

Sintered Sm₂Co₁₇ Magnet Magnetic Properties Standard (General)

Material	Grade	Br		Hcb		Hcj		(BH)max		Tc	Tw	Temperature Coefficient of Br α(Br)	Temperature Coefficient of Hcj β(Hcj)
		Remanence Br		Coercivity Force		Intrinsic Coercivity		Maximun Energy		Curie Temperature	Max. Operating Temperature	%/°C	%/°C
		T	KGs	KA/m	KOe	KA/m	KOe	KJ/m ³	MGOe	°C	°C	%/°C	%/°C
Sm ₂ (CoFeCuZr) ₁₇	YXG-24H	0.95-1.02	9.5-10.2	692-764	8.7-9.6	≥1990	≥25	175-191	22-24	800	350	-0.035	-0.20
	YXG-26H	1.02-1.05	10.2-10.5	748-796	9.4-10.0	≥1990	≥25	191-207	24-26	800	350	-0.035	-0.20
	YXG-28H	1.03-1.08	10.3-10.8	756-812	9.5-10.2	≥1990	≥25	207-223	26-28	800	350	-0.035	-0.20
	YXG-30H	1.08-1.10	10.8-11.0	788-835	9.9-10.5	≥1990	≥25	223-239	28-30	800	350	-0.035	-0.20
	YXG-32H	1.10-1.13	11.0-11.3	812-860	10.2-10.8	≥1990	≥25	231-255	29-32	800	350	-0.035	-0.20
	YXG-33H	1.12-1.16	11.2-11.6	845-890	10.6-11.2	≥1990	≥25	239-263	30-33	800	350	-0.035	-0.20
	YXG-22	0.93-0.97	9.3-9.7	676-740	8.5-9.3	≥1433	≥18	160-183	20-23	800	300	-0.035	-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	-0.035	-0.20
	YXG-26	1.02-1.05	10.2-10.5	748-796	9.4-10.0	≥1433	≥18	191-207	24-26	800	300	-0.035	-0.20
	YXG-28	1.03-1.08	10.3-10.8	756-812	9.5-10.2	≥1433	≥18	207-223	26-28	800	300	-0.035	-0.20
	YXG-30	1.08-1.10	10.8-11.0	788-835	9.9-10.5	≥1433	≥18	223-239	28-30	800	300	-0.035	-0.20
	YXG-32	1.10-1.13	11.0-11.3	812-860	10.2-10.8	≥1433	≥18	231-255	29-32	800	300	-0.035	-0.20
	YXG-33	1.12-1.16	11.2-11.6	845-890	10.6-11.2	≥1433	≥18	239-263	30-33	800	300	-0.035	-0.20
	YXG-35	1.16-1.2	11.6-12.0	868-908	10.9-11.4	≥1433	≥18	255-278	32-35	800	300	-0.035	-0.25
	YXG-26M	1.02-1.05	10.2-10.5	676-780	8.5-9.8	955-1433	12-18	199-215	25-27	800	300	-0.035	-0.20
	YXG-28M	1.03-1.08	10.3-10.8	676-796	8.5-10.0	955-1433	12-18	207-220	26-28	800	300	-0.035	-0.20
	YXG-30M	1.08-1.10	10.8-11.0	676-835	8.5-10.5	955-1433	12-18	220-240	28-30	800	300	-0.035	-0.20
	YXG-32M	1.10-1.13	11.0-11.3	676-852	8.5-10.7	955-1433	12-18	230-255	29-32	800	300	-0.035	-0.20
	YXG-24L	0.95-1.02	9.5-10.2	541-716	6.8-9.0	636-955	8-12	183-199	23-25	800	250	-0.035	-0.20
	YXG-26L	1.02-1.05	10.2-10.5	541-748	6.8-9.4	636-955	8-12	199-215	25-27	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	6.8-10.0	636-955	8-12	220-240	28-30	800	250	-0.035	-0.20	
YXG-32L	1.10-1.15	11.0-11.5	541-812	6.8-10.2	636-955	8-12	230-255	29-32	800	250	-0.035	-0.20	
2:17 Low temperature coefficient (SmEr) ₂ (CoTm) ₁₇	LTC(YXG-18)	0.84-0.89	8.4-8.9	629-668	7.9-8.4	≥1433	≥18	135-151	17-19	840	300	-0.001	-0.25
	LTC(YXG-20)	0.89-0.94	8.9-9.4	660-708	8.3-8.9	≥1433	≥18	151-167	19-21	840	300	-0.007	-0.25
	LTC(YXG-22)	0.94-0.98	9.4-9.8	692-740	8.7-9.3	≥1433	≥18	167-183	21-23	840	300	-0.01	-0.25
High temperature SmCo Sm ₂ (CoFeCuZr) ₁₇	HT400(YXG-26)	0.99-1.04	9.9-10.4	740-812	9.3-10.2	≥1830	≥23	191-215	24-27	850	400	-0.035	-0.12
	HT450(YXG-24)	0.96-0.99	9.6-9.9	724-772	9.1-9.7	≥1830	≥23	175-199	22-25	850	450	-0.035	-0.12
	HT500(YXG-22)	0.93-0.97	9.3-9.7	708-756	8.9-9.5	≥1830	≥23	160-183	20-23	850	500	-0.035	-0.12

Calculation of Theoretical Values of Br and Hcj at High Temperature

The temperature coefficients of remanence Br and intrinsic coercivity Hcj are measured at 20°C to 150°C, only for reference.

Theoretical calculation formula (T1 = room temperature (usually 20°C), T2=high temperature):
 $Br@T2=Br@T1-[(T2-T1)*\alpha(Br)*Br@T1]$
 $Hcj@T2=Hcj@T1-[(T2-T1)*\beta(Hcj)*Hcj@T1]$

Taking YXG-28H, Br=1.03T, Hcj=1990KA/m as an example, the theoretical value at 150°C is calculated as follows:
 $Br@150^{\circ}C=1.03-[(150-20)*0.035\%*1.03]=0.9831T$
 $Hcj@150^{\circ}C=1990-[(150-20)*0.2\%*1990]=1472KA/m$

Remark:

- There will be a slight test error during the magnetic performance test, but the error rate is less than 1%. Because the roughcast are not fully inspected, the performance indicators of all grades will have individual deviations. Take the YXG-30 grade as an example. Br=10.8-11.0KGs (of which there may be less than 5% of the performance range between 10.75-11.04KGs).
- The maximum working temperature has a lot to do with the specific working environment, load coil and other factors.
- With the improvement of technology, the performance index may be changed, please refer to the latest version of NGYC property sheet.