

2.3.1 Chemistry CIP relies substantially on the proper usage of chemicals like alkalis, acids, disinfectants, and surfactants. A negative performance by increasing alkaline concentration has also been observed when studying other protein- and lipid-based soils like egg yolk [39], and was also found in the study reported in Chapter 6. The common disinfection methods include heating, oxidising solutions (e.g., chlorine-based, iodophors, and peroxide-based) and non-oxidising surfactant-based solutions (e.g., quaternary ammonium compounds, acid anionic, amphoteric disinfectants) [6]. The increase in chemical concentration above the optimum can only result in limited improvement of the cleaning efficiency, sometimes even decreased efficiency. For example, Bird et al. (1991, 1992) indicated the existence of an optimal concentration of NaOH (ca. Sodium hydroxide is a commonly used alkaline detergent, supplemented with additives to increase the removal capability to specific soils. Alkaline solutions are mainly used to react with carbohydrate and protein-based soils as well as to make fats and oils soluble).