

If a sanitary environment is needed, the acid step is generally followed by a disinfection treatment to kill microorganisms or reduce the microbial population to a safe level. Common disinfection methods include heating, alkalis, oxidizing solutions (e.g., chlorine-based, iodophor, peroxide) and non-oxidizing solutions based on surfactants (e.g., quaternary ammonium compounds, acid anionic, amphoteric disinfectants) which contribute in removing foam when mixed with alkalis or acids. Sodium hydroxide is a commonly used alkaline cleaner, supplemented with additives to increase the removal capacity on specific soils. Alkaline solutions are mainly used to react with carbohydrate and protein-based soils as well as to make fats and oils soluble. Chemistry CIP relies heavily on the proper use of chemicals such as alkalis, acids and disinfectants and surfactants. Negative performance by increasing alkali concentration was also observed when studying other protein and lipid based soils. For example, Bird pointed out that there is Optimal concentration of NaOH 0.5% by weight for whey protein cleansing. The acid can dissolve mineral deposits introduced by water or heating products. An increase in chemical concentration above the optimum level can only lead to a limited cleaning efficiency, and sometimes it may lead to a decrease in efficiency. It also leads to a change in the structure of the sediment and the formation of a very thick, transparent layer that is difficult to remove.