

## **ChenYang Permanent Magnets for Electric Motors, PM Motors and Generators**

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ChenYang Technologies GmbH & Co. KG supplies all kinds of motor magnets (NdFeB, Hard Ferrite, bonded NdFeB magnets) for specified applications to different electric motors, PM motors and generators in the electrical engineering and electric vehicles etc. These magnets can be made with high iHc materials to match special motor applications. They are consistency for torque performance and ground to meet high precision and concentric requirements.



Magnetic Material	Hard Ferrite	NdFeB	Bonded NdFeB
Max. Energy Product $B \times H_{max}$ (MGOe)	0.8 ~ 5.1	28 ~ 51	5.0 ~ 14.0
Remanence (kGs)	2.0 ~ 4.6	10.2 ~ 14.5	5.2 ~ 8.6
Intrinsic Coercivity iHc (kOe)	1.6 ~ 5.0	11 ~ 30	8.0 ~ 12.8
Curie Temperature (°C)	460	310 ~ 370	310 ~ 350
Maximum Operating Temperature (°C)	250	80 ~ 200	110 ~ 150
Temperature Coefficient of Br (%/°C)	-0.18 ~ -0.2	-0.12 ~ -0.10	-0.075 ~ -0.13
Temperature Coefficient of iHc (%/°C)	0.2 ~ 0.5	-0.6	--

## Hard Ferrite (Ceramic) Magnets

Material	Remanence		Coercivity		Intrinsic Coercivity		Max. Energy Product	
	Br (mT)	Br (kGs)	bHc (kA/m)	bHc (kOe)	iHc (kA/m)	iHc (kOe)	(BH)max (KJ/m <sup>3</sup> )	(BH)max (MGOe)
Y33	410-430	4.10-4.30	220-250	2.77-3.14	225-255	2.83-3.21	31.5-35.0	4.0-4.4
Y35	400-420	4.00-4.20	160-190	2.01-2.38	165-195	2.07-2.45	30.0-33.5	3.8-4.2
Y35H1	395-415	3.95-4.15	251-259	3.15-3.25	255-271	3.20-3.40	29.6-32.8	3.7-4.1
Y35H2	390-410	3.90-4.10	236-295	3.30-3.70	275-299	3.45-3.75	28.8-32.0	3.6-4.04
Y35H3	405-425	4.05-4.25	223-247	2.80-3.10	231-255	2.90-3.20	30.2-35.4	3.8-4.4
Y35H4	370-390	3.70-3.90	270-302	3.40-3.80	326-358	4.10-4.50	25.6-28.8	3.2-3.6
Y40	390-410	3.90-4.10	279-309	3.50-3.86	311-325	3.90-4.10	28.8-32.0	3.6-4.0
Y40B	410-430	4.10-4.30	247-263	3.10-3.30	255-271	3.20-3.40	32.6-34.4	4.0-4.4
Y40H	370-390	3.70-3.90	275-297	3.45-3.75	374-390	4.70-4.90	25.6-29.4	3.2-3.6

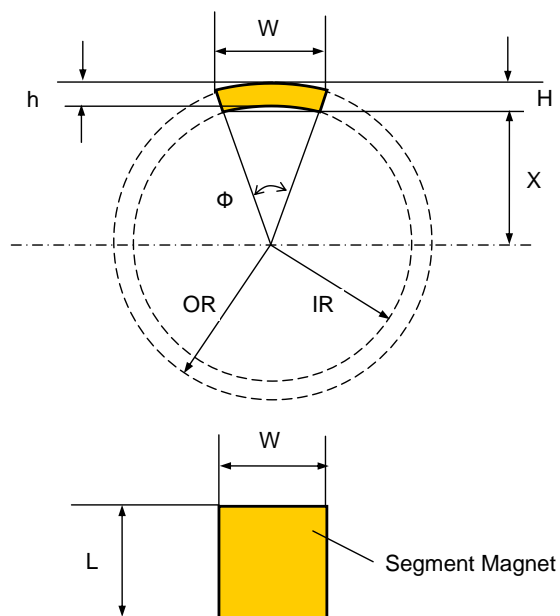
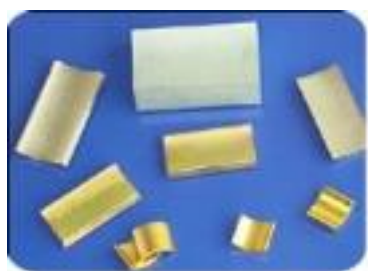
## Sintered NdFeB Magnets

Grade	Max. working Temp.	Remanence				Coercivity				Intr. Coercivity		Max. Energy Product			
		Br(T)		Br(kGs)		bHc(kA/m)		bHc(kOe)		iHc (kA/m)	iHc (kOe)	(BH)max (KJ/m <sup>3</sup> )		(BH)max (MGOe)	
		Nom	Min	Nom	Min	Nom	Min	Nom	Min			Nom	Min	Nom	Min
N30	80	1.12	1.08	11.2	10.8	836	780	10.5	9.8	955	12	239	223	30	28
N33		1.17	1.14	11.7	11.4	876	820	11.0	10.3	955	12	263	247	33	31
N35		1.21	1.17	12.1	11.7	915	860	11.5	10.8	955	12	279	263	35	33
N38		1.26	1.22	12.6	12.2	915	860	11.5	10.8	955	12	303	287	38	36
N40		1.29	1.26	12.9	12.6	876	836	11.0	10.5	955	12	318	303	40	38
N42		1.30	1.27	13.0	12.7	876	836	11.0	10.5	955	12	334	318	42	40
N45		1.38	1.32	13.8	13.2	924	876	11.6	11.0	955	12	366	342	46	43
N48		1.42	1.38	14.2	13.8	890	835	11.19	10.5	876	11	390	366	49	46
N50		1.47	1.41	14.7	14.1	1035	829	13.0	10.5	876	11	414	382	52	48
N30M	100	1.12	1.08	11.2	10.8	836	780	10.5	9.8	1114	14	239	223	30	28
N33M		1.17	1.14	11.7	11.4	876	820	11.0	10.3	1114	14	263	247	33	31
N35M		1.21	1.17	12.1	11.7	915	860	11.5	10.8	1114	14	279	263	35	33
N38M		1.26	1.22	12.6	12.2	915	860	11.5	10.8	1114	14	303	287	38	36
N40M		1.29	1.26	12.9	12.6	915	860	11.5	10.8	1114	14	318	303	40	38
N42M		1.32	1.28	13.2	12.8	1010	955	12.7	12.0	1114	14	342	318	43	40
N48M		1.43	1.37	14.3	13.7	1090	1035	13.7	13.0	1120	14	392	360	49	45
N50M		1.47	1.41	14.7	14.1	1138	1043	14.3	13.1	1114	14	414	382	52	48
N27H	120	1.06	1.02	10.6	10.2	796	740	10.0	9.3	1353	17	215	199	27	25
N30H		1.12	1.08	11.2	10.8	836	780	10.5	9.8	1353	17	239	223	30	28
N33H		1.17	1.14	11.7	11.4	876	820	11.0	10.3	1353	17	263	247	33	31
N35H		1.21	1.17	12.1	11.7	915	860	11.5	10.8	1353	17	279	263	35	33
N38H		1.26	1.22	12.6	12.2	955	915	12.0	11.5	1353	17	303	287	38	36
N40H		1.28	1.24	12.8	12.4	955	915	12.0	11.5	1353	17	334	311	42	39
N42H		1.32	1.28	13.2	12.8	1010	955	12.7	12.0	1353	17	342	318	43	40
N45H		1.36	1.32	13.6	13.2	1050	1000	13.2	12.5	1360	17	376	344	47	43
N27SH	150	1.06	1.02	10.6	10.2	796	740	10.0	9.3	1595	20	215	199	27	25
N30SH		1.12	1.08	11.2	10.8	836	780	10.5	9.8	1595	20	239	223	30	28
N33SH		1.17	1.14	11.7	11.4	876	820	11.0	10.3	1595	20	263	247	33	31
N35SH		1.21	1.17	12.1	11.7	915	860	11.5	10.8	1595	20	279	263	35	33
N38SH		1.26	1.22	12.6	12.2	924	870	11.6	10.9	1595	20	311	286	39	36
N40SH		1.28	1.24	12.8	12.4	989	939	12.4	11.8	1592	20	326	302	41	38
N42SH		1.35	1.30	13.5	13.0	1013	963	12.7	12.0	1600	20	344	312	43	39
N25UH	180	1.02	0.98	10.2	9.8	764	732	9.6	9.2	1990	25	199	183	25	23
N28UH		1.08	1.04	10.8	10.4	812	780	10.2	9.8	1990	25	223	207	28	26
N30UH		1.10	1.08	11.0	10.8	812	780	10.2	9.8	1990	25	247	223	31	28
N33UH		1.17	1.13	11.7	11.3	836	804	10.5	10.1	1990	25	270	247	34	31
N35UH		1.22	1.17	12.2	11.7	891	836	11.2	10.5	1990	25	279	263	35	33
N27EH	200	1.08	1.02	10.8	10.2	784	752	9.8	9.4	2388	30	223	191	28	25
N28EH		1.09	1.04	10.9	10.4	825	780	10.4	9.8	2388	30	231	207	29	26
N30EH		1.13	1.08	11.3	10.8	804	772	10.1	9.7	2388	30	247	223	31	28
N33EH		1.18	1.14	11.8	11.4	885	835	11.1	10.5	2400	30	272	248	34	31
N30AH	>200	1.15	1.08	11.5	10.8	899	804	11.3	10.1	2786	35	254	223	32	28
N35AH		1.24	1.16	12.4	11.6	947	851	11.9	10.7	2786	35	286	254	36	32

## Bonded NdFeB Magnets

Material	Remanence		Coercivity		Intrinsic Coercivity		Max. Energy Product	
	Br (mT)	Br (kGs)	bHc (kA/m)	bHc (kOe)	iHc (kA/m)	iHc (kOe)	(BH)max (KJ/m <sup>3</sup> )	(BH)max (MGOe)
CY-BN6	520-620	5.2-6.2	302-366	3.80-4.60	637-800	8.00-10.0	40-56	5.0-7.0
CY-BN8	600-660	6.0-6.6	358-406	4.5-5.1	637-800	8.0-10.0	60-68	7.5-8.5
CY-BN10	620-690	6.2-6.9	360-438	4.5-5.5	637-860	8.0-10.8	64-80	8.0-10.0
CY-BN12	690-780	6.9-7.8	422-462	5.3-5.8	637-860	8.0-10.8	80-96	10.0-12.0
CY-DN10	600-680	6.0-6.8	414-446	5.2-5.6	800-1020	10.0-12.8	64-80	8.0-10.0
CY-DN12	680-760	6.8-7.6	438-470	5.5-5.9	800-1020	10.0-12.8	80-96	10.0-12.0
CY-PN72	620-650	6.2-6.5	415-440	5.2-5.5	720-960	9.0-12.0	64-72	8.0-9.0
CY-PN80	650-690	6.5-6.9	440-460	5.5-5.8	640-960	8.0-12.0	72-80	9.0-10.0
CY-PN96	700-760	7.0-7.6	420-470	5.3-5.9	640-864	8.0-10.0	81-96	10.0-12.0
CY-PN104	800	8.0	565	7.1	640	8.0	104	13.0
CY-PN111	860	8.6	640	8.0	715	9.0	111	14.0

## Arc/Segment Magnets for Motors and Generators



$$\Phi = 2 \arcsin (W/2OR)$$

$$H=OR-X=OR - IR \cos (\Phi/2)= OR - IR \cos [\arcsin (W/2 OR)]$$

Ref. No.	Dimensions (mm)				
	OR	IR	W	L	H
AM-001	12.0-16.0	8.2-10.2	16.0-18.0	24.0-26.0	6.0-8.0
AM-002	14.0-18.0	7.0-9.0	25.5-27.5	36.0-38.0	11.0-13.0
AM-003	15.0-19.0	11.0-13.0	29.3-31.3	27.0-37.0	11.0-13.0
AM-004	18.0-22.0	13.0-15.0	34.0-36.0	38.0-40.0	13.0-15.0
AM-005	18.0-22.0	13.0-15.0	26.0-28.0	49.0-51.0	10.0-12.0
AM-006	19.0-23.0	14.0-16.0	34.0-36.0	28.0-31.0	14.0-16.0
AM-007	22.0-26.0	17.0-19.0	39.0-41.0	25.0-60.0	15.0-17.0
AM-008	26.0-30.0	20.0-22.0	45.0-50.0	37.0-50.0	18.0-21.0
AM-009	26.0-30.0	19.0-22.0	44.0-46.0	35.0-63.0	15.5-17.5
AM-010	28.0-32.0	22.0-24.0	49.0-54.0	38.0-40.0	17.0-20.0
AM-011	28.0-32.0	22.0-24.0	32.0-34.0	47.0-49.0	10.0-13.0
AM-012	32.0-36.0	24.0-27.0	57.0-59.0	40.0-55.0	19.8-21.8
AM-013	33.0-37.0	27.0-29.0	23.0-25.0	42.0-48.0	7.4-9.4
AM-014	32.0-36.0	26.0-28.0	63.0-66.0	32.0-51.0	24.2-26.2
AM-015	32.0-36.0	28.0-31.0	57.0-59.0	38.0-40.0	21.0-23.0
AM-016	57.0-62.0	39.0-43.0	100.0-105.0	83.0-84.0	39.4-41.4
AM-017	50.0-54.0	40.0-42.0	52.0-54.0	38.0-40.0	14.5-16.5
AM-018	49.0-53.0	41.0-45.0	39.0-54.0	21.0-33.0	15.0-17.0
AM-019	53.0-57.0	47.0-49.0	75.0-93.0	24.0-27.0	19.0-21.0
AM-020	65.0-69.0	53.0-55.0	71.0-72.0	33.0-35.0	23.0-25.0
AM-021	78.0-81.0	62.0-64.0	62.0-64.0	130.0-132.0	17.5-19.5
AM-022	93.0-97.0	68.0-70.0	91.0-94.0	62.0-64.0	34.0-36.0
AM-023	78.0-82.0	69.0-72.0	64.0-66.0	26.0-35.0	7.0-9.0
AM-024	103.0-106.0	95.0-97.0	64.0-66.0	24.0-26.0	13.0-15.0

Dimension tolerance for hard ferrite materials:

Outer radius OR, Inner radius IR and thickness H/T:  $\pm 0.15\text{mm}$

Width W and length L:  $\pm 0.2\text{mm}$  for ground surfaces and  $\pm 2\%$  for unground surfaces.