

THE CARE AND

CLEANING

OF STAINLESS

STEEL

Cleaning Stainless Steel

Stainless steels need to be cleaned for aesthetic considerations and to preserve corrosion resistance. Stainless steel is protected from corrosion by a thin layer of chromium oxide. Oxygen from the atmosphere combines with the chromium in the stainless steel to form this passive chromium oxide film that protects from further corrosion. Any contamination of the surface by dirt, or other material, hinders this passivation process and traps corrosive agents, reducing corrosion protection. Thus, some form of routine cleaning is necessary to preserve the appearance and integrity of the surface. Stainless steels are 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.

General Tips

- ✓ Use a high-quality, non-abrasive cleaner that is specially formulated for stainless steel
- ✓ After applying the cleaner & polish, wipe in the direction of the natural metal grain to clean microscopic grooves where dust and dirt get trapped
- ✓ Avoid abrasive cleaners, powders, scouring pads and brushes that may scratch and damage stainless steel
- ✓ Avoid using glass cleaners, all purpose cleaners and harsh chemicals like chlorine or bleach because they may leave streaks and damage or discolor the outer protective layer of the surface
- ✓ Use a paper towel or soft microfiber cloth to clean stainless steel
- ✓ Don't leave ordinary steel in contact with stainless steel under damp conditions because an adverse reaction between the metals may cause discoloration
- ✓ After cleaning, buff with a soft, clean, dry cloth to remove any residue that may be left on the surface
- ✓ Make sure to completely dry the surface after cleaning to prevent spotting and streaking
- ✓ Cloth baby diapers, flannel fabric swatches, and old, clean tee shirts are great for cleaning stainless steel!

Types of Cleaners and Methods

General Precautions

In selecting cleaning practices, consider the possibility of scratching and the potential for post-cleaning corrosion caused by incompletely removed cleaners. Scratching can be caused by cleaners that contain hard abrasives, or even by “grit” in wash water. This is usually not a problem on dull finishes, or those surfaces finished with a coarse polishing grit. The best preventative measure is to avoid using abrasive cleaners unless absolutely necessary.

Clean Water and Wipe -The simplest, safest, and least costly method that will adequately do the job is always the best method. Stainless surfaces thrive with frequent cleaning because there is no surface coating to wear off stainless steels. A soft cloth and clean warm water should always be the first choice for mild stains and loose dirt and soils. A final rinse with clean water and a dry wipe will complete the process and eliminate the possibility of water stains.

Solvent Cleaning -Organic solvents can be used to remove fresh fingerprints and oils and greases that have not had time to oxidize or decompose. The preferred solvent is one that does not contain chlorine, such as acetone, methyl alcohol, and mineral spirits. There are many compounded or blended organic cleaners that are commercially available and attempt to optimize both clean ability and safety attributes. Cleaning can be accomplished by wiping with solvent-impregnated cloths, or by sophisticated vapor or spray methods. The wiping technique sometimes leaves a streaked surface.

Effective Cleaning Methods

Job	Cleaning Agents*	Comments
Routine Cleaning	Warm Water, Soap, Ammonia, Detergent	Apply with sponge or soft cloth. Can be used on all finishes.
Fingerprints and Smears	3M Stainless Steel Cleaner and Polish Arcal 20, Lac-O-Nu, Lumin Wash, O' Cedar Cream Polish, Stainless Shine	Provides barrier film to minimize fingerprints. Can be used on all finishes.
Stubborn Stains and Discoloration	3M Stainless Steel Cleaner and Polish Allchem Concentrated Cleaner, Samae Twinkle, Cameo Copper Cleaner, Grade FFF. or Grade F Italian Pumice, Whiting or talc, Liquid Nu Steel, Copper's or Revere Stainless Steel Cleaner, Household Cleaners, Lumin Cleaner, Zud Restoro, Sta-Clean, Highlite, Allen Polish, Penny-Brite, Copper-Brite	Rub lightly, using dry damp cloth, in the direction of polish lines on the stainless steel
Grease and Oil	Any good commercial detergent or caustic cleanser	Apply with sponge or soft cloth in direction of polish lines.

***NOTE:** Use of proprietary names is intended only to indicate a type of cleaner and does not constitute an endorsement. Omission of any proprietary cleanser does not imply its inadequacy. All products should be used in strict accordance with instructions on package.

Household Cleaners

Household cleaners fall into two categories: detergent (nonabrasive) and abrasive cleaners. Both are effective for many mild dirt, stain, and soil deposits, as well as light oils such as fingerprints. The abrasive cleaners are more effective but introduce the possibility of scratching the surface. However, the degree of abrasiveness will vary greatly with the particular product, and some brands will produce noticeable scratching on only the most highly polished surfaces. All of these cleaners vary widely with respect to their acidity and the amount of chloride they contain. A neutral cleaner low in chloride is preferred unless the user is assured that the surface can be thoroughly rinsed after cleaning. The fact that the label states “for stainless steel” is no guarantee that the product is not abrasive, not acidic, or low in chloride. The cleaning method generally employed with these cleaners is to apply them to the stainless surface and follow by cloth wiping, or to wipe directly with a cleaner-impregnated soft cloth. In all cases, the cleaned surface should be thoroughly rinsed with clean water and wiped dry with a soft cloth if water streaking is a consideration.

Commercial Cleaners

Many commercial cleaners compounded from phosphates, synthetic detergents, and alkalis are available for the cleaning of severely soiled or stained stainless surfaces. When used with a variety of cleaning methods, these cleaners can safely provide effective cleaning. Manufacturers should be consulted and their recommendations followed whenever using cleaners of this kind. The general precautions stated above also pertain to these cleaners.

References

Much of the cleaning portion of this document was adapted from:
Specialty Steel Industry of North America. Care and Cleaning of Stainless Steel. Specialty Steel Industry of North America, 3050 K Street, N.W. Washington, D.C. 20007 (www.ssina.com)



Technical Data

3M™ Stainless Steel Cleaner & Polish

Description

3M™ Stainless Steel Cleaner and Polish is a ready-to-use cleaner and polish packaged in an aerosol container. The product is dispensed as a white, non-evaporating foam.

Special Features

- Cleans and polishes in one step
- Leaves no greasy build-up on surfaces
- Pleasant citrus fragrance
- Leaves a light protective film
- Masks blemishes
- Slows resoiling
- Reduces fingerprinting
- Resists streaking
- Empty containers may be disposed of in sanitary landfills in accordance with local regulations
- NSF® Certified for use in federally-inspected meat and poultry processing plants

Applications

- Suitable for use on stainless steel, chrome, architectural aluminum, and other interior metal surfaces
- Not intended as a glass cleaner

Packaging

- 21-ounce (600 g) aerosol can
- 10-ounce aerosol can
- 12 cans per case

General Use Directions

Light soil

1. Shake can well.
2. Turn spray tip so arrow points to dot on can rim.
3. Hold can upright 6-12 inches from surface.
4. Spray area lightly directly on surface or on a clean, dry cloth.
5. Wipe area and polish until dry.

Heavy soil

1. Spray 3M™ Stainless Steel Cleaner and Polish onto a Scotch-Brite™ Light Duty Scrubbing Pad 9030 or Scotch-Brite™ Light Duty Scrub Sponge 63.
2. Vigorously rub the surface to remove the heavy soil. Always rub stainless steel in the direction of the grain.
3. Wipe surface with a clean, dry cloth to remove any excess cleaner.
4. Using a clean dry cloth, buff in the direction of the grain to achieve maximum shine.

NOTE:

Refer to product Material Safety Data Sheet for specific physical properties, health hazard, first aid and precautionary information.

3M™ Stainless Steel Cleaner and Polish:

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