NEODYMIUM MAGNETS

Rare Earth

Neodymium magnets are a member of the Rare Earth magnet family and are the most powerful permanent magnets in the world. They are also referred to as NdFeB magnets, or NIB, because they are composed mainly of Neodymium (Nd), Iron (Fe) and Boron (B). They are a relatively new invention and have only recently become affordable for everyday use.

Grades of Neodymium

N35, N38, N42, N38SH...what does it all mean? Neodymium magnets are all graded by the material they are made of. As a very general rule, the higher the grade (the number following the 'N'), the stronger the magnet. The highest grade of neodymium magnet commercially available is N52. Any letter following the grade refers to the temperature rating of the magnet. If there are no letters following the grade, then the magnet is standard temperature neodymium. The temperature ratings are standard (no designation) - M - H - SH - UH - EH. To find out which magnet you need for your project, give us a call.

Platings/Coatings

Neodymium magnets are a composition of mostly Neodymium, Iron and Boron. If left exposed to the elements, the iron in the magnet will rust. To protect the magnet from corrosion and to strengthen the brittle magnet material, it is usually preferable for the magnet to be coated. There are a variety of options for coatings, but our in-house Nano coating has a high corrosion resistance.

Most Popular Coatings (Call for more)

Ni-Cu-Ni | Black Ni | Nano | Cu | Zn+Cu | Sn | Au | Black Epoxy | Nylon | No Treatment

Machining

Neodymium material is brittle and prone to chipping and cracking, so it does not machine well by conventional methods. Machining the magnets will generate heat, which if not carefully controlled, can demagnetize the magnet or even ignite the material which is toxic when burned. It is recommended that magnets not be machined.

Demagnetization

Neodymium magnets have a high resistance to demagnetization, unlike most other types of magnets. They will not lose their magnetization around other magnets or if dropped. They will however, begin to lose strength if they are heated above their maximum operating temperature, which is 176°F (80°C) for standard N grades.

Strength

If you've never handled neodymium magnets before, you will be amazed at their strength. Neodymium magnets are over 10x stronger than the strongest ceramic magnets. If you are currently using ceramic magnets in your project, you could probably use a much smaller neodymium magnet and have greater holding force.

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Storing your Neodymium magnets

Neodymium magnets should be stored in closed, clean containers, away from sensitive electronics and magnetized media such as magnetic tapes or cathode ray tubes (CRT). When magnets of two different alloys are stored nearby (such as neodymium and ceramic), there is a risk of demagnetization.

Neodymium magnets are strongly attractive, even from several inches away. The force is powerful enough to pinch skin and cause bodily injury, depending on the size of the magnet. Use spacers (plastic, wood, or cardboard) when separating magnets for storage and shipping. Keep magnets away from children.

Wear eye protection to avoid damage to the eyes. There is a high risk of breakage due to the brittle nature of neodymium. When two magnets are drawn quickly together, the force can chip or shatter the magnet. These flying shards and fragments then pose a danger to handlers and bystanders.

READ BEFORE USE

Magnet Technology neither assumes nor accepts any liability for damages resulting from the handling or use of our magnets. With your purchase, the buyer confirms that you have read and understood the following warnings: The buyer agrees he/she is responsible for all damages and injuries caused by the magnets, which include personal injury, property damage, and magnet damage. The buyer must agree to these terms before purchase. Pull forces we have provided are estimates only. We are not responsible for any inaccuracy of magnet pull force. Please test the pull force before any usage.

Neodymium magnets are very strong. Handling them with care is necessary to prevent personal injury, property damage, and magnet damage.

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