

## **CLEANING STAINLESS STEEL**

Stainless steel is present in many utensils that are used on a daily basis. In addition to both its physical and behavioural resistance, it has a very beautiful outer appearance.

To perfectly maintain stainless steels, some correct cleaning practices are essential to keep the surface clean and indefinitely prolong the stainless life.

We should understand that stainless steel, just like any other surface, must be cleaned to maintain its great surface beauty as well as its hygiene conditions depending on its specific uses.

To maintain the surface's aspect it is necessary to follow some "very simple" cleaning practices.

### **HOW TO CLEAN:**

- Periodically wash the surface with water and neutral soap until all the dirt has been eliminated.
- Use cloths and/or sponges that do not scratch the stainless.
- Never forget to rinse well after each cleaning operation.
- Final drying will bring out the surface beauty.

### **WHAT NOT TO DO:**

- Bleaches must not be used.
- Never use carbon steel tool in contact with the stainless as this will cause iron contamination with the immediate appearance of orange-brownish rust on the stainless surface.

In addition to the general cleaning norms in which simply by washing with water and neutral soap is enough to maintain the surfaces, it will also be necessary to use different cleaning practices depending on the specific places where the stainless steel will be kept.

As a general rule, it should suffice to test it in a not very visible part of the installations, in order to observe how the chosen utensil affects the stainless surface.

## **HOW TO ELIMINATE DIFFERENT STAINS:**

### 1- Finger marks, fat or oil marks:

If simple washing with water and soap is not enough to eliminate these types of stains, the surface of the stainless steel can be treated with alcohol and/or acetone in order to eliminate stains left by the remains of fats and/or oils.

For the perfect finish, wash with water and neutral soap and then abundantly rinse with water. Dry the surface.

### 2- Tea and coffee stains:

These stains can be removed by dissolving bicarbonate of soda in water and pouring it over the affected area. Heating this solution can make the treatment more effective. Once the stain is removed, the surface of the stainless steel must be abundantly washed with water until the mixture used for cleaning has been totally eliminated. Final drying will bring back the stainless steel's surface beauty.

### 3- Adhesives:

The remains of glue from adhesive labels on the stainless surface have to be removed with the right solvent. In many cases just rubbing with olive oil will be sufficient to remove it from the surface. On other occasions you can try with alcohol and/or acetone. Washing with water and neutral soap is always recommended after the anterior operation. Rinse with abundant water and dry.

### 4- Paints:

The elimination of paints from the stainless surface will be conditioned by the type of solvent that the paint has been formulated with. In general, organic solvents can be used and afterwards it is recommendable to wash with water and neutral soap in order to eliminate the solvent. Rinse with abundant water and dry.

Many times it will be necessary to use scraping utensils, but much care should be taken so as not to scratch the stainless surface.

#### 5- Water remains on the surface:

In some places, due to the hardness of the running water, when the stainless surfaces dry in the open air, prints could be left given the amount of elements this type of water contains. Adding a solution of 1 part vinegar and 3 parts water will eliminate these types of stains. If it is necessary, add hot water.

Immediately after having eliminated the stains, wash the surface with abundant water to eliminate all of the previous acidic solution. Dry the surface.

#### 6- Cement:

The best way to ensure that cement does not leave the stainless surface marked is to simply eliminate it with water while it is still wet. If it is left to dry then we get a product that is totally stuck and difficult to eliminate. Although it is known that hydrochloric acid dissolves cement, it must not be used on stainless surfaces as this product attacks the steel. In some cases it appears that phosphoric acid could eliminate cement stains but, if used, it must be used in a very diluted solution with water in order not to damage the stainless, and special care must be taken when handling it and it must be eliminated from the surface by rinsing with abundant water to make sure all the acid has been removed.

#### 7- Iron contamination:

On occasions, and from bad practices, the surfaces can be contaminated by iron. This sometimes comes from contact with carbon steel tools, splashes from welding operations or simple scratching by some piece of iron. When these iron particles are in contact with the stainless surface there is a strong galvanic coupling which, in the presence of the right electrolyte such as air humidity, causes iron oxidation.

The iron, which acts as an anode, oxidises against the stainless (cathode), and a dark orange-brown colour appears, characteristic of iron oxides. Although the stainless steel does not initially seem to be affected, with time and through aeration differential processes, it could be attacked.

Therefore, apart from the bad image that these oxides produce on the surface, it is advisable to eliminate them in order to prevent future corrosion problems.

In insipient states simple rubbing with scouring pads like "Scotch Brite" can eliminate surface contamination, or the use of bleaches that scrape the iron particles from the surface. As these methods, depending on the stainless finish, can scratch the surfaces, other acidic solutions with nitric or phosphoric content can be recommended in order to eliminate this contamination. There are stainless steel cleaners on the market that contain phosphoric acid, and strippers with nitric acid, that can be used. The use of these surface cleaning methods entails applying some careful work norms in order to prevent unnecessary risks through the use of these chemical products.

If the attack is severe then mechanical treatments will be required to eliminate it from the zone and recover the stainless surface.