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How Clean Is It?

A guide for the various processes of cleaning

The words cleaning, sanitizing, disinfecting and sterilizing are used a lot in our industry. Unfortunately, these process terms have been hijacked by different industries resulting in confusion and misinterpretation. Without going into too much academic detail we would like to offer a basic explanation, which we believe would be useful to users of our ware washing products.

Each process has its own scale of parameters; i.e. cleaning has a wide range of parameters to choose from, whilst sterilizing has a much more defined parameter setting. We have listed the processes in order of decreasing parameters.

Cleaning

Cleaning can describe many processes. Cleaning leaves from the street is one example, or cleaning a factory floor, or a toilet bowl. But a cup is also cleaned before you drink from it. Cleaning has wide parameters however basically, it is a process of removing unwanted matter. In the case of engineering ware washing industry it could be removing contaminants from machine parts.

The most important and crucial factor is that cleaning is the first step before any other process can take place. Unless an item is clean it cannot be sanitized, disinfected or sterilised.

The medical cleaning process, according to AS-4187, is the removal of visible soil and reduction in number of micro-organisms from a surface.

In the hospitality industry, cleaning would be the removal of food soil from the surface of cooking and eating utensils. However it would also include the removal of (food) soil from machinery, including the dishwasher!

Cleaning parameters are individually set by the industry in which they are applicable. Cleaning is also called decontamination. At Rhima our cleaning process involves hot water and detergent being sprayed over items to be cleaned.

Sanitizing

Sanitizing is a term used mainly in the food industry. It comes from the word sanitary which means relating to health and/or the protection of health. Sanitizing is a process to ensure that the microbial load of clean items is reduced to safe levels. This is mostly accomplished by a combination of very hot water and chemicals.

It is important to realise that a sanitation process can only take place after items have been cleaned.

Unfortunately, like cleaning, sanitizing is subject to individual interpretation. Unless an operation has established set procedures for sanitizing, the acceptable residual level of micro-organisms on a surface is open to discussion.

Disinfection

Disinfection is a process to destroy micro-organisms. AS-4187 describes disinfection as a process of the inactivation of non-sporing organisms using either heat or chemical means. Thermal disinfection has relatively tight boundaries, which are described in

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AS-4187. For example, a surface must be subject to a temperature of 90oC for a period no less than 60 seconds. This must be verifiable and only then can the item be considered to be disinfected, but only if they are clean.

Thermal disinfection is determined by a strict combination of time/temperature. Although thermal sanitizing also requires a high temperature, it is not subject to the strict time/temperature relationship of disinfection.

Items cannot be disinfected if they have not first been cleaned.

There are also chemical methods of disinfection, however, unless thermal disinfection is not an option, most healthcare facilities prefer the thermal method. Most ware washing machines that sanitise do not disinfect: special machines are used.

Sterilization

Sterilization is a validated process intended on killing or removing all sporing and non-sporing micro-organisms. Sterile means no life however, according to AS-4187, the absolute absence of micro-organisms cannot be proven. This is because sterile is absolute and we cannot be sure that there are unknown organisms that may survive our current procedures.

The sterilization process is either thermal or chemical depending on the item and its ability to withstand high temperatures. Sterile is a typical word that has been hijacked. Sterile in manufacturing has come to mean an environment without contamination; sterile area in an airport may mean an area that has been checked by immigration and customs. The word is used to describe a highly controlled process.

The parameters within which sterilizing takes place are very tight and subject to scientific microbiological standards. Not only the actual process, but also verification, operator qualifications, processing environment, packaging and storage are all subject to strict procedures and form part of the sterilization process.

Unless an item is clean, it cannot be sterile, even if it has passed through a steriliser. Sterilizing cannot take place in a ware washing machine.

In conclusion, words like sterilizing or disinfecting are sometimes used to describe a process, which in reality is a high level cleaning or sanitizing. For example, boiling items in water does not make them sterile; at best they may be decontaminated. In fact, unless they are clean, they may not even be sanitized and if soil has baked on, due to the boiling process, they are not even clean! Cleaning is the first and most important stage in infection control and Rhima is the "Power of clean".