

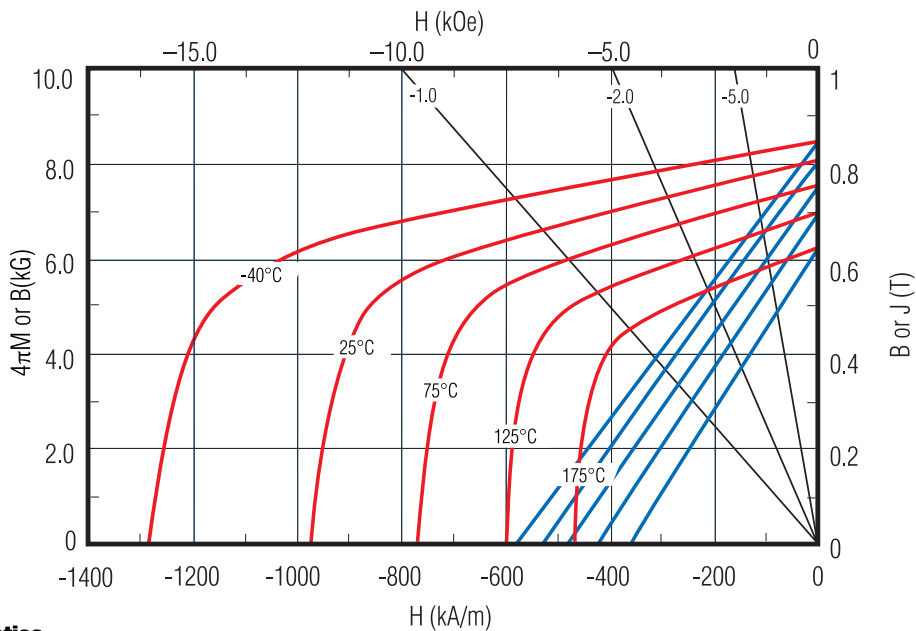
MQP™ - 0 -20057-070 ISOTROPIC POWDER*

Material Description

MQP-0-20057-070 was Magnequench's first "high temperature powder", designed specifically for magnets operating in higher temperature environments. It is an isotropic magnet powder based on a patented Nd-Fe-Nb-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. Magnequench also offers MQP-14-12-20000-070, which provides the same high temperature protection with more flux.

Powder Magnetic Characteristics¹

| | SI | CGS |
|--|---------------------------|----------------|
| Specified | | |
| Residual Induction, B_r | 800-830 mT | 8.00-8.30 kG |
| Energy Product, $(BH)_{max}$ | 105-115 kJ/m ³ | 13.2-14.5 MGOe |
| Intrinsic Coercivity, H_{ci} | 940-1070 kA/m | 11.8-13.5 kOe |
| Typical | | |
| Coercive Force, H_c | 525 kA/m | 6.6 kOe |
| Magnetizing Field to >95% Saturation (Min.), H_s | ≥1600 kA/m | ≥20 kOe |
| Temperature coefficient of B_r , α , to 100°C | -0.13 %/°C | |
| Temperature coefficient of H_{ci} , β , to 100°C | -0.4 %/°C | |
| Curie Temperature, T_c | 305 °C | |
| Maximum Operating Temperature ² | 140-180 °C | |
| Maximum Process Temperature ³ | 300 °C | |



Physical Characteristics

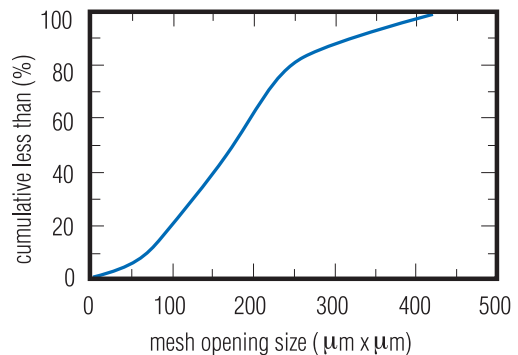
Specified

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

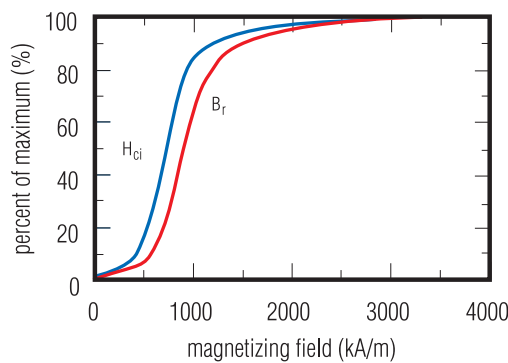
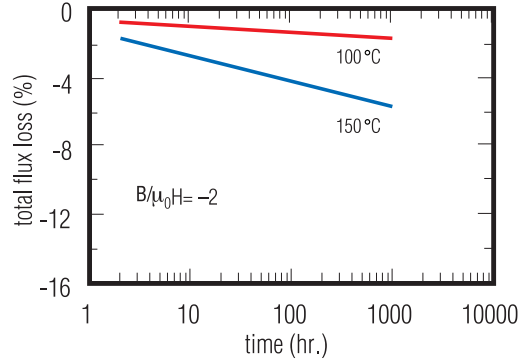
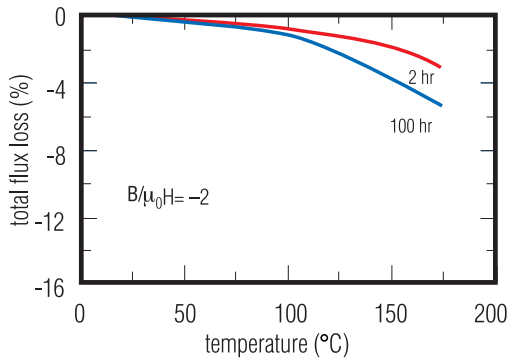
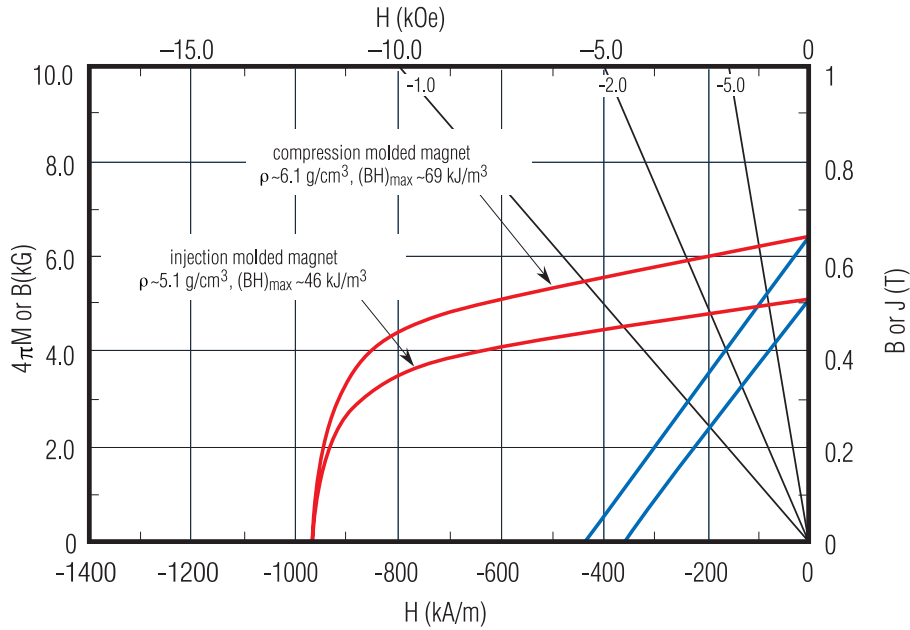
- Density (theoretical) 7.61 g/cm³
- Apparent Density 2.7 g/cm³



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

MQP™-0-20057-070 ISOTROPIC POWDER

Bonded Magnet Characteristics⁴



¹ Properties measured at 25°C, unless otherwise specified.
² 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.
³ Maximum Process Temperature is defined here as <2% reduction in flux (i.e. structural loss) after heating powder 1 hour in air.
⁴ 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