

## Care and Cleaning Tips

Stainless steel should be cleaned routinely. Cleaning frequency depends on the installation environment. An excellent explanation about stainless steel is contained on the web site of the Specialty Steel Industry of North America. (<http://www.ssina.com/faq.htm>)

Stainless steel will corrode under certain conditions. It is not the same type of corrosion as experienced by carbon steel. There is generally not wholesale "rusting" of the surface and a subsequent reduction of thickness. If stainless steel corrodes, the most likely form of corrosion is "pitting". Pitting occurs when the environment overwhelms the stainless steel's passive film and it cannot heal the interruption. It usually occurs in small dark pits on the surface, and does not interfere with the mechanical properties of the stainless steel.

### **CLEANING STANDARD STAINS, INCLUDING RUST**

Cleaning procedures are listed in order, from mildest to more severe. Always attempt the mildest cleaning method first. Be patient - repeat operations more than once before moving on to the more severe cleaning methods. Try selected cleaning method on a small hidden area first.

- 1) Apply a standard detergent cleaner using a soft damp cloth. Apply in the direction of the grain. Rinse well, wipe dry.
- 2) If the stain persists, apply mild household abrasive cleaner, or a paste made from fine chalk or baking soda, using a soft cloth or a fine nylon scouring pad or a lightly abrasive scrub brush. Rub surface in the direction of the grain. Rinse well, wipe dry and repeat #1, above. (*Note: a cleaner low in chloride is preferred. If a cleaner with chloride is used, be sure the surface is thoroughly rinsed after cleaning*)
- 3) If the stain still exists, add a small amount of vinegar to the mild abrasive cleaner and repeat. Rinse well, wipe dry and repeat #1, above.
- 4) Use a proprietary stainless steel cleaner and follow the manufacturer's directions. After cleaning, neutralize with a 1% ammonia or baking powder solution, rinse with clean water and wipe dry.
- 5) Rust spots with a halo around them generally indicate that a fragment of ordinary steel has become embedded in the surface of the Stainless Steel. If the iron is not removed using 1-4, above, spot treat the affected area with a 10% solution of Nitric Acid and 2% Hydrofluoric Acid\* applying the solution with a cloth. The solution works best at room temperature or slightly heated. Commercially available "Pickling Paste" can also be used. Severe rust stains are best removed by keeping the stain moist with the solution for 15 - 20 minutes, repeating if necessary. Very severe stains will require rubbing with a paste of fine household abrasive and the solution, using a fairly coarse nylon scouring pad. This treatment must be followed by rinsing with a 1% ammonia or soda bicarbonate solution and flushing the area with lots of water.

*\*Nitric acid is a "friendly" acid towards Stainless Steel. The 10% solution of Nitric Acid (1 part Nitric Acid added to 9 parts water) and 2% Hydrofluoric Acid also serves to passivate the steel and make it more resistant to corrosion. This solution may be obtained from most chemists, who will make up the solution. This dilute solution is less dangerous than concentrated solutions, but it is advisable to wear rubber gloves and eye protection. If accidental skin contact occurs, wash well with lots of water. Mix and keep the solution in glass containers. Dilute the solution extensively before flushing down the drain. Keep it out of reach of children.*

### **A LIST OF DON'TS**

- Don't rub with steel wool (wire wool)
- Don't use scourers or cleaning cloths that have been used on mild steel
- Don't rub against the grain
- Don't use concentrated bleach or hydrochloric acid based cleaning products