



MAGNET SAFETY INFORMATION

DO NOT IGNORE!

Inappropriate handling of permanent magnets and magnetic assemblies can cause injury to personnel or damage to equipment. With the advent of rare earth magnet material, extraordinarily strong magnetic fields are now a reality.

Magnets or magnetic assemblies can be attracted to each other or to steel objects with great force.

Therefore when using magnets or magnetic equipment:

- DO NOT place magnets or assemblies near each other or near steel benches or items. Finger, hand or eye injury may result.
- Children should not be permitted to play with permanent magnets or magnetic assemblies. They are not toys.
- When installing permanent magnetic assemblies be always aware of what they will want to grab and must be handled with great caution near steel members. A good safety precaution is to tape a thick piece of non-magnetic material such as wood or styrofoam to the magnet face during installation.
- Avoid oven or flame heating, grinding or cutting of magnet material. Some rare earth materials may contain carcinogens which can be released on grinding or cutting.
- Keep magnets away from **CARDIAC PACEMAKERS**. Persons with cardiac pacemakers or other devices implanted in their bodies should not come into close proximity with magnets. Specialist medical opinion must be sought before such persons handle or come into contact with magnets.
- Keep magnets away from credit cards or any cards with a magnetic strip, computer discs and audio and video tapes, and computer equipment.

TRANSPORT OF MAGNETS

- If air transport is being considered, magnets are considered 'Dangerous Goods'. They may be transported by air providing they meet specific magnetic field criteria and may require a degree of shielding to meet these specifications. Consult IATA for details: following is a typical statement from US regulators:

Magnets are considered to be dangerous goods article for shipments outside the Continental United States (International Destinations). For Domestic Destinations, magnets have been deregulated, however, the packaging requirements are still mandated, and are strictly enforced.

MCE follows the IATA Dangerous Goods Regulations so as to comply with the FAA and ICAO requirements for shipping magnets by air.

Domestic Shipments

To ship magnets by air, the following must be followed:

1. Classification: Understand the classification and definition of "Magnetized Material" as given by the FAA or IATA. As of 2003, this was "Any material which, when packed for air transport, has a magnetic field strength of 0.159 A/m (0.002 Gauss) or more at a distance of 2.1 m (7 ft) from any point on the surface of the assembled package.
2. Packing Instructions 902: You must be very familiar with the packing instructions for dangerous goods section 902. According to this, Magnetized materials will be accepted only when:
 - (a) devices such as magnetrons and light meters have been packed so that the polarities of the individual units oppose one another;
 - (b) permanent magnets, where possible, have keeper bars installed;
 - (c) (1) does not exceed 0.418 A/m (0.00525 gauss), or
 - (c) (2) produces a magnetic compass deflection of 2 degrees or less.
3. Federal Aviation Regulations require that the employees packaging ANY dangerous goods articles (including magnets) are trained to package the dangerous goods articles. Training records must be maintained. Additionally, objective evidence is required to ascertain the effectiveness of training. Organizations such as [Dangerous Goods Advisory Council](#) offers training.
4. The FAA imposes strict penalties for violations. The regulations were updated in 2004 to even stricter standards requiring packages to have a special sticker that certifies that you have found the package to be air eligible. MCE adopted the 2004 standards prior to it's release so as to make this transition smooth and stay in compliance.

International Shipments

Magnets being shipped on an international flight **MUST BE DECLARED AS A DANGEROUS GOODS ARTICLE** (Dangerous goods declaration form must accompany the package).

Check the regulations to determine if the airport that receives the shipment considers magnets acceptable (some airports do NOT allow magnets shipped in). The boxes, after being packaged, must be checked for total field emission. If the field exceeds 0.002 gauss at 7 feet from the package (rotated 360° in both planes), follow packaging instructions 902 in the IATA Dangerous Goods Regulation. If the total field emission exceeds 0.00525 gauss at 15 feet from the package in any plane, the package cannot be accepted for air shipment. If the

0.00525 gauss requirement is met (the magnetic field emission is less than 0.00525 in any plane), you can ship the package by air on an international flight PROVIDED you fill the Dangerous Goods Declaration Form, and label the package appropriately. The package(s) must have the "Handling Label for Class 9 - Magnetized Material" label affixed on them.

Refer to the IATA Dangerous Goods Regulations publication (you can get a copy of this from your freight carrier or order this from IATA directly).

Important: The above is for information purposes only, and does not fully state the regulations. You are cautioned that you cannot rely on the above to make decisions, but only use the above to have knowledge that regulations exist and that they must be referred to before shipping magnets by air. Only the regulations provided by the FAA and IATA can be consulted to make decisions. The FAA provides very strict penalties for violations.