Sintered NdFeB

Grade Characteristics

Grade
N35
N38
N40
N42
N45
N48
N50
N35M
N38M

Grade
N40M
N45M
N48M
N50M
N35H
N38H
N40H
N50H
N35SH
N40SH
N42SH
N30UH

Magnetic Characteristics

Grade	Br	Br	Hcb	Hcb	Hcj	Hcj	Bhmax	Bhmax
	mT	KGs	Gauss	KA/m	KOe	Oersteds	KOe	KA/m
N30	1070-1110	10.7-11.0	796-865	10.0-11.0	≥ 12	≥ 955	223-247	28-31
N33	1120-1170	11.2-11.7	836-915	10.5-11.5	≥ 12	≥ 955	243-263	31-33
N35	1160-1210	11.6-12.1	860-930	10.8-11.7	≥ 12	≥ 955	263-286	33-36
N38	1220-1280	12.2-12.8	860-930	10.8-11.7	≥ 12	≥ 955	286-310	36-39
N40	1250-1290	12.5-12.9	923-990	11.6-12.5	≥ 12	≥ 955	303-318	38-40
N42	1280-1320	12.8-13.2	860-930	10.8-11.7	≥ 12	≥ 955	318-342	40-43
N45	1320-1360	13.2-13.6	860-930	10.8-11.7	≥ 12	≥ 955	340-372	42-46

Grade	Br	Br	Hcb	Hcb	Hcj	Hcj	Bhmax	Bhmax
	mT	KGs	Gauss	KA/m	KOe	Oersteds	KOe	KA/m
N48	1380-1430	13.8-14.3	836-915	10.5-11.5	≥ 12	≥ 955	366-390	46-49
N50	1400-1450	14.0-14.5	836-915	10.5-11.5	≥ 12	≥ 955	376-408	47-51
N52	1420-1480	14.2-14.8	836-915	10.5-11.5	≥ 11	≥ 876	390-422	49-53
N55	1440-1510	14.4-15.1	716-785	9.0-10.0	≥ 11	≥ 876	414-446	52-56
N30M	1070-1110	10.7-11.0	812-876	10.2-11.0	≥ 13	≥ 1114	207-223	26-28
N33M	1080-1150	10.8-11.5	836-915	10.5-11.5	≥ 13	≥ 1114	223-247	28-31
N35M	1120-1170	11.2-11.7	868-938	10.9-11.8	≥ 13	≥ 1114	247-263	31-33
N38M	1160-1210	11.6-12.1	899-970	11.3-12.2	≥ 13	≥ 1114	263-286	33-36
N40M	1220-1280	12.2-12.8	923-990	11.6-12.5	≥ 13	≥ 1114	286-310	36-39
N42M	1250-1290	12.5-12.9	955-1010	12.0-12.9	≥ 13	≥ 1114	302-326	38-41
N45M	1280-1320	12.8-13.2	971-1025	12.2-13.1	≥ 13	≥ 1114	318-342	40-43
N48M	1320-1360	13.2-13.6	1000-1034	12.5-13.4	≥ 13	≥ 1114	344-376	43-47
N50M	1370-1420	13.7-14.2	1011-1055	12.7-13.6	≥ 13	≥ 1114	366-390	46-49
N52M	1420-1480	14.2-14.8	1035-1090	13.0-13.9	≥ 13	≥ 1114	376-408	47-51
N30H	1070-1110	10.7-11.0	796-865	10.0-10.9	≥ 17	≥ 1353	223-247	28-31
N33H	1120-1170	11.2-11.7	836-915	10.5-11.5	≥ 17	≥ 1353	247-263	31-33
N35H	1160-1210	11.6-12.1	868-938	10.9-11.8	≥ 17	≥ 1353	263-286	33-36
N38H	1220-1280	12.2-12.8	899-970	11.3-11.7	≥ 17	≥ 1353	286-310	36-39
N40H	1250-1290	12.5-12.9	923-990	11.6-12.5	≥ 17	≥ 1353	302-326	38-41
N42H	1280-1320	12.8-13.2	955-1010	12.0-12.9	≥ 17	≥ 1353	318-342	40-43
N45H	1320-1360	13.2-13.6	971-1025	12.2-13.1	≥ 17	≥ 1353	344-376	43-47
N48H	1370-1410	13.7-14.1	1011-1055	12.7-13.6	≥ 17	≥ 1353	366-390	46-49

Grade	Br	Br	Hcb	Hcb	Hcj	Hcj	Bhmax	Bhmax
	mT	KGs	Gauss	KA/m	KOe	Oersteds	KOe	KA/m
N50H	1390-1440	13.9-14.4	1035-1090	13.0-13.9	≥ 16	≥ 1274	376-408	47-51
N30SH	1080-1130	10.8-11.3	811-880	10.2-11.1	≥ 20	≥ 1592	223-247	28-31
N33SH	1160-1170	11.2-11.7	844-912	10.6-11.5	≥ 20	≥ 1592	247-263	31-33
N35SH	1160-1210	11.6-12.1	876-955	11.0-12.0	≥ 20	≥ 1592	263-286	33-36
N38SH	1220-1280	12.2-12.8	907-975	11.4-11.7	≥ 20	≥ 1592	286-310	36-39
N40SH	1250-1290	12.5-12.9	939-955	11.8-12.0	≥ 20	≥ 1592	302-326	38-41
N42SH	1300-1350	13.0-13.5	955-1010	12.0-12.9	≥ 20	≥ 1592	312-344	39-43
N45SH	1320-1360	13.2-13.6	979-1030	12.3-13.2	≥ 20	≥ 1592	344-376	43-47
N48SH	1370-1410	13.7-14.1	1000-1034	12.5-13.4	≥ 19	≥ 1512	366-390	46-49
N25UH	970-1050	9.7-10.5	732-812	9.2-10.2	≥ 25	≥ 1990	183-199	23-25
N28UH	1040-1080	10.4-10.8	764-833	9.6-10.5	≥ 25	≥ 1990	207-223	26-28
N30UH	1080-1130	10.8-11.3	812-876	10.2-11.0	≥ 25	≥ 1990	223-239	28-30
N33UH	1130-1170	11.3-11.7	852-923	10.7-11.6	≥ 25	≥ 1990	247-263	31-34
N35UH	1160-1210	11.6-12.1	860-930	10.8-11.7	≥ 25	≥ 1990	263-286	33-36
N38UH	1220-1280	12.2-12.8	876-955	11.0-12.0	≥ 25	≥ 1990	286-310	36-39
N40UH	1250-1290	12.5-12.9	915-980	11.5-11.8	≥ 25	≥ 1990	303-318	38-40
N42UH	1300-1350	13.0-13.5	955-1010	12.0-12.9	≥ 25	≥ 1990	312-344	39-43
N45UH	1320-1360	13.2-13.6	1000-1034	12.5-13.4	≥ 24	≥ 1910	344-380	43-47
N28EH	1050-1090	10.5-10.9	780-850	9.8-10.7	≥ 30	≥ 2388	211-235	26-28
N30EH	1080-1130	10.8-11.3	812-876	10.2-11.0	≥ 30	≥ 2388	223-247	28-31
N33EH	1140-1180	11.4-11.8	820-868	10.3-11.2	≥ 30	≥ 2388	247-263	31-34
N35EH	1160-1220	11.6-12.0	836-915	10.5-11.5	≥ 30	≥ 2388	263-286	33-35

Grade	Br	Br	Hcb	Hcb	Hcj	Hcj	Bhmax	Bhmax
	mT	KGs	Gauss	KA/m	KOe	Oersteds	KOe	KA/m
N38EH	1180-1240	11.8-12.4	899-970	11.3-12.2	≥ 30	≥ 2388	282-306	36-38
N40EH	1230-1285	12.3-12.8	915-980	11.5-11.8	≥ 30	≥ 2388	301-314	38-40
N42EH	1300-1350	13.0-13.5	971-1025	12.2-13.1	≥ 29	≥ 2308	306-330	40-42
N28AH	1040-1080	10.4-10.8	780-850	9.8-10.7	≥ 34	≥ 2706	207-231	26-29
N30AH	1080-1120	10.8-11.2	812-876	10.2-11.0	≥ 34	≥ 2706	223-247	28-31
N33AH	1130-1170	11.3-11.7	812-876	10.2-11.0	≥ 34	≥ 2706	239-262	30-33
N35AH	1150-1220	11.5-11.9	883-956	11.2-11.6	≥ 34	≥ 2706	262-286	33-35
N38AH	1190-1250	11.9-12.5	923-990	11.6-12.5	≥ 33	≥ 2626	278-302	36-38
N35X	1160-1210	11.6-12.1	860-930	10.8-11.7	≥ 12	≥ 955	263-286	33-36
N35MX	1160-1210	11.6-12.1	868-938	10.9-11.8	≥ 14	≥ 1114	263-286	33-36
N45MX	1320-1360	13.2-13.6	971-1025	12.2-13.1	≥ 14	≥ 1114	344-376	43-47
N38HX	1220-1280	12.2-12.8	899-970	11.3-12.2	≥ 17	≥ 1353	286-310	36-39
N40HX	1250-1290	12.5-12.9	923-990	11.6-12.5	≥ 17	≥ 1353	302-326	38-41
N45HX	1320-1360	13.2-13.6	971-1025	12.2-13.1	≥ 17	≥ 1353	344-376	43-47
N33SHX	1130-1170	11.3-11.7	844-912	10.6-11.5	≥ 20	≥ 1592	247-263	31-33
N35SHX	1160-1210	11.6-12.1	876-944	11.0-11.9	≥ 20	≥ 1592	263-286	33-36
N38SHX	1220-1280	12.2-12.8	907-975	11.4-12.3	≥ 20	≥ 1592	286-310	36-39
N42SHX	1300-1350	13.0-13.5	955-1010	12.0-12.9	≥ 20	≥ 1592	312-344	39-43
N30SHZ	1080-1130	10.8-11.3	804-872	10.1-11.0	≥ 20	≥ 1592	223-247	28-31
N33SHZ	1130-1170	11.3-11.7	844-912	10.6-11.5	≥ 20	≥ 1592	247-263	31-33
N35SHZ	1160-1210	11.6-12.1	876-944	11.0-11.9	≥ 20	≥ 1592	263-286	33-36
N38SHZ	1220-1280	12.2-12.8	907-975	11.4-12.3	≥ 20	≥ 1592	286-310	36-39

Grade	Br	Br	Hcb	Hcb	Hcj	Hcj	Bhmax	Bhmax
	mT	KGs	Gauss	KA/m	KOe	Oersteds	KOe	KA/m
N45SHZ	1320-1360	13.2-13.6	979-1030	12.3-13.2	≥ 20	≥ 1592	344-376	43-47
N30UHZ	1080-1130	10.8-11.3	812-876	10.2-11.0	≥ 25	≥ 1990	223-247	28-31
N33UHZ	1130-1170	11.3-11.7	852-920	10.7-11.6	≥ 25	≥ 1990	247-263	31-33
N38UHZ	1220-1280	12.2-12.8	876-944	11.0-11.9	≥ 25	≥ 1990	286-310	36-39
N40UHZ	1250-1290	12.5-12.9	915-980	11.5-11.8	≥ 25	≥ 1990	303-318	38-40
N30EHZ	1080-1130	10.8-11.3	812-876	10.2-11.0	≥ 30	≥ 2388	223-247	28-31
N38EHZ	1180-1240	11.8-12.4	899-970	11.3-12.2	≥ 30	≥ 2388	282-306	36-38
N30AHZ	1080-1120	10.8-11.2	812-876	10.2-11.0	≥ 34	≥ 2706	223-247	28-31

Thermal Characteristics

Grade	Max Operating Temp	Curie Temp	Rev Temp Coeff	Rev Temp Coeff
	°C	%/°C	Br (TC a(Br) %/°C)	Hcj (Tc a(Hcj) %/°C)
N30	80	310	-0.120	-0.750
N33	80	310	-0.120	-0.750
N35	80	310	-0.120	-0.750
N38	80	310	-0.120	-0.750
N40	80	310	-0.120	-0.750
N42	80	310	-0.120	-0.750
N45	80	310	-0.120	-0.750
N48	80	310	-0.120	-0.750
N50	80	310	-0.120	-0.750

Grade	Max Operating Temp	Curie Temp	Rev Temp Coeff	Rev Temp Coeff
	°C	%/°C	Br (TC a(Br) %/°C)	Hcj (Tc a(Hcj) %/°C)
N52	80	310	-0.120	-0.750
N55	80	310	-0.120	-0.750
N30M	100	310	-0.120	-0.675
N33M	100	310	-0.120	-0.675
N35M	100	310	-0.120	-0.675
N38M	100	310	-0.120	-0.675
N40M	100	310	-0.120	-0.675
N42M	100	310	-0.120	-0.675
N45M	100	310	-0.120	-0.675
N48M	100	310	-0.120	-0.675
N50M	100	310	-0.120	-0.675
N52M	100	310	-0.120	-0.675
N30H	120	310	-0.120	-0.605
N33H	120	310	-0.120	-0.605
N35H	120	310	-0.120	-0.605
N38H	120	310	-0.120	-0.605
N40H	120	310	-0.120	-0.605
N42H	120	310	-0.120	-0.605
N45H	120	310	-0.120	-0.605
N48H	120	310	-0.120	-0.605
N50H	120	310	-0.120	-0.605
N30SH	150	320	-0.120	-0.535

Grade	Max Operating Temp	Curie Temp	Rev Temp Coeff	Rev Temp Coeff
	°C	%/°C	Br (TC a(Br) %/°C)	Hcj (Tc a(Hcj) %/°C)
N33SH	150	320	-0.120	-0.535
N35SH	150	320	-0.120	-0.535
N38SH	150	320	-0.120	-0.535
N40SH	150	320	-0.120	-0.535
N42SH	150	320	-0.120	-0.535
N45SH	150	320	-0.120	-0.535
N48SH	150	320	-0.120	-0.535
N25UH	180	320	-0.120	-0.465
N28UH	180	320	-0.120	-0.465
N30UH	180	320	-0.120	-0.465
N33UH	180	320	-0.120	-0.465
N35UH	180	320	-0.120	-0.465
N38UH	180	320	-0.120	-0.465
N40UH	180	320	-0.120	-0.465
N42UH	180	320	-0.120	-0.465
N45UH	180	320	-0.120	-0.465
N28EH	200	320	-0.120	-0.420
N30EH	200	320	-0.120	-0.420
N33EH	200	320	-0.120	-0.420
N35EH	200	320	-0.120	-0.420
N38EH	200	320	-0.120	-0.420
N40EH	200	320	-0.120	-0.420

Grade	Max Operating Temp	Curie Temp	Rev Temp Coeff	Rev Temp Coeff
	°C	%/°C	Br (TC a(Br) %/°C)	Hcj (Tc a(Hcj) %/°C)
N42EH	200	320	-0.120	-0.420
N28AH	220	320	-0.120	-0.393
N30AH	220	320	-0.120	-0.393
N33AH	220	320	-0.120	-0.393
N35AH	220	320	-0.120	-0.393
N38AH	220	320	-0.120	-0.393
N35X	80	320	-0.110	-0.750
N35MX	100	320	-0.110	-0.675
N45MX	100	320	-0.110	-0.675
N38HX	120	320	-0.110	-0.605
N40HX	120	320	-0.110	-0.605
N45HX	120	320	-0.110	-0.605
N33SHX	150	320	-0.110	-0.535
N35SHX	150	320	-0.110	-0.535
N38SHX	150	320	-0.110	-0.535
N42SHX	150	320	-0.110	-0.535
N30SHZ	150	320	-0.100	-0.535
N33SHZ	150	320	-0.100	-0.535
N35SHZ	150	320	-0.100	-0.535
N38SHZ	150	320	-0.100	-0.535
N45SHZ	150	320	-0.100	-0.535
N30UHZ	180	320	-0.100	-0.465

Grade	Max Operating Temp	Curie Temp	Rev Temp Coeff	Rev Temp Coeff
	°C	%/°C	Br (TC a(Br) %/°C)	Hcj (Tc a(Hcj) %/°C)
N33UHZ	180	320	-0.100	-0.465
N38UHZ	180	320	-0.100	-0.465
N40UHZ	180	320	-0.100	-0.465
N30EHZ	200	320	-0.100	-0.420
N38EHZ	200	320	-0.100	-0.420
N30AHZ	220	320	-0.100	-0.393

Mechanical/Physical Characteristics

Grade	Density
	g/cm3
N30	7.5-7.8
N33	7.5-7.8
N35	7.5-7.8
N38	7.5-7.8
N40	7.5-7.8
N42	7.5-7.8
N45	7.5-7.8
N48	7.5-7.8
N50	7.5-7.8
N52	7.5-7.8

Grade	Density
	g/cm3
N55	7.5-7.8
N30M	7.5-7.8
N33M	7.5-7.8
N35M	7.5-7.8
N38M	7.5-7.8
N40M	7.5-7.8
N42M	7.5-7.8
N45M	7.5-7.8
N48M	7.5-7.8
N50M	7.5-7.8
N52M	7.5-7.8
N30H	7.5-7.8
N33H	7.5-7.8
N35H	7.5-7.8
N38H	7.5-7.8
N40H	7.5-7.8
N42H	7.5-7.8
N45H	7.5-7.8
N48H	7.5-7.8
N50H	7.5-7.8
N30SH	7.5-7.8
N33SH	7.5-7.8

Grade	Density
	g/cm3
N35SH	7.5-7.8
N38SH	7.5-7.8
N40SH	7.5-7.8
N42SH	7.5-7.8
N45SH	7.5-7.8
N48SH	7.5-7.8
N25UH	7.5-7.8
N28UH	7.5-7.8
N30UH	7.5-7.8
N33UH	7.5-7.8
N35UH	7.5-7.8
N38UH	7.5-7.8
N40UH	7.5-7.8
N42UH	7.5-7.8
N45UH	7.5-7.8
N28EH	7.5-7.8
N30EH	7.5-7.8
N33EH	7.5-7.8
N35EH	7.5-7.8
N38EH	7.5-7.8
N40EH	7.5-7.8
N42EH	7.5-7.8

Grade	Density
	g/cm3
N28AH	7.5-7.8
N30AH	7.5-7.8
N33AH	7.5-7.8
N35AH	7.5-7.8
N38AH	7.5-7.8
N35X	7.5-7.8
N35MX	7.5-7.8
N45MX	7.5-7.8
N38HX	7.5-7.8
N40HX	7.5-7.8
N45HX	7.5-7.8
N33SHX	7.5-7.8
N35SHX	7.5-7.8
N38SHX	7.5-7.8
N42SHX	7.5-7.8
N30SHZ	7.5-7.8
N33SHZ	7.5-7.8
N35SHZ	7.5-7.8
N38SHZ	7.5-7.8
N45SHZ	7.5-7.8
N30UHZ	7.5-7.8
N33UHZ	7.5-7.8

Grade	Density
	g/cm3
N38UHZ	7.5-7.8
N40UHZ	7.5-7.8
N30EHZ	7.5-7.8
N38EHZ	7.5-7.8
N30AHZ	7.5-7.8

MSDS

Section 1 - Product Name

Product Name: Sintered Neodymium Iron Boron (NdFeB) Permanent Magnet

Section 2 - Hazardous Ingredients

Chemical Name: Sintered Neodymium Iron Boron (NdFeB) Permanent Magnet

Material/Component(s):

Material or Component	Weight %	CAS No.	ACGUH TLV (mg/m^3)	Notes
Neodymium	33%	7440-00-8	Not Established	
Iron	65%	7439-89-6	10 (oxide)	
Boron	1.3%	7440-42-8	10	test
Nickel	0.01-0.4%	7440-02-0	1 (dust) / 0.1 (fume)	Plating
Copper	0.01-0.2%	7440-50-8	1 (dust) / 0.2 (fume)	Plating
Dysprosium	0-4%	7429-91-6	Not established	May be used in high-temp grades
Cobalt	0-5%	7440-48-4	0.02	May be used in high-temp grades
Praseodymium	0-5%	74410-10-1	Not Established	N/A

Section 3 - Physical Characteristics

Vapor Pressure: (mm Hg.) N/A
Vapor Density: (air = 1) N/A
Specific Gravity: 7.1 - 7.6
Melting Point: Above 1000 Degrees C (1832 Degrees F)
Evaporation Rate: N/A
Odor: No Odor
Solubility in Water: Not Soluble

Section 4 - Fire and Explosion Hazard Data

Flash Point: N/A
FLAMMABLE LIMITS: N/A
LEL: N/A
UEL: N/A
Extinguishing Media: Dry Chemicals without Oxygen Compounds or Sand
Special Fire Fighting Procedures: Do not use Halon agents or water on smoldering, burning powder.
Unusual Fire and Explosion Hazards(s): Dry powders of neodymium magnets will oxidize, smolder, and burn rapidly in the presences of air or oxygen. Maintain powders in water slurry or in inert atmospheres of nitrogen or argon to prevent spontaneous combustion. Magnets may spark on impact. Handle carefully in explosive atmospheres.

Section 5 - Reactivity Data

Stability: Stable
Conditions to Avoid: Avoid exposure of powdered magnet material to air, oxygen or halogenated hydrocarbons, and to elevated temperatures above 150 Degrees Celsius.
Incompatibility (Materials to Avoid): Fine powders are incompatible with air, oxygen, halogentated hydrocarbons with strong oxidizers

Section 6 - Health Hazard Data

Health Hazards (Acute & Chronic): Prolonged skin contact may cause irritation or allergenic dermatitis.

Emergency and First Aid Procedures:

Procedure For	Procedure
Skin	Brush off powders and wash well with soap and water.
Eyes	Flush with water until clear.

Section 7 - Precautions for Safe Handling and Use

Spill Procedure: Sweep up dust and store in water slurry or sealed containers utilizing inert atmosphere such as argon or nitrogen to prevent spontaneous combustion.
Waste Disposal Method: Dispose of in accordance with federal, state and local regulations.

Section 8 - Control Measures

Respiratory Protection: Use NIOSH approved respirator when TLV is exceeded.
Eye Protection: Use safety glasses or goggles when handling magnets.
Skin Protection: Potective gloves are recommended when handling magnetized part or parts which may have sharp edges.
Ventilation: Use wet machining/grinding processes and adequate local ventilation to reduce dust levels
Work / Hygienic Practices: Use personal protection equipment when required. Use good personal hygiene practices. Keep magnetized parts away from mechanical/electrical instruments which may be damaged by high magnetic fields.