

PHASE EQUILIBRIA OF MIXED CATIONIC-NONIONIC  
SURFACTANT/ALCOHOL/WATER SYSTEM

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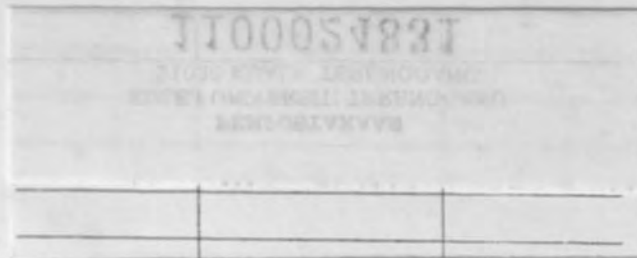
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TESIS

PHASE EQUILIBRIA OF MIXED  
CATIONIC-NONIONIC SURFACTANT/ALCOHOL/WATER  
SYSTEM

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Thesis Submitted in Partial Fulfilment of the Requirements for the  
Degree of Science (Hons.)

Faculty of Science and Technology  
University College Terengganu

UNIVERSITI PUTRA MALAYSIA

2000

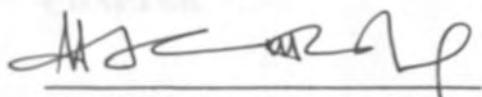
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PHASE EQUILIBRIA OF MIXED CATIONIC-NONONIC / WATER /  
ALCOHOL SYSTEM

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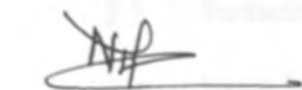
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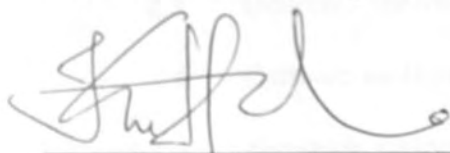
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I would like to take this golden opportunity to express my sincere gratitude and appreciation to my supervisor, Prof. Dr. Hendan Hj. Subandi for his continuous guidance, invaluable advice, constructive comments, guidance and patience throughout the course of this project.

Special thanks to Puan Zaharah from PUSPIS for her assistance and advice. I also would like to acknowledge the assistance and cooperation given by the lab assistants, Ahmad and Kak Hafidah.

I cannot adequately express my gratitude to my husband and children who made these years of study a sweet memorable one.

Last but not least, I wish to thank my family for their support and the rest whom had help me in making this project a successful one.



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Special thanks to Puan Zahariah from PORIM for her assistance and advice. I also would like to acknowledge the assistance and cooperation given by the lab assistances, Mizi and Kak Hasbah.

I cannot adequately express my gratitude to my housemates and coursemates who make these years of study a most memorable one.

Last but not least, I wish to thank my family for their support and the rest whom had help me in making this project a successful one.

## ABSTRACT

The importance of sugar-based surfactants as a substitute for petrochemical based surfactants has received wide coverage of attention due to its unique natural properties. Studies on a mixed cationic-nonionic surfactant system of cetyltrimethylammonium bromide (CTAB) and GLUCAMATE SSE-20 (sugar based surfactant) / pentanol / water were carried out at room temperature ( $27\pm 1^\circ\text{C}$ ). Method employed for determination of CMC is surface tension. The experimental CMC for GLUCAMATE SSE-20 was found to be  $1.15 \times 10^{-5}$  mole/L. Results indicated that the composition of 0.4 mole fraction of CTAB exhibit a stable and the largest micelle area. Results also indicated that the mixture behaved nonideally (synergistic interaction). The corresponding molecular interaction parameter value,  $\beta$  was concluded to be below  $-6$ .

## ABSTRAK

Kepentingan surfaktan daripada terbitan glukos sebagai pengganti kepada surfaktan daripada terbitan petrokimia semakin mendapat perhatian disebabkan sifat-sifat semulajadi yang unik. Kajian terhadap system surfaktan setiltrimetilammonium bromida (CTAB) dan Glucamate SSE-20 campuran / pentanol / air telah dilakukan pada suhu bilik ( $27 \pm 1^\circ\text{C}$ ). Keputusan menunjukkan bahawa komposisi 0.4 pecahan mol CTAB adalah paling stabil dan mempunyai kawasan misel yang terbesar. Kaedah tegangan permukaan digunakan bagi penentuan CMC (critical micelle concentration). Nilai CMC bagi surfaktant GLUCAMATE SSE-20 dan surfaktant yang didapati secara eksperimen ialah masing-masing  $1.15 \times 10^{-5}$  dan  $9.95 \times 10^{-4}$  mol/L. Keputusan juga menunjukkan bahawa campuran tersebut menunjukkan sifat tidak unggul (sinergi) yang ketara. Nilai parameter interaksi molekul,  $\beta$  didapati kurang daripada -6.