Evapo-Rust® FAQs

Q) How does Evapo-Rust® work?

A) EVAPO-RUST® works through selective chelation. This is a process in which a large synthetic molecule forms a bond with metals and holds them in solution. Most chelating agents bind many different metals. The active ingredient in EVAPO-RUST® bonds to iron exclusively. It can remove iron from iron oxide but is too weak to remove iron from steel where the iron is held much more strongly. Once the chelating agent has removed the iron, a sulfur bearing organic molecule pulls the iron away from the chelator and forms a ferric sulfate complex which remains water soluble. This frees the chelating agent to remove more iron from rust.

Q) Do parts have to be completely clean before immersion?

A) No. EVAPO-RUST® has detergents which penetrate oils and dirt. However, surface contaminants do slow the process. The soils must be penetrated before EVAPO-RUST® can come in contact with the rust underneath. Soil residue will also shorten the life of EVAPO-RUST®. Heavy greases and cosmoline should be removed prior to de-rusting.

Q) Will EVAPO-RUST® remove bluing and other oxide finishes?

A) Yes. EVAPO-RUST® will remove these in about 30 minutes. Anodizing will not be removed. Powder coating and paint will not be removed as long as the paints do not contain oxides.

Q) Can I clean brass, copper and aluminum with EVAPO-RUST®?

A) No, it will not clean or damage any of these metals. It will not harm rubber, plastic, clothing or glass either.

Q) Can I spray EVAPO-RUST® on the rusted area?

A) No, EVAPO-RUST® only works in the liquid form. When sprayed on a surface, the water in the solution will evaporate before de-rusting can be completed.

Q) How can I use it on a surface too large to soak?

A) A smooth paper towel can be soaked with Evapo-Rust® and applied to the rusted area. After this is done, cover with plastic to prevent evaporation. When item is de-rusted rinse with water.

Q) How long does EVAPO-RUST® last?

A) One gallon of EVAPO- RUST® will remove the rust from 300 pounds of moderately rusted steel. If any of the bath evaporates, simply replace it with fresh tap water.

Q) How do I know when the bath is spent?

A) The bath will turn completely black and will not perform. Also the specific gravity will change from 1.042 to 1.085.

Q) How do I dispose of the spent solution?

A) When EVAPO-RUST® is spent, only the iron content of the solution will dictate how it can be disposed of. In most cases it can be dumped into the city sewer.

Q) What size containers is EVAPO-RUST® packaged in?

A) It comes in quarts, single gallons, 5 gallon pails, 55 gallon drums, and 275 gallon totes. Try our newest size the 3.5 gallon pail!

Q) How long will Evapo-Rust® last, and how many times can it be re-used?

A) Evapo-Rust has an indefinite shelf life. The product can be re-used until its effectiveness starts to wear off. In general, one gallon of Evapo-Rust® will remove 1/2 pound of pure dry rust, which equates to approximately 300 pounds of moderately rusted steel. Since rust is 1/17th the weight of iron, the workload is quite substantial. In terms of a degradation curve, Evapo-Rust® has a specific gravity of 1.042 when the solution is fresh. After repeated uses, the solution will darken and start to lose its effectiveness. Once the solution reaches a specific gravity of 1.08, the solution will no longer be effective and should be replaced.

Q) After soaking metal in Evapo-Rust®, is any further treatment required?

A) No further treatment is required once the rust has been removed with Evapo-Rust®. In some cases, residual rust may still be embedded in the metal (pits, crevices) after the initial soaking. In this case, rinse the metal with water and re-soak in Evapo-Rust®. All residual rust will be removed from these hard to reach places. It is important to always rinse the metal after a treatment with Evapo-Rust®. Tiny molecules of iron will still be embedded in the Evapo-Rust® solution, and these molecules must be rinsed off with water or they will activate the re-formation of rust on the metal object.

Q) The process for removing rust with Evapo-Rust® is through a soaking of the rusted metal. Are there any other ways to use the solution to remove rust, such as painting or brushing the solution on the rusted area??

A) The recommended way, and the most effective way, of using Evapo-Rust® is through soaking the rusted surface. The liquid must remain in full contact with the rusted area for a period of time without evaporating.

Q) How can I use Evapo-Rust® on an area that is difficult to soak?

A) Soak a thick paper towel with Evapo-Rust® and then place it over the rusted area. Make sure the soaked paper towel conforms to the shape of the object bein de-rusted. For heavier rust, cover the soaked towel with the plastic wrap and tape the wrap down to prevent moisture from escaping. After an appropriate period of time, remove the soaked towel and rinse the area with water. The paper towel must remain soaked with Evapo-Rust® for this method to work effectively.

Q) Can I spray Evapo-Rust® on the rusted area?

A) Evapo-Rust® works best when the rusted item is completely immersed in the liquid solution. When Evapo-Rust® is sprayed on a deeply rusted surface, the water in the solution will evaporate long before the de-rusting can be completed. However, if there is light rust on a flat surface area (e.g. appliances, countertops, etc.), then spraying or wiping on Evapo-Rust® solution can work very effectively. Spray or wipe on the solution generously. The longer the contact time, the better results.

Q) I got a black film on some parts after using Evapo-Rust®. What is it, and how do I remove it?

A) The black film is carbon from the steel. Steel is composed of a combination of carbon and iron. In certain instances, steel will darken in color after rust has been removed from the surface of the metal. This is a natural phenomenon that chemists refer to as “carbon migration”. The carbon from the steel moves, or “migrates”, to the outer layer of the metal and settles into the pores. The removal of the rust (iron oxide) reduces the proportion of iron to carbon, leaving a higher concentration of carbon on the outer surface. This heavier layer of carbon could cause a darkening of the metal due to the attributes of the carbon. The darkening does not have an adverse affect on the metal. It merely represents the movement of carbon from the interior of the metal to the exterior of the metal. Since Evapo-Rust® is a highly effective rust remover, it stimulates the carbon migration process. Evapo-Rust®is not alone in creating the carbon migration effect. Other rust removal treatments will also result in carbon migration and a darkening of the metal. The primary difference between Evapo-Rust® and the acid based treatments is that Evapo-Rust® will not harm or weaken the metal. Unlike other treatments, Evapo-Rust® will not darken products made with low carbon steel. With Evapo-Rust®, sometimes a wiping with a dry cloth or a more rigorous buffing can remove the dark coloring. A quick rinsing of the metal after Evapo-Rust® has been applied may also keep the carbon from settling into the pores of the metal. There are several things that can be tried to minimize the effects of carbon migration. First, high carbon parts should not be soaked longer than necessary. Once the rust has been removed, the parts should be rinsed and dried. Second, a further dilution of the Evapo-Rust® formula may have a positive affect. The lower concentration of Evapo-Rust® will take longer to remove the rust, but may have less of an effect on causing the carbon migration.