

MQP Isotropic RE-Fe-B Powders

MQP Powder Selection Guide

By modifying alloy composition and manufacturing conditions, we are able to tailor the magnetic properties of its MQP powders to meet our customer's needs. We therefore offer a wide range of powder grades to serve different market segments and application requirements.

To determine which MQP powder is right for you requires knowledge of:

- the magnetic specifications and operating environment of your intended application
- any special requirements related to the magnet's physical dimensions or mechanical properties, and
- the manufacturing process that will be used to produce the bonded magnet.

If, after considering the information presented here, you are still uncertain of which MQP grade is best for your application, or if you have other questions about any of our materials, please do not hesitate to contact us for additional assistance.

A Simple Selection Exercise

Select the category most important to you, and we will recommend a powder grade.

General Purpose

If you are unsure about the specifics of your application and/or are just getting started in the field of bonded magnets, and you need some material with which to experiment and learn, we usually recommend MQP-B2, because of its broad applicability in a wide variety of products.

Elevated Temperatures and Resistance to Corrosion

In situations where the magnet is expected to operate at the highest possible service temperatures (for example, >150 °C) and/or will be exposed to severe environmental conditions such as corrosive liquids or hot gases, we usually recommend MQP-14-12, as the material of choice.

Highest Magnetic Flux

For applications that demand the highest possible flux density, we have grades designed specifically for this purpose. When the magnet requires relatively strong

resistance to demagnetizing fields, MQP-B+ will often be the material of choice. Alternatively, if the magnet will always be exposed to limited demagnetizing fields (as sometimes encountered, for example, in precision multipole rings used in micromotors), so that a slightly lower resistance to demagnetization can be tolerated, then our MQP-15-7 or MQP-16-7 grade may be the recommended solution.

Lowest Cost

When you are less concerned with achieving the absolute best possible magnetic performance and are instead most interested in a lower cost, slightly lower performance RE-Fe-B solution, MQP-13-9R1 may be suitable.

Small Particle Size or Spherical Particle Shape

When the magnet will be manufactured by injection molding and has a complicated geometry or very small size, or when forming methods such as calendaring, extrusion, or thick film processes will be used, then fine, spherical particles are advantageous, and our atomized MQP-S-11-9 may be the best choice.

Resistance to Demagnetizing Fields

MQP-A should be considered when your material will be exposed to strong demagnetizing fields and you therefore know that you need higher resistance to demagnetization.

High Temperature Magnetics

Owing to their higher Curie temperature and lower temperature coefficient of B_r , high cobalt grades such as MQP-C are recommended in certain situations involving elevated service temperatures.

Hybrid Ferrite + RE-Fe-B Magnets

If you intend to blend RE-Fe-B powder with ferrite powder to improve magnetic performance over that achievable using bonded or sintered ferrite alone, then a high flux grade such as MQP-16-7 is often preferred. In cases where better compatibility with ferrite's physical characteristics is desired, for example to improve compounding, thermal stability or surface finish, then MQP-S-11-9 may be the best choice.