



Chemical Thermal Processing Technology to the Details of Working in the Conditions of Car Rust

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ABSTRACT

This article covers the technology of chemical thermal processing. Any iron item can be subjected to rust. There are different ways to clean rust and protect the iron from such interactions. Below we give theoretical information about rust removal and chemical thermal treatment technology from auto parts.

Keywords:

Chemical Engineering, rust, machines, iron, painting, treatment.

Introduction. Rust is also called Iron III hydroxide, it is a red substance that occurs from the oxidation reactions of iron in water and air impact, because any iron mass can become rust in water and air impact for a sufficient period of time, and rust leads to the weakness and moodiness of iron, because the Iron bonds weaken in water and air impact. the term Rust for these reactions refers only to the oxidation of iron and alloys containing iron, where other metals can undergo corrosion in the same way as iron rust. Rust is defined as a mixture of iron oxides and hydroxides formed on the surface of iron or steel when it is corrosive with the participation of oxygen and water. The rust layer appears in several colors, including: red, brown, yellow, orange or green [1].

Literature view. Different colors of rust, although Rust can have several chemical compounds, and the term Rust is used only to describe the oxidation or corrosion of Iron[2].

How to remove rust from cars, usually the rust on the cars will damage the iron structure of the car and its corrosion, thereby affecting the appearance of the car and the duration of its operation, therefore, if it is felt, it is necessary to remove rust from the car and

treat it until the damage worsens, and it will be known from the:

1. Obtaining Permatex material containing tannic acid and 2-butoxyethanol.
2. Determine the area that will affect the rust.
3. Clean the place where you are exposed to rust with coarse sandpaper, make the area around the rust rough.
4. To apply Permatex, take rubber gloves and a brush or sponge.
5. Wipe a thin layer of permatex on an open place. Wait minutes (from 15 to 30) for Permatex to dry.
6. Add the second layer of Permatex and wait for half an hour for the drying.
7. To achieve the best results, keep the moisture in the rust area for 24 hours.

Literature view. Ways to protect iron from rust: iron can be protected from rust by the following methods: passivation this is to cover the iron with a hard and inert layer to prevent corrosion. Rust and this layer is again restored when scratched, and this method is used to cover the steel with chromium III oxide to the stainless steel, and this method is also used to

protect aluminum, magnesium, copper, titanium and zinc.

Analysis and results. Galvanization.

Galvanization refers to the coating of steel with another metal, it forms an oxide that serves as a barrier to prevent oxidation of the steel surface when in contact with steel, and zinc is often chosen for the process of galvanization. This is due to the fact that it is inexpensive and easy to polish, because it tightly adheres to steel to increase the efficiency of zinc, and aluminum is added to it to form oxide, which is considered a long-term protection.

Cathodic Protection. This method is carried out by connecting the protected metal with an electric circuit. Thus, a negative electrode is formed in it, and to form anode, another metal is placed (most often: zinc or magnesium is selected), and the selected metal is very close to the metal to be protected. Therefore, when water contacts the metal, IT contacts magnesium or zinc at the same time, then an electric current passes between the electrodes, and when zinc or magnesium is corrosive in its place, the metal remains intact. Therefore, they must be constantly changed.

Darkening. This is a method of protecting small metal parts from rust (they are visible not in black, but in blue), and then rubbing them constantly with water-resistant oil to further protect the metal, for example, firearms.

Lubricate the rusting parts of cars, ships, etc. with rust repellent oil (slushing oil); to form a barrier that protects the metal and prevents the appearance of rust.

Painting and paint. The iron can be protected from the impact of rust, it can be covered with paint designed to protect it from rust and rust, since the iron bars are painted with this paint, it protects the surface of the iron from moisture and direct water effects, thereby protecting it from any rust and oxidation effects it should be noted that it is necessary to

Removing rust stains here are some guidelines for successful removal of rust stains:

Do not use bleach (chlorine) to wash off the stain; because it can clog it instead of smoothing it. When using a commercial product to remove rust, you need to follow the instructions on the package. Before you try to remove rust stains, you need to know the essence of the contaminated material, and it is better not to try to clean delicate fabrics and send them to washing places that specialize in removing stains, and these fabrics include: natural and synthetic silk, acetate silk and fiberglass (fiberglass):

1. Moisten the area of the stain with osh tuzi added lemon juice and leave it for twenty-four hours with the addition of more lemon to keep it moist, then rinse the stain with cold water without rubbing and, if necessary, repeat the process.

2. Moisten the stain with a mixture consisting of a quarter of a tablespoon of dishwashing liquid dissolved in a glass of warm water and left for five minutes until the surface active substance reacts with the stain and removes the particles of rust, then the stain is wiped with a clean white cloth or paper towel and the surface is washed with active Cold water is repeated until the washing process is utilized from the place.

3. Wipe with a damp pumice stone to remove rust stains from ceramics and porcelain utensils; however, this method is not suitable for ceramic utensils, since it is subjected to scratching, and the stain can be rubbed with a paste made of borax and lemon juice and left to dry, then rinse with water, dry thoroughly and repeat the process if necessary.

4. Use abrasive tools to remove rust. This method requires a lot of effort, but you can effectively remove it by scraping the rust. Use the tools in your garage or the tools rented from the hardware store.

5. Metal cleaning wires can be used and you can find them already at home.

6. To remove rust from large surfaces, use an electric leveling agent. Always start with the maximum leveling, and then go to the lowest grades to reduce the rudeness of the metal.

7. It is possible to use any metal tools for scraping metal, but then use fine polishing paper to remove traces that have left friction.

Rust-forming chemical reaction: Rust is an electrochemical reaction, that is, iron changes chemically with the flow of electric current in the water, and rust is formed faster if the water is salty. Since in salt water there are ions that accelerate the transfer of electrical energy, at the stages of the formation of rust, the following are understood:

1. Iron interacts with oxygen, forming iron dioxide ions ($\text{Fe} + \text{O}_2$).

2. Oxygen reacts with water to form hydrochloric (OH^-) ions. Iron dioxide reacts with hydroxide in the presence of oxygen, forming iron hydroxide ($\text{Fe}(\text{OH})_2$).

3. Iron dioxide again reacted with oxygen, forming an aqueous Iron III oxide ($\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$), in addition to water, is called Rust.

Aluminum foil (tin foil) for rust removal and easy to remove and cost-effective basket [17-19] Chrome rust. Aluminum foil reacts chemically with rust, which leads to easy removal of chromium rust. In addition, one of the advantages of aluminum foil is that it does not leave scratches on the surfaces of chromium. Before using aluminum foil (tin) for cleaning, thoroughly clean the chrome surface with a cloth and soap.

Conclusion / Recommendations. Treatment of rust, which quickly affects the parts of the car, is one of the tasks of its lifetime. Therefore, when the paint is scraped off a part of the car body, it is recommended to remove it early, as this will shorten the life of the car. Rust is formed mainly as a result of the interaction of iron and oxygen with the action of moisture, and some people experience difficulties in correct behavior before the problem of rust, so do not forget that the best way to get rid of it is to treat it as soon as the first signs appear. Check the vehicle rust regularly. Clean the place where the Rust will affect. To prevent the onset of rust, use rust prevention tools.

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