

Magnetic Material Performance Reference

1. Notes

The following values are typical reference data for preliminary material selection and technical discussion.

Actual values may vary by material source, geometry, magnetization method, coating, operating temperature and test conditions. Final performance should be confirmed by the approved specification, drawing, certificate of conformity or outgoing inspection report.

2. NdFeB Grade Reference

Grade	Br Min mT	Br Typ mT	Hcb kA/m	Hcj kA/m	BHmax Min kJ/m ³	BHmax Typ kJ/m ³	Max Temp C
N35	1150	1170	>=836	>=955	263	279	80
N38	1220	1240	>=899	>=955	287	303	80
N40	1250	1280	>=923	>=955	302	318	80
N42	1280	1310	>=955	>=955	318	334	80
N45	1320	1360	>=980	>=1003	342	358	80
N48	1360	1400	>=1003	>=1035	366	382	80
N50	1400	1430	>=1033	>=1060	382	398	80
N52	1430	1470	>=1059	>=1114	398	422	80
N54	1450	1480	>=1059	>=1114	414	430	80
N55	1460	1500	>=1060	>=1114	422	438	80
N35M	1150	1170	>=836	>=1194	263	279	100
N38M	1220	1240	>=899	>=1194	287	303	100
N42M	1280	1310	>=955	>=1194	318	334	100
N45M	1320	1360	>=980	>=1274	342	358	100
N48M	1360	1400	>=1003	>=1353	366	382	100
N35H	1150	1170	>=836	>=1353	263	279	120
N38H	1220	1240	>=899	>=1353	287	303	120
N40H	1250	1280	>=923	>=1353	302	318	120
N42H	1280	1310	>=955	>=1353	318	334	120
N45H	1320	1360	>=980	>=1353	342	358	120
N48H	1360	1400	>=1003	>=1353	366	382	120
N35SH	1150	1170	>=836	>=1592	263	279	150

Grade	Br Min mT	Br Typ mT	Hcb kA/m	Hcj kA/m	BHmax Min kJ/m3	BHmax Typ kJ/m3	Max Temp C
N38SH	1220	1240	>=899	>=1592	287	303	150
N42SH	1280	1310	>=955	>=1592	318	334	150
N45SH	1320	1360	>=980	>=1592	342	358	150
N35UH	1150	1170	>=836	>=1990	263	279	180
N38UH	1220	1240	>=899	>=1990	287	303	180
N40UH	1250	1280	>=923	>=1990	302	318	180
N35EH	1150	1170	>=836	>=2388	263	279	200
N38EH	1220	1240	>=899	>=2388	287	303	200
N40EH	1250	1280	>=923	>=2388	302	318	200

N54 and N55 are high-energy NdFeB grades. Grade labels above N55 may appear in some market references; their properties should be defined by the relevant material specification.

3. NdFeB Temperature Suffix

Suffix	Typical Max Working Temp	Description
None	80 C	Standard temperature grade
M	100 C	Medium temperature
H	120 C	High temperature
SH	150 C	Super high temperature
UH	180 C	Ultra high temperature
EH	200 C	Extra high temperature
TH	220 C	Very high temperature grade

4. Ferrite / Ceramic Grade Reference

Ferrite / ceramic magnets are named differently by market and standard. C grades are common in USA ceramic magnet references, Y grades are common in Chinese market and GB/T references, and HF grades are common in IEC / European references. Similar rows should be treated as approximate references, not automatic one-to-one substitutions.

4.1 USA Ceramic C Series Reference

Grade	Br mT	Hcb kA/m	Hcj kA/m	BHmax kJ/m3
C1	230	148	258	8.36
C5	380	191	199	27.0

Grade	Br mT	Hcb kA/m	Hcj kA/m	BHmax kJ/m ³
C7	340	258	318	21.9
C8 / C8A	385	235	242	27.8
C9	380	280	320	26.4
C10	400	288	280	30.4
C11	430	200	204	34.4

4.2 China Y Series Reference

Grade	Br mT	Hcb kA/m	Hcj kA/m	BHmax kJ/m ³
Y10T	200-235	125-160	210-280	6.5-9.5
Y20	320-380	135-190	140-195	18.0-22.0
Y22H	310-360	220-250	280-320	20.0-24.0
Y25	360-400	135-170	140-200	22.5-28.0
Y26H	360-390	220-250	225-255	23.0-28.0
Y27H	370-400	205-250	210-255	25.0-29.0
Y30	370-400	175-210	180-220	26.0-30.0
Y30BH	380-390	223-235	231-245	27.0-30.0
Y30H-1	380-400	230-275	235-290	27.0-32.5
Y30H-2	395-415	275-300	310-335	28.5-32.0
Y32	385-395	223-235	231-245	27.0-30.0
Y33	390-395	220-250	225-255	30.5-34.0
Y35	395-410	220-250	230-260	31.5-35.0

4.3 Europe IEC HF Series Reference

Grade	Br mT min/typ	Hcb kA/m min/typ	Hcj kA/m min/typ	BHmax kJ/m ³ min/typ
HF8/22	200/220	125/140	220/230	6.5/6.8
HF20/19	320/333	170/190	190/200	>20.0/21.0
HF20/28	310/325	220/230	280/290	>20.0/21.0
HF22/30	350/365	255/265	290/300	>22.0/23.5
HF24/16	350/365	155/175	160/180	>24.0/25.5
HF24/23	360/370	220/230	230/240	>24.0/25.5
HF24/35	370/380	260/270	350/360	>24.0/25.5
HF26/16	370/380	155/175	160/180	>26.0/27.0
HF26/18	370/380	175/190	180/190	26.0/27.0

Grade	Br mT min/typ	Hcb kA/m min/typ	Hcj kA/m min/typ	BHmax kJ/m ³ min/typ
HF26/24	370/380	230/240	240/250	26.0/27.0
HF26/26	370/380	230/240	260/270	26.0/27.0

5. Units

Symbol	Meaning	Common Unit
Br	Remanence / residual flux density	mT
Hcb	Coercive force	kA/m
Hcj	Intrinsic coercive force	kA/m
BHmax	Maximum energy product	kJ/m ³ or MGOe