

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This research was to study the correlations between phase behavior of microemulsion conditions and detergency application of mixed surfactant system that consisted of an extended surfactant ($C_{12,13}$ -4PO-SO₄Na), 1-dodecanol ($CH_3(CH_2)_{11}OH$), and sodium mono- and dimethyl naphthalene sulfonate (SMDNS). The experimental results indicated that the mixed surfactant system were formed microemulsion with monoglyceride. As the result, the mixed surfactants of 55 part of $C_{12,13}$ -4PO-SO₄Na, 41 part of 1-dodecanol, and 4 part of SMDNS were chosen as the proper formulation in detergency experiment. In detergency performance, the mixed surfactant systems were studied their efficiency in monoglyceride removal from polyester/cotton blend and 100% polyester fabrics. The experimental results showed that the selected formulation at 0.3 %w/v total surfactant concentration with 3 %w/v sodium chloride the highest monoglyceride removal corresponding to the lowest interfacial tension and the lowest monoglyceride re-deposition for both types of fabrics.

5.2 Recommendations

For further study research, the biodegradability of all surfactants and monoglyceride should be investigated. Furthermore, the mechanism of monoglyceride removal should be observed.