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# NOTES

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# EQUIPMENT CARE AND CLEANING



## Stainless Steel

## CLEANING YOUR CABINET

### **Cleaning Exterior, Vinyl Clad, Galvanized, and Aluminum interior of cabinet:**

**True recommends the use of soap and warm water to clean these parts of the cabinet.**

**WARNING: USE OF ABRASIVE OR CHLORINE BASED CLEANERS WILL DAMAGE YOUR CABINET.**

#### **NOTE:**

The use of stainless steel cleaners or other such solvents is not recommended on plastic parts.  
Warm soap and water will suffice.

# STAINLESS STEEL EQUIPMENT CARE AND CLEANING (NAFEM - NORTH AMERICAN ASSOCIATION OF FOOD EQUIPMENT MANUFACTURERS)

## STAINLESS STEEL EQUIPMENT CARE AND CLEANING

### NAFEM

North American Association of Food  
Equipment Manufacturers

### So, what does all this mean?

At this very moment you're gritting your teeth and saying, "Well, what am I supposed to do now? The only way to get that crusted lasagna off my stainless steel is to use some kind of scouring pad, and I certainly need to use a cleaner, and the water in this town is hard enough to cut diamonds."

### Don't Despair!

Here are a few steps that can help prevent stainless steel rust.

#### 1. Use the proper tools

When cleaning your stainless steel products, take care to use non-abrasive tools. Soft cloths and plastic scouring pads will not harm the steels passive layer. Stainless steel pads can also be used but the scrubbing motion must be in the direction of the manufacturers' polishing marks. (Step 2 tells you how to find the polishing marks).

#### 2. Clean with the polish lines

Some stainless steels come with visible polishing lines or "grain." When visible lines are present, you should always scrub in a motion that is parallel to them. When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.

#### 3. Use alkaline, alkaline chlorinated or non-chloride containing cleaners

While many traditional cleaners are loaded with chlorides, the industry is providing an ever increasing choice of non-chloride cleaners. If you are not sure of your cleaner's chloride content contact your cleaner supplier. If they tell you that your present cleaner contains chlorides, ask if they have an alternative. They probably will. Also, avoid cleaners containing quaternary salts as they also can attack stainless steel and cause pitting and rusting.

#### 4. Treat your water

Though this is not always practical, softening hard water can do much to reduce deposits. There are certain filters that can be installed to remove distasteful and corrosive elements. Salts in a properly maintained water softener are your friend. If you are not sure of the proper water treatment, call a treatment specialist.

#### 5. Keep your food equipment clean

Use alkaline, alkaline chlorinated or non-chloride cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains. If you boil water in your stainless steel equipment, remember the single most likely cause of damage is chlorides in the water. Heating cleaners that contain chlorides has a similar effect.

### DON'T USE

Steel Pads  
Wire Brushes  
Scraper

**6. Rinse, Rinse, Rinse**

If chlorinated cleaners are used you must rinse, rinse, rinse and wipe dry immediately. The sooner you wipe off standing water, especially when it contains cleaning agents, the better. After wiping the equipment down, allow it to air dry for the oxygen helps maintain the stainless steels' passivity film.

**7. Never use hydrochloric acid (muriatic acid) on stainless steel.**

**8. Regularly restore / passivate stainless steel.**

**IMPORTANT:**  
Stainless steel cleaners are not to be used on any plastic parts.

**RECOMMENDED CLEANERS FOR SPECIFIC SITUATIONS:**

JOB	CLEANING AGENT	COMMENTS
Routine cleaning	Soap, ammonia, detergent Medallion	Apply with cloth or sponge
Fingerprints & smears	Arcal 20, Lac-O-Nu, Ecoshine	Provides barrier film
Subborn stains & discoloration	Cameo, Talc, Zud, First Impression	Rub in direction of polish lines
Grease & fatty acids, blood, burnt-on foods	Easy-off, DeGrease It Oven Aid	Excellent removal on all finishes
Grease & oil	Any good commercial detergent	Apply with sponge or cloth
Restoration/Passivation	Benefit, Super Sheen	

**What does Corroded Stainless Steel Look Like?**

**Passive Film Breakdown**

If the passive film of your stainless steel has been broken, your equipment will begin the long walk down the dark road of corrosion. At it's end; rust.

The first signs are on the microscopic level. If you were to look at them under a microscope or through a magnifying glass, you would see small pits and cracks staring back at you. Given time, these pits and cracks will grow and deepen while all the time exuding unsightly, red-orange rust.

More severe and visible cracking can also take place.

**Contrary to popular belief, Stainless Steels ARE susceptible to rusting**

Corrosion on metals is everywhere. We recognize it quickly on iron and steel as unsightly yellow / orange rust. Such metals are called "active" because they actively corrode in the natural environment.

Stainless steels are passive metals because they contain other metals, like chromium and nickel. 400 series stainless steels contain chromium while 300 series contain both chromium and nickel.

Metals are crystalline solids made up in atom arrangements like tinker toys. With 12-30% chromium, an invisible passive film covers the steels surface acting as a shield against corrosion. The metal becomes "passive" toward corrosion.

As long as the film is intact; not broken or contaminated, the metal is passive and stainless.

## Enemies of Stainless Steel

There are three basic things which can break down your stainless steels passivity layer and allow corrosion to rear its ugly head.

1. **Mechanical abrasion**
2. **Deposits & Water**
3. **Chlorides**

**Mechanical abrasion** means those things that will scratch the surface. Steel pads, wire brushes, and scraper are prime examples.

**Water** comes out of our tap in varying degrees of hardness. Depending on what part of the country you live in, you may have hard or soft water. Hard water may leave spots. Also, when heated, hard water leaves deposits behind that if left to sit, will break down the passive layer and rust your stainless steel. Other deposits from food preparation and service must be properly removed.

**Chlorides** are found nearly everywhere. They are in water, food, and table salt. One of the worst perpetrator of chlorides can come from household and industrial cleaners.

## Review

1. Stainless steels do rust when: Passivity (film-shield) breaks down by scrapes or scratches by deposits and chlorides.
2. Stainless steel rust starts with pits and cracks.
3. Use the proper tools. Do not use steel pads, wire brushes or scraper. (Step 1)
4. Use non-chlorinated cleaners at recommended concentrations. Use only chloride free cleaners. (Step 3)
5. Soften your water. Know the hardness of your water. Use filters and softeners whenever possible. (Step 4)
6. Wipe off cleaning agent(s) and standing water ASAP. Prolonged contact will cause eventual problems. (Step 6)

To learn more about chloride-stress corrosion and how to prevent it, contact the manufacturer of your equipment, your cleaning materials supplier or NAFEM.

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