

1100024731

c/n 1311



LP 46 FST 4 2002



1100024731

Non-aqueous emulsion from C3 H8 O3/C12 E4 : stearic acid/EDTA / Rosmeira Mohamad @ Ali.

PERPUSTAKAAN
KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA
21030 KUALA TERENGGANU

1100024731		

1100024731

PERPUSTAKAAN KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA (KUSTEM)			
Pengarang ROSMIRA MOHAMAD @ ALI		No. Panggilan LP 46 FST	
Judul Non-aqueous emulsion from C3H8O3/C12E4			
Tarikh 14/07/00	Waktu Pemulangan 11.47am	Nombor Ahli UK7762	Tanda tangan D.

LP
46
FST
4
2002

18/2/10

HAK MILIK
PERPUSTAKAAN KUSTEM

NON-AQUEOUS EMULSION FROM $C_3H_8O_3/C_{12}E_4$:STEARIC
ACID/EDTA

By

ROSMEIRA BINTI MOHAMAD @ ALI

Thesis submitted in partial fulfillment of the requirement for the Degree of
Bachelor Science (Hons.) Chemistry.

PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH

FACULTY OF SCIENCE AND TECHNOLOGY
COLLEGE UNIVERSITY SCIENCE AND TECHNOLOGY MALAYSIA
UNIVERSITY PUTRA MALAYSIA

2002

1100024731

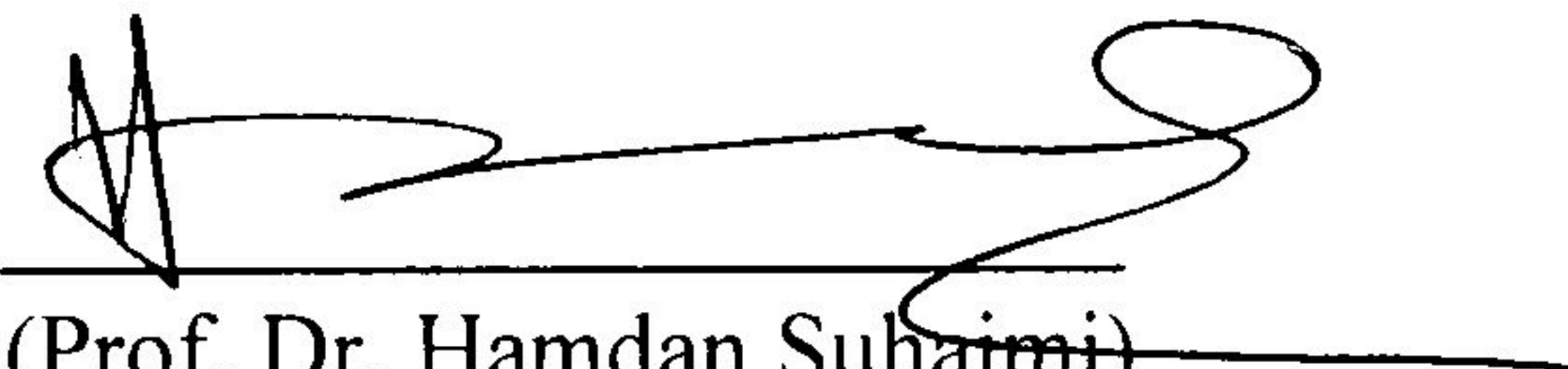
NON-AQUEOUS EMULSION FROM $C_3H_8O_3/C_{12}E_4$:STEARIC ACID/EDTA

By

ROSMEIRA BINTI MOHAMAD @ ALI

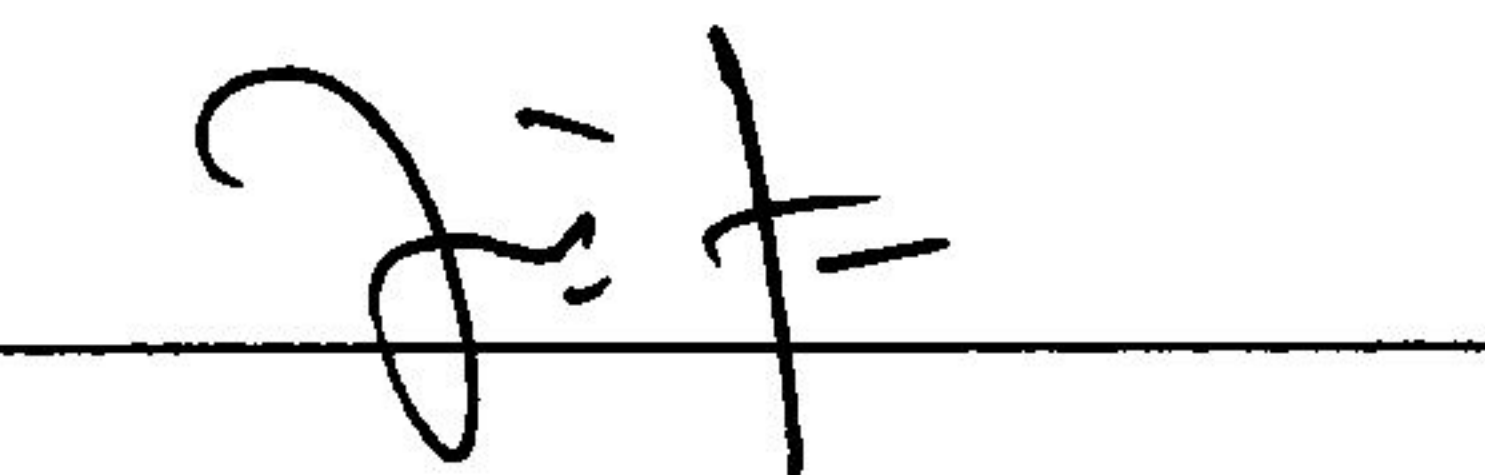
Approved By :

Supervisor


(Prof. Dr. Hamdan Suhaimi)

Date: 8/4/02

Coordinator


(Encik Suhaimi Suratman)

Date: 8/4/02

Acting Head of Department of Chemical Sciences


(Prof. Dr. Law Ah Theem)

Date: 8/4/02

ACKNOWLEDGEMENTS

Everyday I think how lucky I am to be where I am right now; my wildest dreams are unfolding into a reality in front of my eyes. It's like that for me because of a massive amount of hard work, support and dedication – only partly by me – mostly by a lot of other people...

I would like to take this opportunity to express my sincere gratitude to my supervisor, Prof. Dr. Hamdan Haji Suhaimi for his continuous guidance, invaluable advices, constructive comments, guidance and patience throughout the course of this project.

To my beloved parent, I could never repay both of you for all you have done for me; your love and support is priceless. I do hope both of you know how grateful I am for all the advice, guidance, love and support.

I also would like to acknowledge the assistance and cooperation given by the lab assistances, Abang Jamal, Abang Mizi, Abang Man and Kak Hasbah.

I cannot adequately express my gratitude to my roommates and classmates who make my years of study a most memorable one. Ila, Syikin, and Lin; I really appreciate all of your help and hopefully someday I can return all the favours.

Last but not least, I wish to thank the rest whom had in making this project a great one.

ABSTRACT

Non-aqueous emulsion from nonionic surfactant, polyoxyethylene 4 lauryl ether ($C_{12}E_4$) and stearic acid with glycerol and EDTA were investigated by stability test and optical microscopy. The formulated emulsions were prepared by petroleum jelly (PJ) as thickening agent. Formulation weight by ratio of stearic acid/ $C_{12}E_4$:EDTA at 60%, 80% and 95% by weight of glycerol were prepared about nine samples of emulsions. The weight ratio of stearic acid/ $C_{12}E_4$:EDTA were at 70:30, 50:50, 10:90.

From the stability studies, nine sample of emulsion (01-09) were prepared. The results showed only that in two weeks, samples 01-03 were stable while the other six samples were unstable. The stability test was once again determined after a month. Based on that test, the results showed that all of nine samples were not stable. The value of the stability index for the samples 01-09 was 0.90, 0.91, 0.91, 0.60, 0.64, 0.60, 0.62, 0.41 and 0.55. This was further substantiated by a large droplet size of the samples observed using optical microscope. Interestingly, although the emulsions were not stable, through polarized microscope, it was observed that liquid crystalline were also presence in all of the nine samples.

ABSTRAK

Emulsi bukan akueus dari surfaktan bukan ionik, iaitu polyoxyethylene 4 lauryl ether ($C_{12}E_4$) and asid stearik dengan gliserol dan EDTA, telah dipastikan melalui ujian kestabilan dan mikroskop optikal. Formulasi emulsi ini disediakan dengan menggunakan jeli petroleum (PJ) sebagai agen pemekat. Formulasi bagi nisbah berat asid stearik/ $C_{12}E_4$:EDTA pada 60%, 80% dan 95% oleh nisbah gliserol disediakan sebanyak sembilan sampel emulsi. Nisbah berat asid stearik/ $C_{12}E_4$:EDTA adalah pada 70:30, 50:50 dan 10:90.

Daripada kajian, sembilan sample emulsi (sample 01-09) telah disediakan. Keputusan menunjukkan bahawa dalam masa dua minggu, sampel 01-03 adalah stabil sedangkan enam sampel yang lain adalah tidak stabil. Ujian kestabilan itu ditentukan sekali lagi selepas satu bulan. Daripada kajian itu, didapati kesemua sembilan sampel itu adalah tidak stabil. Nilai indeks kestabilan bagi sample 01 hingga sample 09 adalah 0.90, 0.91, 0.91, 0.60, 0.64, 0.60, 0.62, 0.41 dan 0.55. Ini dapat disokong dengan penggunaan mikroskop optikal yang menunjukkan saiz partikel yang agak besar. Bagi pemerhatian yang lebih menarik, didapati walaupun emulsi itu tidak stabil, tapi melalui mikroskop berpolar, ia menunjukkan hablur cecair hadir dalam kesemua sembilan sampel itu.