

Neodymium-Iron-Boron Magnets



NEODYMIUM

NEODYMIUM is a new sintered magnetic material made of neodymium, iron and boron. Thanks to the sintering process, these magnets reach more powerful specifications and meet many customer requirements. After sintering, the magnets are processed to provide a variety of shapes and sizes without requiring any further moulding.

NEODYMIUM is a new high performance sintered magnetic material, with low tolerances offering customised solutions.

SPECIFICATIONS

- Magnet made of pulverised neodymium, iron and boron
- Allows the formation of a variety of shapes without the use of moulds
- Types of magnetisation: axial, radial and diametrical
- Maximum energy product: up to 48 MGOe
- Residual induction: up to 1.46 KGs
- Exact tolerance: ± 0.05 mm
- Suitable for high temperature applications: up to 200°C in motors and generators
- In many applications it can replace the much more expensive SmCo magnet
- Suitable for advanced applications and to lighten structures
- Available with various cover materials such as Ni, Zn, NiCuNi, Epoxy, depending on the various applications.

APPLICATIONS

AUTOMOTIVE

- DC motors
- Brushless motors
- Pancake motors
- Sensors
- Engine cooling electric fans
- Electric fuel pumps
- Electrical steering
- Actuators
- Starter motors

HOUSEHOLD APPLIANCES

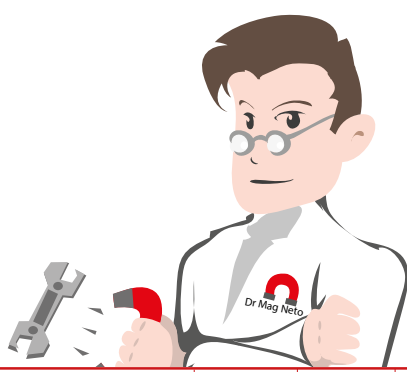
- Fridge motors
- Cooling motors (HVAC)
- Battery powered tools
- Battery powered household appliances
- Motors for small household appliances

INDUSTRIAL AUTOMATION

- Robotic arms
- Robot motors
- Battery powered tools
- Magnetic couplings
- Bearings
- Generators
- Servo motors

OTHER APPLICATIONS

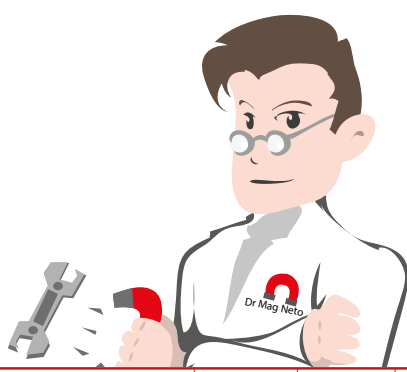
- Drives
- Headsets and speakers
- Electro acoustics (woofers and tweeters)
- Calibration tools
- Medical equipment
- Movement control technologies



Neodymium Iron Boron Magnets

Magnetic specifications

CODE	RESIDUAL INDUCTION (BR)	HOT COEFFICIENT OF EXPANS.	INTRINSIC COERCIVE FORCE (H _C)	MAXIMUM ENERGY PRODUCT (BH) MAX	MAX. WORKING TEMP.	TEMP. COEFFICIENT OF BR FROM 20 TO 100°C	TEMP. COEFFICIENT OF H _C FROM 20 TO 100°C	DENSITY	VICKERS HARDNESS	ELECTRIC RESISTANCE RATE	HOT COEFFICIENT OF EXPANS.
	T (KGs)	KA/m (KOe)	KA/m (KOe)	KJ/m ³ (MGOe)	°C	% / °C	% / °C	G/cm ³	Hv	μOcm	μOcm
NM-30	1.09 - 1.17 (10.9 - 11.7)	≥ 796 (≥ 10.0)	≥ 955 (≥ 12)	223 - 255 (28 - 32)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-33	1.14 - 1.22 (11.4 - 12.2)	≥ 836 (≥ 10.5)	≥ 955 (≥ 12)	247 - 279 (31 - 35)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-35	1.18 - 1.25 (11.8 - 12.5)	≥ 859 (≥ 10.8)	≥ 955 (≥ 12)	263 - 294 (33 - 37)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-38	1.23 - 1.30 (12.3 - 13.0)	≥ 859 (≥ 10.8)	≥ 955 (≥ 12)	286 - 318 (36 - 40)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-40	1.26 - 1.32 (12.6 - 13.2)	≥ 836 (≥ 10.8)	≥ 955 (≥ 12)	302 - 334 (38 - 42)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-42	1.30 - 1.35 (13.0 - 13.5)	≥ 836 (≥ 10.8)	≥ 955 (≥ 12)	318 - 350 (40 - 44)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-45	1.32 - 1.38 (13.2 - 13.8)	≥ 836 (≥ 10.5)	≥ 875 (≥ 11)	334 - 366 (42 - 46)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-48	1.35 - 1.43 (13.5 - 14.3)	≥ 836 (≥ 10.5)	≥ 875 (≥ 11)	358 - 390 (45 - 49)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-50	1.40 - 1.46 (14.0 - 14.6)	≥ 836 (≥ 10.5)	≥ 875 (≥ 11)	374 - 406 (47 - 51)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-52	1.43 - 1.48 (14.3 - 14.8)	≥ 860 (≥ 10.8)	≥ 876 (≥ 11)	398 - 422 (50 - 53)	≤ 80	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-30M	1.09 - 1.17 (10.9 - 11.7)	≥ 812 (≥ 10.2)	≥ 1114 (≥ 14)	223 - 255 (28 - 32)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-33M	1.14 - 1.22 (11.4 - 12.2)	≥ 851 (≥ 10.7)	≥ 1114 (≥ 14)	247 - 279 (31 - 35)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-35M	1.18 - 1.25 (11.8 - 12.5)	≥ 875 (≥ 11.0)	≥ 1114 (≥ 14)	263 - 294 (33 - 37)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-38M	1.23 - 1.30 (12.3 - 13.0)	≥ 907 (≥ 11.4)	≥ 1114 (≥ 14)	286 - 318 (36 - 40)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-40M	1.26 - 1.32 (12.6 - 13.2)	≥ 936 (≥ 11.8)	≥ 1114 (≥ 14)	302 - 334 (38 - 42)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-42M	1.30 - 1.35 (13.0 - 13.5)	≥ 955 (≥ 12.0)	≥ 1114 (≥ 14)	318 - 350 (40 - 44)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-45M	1.32 - 1.38 (13.2 - 13.8)	≥ 971 (≥ 12.2)	≥ 1114 (≥ 14)	334 - 366 (42 - 46)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-48M	1.35 - 1.43 (13.5 - 14.3)	≥ 971 (≥ 12.2)	≥ 1114 (≥ 14)	358 - 390 (45 - 49)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-50M	1.40 - 1.45 (14.0 - 14.5)	≥ 1033 (≥ 13.0)	≥ 1114 (≥ 14)	382 - 406 (48 - 51)	≤ 100	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-27H	1.02 - 1.11 (10.2 - 11.1)	≥ 780 (≥ 9.80)	≥ 1353 (≥ 17)	199 - 231 (25 - 29)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-30H	1.09 - 1.17 (10.9 - 11.7)	≥ 812 (≥ 10.2)	≥ 1353 (≥ 17)	223 - 255 (28 - 32)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-33H	1.14 - 1.22 (11.4 - 12.2)	≥ 812 (≥ 10.2)	≥ 1353 (≥ 17)	247 - 279 (31 - 35)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-35H	1.18 - 1.25 (11.8 - 12.5)	≥ 875 (≥ 11.0)	≥ 1353 (≥ 17)	263 - 294 (33 - 37)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-38H	1.23 - 1.30 (12.3 - 13.0)	≥ 907 (≥ 11.4)	≥ 1353 (≥ 17)	286 - 318 (36 - 40)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-40H	1.26 - 1.32 (12.6 - 13.2)	≥ 936 (≥ 11.8)	≥ 1273 (≥ 16)	302 - 334 (38 - 42)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-42H	1.30 - 1.35 (13.0 - 13.5)	≥ 939 (≥ 11.8)	≥ 1273 (≥ 16)	318 - 350 (40 - 44)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-44H	1.30 - 1.37 (13.0 - 13.7)	≥ 939 (≥ 11.8)	≥ 1273 (≥ 16)	326 - 358 (41 - 45)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-48H	1.36 - 1.43 (13.6 - 14.3)	≥ 995 (≥ 12.5)	≥ 1274 (≥ 16)	366 - 390 (46 - 49)	≤ 120	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-30SH	1.09 - 1.17 (10.9 - 11.7)	≥ 812 (≥ 10.2)	≥ 1592 (≥ 20)	223 - 255 (28 - 32)	≤ 150	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-33SH	1.14 - 1.22 (11.4 - 12.2)	≥ 851 (≥ 10.7)	≥ 1592 (≥ 20)	247 - 279 (31 - 35)	≤ 150	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-35SH	1.18 - 1.25 (11.8 - 12.5)	≥ 875 (≥ 11.0)	≥ 1592 (≥ 20)	263 - 294 (33 - 37)	≤ 150	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-38SH	1.23 - 1.30 (12.3 - 13.0)	≥ 923 (≥ 11.6)	≥ 1592 (≥ 20)	286 - 318 (36 - 40)	≤ 150	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-40SH	1.26 - 1.32 (12.6 - 13.2)	≥ 939 (≥ 11.8)	≥ 1592 (≥ 20)	302 - 334 (38 - 42)	≤ 150	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-42SH	1.28 - 1.34 (12.8 - 13.4)	≥ 939 (≥ 11.8)	≥ 1592 (≥ 20)	310 - 342 (39 - 43)	≤ 150	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-45SH	1.32 - 1.38 (13.2 - 13.8)	≥ 1003 (≥ 12.6)	≥ 1592 (≥ 20)	342 - 366 (43 - 46)	≤ 150	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8



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Magnetic specifications

	RESIDUAL INDUCTION (BR)	HOT COEFFICIENT OF EXPANS.	INTRINSIC COERCIVE FORCE (HcJ)	MAXIMUM ENERGY PRODUCT (BH) MAX	MAX. WORKING TEMP.	TEMP. COEFFICIENT OF BR FROM 20 TO 100°C	TEMP. COEFFICIENT OF HcJ FROM 20 TO 100°C	DENSITY	VICKERS HARDNESS	ELECTRIC RESISTANCE RATE	HOT COEFFICIENT OF EXPANS.
	T (KGs)	KA/m (KOe)	KA/m (KOe)	KJ/m ³ (MGOe)	°C	% / °C	% / °C	G/cm ³	Hv	μOcm	μOcm
CODE											
NM-25UH	0.98 - 1.07 (9.8 - 10.7)	≥ 732 (≥ 9.20)	≥ 1989 (≥ 25)	183 - 215 (23 - 27)	≤ 180	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-28UH	1.05 - 1.13 (10.5 - 11.3)	≥ 780 (≥ 9.80)	≥ 1989 (≥ 25)	207 - 239 (26 - 30)	≤ 180	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-30UH	1.09 - 1.17 (10.9 - 11.7)	≥ 812 (≥ 10.2)	≥ 1989 (≥ 25)	223 - 255 (28 - 32)	≤ 180	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-33UH	1.14 - 1.22 (11.4 - 12.2)	≥ 851 (≥ 10.7)	≥ 1989 (≥ 25)	247 - 279 (31 - 35)	≤ 180	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-35UH	1.18 - 1.25 (11.8 - 12.5)	≥ 875 (≥ 11.0)	≥ 1989 (≥ 25)	263 - 294 (33 - 37)	≤ 180	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-38UH	1.21 - 1.25 (12.1 - 12.5)	≥ 907 (≥ 11.4)	≥ 1990 (≥ 25)	287 - 310 (36 - 39)	≤ 180	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-40UH	1.25 - 1.28 (12.5 - 12.8)	≥ 907 (≥ 11.4)	≥ 1990 (≥ 25)	302 - 326 (38 - 41)	≤ 180	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-25EH	0.98 - 1.07 (9.8 - 10.7)	≥ 732 (≥ 9.20)	≥ 2387 (≥ 30)	183 - 215 (23 - 27)	≤ 200	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-28EH	1.05 - 1.08 (10.5 - 10.8)	≥ 756 (≥ 9.5)	≥ 2388 (≥ 30)	207 - 231 (26 - 29)	≤ 200	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-30EH	1.08 - 1.14 (10.8 - 11.4)	≥ 756 (≥ 9.5)	≥ 2388 (≥ 30)	223 - 241 (28 - 31)	≤ 200	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-33EH	1.13 - 1.17 (11.3 - 11.7)	≥ 812 (≥ 10.2)	≥ 2388 (≥ 30)	247 - 263 (31 - 33)	≤ 200	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-35EH	1.17 - 1.21 (11.7 - 12.1)	≥ 812 (≥ 10.2)	≥ 2388 (≥ 30)	263 - 287 (33 - 36)	≤ 200	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-38EH	1.21 - 1.25 (12.1 - 12.5)	≥ 907 (≥ 11.4)	≥ 2388 (≥ 30)	287 - 310 (36 - 39)	≤ 200	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-30AH	1.08 - 1.13 (10.8 - 11.3)	≥ 812 (≥ 10.2)	≥ 2785 (≥ 35)	223 - 255 (28 - 32)	≤ 220	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8
NM-33AH	1.12 - 1.17 (11.2 - 11.7)	≥ 812 (≥ 10.2)	≥ 2785 (≥ 35)	247 - 271 (31 - 34)	≤ 220	- 0.11	- 0.60	7.5	570	150	3.4 - 4.8



	CODE / 00 COLOUR - ZN	CODE / 01 NI - CU - NI	CODE / 02 ZN - NI	CODE / 03 NICUNI + EPOXY	CODE / 04 NICUNI + SN
PERFORMANCE					
Coating Thickness (μm)	10 - 15	15 - 30	10 - 20	10 - 50	15 - 30
Sst: 35°C 5% NaCl Corrosion resistance in salt fog (hours)	> 24	> 48	> 48	> 72	> 72
Coating Porosity	< 0.1	< 0.1	< 0.1	-	-
Magnetic flux Lose	< 0.1	< 0.1	< 0.1	-	-
Colour	colour	silver	colour	black / grey	silver
PTC: 120°C Humidity 100% 2 ATM (hours)	> 24	> 48	> 24	> 48	100
Environment test report 85°C Humidity 100% (hours)	-	00	> 24	48	100