

Samarium Cobalt (Sm1Co5)

Material Grade



Main Properties	Remanence		Coercive Force		Intrinsic Coercive Force		Max. Energy Product		Rev.Temp.Coeff. of Induction / Coercivity		Working Temperature
	Br		HcB		HcJ		BH max				
Grade	Typical mT	Typical Gauss	min kA/m	min Oersted	min kA/m	min Oersted	Typical kJ/m3	Typical MGOe	α (Br) %/°C	α (HcJ) %/°C	maximum °C
SmCo16	801-850	8100-8500	620-660	7800-8300	1194-1830	15000-23000	110-127	14-16	-0.050	-0.30	250°C
SmCo18	850-900	8500-9000	660-700	8300-8800	1194-1830	15000-23000	127-143	16-18	-0.050	-0.30	250°C
SmCo20	900-940	9000-9400	680-725	8500-9100	1194-1830	15000-23000	150-167	19-21	-0.050	-0.30	250°C
SmCo22	920-940	9200-9400	710-750	8900-9400	1194-1830	15000-23000	160-175	20-22	-0.050	-0.30	250°C
SmCo24	960-1000	9600-10000	730-770	9200-9700	1194-1830	15000-23000	175-190	22-24	-0.050	-0.30	250°C
SmCo18S	850-900	8500-9000	660-700	8300-8800	1433-2000	18000-25000	135-151	17-19	-0.045	-0.28	250°C
SmCo20S	900-940	9000-9400	680-725	8500-9100	1433-2000	18000-25000	143-160	18-20	-0.045	-0.28	250°C
SmCo22S	920-960	9200-9600	710-750	8900-9400	1433-2000	18000-25000	160-175	20-22	-0.045	-0.28	250°C

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Grade	Typical mT	Typical Gauss	min kA/m	min Oersted	min kA/m	min Oersted	Typical kJ/m3	Typical MGOe	α (Br) %/°C	α (HcJ) %/°C	maximum °C
SmCo24L	950-1020	9500-10200	557-716	7000-9000	636-955	8000-12000	175-191	22-24	-0.035	-0.20	250°C
SmCo26L	1020-1050	10200-10500	557-748	7000-9400	636-955	8000-12000	191-207	24-26	-0.035	-0.20	250°C
SmCo28L	1030-1080	10300-10800	557-765	7000-9900	636-955	8000-12000	207-220	26-28	-0.035	-0.20	250°C
SmCo30L	1080-1150	10800-11500	557-795	7000-10000	636-955	8000-12000	220-240	28-30	-0.035	-0.20	250°C
SmCo32L	1100-1150	11000-11500	557-810	7000-10200	636-955	8000-12000	230-255	29-32	-0.035	-0.20	250°C
SmCo26M	1020-1050	10200-10500	716-780	9000-9800	955-1273	12000-16000	191-207	24-26	-0.035	-0.20	300°C
SmCo28M	1030-1080	10300-10800	716-796	9000-10000	955-1273	12000-16000	207-220	26-28	-0.035	-0.20	300°C
SmCo30M	1080-1100	10800-11000	716-835	9000-10500	955-1273	12000-16000	220-240	28-30	-0.035	-0.20	300°C
SmCo32M	1100-1130	11000-11300	716-845	9000-10600	955-1273	12000-16000	230-255	29-32	-0.035	-0.20	300°C
SmCo22	930-970	9300-9700	676-740	8500-9300	>1433	>18000	160-183	20-23	-0.035	-0.20	300°C
SmCo24	950-1020	9500-10200	700-750	8700-9400	>1433	>18000	175-191	22-24	-0.035	-0.20	300°C
SmCo26	1020-1050	10200-10500	750-780	9400-9800	>1434	>19000	191-207	24-26	-0.035	-0.20	300°C
SmCo28	1030-1080	10300-10800	756-796	9500-10000	>1435	>20000	207-220	26-28	-0.035	-0.20	300°C
SmCo30	1080-1100	10800-11000	788-835	9900-10000	>1436	>21000	220-240	28-30	-0.035	-0.20	300°C
SmCo32	1100-1130	11000-11300	811-845	10200-10600	>1194	>15000	230-255	29-32	-0.035	-0.20	300°C
SmCo24H	950-1020	9500-10200	700-750	8700-9400	>1990	>25000	175-191	22-24	-0.035	-0.20	350°C

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SmCo26H	1020-1050	10200-10500	750-780	9400-9800	>1990	>25000	191-207	24-26	-0.035	-0.20	350°C
SmCo28H	1030-1080	10300-10800	756-796	9500-10000	>1990	>25000	207-220	26-28	-0.035	-0.20	350°C
SmCo30H	1080-1100	10800-11000	788-835	9900-10500	>1990	>25000	220-240	28-30	-0.035	-0.20	350°C

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Typical Physical Properties of SmCo

Property	um	value
Density	kg/m ³	8.4 x 10 ³
Bending Strength	kg/m ²	1.2 x 10 ³
Compressive Strength	kg/m ²	9.1 x 10 ³
Vickers Hardness (Hv)	Hv	560 - 600
Electrical Resistivity	m	0.8 x 10 ⁻⁶
Thermal Expansion Coefficient parallel to M	//M	9.2 x 10 ⁻⁶
Thermal Expansion Coefficient perpendicular to M	-I M	11.8 x 10 ⁻⁶
Curie Temperature	°C	825