MAGNET SAFETY

Permanent magnets can be extremely powerful, and if handled incorrectly, they can cause serious bodily injury and significant damage to property.

"Magnets are totally harmless, right?"

Well, not exactly. Handling permanent magnets does not come entirely without risk. Some permanent magnets are very powerful, and that power can be a source of harm if they are not handled properly. Because of this, here are a few common-sense precautions you should take to mitigate those risks and keep yourself and others safe.

Recommendations for Handling Magnets Safely

Familiarize yourself with the magnets you will be handling.

It is a good idea to take note of the magnetic and physical characteristics of the magnets you will be handling. Some important areas of note are:

Composition: A magnet's physical makeup might warrant additional safety precautions and/or care in handling. For instance, magnets that are brittle are prone to chipping and/or breaking when dropped or handled with too much force. Other magnets may be composed of materials that emit toxic fumes when burned or combust when machined.

Pull Strength: If handled incorrectly, powerful magnets can cause serious bodily injury and/or property damage.

The knowledge gained from a standardized pre-handling familiarization process will go a long way in protecting yourself, property, and the magnets themselves.

Wear Personal Protective Equipment (PPE).

Wear the appropriate safety gear for the job. This is particularly important when handling larger or high-powered magnets. Pinching, or crushing can occur when appendages become trapped between magnets. Spacers can disengage and propel the magnets, while brittle magnets can break or splinter when attracting magnets accidentally collide. Examples of Personal Protective Equipment (PPE) are:

Goggles or Safety Glasses: Make sure you wear protective eyewear to help prevent magnetic dust and debris from entering your eyes.

Gloves: Protective gloves help reduce the risk of hands or fingers becoming trapped between magnets. The damage resulting from such a scenario can include, but is not limited to, pinching, crushing, or even amputation.

Foot Protection: Safety boots with non-slip soles and protective toes reduce the possibility of slips, falls and crushed toes.

Maintain a Safe Distance when working with strong magnets.
Be aware of your surroundings. Take note of the available distance between strong magnets, yourself, and any other heavy magnetic objects. Maintain a safe distance between you and potential hazards to avoid being trapped between them.

Practice care when handling magnets.
Carefully and gently handle your magnets to avoid dropping them. This can cause cracking or breakages which reduce their effectiveness and produce hazards.

Under no circumstances should you try to cut or drill Neodymium magnets.
Not only will the magnets break, but the resulting dust from the magnets is highly flammable. Neodymium magnets should never be burned, as burning them will create toxic fumes.

Keep Young Children and Pets Safe

Children should be supervised in the presence of magnets.
Magnets pose serious risks to young children. They can pinch or crush little fingers and toes, while brittle magnets can break or chip and enter the body through any number of scenarios. Inquisitive children have been known to swallow or insert small magnets into their bodies, resulting in serious health emergencies such as choking and magnetic poisoning. Please keep children in check when magnets are present.

Keep Pets Away.
Pets are also at risk around magnets, and for many of the same reasons that young children are. Be sure to keep your pets away from magnets to safeguard them from possible physical and health hazards.

Protecting Sensitive Products and Equipment

Strong Magnets can interfere with electronic devices.
To avoid the risk of interference, corruption, or even the total failure of your sensitive products and equipment, avoid placing permanent magnets within close proximity of computers, credit cards, cell phones and similar sensitive equipment.

Possible effects of Magnets on Medically Implanted Devices.
Medically implanted devices such as pacemakers are also susceptible to interference, malfunction, or failure when exposed to strong magnets and/or magnetic fields. To err on the side of caution, it is advisable that people with such devices should keep a safe distance and/or totally avoid exposure to magnets; particularly those that hold significant power.

How to Properly Store Magnets for Optimum Performance and Longevity

Use Proper Storage Containers.
Store magnets in containers that are appropriate for the magnets' specific characteristics. Consider material, weight, size, quantity, and pull-force when determining the proper container for the job. Containers should be non-magnetic and should act as barriers against any accidental magnetic interaction with nearby objects. Keep the containers securely closed to prevent any accidental shifting or spilling of the magnets. Heavy duty corrugated, plastic, or wood boxes are some of the most common containers.

Pack the magnets properly.
When storing multiple magnets, place non-magnetic dividers between the magnets to help alleviate adverse interaction between the magnets. This is specifically helpful when dealing with very powerful magnets.

Use Magnetic Shields.
When storing strong permanent magnets like neodymium magnets, deploy magnetic shields to prevent interference with sensitive equipment. You can use a steel iron as a magnetic shield.

Label Stored Magnets:
Clearly label storage containers with the type and strength of the magnets inside**.** This helps in quickly identifying the magnets needed for specific applications while ensuring that proper safety measures are maintained during handling.

Maintain a Stable Environment.
Magnets should be stored in a cool dry area, free from excess heat and humidity which can to corrosion and loss of magnetic capabilities.

Avoid Direct Sunlight.
Prolonged exposure to sunlight can cause temperature fluctuations and potentially damage coatings on magnets**.** Store magnets in a shaded area away from direct sunlight.

Do Not Store Different Magnets in the Same Container.
Store different types of magnets in distinct containers to mitigate demagnetization. For example, store your neodymium magnet far from your ceramic magnet.

Consider Demagnetization.
If you have no imminent use for your magnets, you may consider demagnetizing them before storage.

Store Strong Magnets in Double-Padded Cartons.
Consider storing extremely strong magnets in double-padded boxes. Alternatively, place the container they are stored in in another container.

Keep magnets separated.
When storing multiple magnets, use spacers or dividers to keep them separated. This prevents magnets from attracting each other unexpectedly, which could lead to accidental injury or damage.

Regularly Inspect your Magnets.
Periodically inspect your stored magnets to monitor their condition and to ensure they remain stored properly.

Safe and Responsible Disposal of Magnets

Contact your local authorities regarding their magnet waste disposal regulations.
Local authorities often have regulations and guidelines in place that provide you with the safe and responsible disposal of magnetic waste (magnets). Disposing magnetic waste in conformity with these regulations will help you to avoid unknowingly breaking the law and contaminating the environment.

Consider alternate options to disposal.
There are alternative options to disposing unwanted magnets. Some of these alternatives are:

Recycling.
Magnets can be taken to a recycling center where they will take the magnets, extract the rare earth minerals, and repurpose them. This is the best disposal option because it minimizes the magnet's impact on the environment.

Repurposing or Donating.
Given the proper circumstances, magnets can be repurposed by removing them from one function and replacing them in another. You may also want to consider donating unwanted surplus to a school, church, or any number of charitable organizations.

Discarding magnets in a landfill.

Magnets and magnetic materials can usually be disposed of in landfills when other alternative methods of disposal are not available. It is recommended that you contact your local governing agency to confirm which methods are acceptable.

Disassemble magnets from large assemblies and devices.
If your magnet is part of a large assembly or device, attempts should be made to disassemble it from the product before discarding it.

Separate individual magnet types by lot.
To avoid dangerous interactions, multiple magnet types should be sorted into like lots prior to their disposal.

Wrap the Magnets.
Apply a protective wrap around your magnet before disposing of it to mitigate the accidental attraction of metallic waste.

Label all magnetic waste.
To protect handlers from the potential dangers posed by magnets and magnetic waste, all magnetic articles should be affixed with a warning as to those dangers. Whether it be a pre-printed label or a handwritten warning, all magnets and/or magnetic waste should carry a warning as to the presence of a magnetic field.

BE INFORMED! BE ALERT!
ALWAYS PRACTICE MAGNET SAFETY MEASURES!