

EFFECT OF DIFFERENT ADDITIVES ON CLOUD POINT OF NON IONIC SURFACTANT

*A Thesis submitted to the
National Institute of Technology, Rourkela
In partial fulfilment of the requirements
of*

Bachelor of Technology (Chemical Engineering)

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2011



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CERTIFICATE

This is to certify that the thesis entitled “**Effect of Different Additives on Cloud Point of Non Ionic Surfactant**”, submitted by **Dhananjay Singh** for the requirements of bachelor’s degree in Chemical Engineering Department of National Institute of Technology, Rourkela is an original work to the best of my knowledge, done under my supervision and guidance.

Date-12/06/11

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ACKNOWLEDGEMENT

In the pursuit of this academic endeavour, I feel I have been singularly fortunate. I should fail in my duty if I do not record my profound sense of indebtedness and heartfelt gratitude to my supervisor Dr. Santanu Paria who inspired and guided me in the pursuance of this work.

I want to acknowledge the support and encouragement of Mr Nihar Ranjan Biswal, Mr Rajib Ghosh Chaudhuri, and Mr K. J Rao in the lab work.

I owe a depth of gratitude to Prof. K.C. Biswal, H.O.D. of Chemical Engineering department, National Institute of Technology, Rourkela, and all other faculties for all the facilities provided during the course of my tenure.

Date-12/06/11

Dhananjay Singh

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ABSTRACT

Determination of cloud point of non-ionic surfactants have wide applications as it is the temperature where the mixture starts to phase separate and the two phases appear, thus becoming cloudy. Non-ionic surfactants find suitable applications for recovery of membrane components under mild non-denaturing condition. Knowing the cloud point helps us to determine the storage stability since storing formulations at temperatures significantly higher than the cloud point may result in phase separation and instability. Generally, non-ionic surfactants show optimal effectiveness when used near or below their cloud point.

In this present work, effects of different additives on cloud point of non-ionic surfactants have been studied. Triton X-100 (TX-100) has been used as the non-ionic surfactant and observations have been done subsequently for different concentration of TX-100 by taking various additives like NaCl, Na₂SO₄, CaCl₂ and corresponding temperature were noted down. Other than non-ionic surfactants, experiments were conducted for both cationic as well as anionic surfactants. Based upon the result, graphs were plotted which comply well with the theoretical study.

Keywords: cloud point, non-ionic surfactants.

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