RAJ ENGINEERS

Trusted Since 1981

Material Data Sheet - NdFeB & SmCo

Magnetic Properties - NdFeB - Grade: *Standard*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ °C
01	N30	11.2	10.8	1.12	1.08	10.5	10.0	836	796	⩾12	⩾955	30	28	239	223	⩽80
02	N35	12.0	11.7	1.20	1.17	11.3	10.8	900	860	⩾12	⩾955	35	33	279	263	⩽80
03	N38	12.6	12.2	1.26	1.22	11.5	11.3	915	900	⩾12	⩾955	38	36	303	287	⩽80
04	N40	12.9	12.6	1.29	1.26	11.6	11.4	924	908	⩾12	⩾955	40	38	318	303	⩽80
05	N42	13.1	12.9	1.31	1.29	11.8	11.5	939	915	⩾12	⩾955	42	40	342	326	⩽80
06	N45	13.6	13.3	1.36	1.33	12.0	11.6	955	924	⩾12	⩾955	45	43	358	342	⩽80
07	N48	14.0	13.8	1.40	1.38	10.8	10.2	860	810	⩾12	⩾955	48	46	383	367	⩽80
08	N50	14.3	14.1	1.43	1.41	10.8	10.0	860	794	⩾12	⩾955	50	48	398	383	⩽80
09	N52	14.5	14.2	1.45	1.42	10.8	10.0	860	794	⩾11	⩾875	52	50	414	398	⩽60
10	N55	14.7	14.4	1.47	1.44	10.8	10.0	860	794	⩾11	⩾875	55	53	438	422	⩽60

RAJ ENGINEERS

Magnetic Properties - NdFeB - Grade: *M*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ ℃
11	N30M	11.2	10.8	1.12	1.08	10.5	10.0	836	794	≥14	≥1114	30	28	239	223	≤100
12	N35M	12.0	11.7	1.20	1.17	11.3	10.9	900	868	≥14	≥1114	35	33	279	263	≤100
13	N38M	12.6	12.2	1.26	1.22	11.8	11.3	939	900	≥14	≥1114	38	36	303	287	≤100
14	N40M	12.9	12.6	1.29	1.26	12.0	11.6	955	924	≥14	≥1114	40	38	318	303	≤100
15	N42M	13.2	12.9	1.32	1.29	12.4	12.0	987	955	≥14	≥1114	42	40	342	326	≤100
16	N45M	13.5	13.3	1.35	1.33	12.6	12.2	1003	971	≥14	≥1114	45	43	358	342	≤100
17	N48M	14.0	13.7	1.40	1.37	13.3	12.9	1059	1027	≥14	≥1114	48	46	383	367	≤100
18	N50M	14.3	13.9	1.43	1.39	13.5	13.1	1074	1042	≥14	≥1114	50	48	398	383	≤100
19	N52M	14.5	14.2	1.45	1.42	13.6	13.2	1082	1050	≥13	≥1114	52	50	414	398	≤80

RAJ ENGINEERS

Magnetic Properties - NdFeB - Grade: *H*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ ℃
20	N30H	11.2	10.8	1.12	1.08	10.5	10.0	836	794	≥17	≥1353	30	28	239	223	≤120
21	N33H	11.7	11.4	1.17	1.14	11.0	10.5	876	836	≥17	≥1353	33	31	263	247	≤120
22	N35H	12.0	11.7	1.20	1.17	11.3	10.9	900	868	≥17	≥1353	35	33	279	263	≤120
23	N38H	12.6	12.2	1.26	1.22	11.8	11.3	939	900	≥17	≥1353	38	36	303	287	≤120
24	N40H	12.8	12.6	1.28	1.26	12.0	11.6	955	924	≥17	≥1353	40	38	318	303	≤120
25	N42H	13.0	12.8	1.30	1.28	12.4	12.0	987	955	≥17	≥1353	42	40	342	326	≤120
26	N45H	13.5	13.3	1.35	1.33	12.6	12.2	1003	971	≥17	≥1353	45	43	358	342	≤120
27	N48H	14.0	13.7	1.40	1.37	13.3	12.9	1059	1027	≥16	≥1274	48	46	383	367	≤100
28	N50H	14.3	13.9	1.43	1.39	13.5	13.1	1074	1042	≥16	≥1274	50	48	398	383	≤100
29	N52H	14.5	14.2	1.45	1.42	13.6	13.2	1082	1050	≥16	≥1274	52	50	414	398	≤100

RAJ ENGINEERS

Magnetic Properties - NdFeB - Grade: *SH*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ ℃
30	N30SH	11.2	10.8	1.12	1.08	10.5	10.1	836	804	⩾20	⩾1595	30	28	239	223	⩽150
31	N33SH	11.7	11.4	1.17	1.14	11.0	10.6	876	844	⩾20	⩾1595	33	31	263	247	⩽150
32	N35SH	12.0	11.7	1.20	1.17	11.3	11.0	900	876	⩾20	⩾1595	35	33	279	263	⩽150
33	N37SH	12.3	12.0	1.23	1.20	11.5	11.3	915	900	⩾20	⩾1595	37	35	295	279	⩽150
34	N38SH	12.5	12.2	1.25	1.22	11.8	11.4	939	908	⩾20	⩾1595	38	36	303	287	⩽150
35	N40SH	12.7	12.5	1.27	1.25	12.1	11.8	963	939	⩾20	⩾1595	40	38	318	303	⩽150
36	N42SH	13.0	12.8	1.30	1.28	12.4	12.0	987	955	⩾20	⩾1595	42	40	342	326	⩽150
37	N45SH	13.5	13.3	1.35	1.33	12.6	12.2	1003	971	⩾20	⩾1595	45	43	358	342	⩽150
38	N48SH	14.0	13.7	1.40	1.37	13.3	12.9	1059	1027	⩾19	⩾1512	48	46	383	367	⩽130
39	N50SH	14.2	13.9	1.42	1.39	13.5	13.1	1074	1042	⩾19	⩾1512	50	48	398	383	⩽130

RAJ ENGINEERS

Magnetic Properties - NdFeB - Grade: *UH*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ ℃
40	N25UH	10.0	9.6	1.00	0.96	9.6	9.2	764	732	⩾25	⩾1990	25	22	199	175	⩽180
41	N28UH	10.8	10.4	1.08	1.04	10.2	9.8	812	780	⩾25	⩾1990	28	26	223	207	⩽180
42	N30UH	11.2	10.8	1.12	1.08	10.6	10.1	844	804	⩾25	⩾1990	30	28	239	223	⩽180
43	N33UH	11.5	11.3	1.15	1.13	11.0	10.6	876	844	⩾25	⩾1990	33	31	263	247	⩽180
44	N35UH	11.9	11.7	1.19	1.17	11.3	11.0	900	876	⩾25	⩾1990	35	33	279	263	⩽180
45	N38UH	12.5	12.2	1.25	1.22	11.8	11.4	939	908	⩾25	⩾1990	38	36	303	287	⩽180
46	N40UH	12.7	12.5	1.27	1.25	12.2	11.8	971	939	⩾25	⩾1990	40	38	318	303	⩽180
47	N42UH	13.0	12.8	1.30	1.28	12.4	12.0	987	955	⩾25	⩾1990	42	40	342	326	⩽180
48	N45UH	13.5	13.3	1.35	1.33	12.6	12.2	1003	971	⩾24	⩾1911	45	43	358	342	⩽150
49	N48UH	14.0	13.7	1.40	1.37	13.3	12.9	1059	1027	⩾24	⩾1911	48	46	383	367	⩽150
50	N50UH	14.2	13.9	1.42	1.39	13.5	13.1	1074	1042	⩾24	⩾1911	50	48	398	383	⩽150

RAJ ENGINEERS

Magnetic Properties - NdFeB - Grade: *EH*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ ℃
51	N28EH	10.8	10.4	1.08	1.04	10.4	9.8	811	780	⩾30	⩾2388	28	26	223	207	⩽200
52	N30EH	11.2	10.8	1.12	1.08	10.6	10.1	844	804	⩾30	⩾2388	30	28	239	223	⩽200
53	N33EH	11.5	11.3	1.15	1.13	11.0	10.6	876	844	⩾30	⩾2388	33	31	263	247	⩽200
54	N35EH	11.9	11.7	1.19	1.17	11.3	11.0	900	876	⩾30	⩾2388	35	33	279	263	⩽200
55	N38EH	12.4	12.2	1.24	1.22	11.8	11.4	939	908	⩾30	⩾2388	38	36	303	287	⩽200
56	N40EH	12.7	12.4	1.27	1.24	12.2	11.8	971	939	⩾30	⩾2388	40	38	318	303	⩽200
57	N42EH	13.0	12.8	1.30	1.28	12.4	12.0	987	955	⩾29	⩾2308	42	40	342	326	⩽190
58	N45EH	13.5	13.3	1.35	1.33	12.6	12.2	1003	971	⩾29	⩾2308	45	43	358	342	⩽190
59	N48EH	14.0	13.7	1.40	1.37	13.3	12.9	1059	1027	⩾29	⩾2308	48	46	383	367	⩽190

RAJ ENGINEERS

Magnetic Properties - NdFeB - Grade: *AH*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ °C
60	N28AH	10.8	10.4	1.08	1.04	10.4	9.8	811	780	⩾35	⩾2786	28	26	223	207	⩽220
61	N30AH	11.2	10.8	1.12	1.08	10.6	10.1	844	804	⩾35	⩾2786	30	28	239	223	⩽220
62	N33AH	11.5	11.3	1.15	1.13	11.0	10.6	876	844	⩾35	⩾2786	33	31	263	247	⩽220
63	N35AH	11.9	11.7	1.19	1.17	11.5	11.0	915	876	⩾35	⩾2786	35	33	279	263	⩽220
64	N38AH	12.4	12.2	1.24	1.22	11.8	11.4	939	908	⩾35	⩾2786	37	35	294	279	⩽220
65	N40AH	12.7	12.4	1.27	1.24	12.1	11.8	971	939	⩾35	⩾2786	39	37	310	294	⩽220
66	N42AH	13.0	12.8	1.30	1.28	12.4	12.0	987	955	⩾35	⩾2786	42	40	334	318	⩽220
67	N45AH	13.5	13.3	1.35	1.33	12.6	12.2	1003	971	⩾35	⩾2786	45	43	358	342	⩽220

RAJ ENGINEERS

Magnetic Properties - NdFeB - Grade: *TH*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ ℃
68	N28TH	10.8	10.4	1.08	1.04	10.4	9.8	811	780	⩾40	⩾3185	28	26	223	207	⩽240
69	N30TH	11.2	10.8	1.12	1.08	10.6	10.1	844	804	⩾40	⩾3185	30	28	239	223	⩽240
70	N33TH	11.5	11.3	1.15	1.13	11.0	10.6	876	844	⩾40	⩾3185	33	31	263	247	⩽240
71	N35TH	11.9	11.7	1.19	1.17	11.5	11.0	915	876	⩾40	⩾3185	35	33	279	263	⩽240
72	N38TH	12.4	12.2	1.24	1.22	11.8	11.4	939	908	⩾40	⩾3185	37	35	294	279	⩽240
73	N40TH	12.7	12.4	1.27	1.24	12.1	11.8	971	939	⩾40	⩾3185	39	37	310	294	⩽240

RAJ ENGINEERS

Magnetic Properties - NdFeB - Grade: *RH*

NO.	Grade	Remanence Br kGs Nom.	Remanence Br kGs Min.	Remanence Br T Nom.	Remanence Br T Min.	Coercive Force Hcb kOe Nom.	Coercive Force Hcb kOe Min.	Coercive Force Hcb kA/m Nom.	Coercive Force Hcb kA/m Min.	Intrinsic Coercive Force Hcj kOe	Intrinsic Coercive Force Hcj kA/m	Maximum Energy Product (BH)max MGOe Nom.	Maximum Energy Product (BH)max MGOe Min.	Maximum Energy Product (BH)max kJ/m³ Nom.	Maximum Energy Product (BH)max kJ/m³ Min.	Working Temp. $B/\mu_0 H=-2$ ℃
74	N28RH	10.8	10.4	1.08	1.04	10.4	9.8	811	780	⩾45	⩾3583	28	26	223	207	⩽260
75	N30RH	11.2	10.8	1.12	1.08	10.6	10.1	844	804	⩾45	⩾3583	30	28	239	223	⩽260
76	N33RH	11.5	11.3	1.15	1.13	11.0	10.6	876	844	⩾45	⩾3583	33	31	263	247	⩽260
77	N35RH	11.9	11.7	1.19	1.17	11.5	11.0	915	876	⩾45	⩾3583	35	33	279	263	⩽260

Magnetic Properties:

Br (Residual Induction): Magnetic strength after saturation **(kGs / Tesla)**.

Hcb (Coercive Force): Resistance to demagnetization **(kOe / kA/m)**.

Hcj (Intrinsic Coercivity): Temperature & demagnetization stability.

BHmax (Energy Product): Overall magnetic power **(MGOe / kJ/m³)**.

Operating Temperature: Maximum recommended working temperature**.**

RAJ ENGINEERS

Magnetic Properties - ***SmCo5***

	Grade	T	kGs	kA/m	kOe	kA/m	kOe	kJ/m3	MGOe	℃	℃	%℃	%℃
SmCo5	YX-16	0.81~0.85	8.1~8.5	612~660	7.7~8.3	1194~1830	15~23	110~127	14~16	750	250	-0.050	-0.30
	YX-18	0.85~0.90	8.5~9	644~692	8.1~8.7	1194~1830	15~23	127~143	16~18	750	250	-0.050	-0.30
	YX-20	0.90~0.94	9~9.4	676~725	8.5~9.1	1194~1830	15~23	150~167	19~21	750	250	-0.050	-0.30
	YX-22	0.92~0.96	9.2~9.6	710~748	8.9~9.4	1194~1830	15~23	160~175	20~22	750	250	-0.050	-0.30
	YX-24	0.96~1.00	9.6~10	730~770	9.2~9.7	1194~1830	15~23	175~190	22~24	750	250	-0.050	-0.30
	YX-16S	0.79~0.84	7.9~8.4	620~660	7.8~8.3	≥1830	≥23	118~135	15~17	750	250	-0.035	-0.28
	YX-18S	0.84~0.89	8.4~8.9	660~700	8.3~8.8	≥1830	≥23	135~151	17~19	750	250	-0.040	-0.28
	YX-20S	0.89~0.93	8.9~9.3	684~732	8.6~9.2	≥1830	≥23	150~167	19~21	750	250	-0.045	-0.28
	YX-22S	0.92~0.96	9.2~9.6	710~756	8.9~9.5	≥1830	≥23	167~183	21~23	750	250	-0.045	-0.28
	YX-24S	0.96~1.00	9.6~10	740~788	9.3~9.9	≥1830	≥23	183~199	23~25	750	250	-0.045	-0.28

RAJ ENGINEERS

Magnetic Properties - ***Sm2Co17***

	Grade	T	kGs	kA/m	kOe	kA/m	kOe	kJ/m3	MGOe	℃	℃	%℃	%℃
Sm2Co17	YXG-24L	0.95~1.02	9.5~10.2	541~716	6.8~9	636~955	8~12	175~191	22~24	800	250	-0.025	-0.20
	YXG-26L	1.02~1.05	10.2~10.5	541~748	6.8~9.4	636~955	8~12	191~207	24~26	800	250	-0.035	-0.20
	YXG-28L	1.03~1.08	10.3~10.8	541~764	6.8~9.6	636~955	8~12	207~220	26~28	800	250	-0.035	-0.20
	YXG-30L	1.08~1.15	10.8~11.5	541~796	6.8~10	636~955	8~12	220~240	28~30	800	250	-0.035	-0.20
	YXG-32L	1.10~1.15	11~11.5	541~812	6.8~10.2	636~955	8~12	230~255	29~32	800	250	-0.035	-0.20
	YXG-24M	0.95~1.02	9.5~10.2	676~764	8.5~9.6	955~1433	12~18	175~191	22~24	800	300	-0.035	-0.20
	YXG-26M	1.02~1.05	10.2~10.5	676~780	8.5~9.8	955~1433	12~18	191~207	24~26	800	300	-0.035	-0.20
	YXG-28M	1.03~1.08	10.3~10.8	676~796	8.5~10	955~1433	12~18	207~220	26~28	800	300	-0.035	-0.20
	YXG-30M	1.08~1.15	10.8~11.5	676~835	8.5~10.5	955~1433	12~18	220~240	28~30	800	300	-0.035	-0.20
	YXG-32M	1.10~1.15	11~11.5	676~852	8.5~10.7	955~1433	12~18	230~255	29~32	800	300	-0.035	-0.20
	YXG22	0.93~0.97	9.3~9.7	676~740	8.5~9.3	≥1433	≥18	160~183	20~23	800	300	-0.020	-0.20
	YXG-24	0.95~1.02	9.5~10.2	692~764	8.7~9.6	≥1433	≥18	175~191	22~24	800	300	-0.025	-0.20
	YXG-26	1.02~1.05	10.2~10.5	748~796	9.4~10	≥1433	≥18	191~207	24~26	800	300	-0.030	-0.20
	YXG-28	1.03~1.08	10.3~10.8	756~812	9.5~10.2	≥1433	≥18	207~220	26~28	800	300	-0.035	-0.20
	YXG-30	1.08~1.15	10.8~11.5	788~835	9.9~10.5	≥1433	≥18	220~240	28~30	800	300	-0.035	-0.20
	YXG-32	1.10~1.15	11~11.5	812~860	10.2~10.8	≥1433	≥18	230~255	29~32	800	300	-0.035	-0.20
	YXG-24H	0.95~1.02	9.5~10.2	692~764	8.7~9.6	-0.030)	≥25	175~191	22~24	800	350	-0.030	-0.20
	YXG-26H	1.02~1.05	10.2~10.5	748~796	9.4~10	≥1990	≥25	191~207	24~26	800	350	-0.030	-0.20
	YXG-28H	1.03~1.08	10.3~10.8	756~812	9.5~10.2	≥1990	≥25	207~220	26~28	800	350	-0.035	-0.20
	YXG-30H	1.08~1.15	10.8~11.5	788~835	9.9~10.5	≥1990	≥25	220~240	28~30	800	350	-0.035	-0.20
	YXG-32H	1.10~1.15	11~11.5	812~860	10.2~10.8	≥1990	≥25	230~255	29~32	800	350	-0.035	-0.20

RAJ ENGINEERS