

ChemScan®

PROCESS ANALYZERS

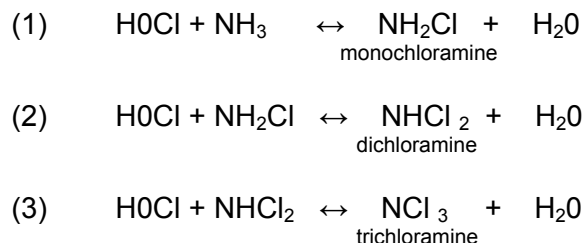
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Rev. 9/02

ChemScan® Method Summary #162 Chloramines

Interactions between chlorine and various forms of nitrogen found in or intentionally added to water are complex and successive (but reversible) in nature, governed by the ratio of chlorine to nitrogen and by pH and reaction time. As the chlorine to nitrogen ratio increases, the combined species transform first into monochloramine, then into dichloramine, then trichloramine and finally into free chlorine plus nitrogen gas. The typical reactions are as follows:



ChemScan Analysis Methods

Monochloramine can be analyzed by direct spectrophotometric methods or by photometric measurement of the amount of iodine liberated from potassium iodide reagent under neutral pH conditions. (See ChemScan Method Summary #122, Monochloramine). If after analysis of monochloramine in a sample, the pH is subsequently lowered to below 4 and more potassium iodide added to the sample, the concentrations of the monochloramine plus higher forms of chloramine (di- and tri-chloramine) can be obtained after specific time intervals. Control of analysis time intervals and pH will allow each individual form of chloramine to be analyzed if desired. In practice, most control applications are operated to maximize the monochloramine concentration and avoid any formation of higher chloramine species, which tend to have objectionable taste and odor. (See ChemScan Application Summary #154, Peak Point™ Chloramination Control.)