Sintered SmCo Magnet Magnetic Properties Standard (General)

Material	Grade	Br Remanence Br		Hcb Coercivity Force		Hcj Intrinsic Coercivity		(BH)max Maximun Energy		Tc Curie Temperature	Tw Max. Operating Temperature	Temperature Coefficient of Br α(Br)	Temperature Coefficient of Hcj β(Hcj)
		T	KGs	KA/m	KOe	KA/m	KOe	KJ/m^3	MGOe	℃	℃	%/℃	%/℃
Pure SmCo$_5$	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	9.6-10.0	740-788	9.3-9.9	≥1830	≥23	183-199	23-25	750	250	-0.045	-0.28
1:5 Low temperature coefficient (SmGd)Co$_5$	LTC (YX-10)	0.62-0.66	6.2-6.6	485-517	6.1-6.5	≥1830	≥23	75-88	9.5-11	750	300	Temp. Range 20-100℃ 100-200℃ 200-300℃	α(Br) +0.0156%/℃ +0.0087%/℃ +0.0007%/℃

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℃), T2=high temperature):
	Br@T2=Br@T1-[(T2-T1)*α(Br)*Br@T1]
	Hcj@T2=Hcj@T1-[(T2-T1)*β(Hcj)*Hcj@T1]
	Taking YX-20s，Br=0.9T, Hcj=1830KA/m as an example, the theoretical value at 150℃ is calculated as follows:
	Br@150℃=0.9-[(150-20)*0.045%*0.9]=0.8473T
	Hcj@150℃=1830-[(150-20)*0.28%*1830]=1163.88KA/m

Remark:

1) 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.

2) The maximum working temperature has a lot to do with the specific working environment, load coil and other factors.

3) With the improvement of technology, the performance index may be changed, please refer to the latest version of NGYC property sheet.