**6 Tips For Preventing Rust**

Rust is the name for the orange-brown flakes of iron oxide that form on the surface of any metal containing iron that is exposed to air and water. It is a type of corrosion that can be highly destructive, as well as unsightly. In this article, we will share tips on how to prevent rust.

The rusting process begins when iron reacts with oxygen in the presence of water, saltwater, acids, or other harsh chemicals. As the iron oxide flakes off the metal surface, it exposes fresh iron molecules, which continue the reaction process. Eventually, large areas of rust form that may cause the entire metal structure to disintegrate.

A ferrous metal is one that contains iron and only iron can rust. Common ferrous metals include carbon steel (1018, 12L14), alloy steel (4130), and [stainless steel](https://www.industrialmetalsupply.com/Products/Metals/Steel) (304, 316). Non-ferrous metals, such as [aluminum](https://www.industrialmetalsupply.com/Products/Metals/Aluminum) and [copper](https://www.industrialmetalsupply.com/Products/Metals/Copper), contain little if any iron, and so cannot rust, though they can corrode.

**Keep It Clean and Dry**

Water is enemy number one when it comes to rust, because it’s the oxygen in water molecules that combines with iron to form iron oxide. That’s why metals left outdoors, such as cars, gates, or tanks, are more likely to rust. If the object is located in a humid indoors environment, such as a garage or basement, install a dehumidifier. Any type of mud or dirt adhered to the surface can hold water, so it’s important to keep metals clean.

**Prevent Scratches**

Scratches or cracks in the metal expose more metal and hold water, allowing it to remain in contact with the iron. This is why cold rolled steel is more corrosion resistant than hot rolled steel, because cold rolling creates a smoother surface without texture that can trap and hold water.

**Apply A Protective Coating**

Dipping metal objects, such as clocks, into a bluing solution of water, sodium hydroxide, and potassium nitrate, provides strong corrosion resistance. Commercially available rust prevention products in the form of aerosol sprays or cloth wipes also can protect metal objects, including tools, outdoor gear, vehicles, and large metal parts.

**Use [Stainless Steel](https://www.industrialmetalsupply.com/Products/Metals/Stainless-Steel)**

Stainless steel alloys contain iron, but it resists rust because it also contains a high percentage of chromium which is even more reactive than iron. The chromium in the alloy oxidizes quickly to form a protective layer of chromium oxide on the metal surface which prevents oxygen from reaching the underlying steel.

**Use Galvanized Metal**

Galvanization is a process used to preserve steel rust-free for many years. In the galvanizing process, a piece of steel is coated with liquid zinc. The zinc protects the steel in three different ways. First, the zinc coating acts as a barrier preventing oxygen and water from reaching the steel. Second, even if the coating is scratched off, the zinc continues to protect nearby areas of the metal through cathodic protection. And third, zinc is highly reactive to oxygen and quickly forms a protective coating of zinc oxide which prevents the iron from further oxidation.

**Regular Maintenance**

Because rust spreads quickly, it’s important to scrape it off as soon as it appears. Then, scrub with warm water and soap and apply a metal conditioner or other protective coating to prevent further oxidation. If necessary, apply a new coat of paint to the area.