

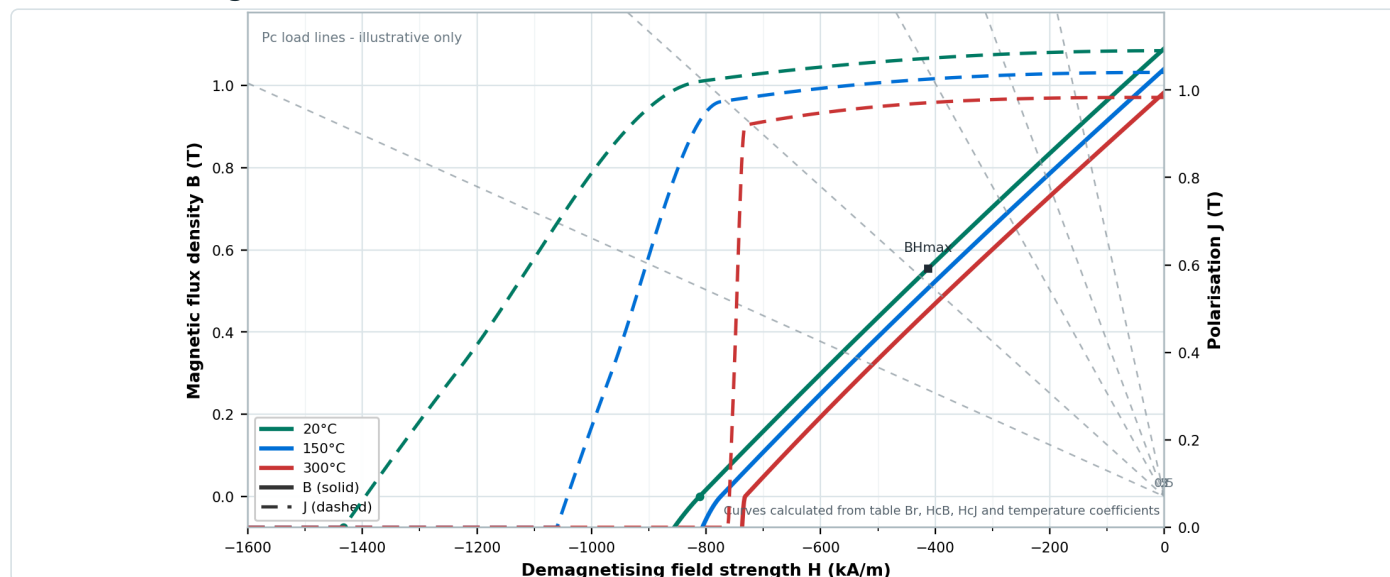
Technical Datasheet: Samarium Cobalt Sm2Co17-30

Material family: Sm2Co17 · GBT 4180-2012: XGS 223/247

Solid lines represent estimated magnetic flux density B. Dashed lines represent estimated polarisation J. Curves are generated from tabulated grade data for preliminary material comparison.

B_R [T]	H_{CB} [KA/M]	H_{CJ} [KA/M]	$(BH)_{MAX}$ [KJ/M ³]	T_{MAX} [°C]
1.08-1.10	788-835	≥1433	220-240	≤300

Estimated Demagnetisation Curve — Sm2Co17-30



Grade Information		Magnetic Properties			
Grade family	Sm2Co17	Property	SI value		Alt. value
Grade	Sm2Co17-30	Remanence B_r	1.08-1.10	T	10.8-11.0 kGs
GBT 4180-2012	XGS 223/247	Normal coercivity H_{CB}	788-835	kA/m	9.9-10.5 kOe
Max. working temperature	≤300 °C	Intrinsic coercivity H_{CJ}	≥1433	kA/m	≥18 kOe
Density	8.4 g/cm ³	Max. energy product $(BH)_{max}$	220-240	kJ/m ³	28-30 MGOe
		Temp. coefficient of B_r $\alpha(B_r)$	-0.035	%/°C	
		Temp. coefficient of H_{CJ} $\beta(H_{CJ})$	-0.2	%/°C	

Typical reference values for the SmCo material family. These values are not grade-specific measured values.

Reference Physical & Mechanical Properties @20°C — Sm2Co17 family							
Vickers hardness	typ	400 - 700	HV	Specific heat capacity	typ	320 - 390	J/(kg·K)
Modulus of elasticity / Young's modulus	typ	100 - 200	GPa	Thermal conductivity	typ	10 - 13	W/(m·K)
Flexural / bending strength	typ	90 - 180	MPa	Recoil permeability μ_r	typ	1.1	-
Compressive strength	typ	650 - 1200	MPa	Coeff. of linear thermal expansion, $\parallel$ DOM*	typ	5 - 12	×10 ⁻⁶ /K
Tensile strength / ultimate strength	typ	30 - 50	MPa	Coeff. of linear thermal expansion, $\perp$ DOM*	typ	10 - 13	×10 ⁻⁶ /K
Electrical resistivity	typ	0.5 - 0.9	μΩm				

Selection note — Sm2Co17: General high-temperature Sm2Co17 grade family.

Estimated curves are indicative only and are not measured test data. Final material specification, tolerances and performance should be confirmed against agreed supply documentation. * DOM = Direction of Magnetisation.

GUK Magnetics
info@gukmagnetics.co.uk