

Accepted Manuscript

Dicationic hydroxylic surfactants: Aggregation behavior, guest-host interaction and catalytic effect

Alla B. Mirgorodskaya, Farida G. Valeeva, Svetlana S. Lukashenko, Rushana A. Kushnazarova, Tatiana M. Prokop'eva, Tatiana M. Zubareva, Vasiliy A. Mikhailov, Lucia Ya. Zakharova



PII: S0167-7322(17)34488-4
DOI: doi:[10.1016/j.molliq.2017.11.175](https://doi.org/10.1016/j.molliq.2017.11.175)
Reference: MOLLIQ 8291
To appear in: *Journal of Molecular Liquids*
Received date: 28 September 2017
Revised date: 22 November 2017
Accepted date: 30 November 2017

Please cite this article as: Alla B. Mirgorodskaya, Farida G. Valeeva, Svetlana S. Lukashenko, Rushana A. Kushnazarova, Tatiana M. Prokop'eva, Tatiana M. Zubareva, Vasiliy A. Mikhailov, Lucia Ya. Zakharova , Dicationic hydroxylic surfactants: Aggregation behavior, guest-host interaction and catalytic effect. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Molliq(2017), doi:[10.1016/j.molliq.2017.11.175](https://doi.org/10.1016/j.molliq.2017.11.175)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Dicationic hydroxylic surfactants: Aggregation behavior, guest-host interaction and catalytic effect

Alla B. Mirgorodskaya,¹ Farida G. Valeeva¹, Svetlana S. Lukashenko¹, Rushana A. Kushnazarova¹, Tatiana M. Prokop'eva², Tatiana M. Zubareva², Vasiliy A. Mikhailov², Lucia Ya. Zakharova¹

¹A.E. Arbuzov Institute of Organic and Physical Chemistry of Kazan Scientific Center of Russian Academy of Sciences, 8, ul. Arbuzov, 420088 Kazan, Russian Federation

²L.M. Litvinenko Institute of Physical Organic Chemistry and Coal Chemistry, 70 R. Luxemburg St., 83114 Donetsk

Corresponding author: Alla Mirgorodskaya; Telephone: +7(843) 2 73 22 93;
Fax: +7(843) 2 73 22 53; 8, ul. Akad. Arbuzov, Kazan, 420088, Russia;
e-mail: mirgoralla@mail.ru, mirgorod@iopc.ru

Abstract

Herein, supramolecular systems with improved aggregation, solubilization and catalytic activity have been constructed by self-assembly of gemini surfactants with two cationic centers separated by the spacer chain of 10 atoms long and hydroxyl functionality in their head group or in the spacer. It was found that hydroxylic dicationic surfactants capable of forming hydrogen bonds exhibit the ability to micelle formation at a concentration substantially lower than that of their monocationic and non-functionalized dicationic counterparts. They are capable of initiating additional solubilization mechanisms, which are responsible for the enhanced solubilization capacity of the surfactants. The use of the dicationic hydroxylic surfactants in hydrolytic decomposition of esters gives rise to the high catalytic effect and substrate selectivity: the highest, 430-fold, acceleration was observed for *p*-nitrophenyl caprate.

Key words: Gemini surfactants; Aggregation; Solubilization; Hydrolysis; Micellar catalysis

Download English Version:

<https://daneshyari.com/en/article/7843354>

Download Persian Version:

<https://daneshyari.com/article/7843354>

[Daneshyari.com](https://daneshyari.com)