8	1.11	1.08	10.6	10.2	843.8	811.9	30	2388.0	-0.11	200

(1) Reversible temperature coefficient of residual induction. Calculated between 20°C and 100°C.

(2) Maximum operating temperature for stand alone parts with an effective L/D ratio greater than 0.7. Maximum operating temperature has strong dependence on the loadline and the operating environment. It can be substantially higher or lower than the published data because of the working point of the magnets in specific systems. Please call EEC engineers for consultation if you have any questions on the maximum operating temperature.

