



## CHAPTER IV CONCLUSIONS

### 5.1 Conclusions

The temperature and the hydrophilic surfactant showed the effects on the microemulsion formation of mixed surfactant between AE3 and Span 80 with motor oil including the  $C_{\mu C}$  and solubilization parameter. The  $C_{\mu C}$  decreased with increasing temperature, suggesting that the system needs less amount of AE to form a Winsor Type III microemulsion at higher temperatures. Among the studied hydrophilic surfactant, AE7 was the most effective hydrophilic surfactant in terms of a Winsor Type III microemulsion formation and solubilization of oil in the middle phase. The critical micelle concentration decreased with increasing HLB of the system.

### 5.2 Recommendations

Based on the present results, the following recommendations are suggested for futures studies:

1. For improving the phase behavior of the MES system, Salinity (NaCl) may be added into the system to reduce the  $C_{\mu C}$  value because MES is an anionic surfactant which the transition of Winsor Types will occur when added NaCl.
2. Cloud point of all systems may be improving when inorganic electrolytes, a short chain alcohol and ionic surfactants were added into the system.