



CHAPTER IV

CONCLUSIONS AND RECOMMENDATION

CONCLUSIONS

This work studied the effect of ions present as hardness in tap water, calcium, magnesium, hydrogen carbonate and hydrogen sulfate ions, on the foaming property of 3 surfactant systems by the shaking method. The results were divided into 5 parts, the first part studied the effect of Ca^{2+} and Mg^{2+} concentration. The effects of HCO_3^- and HSO_4^- concentration were observed in the second and third parts. The comparison of the defoaming behaviors of HCO_3^- and HSO_4^- were investigated in the fourth part. Moreover, the comparison of the foam stability among three surfactant systems was studied in the fifth part. From these results, it can be concluded as follows:

1. Calcium and magnesium ions, the major components of hardness in tap water, show the defoaming effect. Increasing calcium and magnesium ions concentration leads to decrease in the foam height.
2. A minute amount of hydrogen carbonate and hydrogen sulfate ions can enhance defoaming in the presence of calcium and magnesium ions.
3. Hydrogen carbonate and hydrogen sulfate ions have different defoaming behaviors, depending on the surfactant ingredients in the system.
4. Among the three systems, the second system showed the highest foam stability whereas the first system showed the lowest. This is possibly due to the effect of nonionic surfactant and co-surfactant.

RECOMMENDATION

A new method to study the foaming properties of the surfactant solutions should be explored and compared with the results in this work.