

Aussie Magnets

Does Rust Affect a Magnet?

What is rust?

Rusting is a chemical reaction between iron and oxygen, in the presence of water.

The reaction creates a flaky, reddish iron-oxide coating as the iron corrodes away.

Given sufficient time, oxygen, and water, any iron mass will eventually convert entirely to rust and disintegrate.

Rusting is more prevalent in coastal or marine environments, where there is greater exposure to moisture.

How does rust affect metal and magnets?

Magnets only attract to materials which are ferrous. Ferrous means "relating to, or containing, iron".

As such, magnets need iron to attract to. As rust spreads, the iron corrodes and diminishes.

A reduction in iron content means there is less ferrous material for a magnet to attract to.

The end result is that magnetic power/induction is reduced.

Will the magnets rust?

Any material containing iron will rust, unless properly protected. Information on our Rare Earth and Ferrite magnets are as follows:

RARE EARTH

Our Rare Earth magnets are spray-coated in a protective nickel coating to combat corrosion. This coating is susceptible to chipping, which may allow corrosion to occur.

FERRITE

Our Ferrite magnets are un-coated, but are less susceptible to corrosion due to their constitution. They are ceramic in nature which gives them a greater resistance to rust, however over time may require some form of coating or protection.

How can I prevent rusting?

Rusting occurs when iron is exposed to air and moisture. The way to combat rusting is to prevent exposure to air and moisture.

This can be done by coating/sealing the magnet or metal entirely in some protective layering (such as plastic, rubber, glue, etc.).

Make sure you have sealed the magnet surface entirely! You need to cut off all sources of oxygen and moisture.

Will a protective coating affect the magnet?

Magnets operate when brought into proximity with iron.

When you apply a coating, you increase the distance between magnet and iron.

Therefore, thick coatings will result in a reduction in magnet strength.

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