



# Spacemagnets Europe GmbH

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N42

## Sintered NdFeB-Magnets

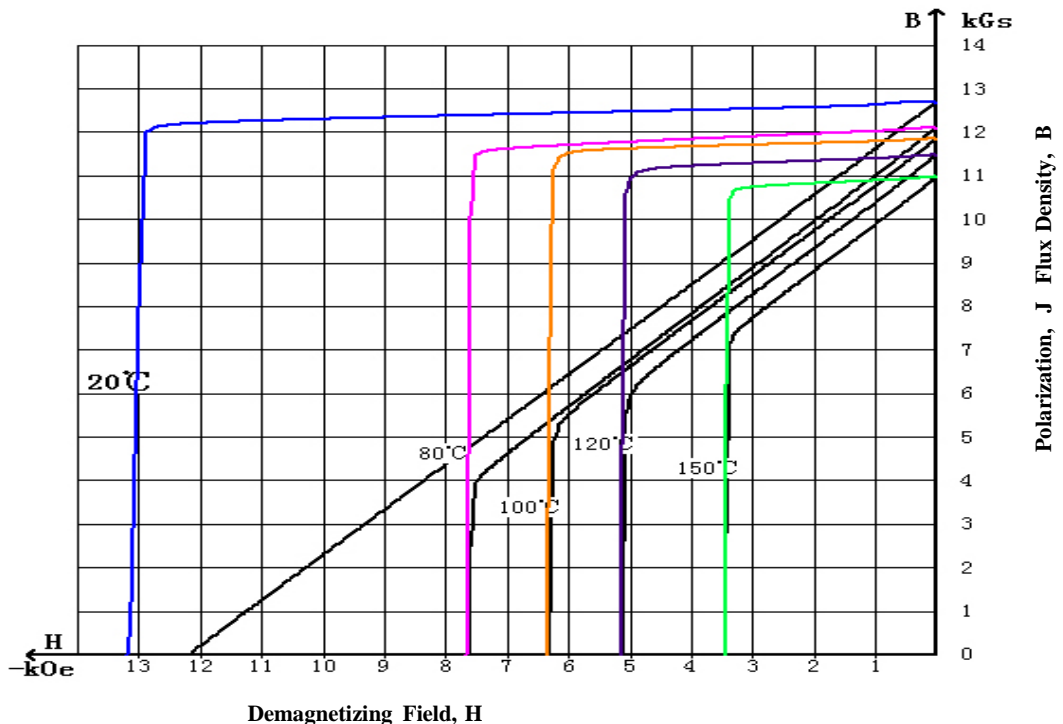
A neodymium magnet (also known as NdFeB, NIB or Neo magnet), the most widely used type of rare-earth magnet, is a permanent magnet made from an alloy of neodymium, iron and boron to form the Nd<sub>2</sub>Fe<sub>14</sub>B tetragonal crystalline structure. NdFeB-magnets are the strongest type of permanent magnet commercially available.

Magnetic Properties	Characteristic	Unit	Min	Nominal	Max
	<b>Br</b> Residual Induction		Gauss	12800	13000
		mT	1280	1300	1320
<b>Hcb</b> Coercivity		Oersteds	11500		
		KA/M	915		
<b>Hcj</b> Intrinsic Coercivity		Oersteds	12000		
		KA/M	955		
<b>BHmax</b> Maximum Energy Product		MGOe	40	41.5	43
		KJ/M <sup>3</sup>	318	330	342

Thermal Properties	Characteristic	Unit	C//	C⊥
	Reversible Temperature Coefficients <sup>(1)</sup>			
Of Induction, $\alpha$ ( Br)		%/°C		-0.12
Of Coercivity, $\beta$ ( Hcj)		%/°C		-0.750
Coefficient of Thermal Expansion <sup>(2)</sup>		$\Delta L/L$ per °C $\times 10^{-6}$	7.5	-0.1
Thermal Conductivity		kcal/mhr°C	7.6	5.8
Specific Heat <sup>(3)</sup>		cal/g°C		0.11
Curie Temperature, Tc		°C		310
Other Properties	Flexural Strength	psi		41300
		Mpa		285
	Density	g/cm <sup>3</sup>		7.6
	Hardness, Vickers	Hv		620
	Electrical Resistivity	$\mu\Omega \cdot \text{cm}$		180

Notes: (1) Coefficients measured between 20 and 80 °C  
 (2) Between 20 and 180 °C (3) Between 20 and 140 °C

## Material: N42



1KA/M = 12.566 Oe      1Koe = 79,577 KA/M      10KGs = 1 Tesla

Notes: The material data and demagnetization curves shown above represent typical properties that may vary due to product shape and size.  
 Demagnetization curves show nominal Br and minimum Hcj.  
 Magnets can be supplied thermal stabilized or magnetically calibrated to customer specifications.  
 Additional grades are available, Please contact the factory for information.