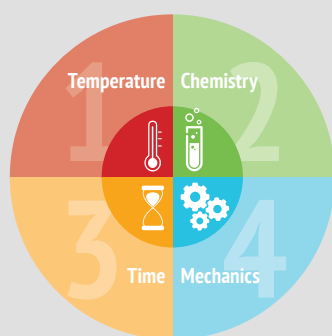


# SURFACE CLEANING

Surface cleaning is obtained by separating at least two substances without the surface being worked on deteriorating as a result of the operation or due to subsequent reactions due to the operation itself.

Cleaning is obtained by the interaction of:

- **mechanical action**
- **thermal action**
- **temporal action**
- **chemical action**



We find these factors in the so-called "Ideal Factor Circle" of Sinner: ideally, to obtain 100% cleanliness, these four factors should contribute to the same extent.

## TYPES OF CLEANING

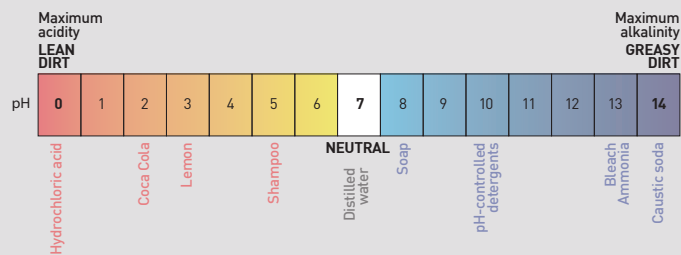
There are 3 types of cleaning that can be done:

**ROUTINE CLEANING:** Cleaning that must make the most of equipment and products where possible to obtain the desired cleaning in the shortest possible time.

**PERIODIC CLEANING:** Technique that facilitates routine cleaning to maintain the quality level of cleanliness.

**THOROUGH/EXTRAORDINARY CLEANING:** Cleaning that requires more time to be carried out and which involves the use of specific products.

*Graphic representation of the pH scale*



## DETERGENT

Detergent is a formulation suitable for performing a chemical reaction with respect to a specific type of dirt, emulsifying it in water to allow its removal. The formulation can contain different elements, each with a specific task:

### • Alkalis: saponify greasy dirt.

A Basic pH reacts with fat of organic origin making the FAT turn into SOAP. This, in turn, is then dissolved by the "water solvent" allowing it to be removed.

### • Solvents: dissolve greasy dirt.

A solvent reacts by dissolving grease of mineral origin: if the dissolved grease does not emulsify in water, the solvent evaporates quickly, causing the dirt to deposit again and penetrate even further into the porosity of the surface.

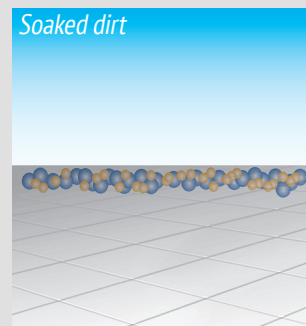
### • Acids: crystallize lean dirt.

An Acid pH reacts with lean dirt, causing the INCRUSTATIONS to turn into SALT.

This is then dissolved by the "water solvent" allowing it to be removed.

### • Sequestrants: reduce water hardness.

This element makes the strength of a formula effective on any type of WATER. They prevent the formation of insoluble Calcium and Magnesium salts. In these structures the Ca and Mg ions remain blocked-sequestered and therefore no longer available for the formation of insoluble carbonates.



• **Surfactants<sup>1</sup>: emulsify the dirt.**

The hydrophilic extremities of the surfactant drag the dirt into the aqueous solution and prevent it from depositing again because they are repelled by the hydrophilic extremities of the surfactant absorbed by the substrate.

Depending on the charge of the hydrophilic part they can be divided into:

**ANIONIC SURFACTANTS (-)** suitable for all dirt, very foaming, used above all in hand-washing soaps and products for manual dish washing.

**NON IONIC SURFACTANTS** (without charge) excellent on greasy dirt and organic dirt, not very foaming, much used in products for hard surfaces.

**CATIONIC SURFACTANTS (+)** have bactericidal or fabric softening action, incompatible with anionic surfactants.

**AMPHOTERIC SURFACTANTS** are not very aggressive and are mainly used in hand-washing soaps.

**SURFACTANTS OF PLANT ORIGIN** used in the ZERO line<sup>2</sup>.

**TYPES OF DIRT**

The types of dirt to be cleaned can be the following:

**PARTICULATE**

- of mineral origin (stone, coal, cement)
- of plant origin (leaves, wood, pollen)
- of chemical origin (rubber, smoke, smog)

**GREASY DIRT**

- edible fat (butter and sauce)
- non-edible fat (e.g. motor oil typical of the industrial sector)

This type of dirt reacts with all BASIC products.

**LEAN DIRT**

- lean (particulate, mud, etc.)
- saline deposits(scale)
- metal oxides (rust, verdigris)

This type of dirt reacts with all ACID products.

**INVISIBLE**

- microorganisms

This type of dirt reacts with all disinfectant products.

**The Sutter Professional range includes products to achieve high cleaning standards. Expert consultants are available to customers for the creation of customised procedures for cleaning surfaces in various professional fields.**

<sup>1</sup>See Sutterpedia.

<sup>2</sup>Find out more [www.zero.sutterprofessional.com](http://www.zero.sutterprofessional.com)