



## Proper Care & Maintenance Guide of Stainless Steel Products

### **General Precautions:**

In selecting best cleaning practices, consider possibility of scratching and potential for post cleaning corrosion caused by incomplete removal of cleaner residue. Scratching can occur on a bright finish by cleaners that contain hard abrasives or even by “grit” in wash water. The best preventive measure is to avoid using abrasive cleaners unless absolutely necessary. When abrasives are needed first experiment on an inconspicuous area. A “soft abrasive”, such as Zud liquid or Bon Ami should be tried first to see initial test results. While cleaning with products mentioned be sure to observe direction of grain in material. Following grain while cleaning material will limit scratching. Many cleaners contain corrosive ingredients which require thorough post-cleaning rinse with clean water. However, thorough rinsing is recommended for all cleaning procedures.

### **General Maintenance Procedures:**

Stainless steel equipment will need to be cleaned on a regular basis for aesthetic considerations and to preserve corrosion resistance against evaporated chloramines or spotting. Stainless steel is protected from corrosion by a thin layer of chromium oxide. Oxygen from the atmosphere combines with chromium in stainless steel to form this passive chromium oxide film that helps protect against corrosion. Any contamination of surface by dirt, chlorides, greases, or other material will hinder this passivation process, and traps corrosive agents thus reducing corrosion protection. Chlorine and bromine used for sanitation are highly caustic chemicals to stainless steel, while heat and humidity enhance corrosiveness of these chemicals especially in natatoriums. Thus, some form of routine maintenance is necessary to preserve appearance and integrity of surface. Stainless steel is easily cleaned by many different methods. They actually thrive with frequent cleaning, and unlike some other materials it is impossible to “wear out” stainless steel by excessive cleaning. Your goal should be a robust cleaning and maintenance program to keep stainless steels protective chromium oxide layer intact which helps prevent corrosion.

To increase longevity of your stainless steel equipment, frequently follow these steps:

1. Establish a proper grounding of all equipment being installed at aquatic facilities. Make it a point that dissimilar metals are not in direct contact of one another. Taking this precaution will minimize risk of forming an electrolytic cell between equipment, pool water and atmosphere at facility.
2. Once all equipment has been installed at facility, apply a coat of paste wax (automotive or marine wax) and buff equipment with soft cloth to assist in extended corrosion protection. Redo this process with waxing after using cleaners or at six month intervals on stainless equipment. This wax will form a protective barrier between stainless steel and environmental elements left behind by evaporating pool water on equipment.

3. As stated previously rinse all equipment frequently with fresh water and dry with soft clean cloth. This should wash away any accumulated halogen salts such as chlorine or bromine. **DO NOT** use pool water, salt water, high PH or iron in water to clean your stainless steel products.
4. Pool equipment should be inspected regularly. Look for any tarnish, discoloration, stubborn stains, grease build up, blemishes or water spotting of stainless equipment. If apparent, then take appropriate steps to remove corrosive elements with a non chlorinated stainless steel cleaner and water rinse.

**NEVER** use steel wool, sandpaper, hydrochloric acid, muriatic acid, mineral acids or harsh abrasive cleaners on stainless steel equipment. Steel wool will add to corrosion due to dissimilar metal materials coming into contact with equipment. Discoloration should be removed at first sign with a cleaner or polisher recommended for stainless steel equipment.

Note: Avoid adding chlorine in close proximity to stainless steel equipment. Dilute chlorine in 5 gallon bucket and pour as far from stainless equipment as possible. Also avoid cleaning masonry and pool decks with strong acid solutions that come in contact with stainless steel products. Do not pour straight muriatic acid directly into pool for PH control. This method increases corrosion to stainless steel around application area.

### **Effective Cleaning Methods:**

There are many choices available for cleaning stainless steel in market that consumers may utilize. Depending upon cleaning needed and degree of contamination, some products may be better than others. Although some products are listed as stainless steel cleaners, they may scratch surface and may contain chloride bleach which will discolor, tarnish or dull finish if not removed completely.

There are many industry associations that have listed available product that can be utilized in cleaning stainless steel products. Use of these proprietary names is intended only to indicate a type of product available and does not constitute an endorsement. Omission of any proprietary product does not imply inadequacy. Review each product being utilized in strict accordance with instructions on packaging. No one product is best for every form of cleaning, since there are many levels of corrosion.

The simplest, safest and least costly method that will adequately do job is always best. The longer a stain is on surface of stainless equipment, the higher chance of permanent discoloration or damage. Stainless steel surfaces thrive with frequent cleaning because there is no surface coating to wear off material. A soft cloth and clean warm water should always be first choice for mild stains and loose dirt and soils. A final rinse with clean water and a dry wipe will complete process and eliminate possibility of water stains. **DO NOT** use pool water, salt water, high PH or iron in water to clean your stainless steel products.

Dealing with stubborn stains, discolored or tarnished stainless steel product try and utilize recommended merchandise per various manufacturers. Some recommended product: CitriSurf product such as 77 plus or 2310, Sta-clean, Zud liquid, Samae, Bon Ami, Allchem concentrated cleaner, Twinkle, 3M stainless steel cleaner and polish, Sheila Shine, Perfect Sink, Liquid Nu Steel, Lumin cleaner, Gade FFF or Grade F Italian pumice, Highlite and many others.

Surface restoration may be needed when stainless steel is scratched or pitted due to heavy corrosion. This can be accomplished by mechanically polishing as opposed to chemical cleaning above. A professional familiar with process should be contacted to handle.