

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

In this study, the mixed surfactant of MES and AE was selected to investigate the detergency performance for mixed soil removal. There are many functions that affect to the detergency performance such as surfactant formulation, total surfactant concentration, and characteristics of test fabrics and soils. The results can be concluded that the selected formulation (MES: AE7) at the weight ratio of 1:9 is the best formulation in this study because its cloud point is higher than room temperature so it remains homogeneous phase during washing process. It also had the lowest CMC indicating to be efficient for detergency.

The maximum of oily soil removal was obtained at a 0.3 %w/v active total concentration of the selected formulation on the cotton fabric. The cotton showed a higher oily soil removal when compared with the polyester. In case of particulate soil removal, the commercial liquid detergent provided the highest percentage of particulate soil removal because the commercial liquid detergent, Breeze Excel contains a higher portion of the anionic surfactant which plays an important role for particulate soil removal. For any given type of test fabrics, the mixed surfactant system at optimum concentration (0.3% w/v) provided more highly percentage for both soil removals than using the pure surfactant of MES or AE7. For the selected formulation, the re-deposition of oily soil was found much higher than that of particulate soil.

5.2 Recommendations

For further detergency research, the distribution of mixed soils on the test fabrics should be investigated by scanning electron microscope for a better understanding of the mixed soil adsorption on the fabrics substrate. Furthermore, the biodegradability of using this mixed surfactant formulation should be observed in order to reduce the environmental impacts.