

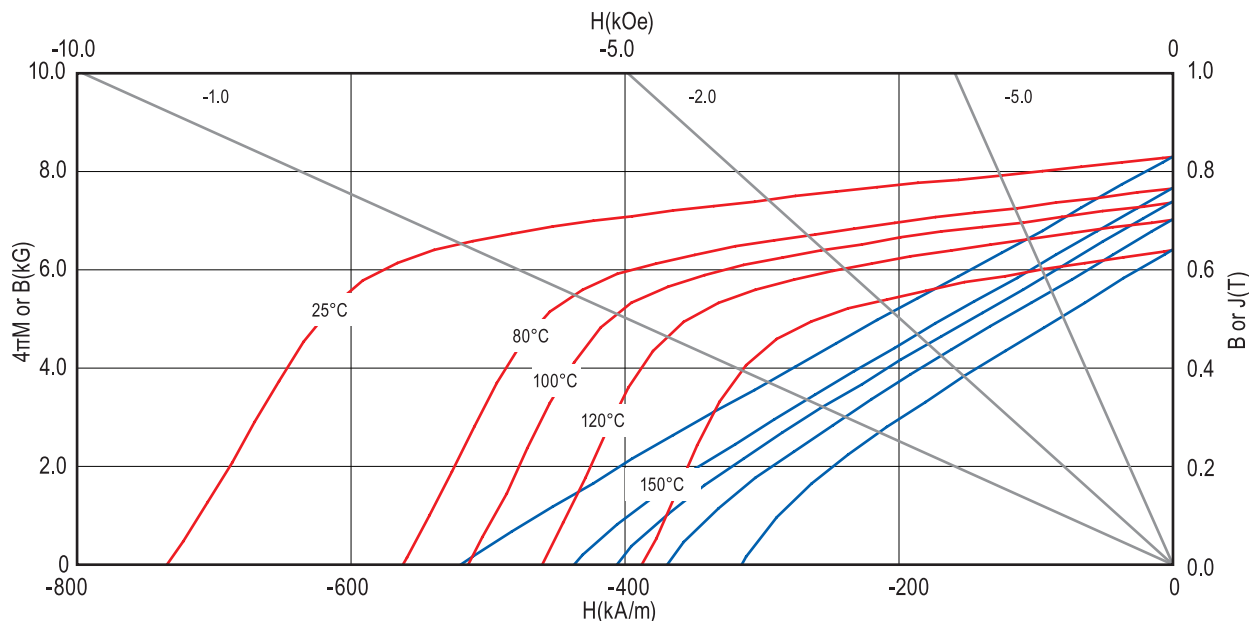
# MQP™-13-9HD-20179-070 Isotropic Powder\*

## Material Description

MQP-13-9HD-20179-070 is an isotropic powder designed for the manufacturing of bonded magnets. For a given press tonnage, bonded magnets made from this powder grade will exhibit the highest density ("HD") in the MQP-13-9 series. This powder offers lower springback and requires lower ejection forces. MQP-13-9HD-20179-070 is based on a patented and cost optimized Nd-Pr-Fe-B alloy composition and may be a cost effective alternative to MQP-13-9-20063-070. This material is produced by employing a proprietary rapid solidification process followed by a milling process and heat treatment.

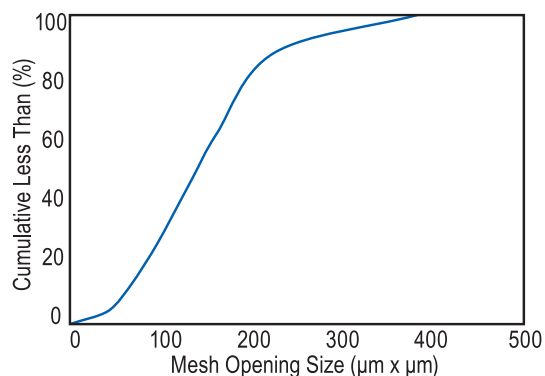
## Powder Magnetic Characteristics<sup>1</sup>

		SI	CGS
Specified	Residual Induction, $B_r$ .....	823-833	mT ..... 8.23-8.33
	Energy Product, $(BH)_{max}$ .....	104-112	kJ/m <sup>3</sup> ..... 13.1-14.1
	Intrinsic Coercivity, $H_{ci}$ .....	690-750	kA/m ..... 8.67-9.43
Typical	Magnetizing Field to ≥ 95% Saturation $H_s$ .....	≥ 1600	kA/m ..... ≥ 20.0
	Temperature coefficient of $B_r$ , $\alpha$ , to 100° C .....	-0.15	%/°C
	Temperature coefficient of $H_{ci}$ , $\beta$ , to 100° C .....	-0.40	%/°C
	Coercive Force, $H_c$ .....	510	kA/m ..... 6.4
	Curie Temperature, $T_c$ .....	273	°C
	Maximum Operating Temperature <sup>2</sup> .....	130-140	°C
	Maximum Process Temperature <sup>3</sup> .....	200-225	°C



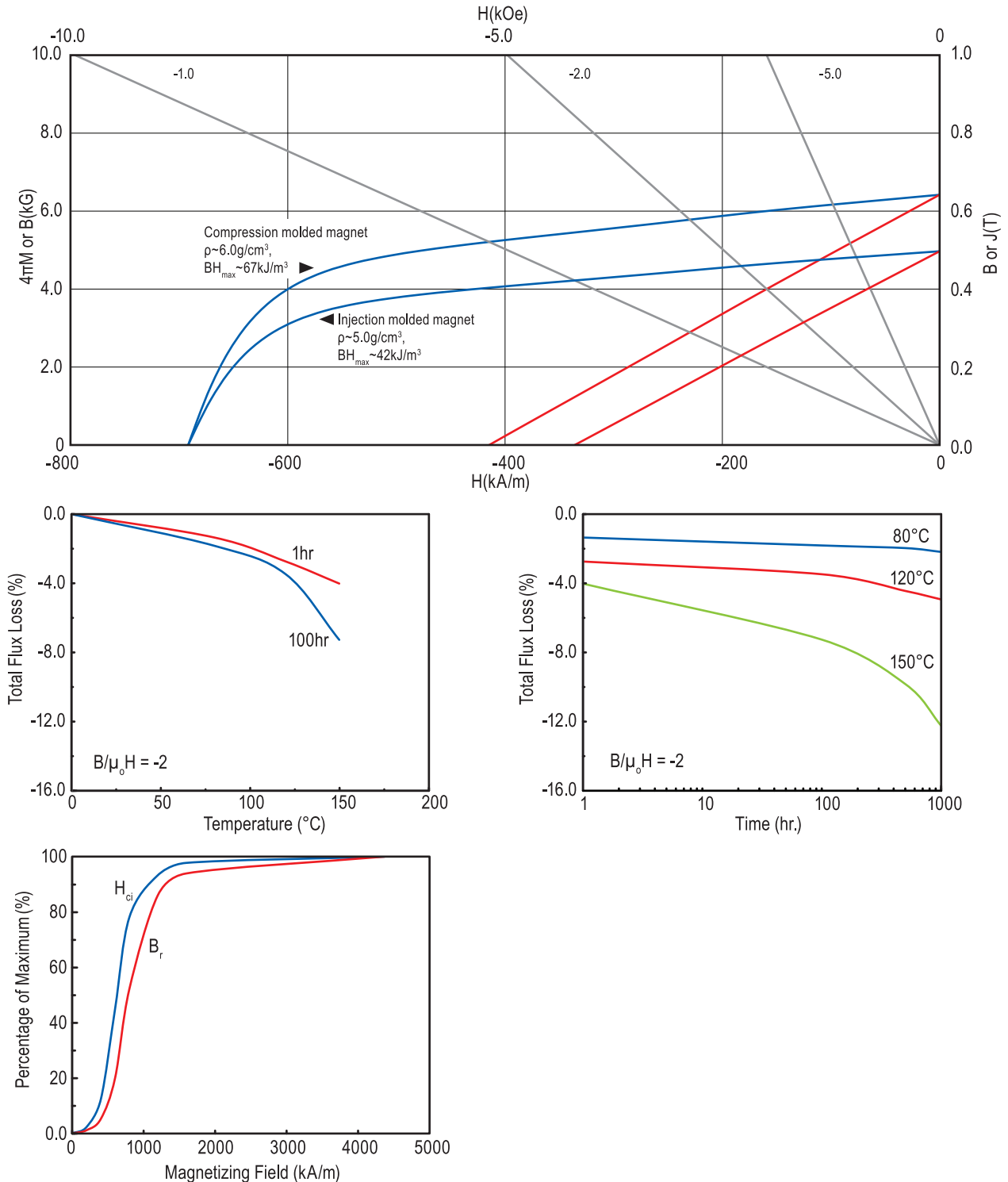
## Physical Characteristics

Specified	Sieve Screen Analysis:	
	Total > 40 Mesh (177x177μm opening) .....	< 0.1wt%
	Total > 60 Mesh (149x149μm opening) .....	< 25wt%
	Total < 270 Mesh (53x53μm opening) .....	< 12wt%
Typical	Density (theoretical) .....	7.60 g/cm <sup>3</sup>
	Apparent Density .....	2.63 g/cm <sup>3</sup>



\*Contact Magnequench to obtain up-to-date product specifications.

## Bonded Magnet Characteristics<sup>4</sup>



<sup>1</sup> Properties measured at 23°C, unless otherwise specified.

<sup>2</sup> The Maximum Operating Temperature for a magnet made from this powder is dependent upon the specific application, the type of magnet, and magnet geometry. Contact our Application Engineers for more information.

<sup>3</sup> Maximum Process Temperature is defined here at <2% reduction in coercivity (i.e. structural loss) after heating powder 1 hour in air.

<sup>4</sup> These properties are typical at 23°C and are representative only. Magnet properties are dependent upon powder loading and magnet manufacturing conditions. Contact our Application Engineers for information about Magnequench magnet products.

\* This powder, the products that are made there from, and its manufacturing processes are subject to one or more of the following United States Patents: 6,183,572; 6,478,890; 6,527,875; 6,855,265; 6,979,409; 7,087,185; 7,144,463.