

CHAPTER V

CONCLUSIONS

1 Effect of Aging Time

- 1.1 Entanglement storage modulus, zero shear viscosity and Bingham stress increased for MUC32: FA = 1:4% by weight with aging time; the system equilibrium reached after 14 days.
- 1.2 Entanglement storage modulus, zero shear viscosity and Bingham stress did not change significantly with aging time for the emulsion of MUC32:FA=1:2, 1:6 and 1:8.
- 1.3 Aging allows the growth of dispersed particles.
- 1.4 Multilayer lamellar structure can be seen at low fatty alcohol concentration. At high fatty alcohol concentration, dark sheet or islands of excess fatty alcohol remained in the system.

2 Effect of Fatty Alcohol Concentration

- 2.1 Entanglement storage modulus, zero shear viscosity and Bingham stress increased as fatty alcohol content was increased.
- 2.2 Saturation level of fatty alcohol was between 4 to 6% by weight.
- 2.3 Fatty alcohol allowed the growth of dispersed particles.
- 2.4 Multilayer lamellar structure became more pronounced at high fatty alcohol concentrations.

3 Effect of Temperature

- 3.1 Zero shear viscosity and Bingham stress decreased with temperature especially at high fatty alcohol concentrations.
- 3.2 Temperature did not influence on entanglement storage modulus, especially at high fatty alcohol concentrations.

- 3.3 Aggregated dispersed particles disaggregated when temperature was raised about the melting point of fatty alcohol for emulsions with high fatty alcohol concentrations.
- 3.4 Size of the dispersed particles did not change with temperature at low fatty alcohol concentration.

4 Effect of pH

- 4.1 Entanglement storage modulus, zero shear viscosity and Bingham stress gave the highest value at isoelectric area of surfactant molecule.
- 4.2 Entanglement storage modulus, zero shear viscosity and Bingham stress decreased at below and above the isoelectric area.
- 4.3 Aggregated dispersed particles far apart each other in the emulsion at pH above and below the isoelectric area.
- 4.4 Multilayer lamellar structure can be seen in the emulsion with low fatty alcohol concentration at all pH values. The emulsion with high fatty alcohol concentration, dark sheet or islands of excess fatty alcohol remained in the system at all pH range.