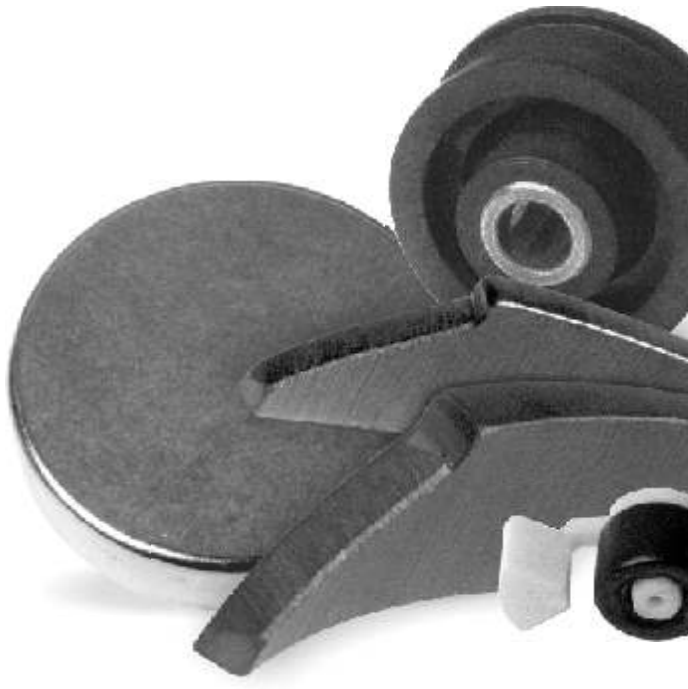
Eneflux Armtek Magnetics, Inc .

Magnetic and Physical Properties

Injection Molded Neodymium and Hard Ferrite



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Magnetic Properties
Injection Molded Neodymium & Hard Ferrite

Magnetic material	Resin	Magnetic property / Unit / Product name	Anisotropic magnet				Isotropic magnet			
			Residual flux density	Coercive force		Maximum energy product	Residual flux density	Coercive force		Maximum energy product
			Br	bHc	iHc	(BH) max.	Br	bHc	iHc	(BH) max.
			(G)	(Oe)	(Oe)	(MGOe)	(G)	(Oe)	(Oe)	(MGOe)
Hard ferrite	Nylon 6	EAM 9500	1000	950	1900	0.2	650	650	2000	0.1
		140	2400	2200	2900	1.4	1250	1100	2900	0.3
		160	2600	2250	2850	1.6	1370	1140	2800	0.4
		170	2780	2350	2800	1.8	1450	1200	2800	0.5
		190	2870	2350	2700	2.0	1480	1250	2700	0.5
		200	3000	2400	2800	2.2	1530	1300	2800	0.6
	Nylon 12	062	1550	1400	2000	0.6	1050	1000	2000	0.2
		132	2340	2200	3300	1.4	1200	1150	3250	0.3
		152	2570	2350	3300	1.6	1320	1200	3250	0.4
		172	2730	2400	2900	1.8	1400	1250	2850	0.4
		192	2860	2400	2900	2.0	1460	1250	2850	0.5
		202	2930	2500	2900	2.1	1500	1300	2850	0.6
	PPS	134	2350	2200	2850	1.4	1200	1150	2800	0.3
		164	2640	2250	2800	1.7	1380	1200	2750	0.4
Nd-Fe-B	Nylon 12	362	—	—	—	—	4000	3450	7900	3.3
		392	—	—	—	—	5000	3900	8000	5.0
		502	—	—	—	—	5700	4200	7500	6.0
		602	—	—	—	—	6100	4250	7500	7.0

Magnetic material	Resin	Magnetic property / Unit / Product name	Saturated flux density	A.C. initial permeability μiac		Relative loss factor $\tan\delta/\mu iac$		Maximum energy product
			Bs	100KHz	1MHz	100KHz	1MHz	
			(G)	—	—	—	—	Ω • m
Soft ferrite	Nylon 6	410	3200	11.5	11.5	4.4×10^{-3}	1.0×10^{-3}	10^{3}
		425	2450	15.0	15.0	2.8×10^{-3}	8.0×10^{-3}	10^{7}
	Nylon 12	422	3100	10.4	10.4	6.4×10^{-3}	1.4×10^{-3}	10^{3}
	Polyo-tefine	430 E	3050	10.1	10.1	5.6×10^{-3}	1.3×10^{-3}	10^{3}
	PPS	456 S	650	2.9	2.9	7.5×10^{-3}	1.1×10^{-3}	10^{11}
		465 N	2470	16.0	16.0	2.7×10^{-3}	1.5×10^{-3}	10^{8}

- Conversion Formula (CGS unit ⟷ SI unit)
  $1G=10^{-4}T$ $10e=8kJ/m^3$ $1MG0e=8kJ/m^3$
- The above tables are based on reliable sources for reference only.
- Users are advised to utilize them only after study of all relevant data.

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Physical Properties
Injection Molded Neodymium & Hard Ferrite

Magnetic material	Resin	Physical property / Unit / Product name	Tensile strength ASTM D-638	Flexural strength ASTM D-790	Izod impact (with notch) ASTM D-256	Rockwell hardness ASTM D-785	Heat deflection temp. (18.5kg/cm²) ASTM D-785	Specific gravity ASTM D-792	Absorption coefficient 23ºC 24 hrs ASTM D-570	Molding shrinkage coefficient DIC[1] Method
		Unit	kg/cm²	kg/cm²	kg-cm/cm	R Scale	ºC	—	%	%
Hard ferrite	Nylon 6	EAM 9500	600	1000	2.5	118	115	2.42	0.3	0.7
		140	800	1500	3.1	119	163	3.22	0.2	0.5
		160	800	1500	3.2	120	166	3.46	0.15	0.4
		170	750	1400	3.2	120	172	3.58	0.15	0.4
		190	700	1300	3.2	121	176	3.71	0.15	0.4
		200	600	1100	3.1	121	176	3.81	0.14	0.4
	Nylon 12	062	440	750	2.5	108	118	2.84	0.06	0.7
		132	500	900	3.1	108	110	3.29	0.05	0.6
		152	500	900	3.1	114	120	3.41	0.04	0.5
		172	600	1000	3.3	115	142	3.52	0.04	0.5
		192	550	1000	3.2	115	145	3.71	0.04	0.5
		202	500	1000	3.4	115	123	3.71	0.04	0.5
	PPS	134	450	800	3.2	114	220	3.36	0.01	0.4
		164	400	750	3.3	115	220	3.58	0.01	0.4
Nd-Fe-B	Nylon 12	362	600	1000	5.0	108	125	4.2	0.05	0.5
		392	500	880	4.8	110	150	5.0	0.04	0.4
		502	400	750	4.1	111	155	5.4	0.04	0.4
		602	250	500	4.3	105	136	5.7	0.04	0.4

Magnetic material	Resin	Physical property / Unit / Product name	Tensile strength ASTM D-638	Flexural strength ASTM D-790	Izod impact (with notch) ASTM D-256	Rockwell hardness ASTM D-785	Heat deflection temp. (18.5kg/cm²) ASTM D-785	Specific gravity ASTM D-792	Absorption coefficient 23ºC 24 hrs ASTM D-570	Molding shrinkage coefficient DIC[1] Method
		Unit	kg/cm²	kg/cm²	kg-cm/cm	R Scale	ºC	—	%	%
Soft ferrite	Nylon 6	410	720	1200	3.2	120	185	3.52	0.2	0.5
		425	530	950	3.4	121	180	3.84	0.2	0.4
	Nylon 12	422	450	700	3.5	112	150	3.35	0.05	0.6
	Polyolefine	430 E	—	65	9.5	—	42[2]	3.26	0.01	—
	PPS	456 S	720	1100	2.5	122	240	2.22	0.01	0.5
		465 N	250	500	3.2	112	230	3.86	0.01	0.4

1.) Molding shrinkage coefficient: 65 x 12.4 x 3.2mm
Average value of flow and right-angle directions of molded products.
2.) Heat deflection temperature (4.6kg/cm²)

* Acquired UL94 (E53829)

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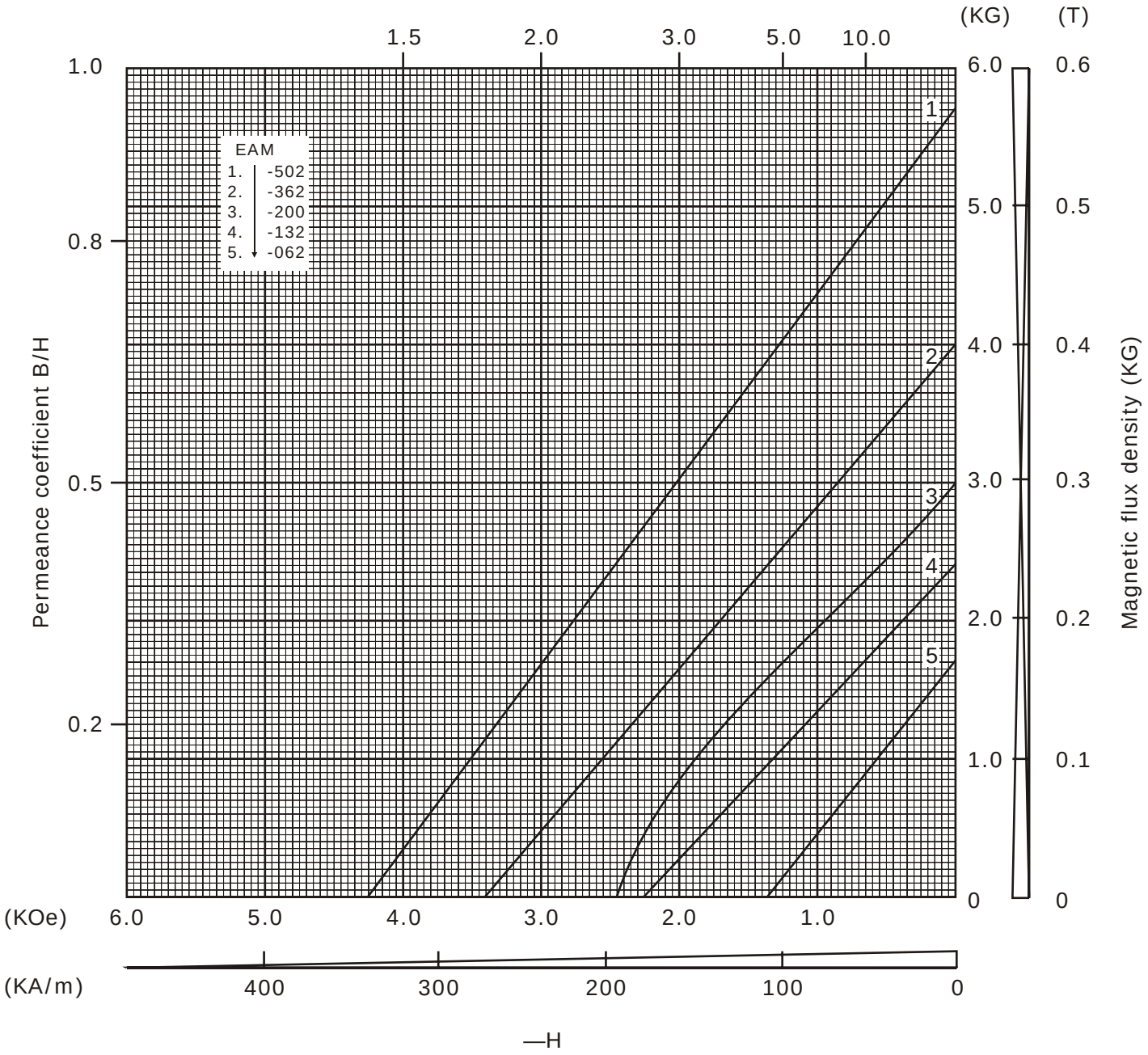
Demagnetization Curve



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