

Disinfection (Practical Exercise)

Session Objectives

- To provide a practical example of how to calculate chlorine demand in a water supply.
- To discuss and provide practical examples of different methods of chlorine residual analysis, with an emphasis on use of DPD tablets and comparators as a quick and reasonably accurate method.
- To discuss why free chlorine may be lost and the significance of high levels of combined chlorine.

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Outline

NB.: It is assumed that whoever takes this practical has a good working knowledge of chlorine testing techniques and the relative advantages and disadvantages of different disinfectants.

1. Make up a range of chlorine solutions using HTH or chlorine tablets. It is suggested that 4-5 different concentrations of chlorine solution are prepared.
2. Ask the participants to test the free and total chlorine residual in each solution and calculate the combined chlorine (combined chlorine = total residual – free residual).
3. Add contaminated water to solutions and ask the participants to re-test chlorine residuals.
4. Discuss the results and the need for maintaining residuals during distribution. Highlight the relative advantages and disadvantages of different disinfectants using the disinfectant session notes.
5. Discuss the ways in which free residual may be lost and highlight that high combined chlorine indicates sanitary integrity of the system is compromised.