

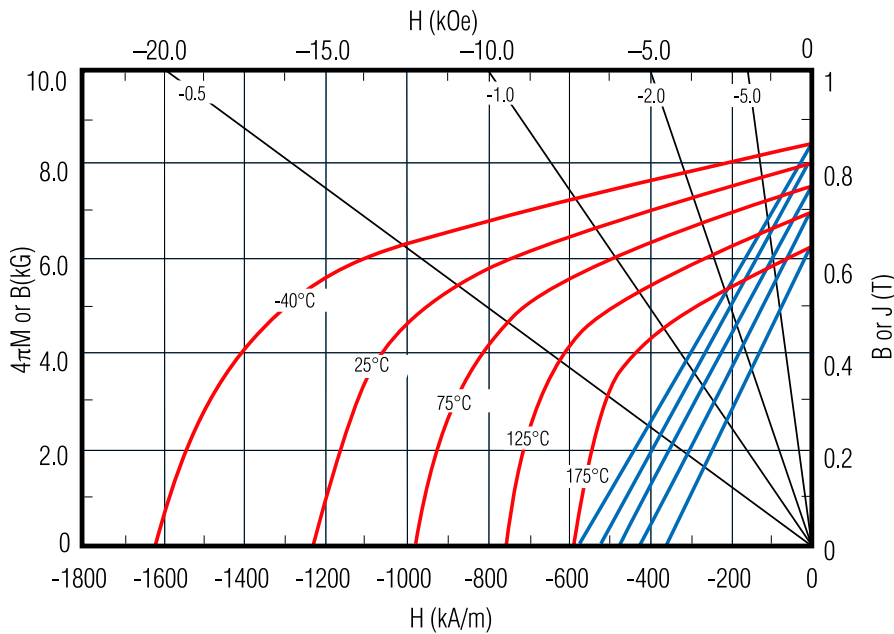
# MQP™ -A -10179-070 ISOTROPIC POWDER\*

## Material Description

MQP-A-10179-070 was the first powder grade commercialized by Magnequench. It is now typically used only in applications which require cost effective high coercivity. It is an isotropic magnet powder based on a patented Nd-Fe-B alloy that is suitable for the manufacture of bonded magnets. 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
<b>Specified</b>		
Residual Induction, $B_r$ .....	780-820 mT	7.80-8.20 kG
Energy Product, $(BH)_{max}$ .....	97-111 kJ/m <sup>3</sup>	12.2-14.0 MGOe
Intrinsic Coercivity, $H_{ci}$ .....	1030-1350 kA/m	13.0-17.0 kOe
<b>Typical</b>		
Coercive Force, $H_c$ .....	515 kA/m	6.4 kOe
Magnetizing Field to >95% Saturation (Min.), $H_s$ .....	≥2000 kA/m	≥25 kOe
Temperature coefficient of $B_r$ , $\alpha$ , to 100°C .....	-0.12 %/°C	
Temperature coefficient of $H_{ci}$ , $\beta$ , to 100°C .....	-0.4 %/°C	
Curie Temperature, $T_c$ .....	305 °C	
Maximum Operating Temperature <sup>2</sup> .....	120-160 °C	
Maximum Process Temperature <sup>3</sup> .....	200 °C	



## Physical Characteristics

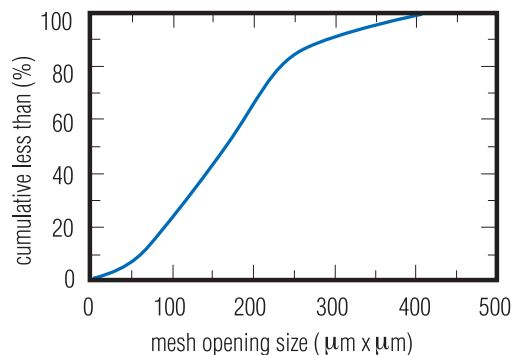
### Specified

Sieve Screen Analysis:

- Total > 40 Mesh (420x420 μm opening) ..... < 0.1 wt.%
- Total > 60 Mesh (250x250 μm opening) ..... < 25 wt.%
- Total < 270 Mesh (53x53 μm opening) ..... < 12 wt.%

### Typical

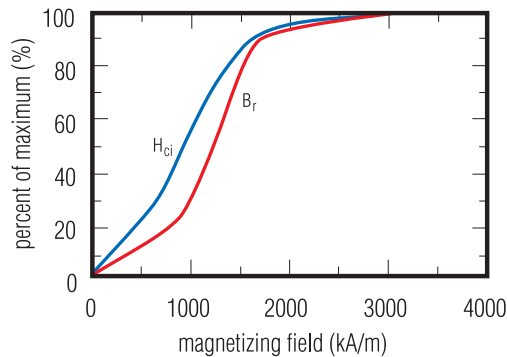
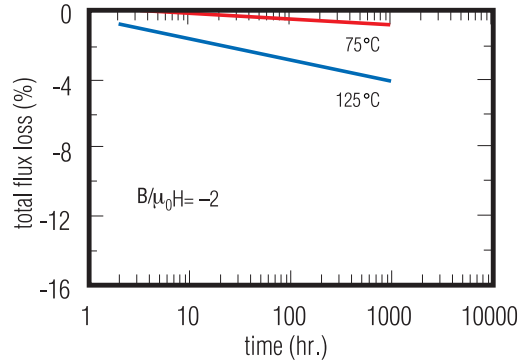
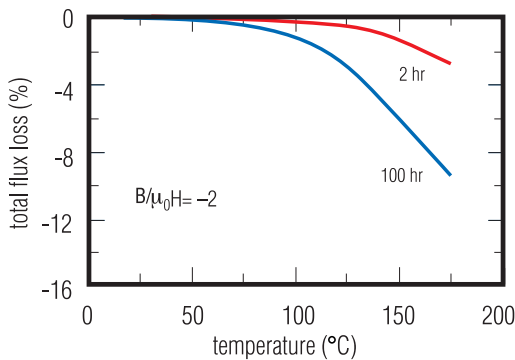
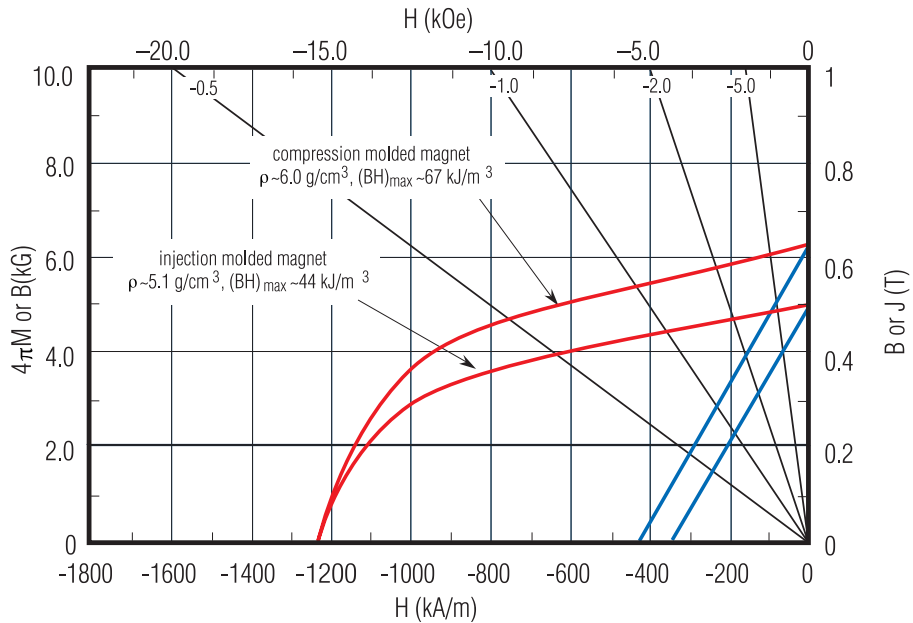
- Density (theoretical) ..... 7.60 g/cm<sup>3</sup>
- Apparent Density ..... 2.7 g/cm<sup>3</sup>



\* Contact Magnequench to obtain up-to-date product specifications and for assistance in selecting the ideal product for your application.

**MQP™-A-10179-070 ISOTROPIC POWDER**

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



<sup>1</sup> Properties measured at 25°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 your local sales representative for more information.  
<sup>3</sup> Maximum Process Temperature is defined here as <2% reduction in flux (i.e. structural loss) after heating powder 1 hour in air.  
<sup>4</sup> These properties are typical at 25°C and are representative only. Bonded magnet properties are dependent upon powder loading and magnet manufacturing conditions. Contact your local sales representative for information about our products.

These powders, the products that are made therefrom, and their manufacturing processes are subject to one or more of the following United States Patents: 5,056,585; 5,172,751; 5,174,362; 5,411,608; 5,645,651; 6,183,572; 6,478,890; 6,979,409; 7,144,463