

## Instructions for Stainless Steel Cleaning

1. Brush or wipe away any visible debris
2. Wash with mild soap or detergent
3. Rinse with distilled or deionized water
4. Wipe dry with a clean, soft, low-lint wipe



## Stainless Steel Cleaning Guidelines

### Stainless Steel Cleaning vs Sanitation vs Disinfection

**Cleaning** refers primarily to removing visible dirt or particles. Many cleaning products integrate various antimicrobial chemicals and ingredients that result in the disinfection of a surface or object. In the simplest terms, cleaning is the act of making something less dirty, which can include many different means and methods.

**Sanitation:** while the terms sanitizer and disinfectant are often used synonymously, these terms designate two unique classifications of cleaning chemicals. Sanitizers are most frequently associated with chemicals or ingredients that reduce bacteria and colony-forming units (CFUs). Sanitizers encompass antibacterial substances that reduce pathogen CFUs to a safe level. For sanitizers, a 5-log CFU reduction is expected to result in a 99.999% reduction of non-spore-forming bacteria.

**Disinfection** refers to specific measures taken to control, deactivate or kill infectious agents, such as viruses and bacteria. Disinfection typically occurs once the surface is already clean and free of surface particles or debris. Precleaning is important to ensure that surfaces are free of films, residues, and organic matter. Otherwise, microbes may find a safe harbor among sub-surface layers that liquid disinfectants cannot easily penetrate.

### Considerations for Stainless Steel Cleaning

#### Can I Use Bleach for Cleaning Stainless Steel?

Improper cleaning tools and incompatible chemical use are typical precursors to unsatisfactory wipe-down performance, uneven wetting, and limited working life if rust or oxidation arises.

#### Minimize Bleach and Chlorine

Bleach and chlorine are potentially detrimental chemical treatments to stainless steel materials and finishes. The effect of bleach and chlorine on metals is broadly dependent on the chemical choice, chemical concentration, and the specific grade of stainless steel.

The negative effects of bleach on stainless steel are most noticeable over many repeated cleaning cycles. Many sporicidal disinfectants are chlorine based and will damage material like stainless steel unless the residue is wiped away after use.

In most residential and commercial applications, bleach is applied at a ratio of 10% bleach, and 90% water. Even at a 10% concentration, frequent bleach exposure is likely to have observable effects on stainless surfaces, thus non-bleach alternatives include quarternary ammonia, isopropyl alcohol, and hydrogen peroxide. Meanwhile, many manufacturers will continue to develop novel bleach formulations that can be safely used with stainless steel to prevent damage, oxidation, and rust.

#### Can I Use Brushes or Steel Wool for Cleaning Stainless Steel?

Brushes and steel wool are not recommended for cleaning critical stainless steel surfaces in a cleanroom. Steel wool and brushes will not only make the surface look dull, scratched, and weathered, but will also generate microscopic scratches that will make the surface difficult to clean and more susceptible to generating biofilms or microbial growth. Instead of steel or wire brushes, use a soft nylon brush for heavier soiling to prevent damage to the surface.

#### Can I Use Tap Water for Cleaning Stainless Steel?

Tap water, which commonly contains trace levels of chlorine and minerals, is a concern when used for cleaning stainless steel surfaces. Use distilled or deionized water to prevent corrosion, spotting, and oxidation.

### Tips for Safe Chemical Handling & Storage

1. Never mix bleach with soaps – mixing bleach and ammonia-based soaps produces toxic chlorine gas (chloramine)
2. Follow the manufacturer's instructions with regard to storage, handling, and dilution.
3. It is strongly recommended that the solution be diluted and mixed immediately prior to prevent efficacy losses due to solutions that respond unpredictably when two chemicals are combined and stored for long periods of time, especially when storage conditions are less than ideal.
4. Consider temperature and humidity when storing, preparing, and handling. Each disinfectant has an optimal pH and temperature at which it is most effective. If the temperature or pH is outside this optimal range, then the rate of reaction (log kill over time) is affected.