STUDYING THE PROPERTIES OF WATER-SOLUBLE SURFACTANTS OBTAINED FROM FATTY ACIDS OF COTTON SOAP STOCK

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ABSTRACT

The article deals with the physico-chemical parameters of the obtained surfactants were analyzed by standard methods. The main physico-chemical parameters of the obtained basis of the surfactant composition are presented in the table. A number of surfactant compositions have been created, essentially consisting of local raw materials. To increase the effectiveness of surfactants, sodium silicate, sodium sulfite, soda ash, sodium chloride and ammonium sulfate are introduced into the composition.

Keywords:*clay adsorbent, waxed adsorbent, triethanolamine (TEA).*

АННОТАЦИЯ

В статье физико-химические параметры полученных ПАВ анализировали стандартными методами. Основные физико-химические параметры полученной на основе композиции ПАВ представлены в таблице. Создан ряд композиций ПАВ, в основном состоящих из местного сырья. Для повышения

эффективности ПАВ в состав вводят силикат натрия, сульфит натрия, кальцинированную соду, хлорид натрия и сульфат аммония.

Ключевые слова: *глинистый адсорбент, воскообразный адсорбент, триэтаноламин (ТЭА).*

INTRODUCTION

The protection of the ecology of the Fergana region requires a reduction in the formation of solid waste at industrial enterprises, including waste oiled and waxed clay adsorbents and their burial in country dumps.

We have developed a method for the regeneration of spent oily and waxed adsorbents by treating them with a surfactant-containing aqueous solution, the cost of which mainly depends on the price of the latter.

DISCUSSION AND RESULTS

It is known that today effective surfactants are imported to enterprises mainly from abroad at a high price.

Therefore, the creation and application of compositions of water-soluble surfactants from local raw materials is considered an urgent and economically important task.

In this aspect, the fatty acids of cottonseed stock are considered to be a cheap raw material for the production of surfactants. in Uzbekistan, their production has been mastered at 18 large oil and fat enterprises.

Treatment of raw (or distilled) fatty acids with alkaline reagents will make it possible to obtain their salts, which are readily soluble in water [1]. However, detergent, foaming, wetting and other colloid-physical properties of such solutions do not always meet the requirements of consumers, which is due to the composition and content of the processed material.

Waste oiled and waxed clays are considered to be multicomponent highly dispersed materials, and their regeneration with an aqueous solvent requires the use of special surfactant compositions, mainly obtained from local components.

By saponification of raw fatty acids of cotton soapstock, first with sodium sulfite, then with triethanolamine (TEA), a liquid detergent base for the created surfactant composition was obtained [4].

The physicochemical parameters of the obtained surfactants were analyzed by standard methods [6].

Table 1 presents the main physico-chemical parameters of the obtained basis of the surfactant composition.

Table 1

Physico-chemical parameters of the detergent base obtained from raw fatty acids of cotton soap stock

The name of indicators	With a mass fraction of fatty acids of cotton soap stock, %		
	thirty	40	fifty
1. Appearance and consistency	Ointment		
2. Color	light brown	brown	dark brown
3. Mass fraction,% - free of caustic alkali - free carbonic soda - impurities insoluble in water	0.25 0.8 0.3	0.14 0.9 0.4	0.12 1.0 0.5
4. Initial volume of foam, ml	200	250	300

From Table. 1 it can be seen that with an increase in the mass fraction of fatty acids, the color of the surfactant base darkens, and the mass fraction of free carbonic soda and impurities that are insoluble in water increase. This also increases the initial foam volume (from 200 ml to 300 ml). Moreover, with an increase in the mass fraction of fatty acids in the resulting base, the content of free caustic alkali decreases from 0.15 to 0.12%.

CONCLUSION

In practice, to increase the effectiveness of surfactants, their compositions are more often used. the latter are superior in their colloid-chemical properties to individual washing bases.

With this in mind, a number of surfactant compositions have been created, essentially consisting of local raw materials.

Thus, the studies carried out and the results obtained make it possible to recommend the obtained compositions of surfactants for the regeneration of spent oily and waxed clay adsorbents.

REFERENCES

1. А.А.Абрамзон Поверхностно-активные вещества. Справочник, Л.: Химия, 1979-376 С.
2. С.В.Мамадалиева Зависимость показателей очищаемого парафина от размера гранул применяемого адсорбента // Universum: Химия и биология:

электрон. научн. журн. 2019. № 11(65). URL: http://7universum.com/ru/nature/archive/item/8079 (дата обращения: 20.11.2019).

3. О.К.Рахмонов, С.В.Мамадалиева Механизм воздействия ультразвука на парафин при его очистке композицией адсорбентов из местных глин // Universum: Химия и биология: электрон. научн. журн. 2019. № 11(65). URL: http://7universum.com/ru/nature/archive/item/8109 (дата обращения: 20.11.2019).

4. Ребиндер П.А. Поверхностно-активные вещества и их применение в химической и нефтяной промышленности. Киев. Наука думка 1971-4С.

5. Паронян В.Х., Принь В.Т. Технология синтетических моющих средств. М.: Химия,1984-224 С.

6. S.B.Ubaydullaeva, & U.X. Sodikov. (2022). Determination of the Optimal Conditions of t he Bond of Nickel (II) Ion Complex with Dimethyl glyoxime Reagent. *Eurasian Research Bulletin*, *8*, 1–5. Retrieved from https://geniusjournals.org/index.php/erb/article/view/1335

7. Ubaydullayeva Saidakhon, Sodikov Usmonali, Yunusova Nozima, & Azimbek Amirov. (2022). SELECTION OF OPTIMAL CONDITIONS FOR COMPLEX COMBINATION OF NICKEL (II) ION WITH DIMETHYLGLYOXIME REAGENT. *American Journal of Applied Science and Technology*, *2*(04), 29–34. https://doi.org/10.37547/ajast/Volume02Issue04-04

8. Ubaydullayeva Saidaxon Baxromjon qizi, & Jumaboyev Alisher G'ofurovich. (2022). Determination of the Complex Composition by the Method of Isomolar Series. *Eurasian Journal of Physics,Chemistry and Mathematics*, *6*, 55–58. Retrieved from https://www.geniusjournals.org/index.php/ejpcm/article/view/1552

9. Ubaydullayeva, S. B. Q. (2022). KOMPLEKS TARKIBINI IZOMOLYAR SERIYALAR METODI YORDAMIDA ANIQLASH. *Oriental renaissance: Innovative, educational, natural and social sciences*, *2*(5), 578-582.

10. Hamidov Bosit, Ubaydullayeva Saidaxon FOYDALANILGAN ADSORBENTDA NI (II) ION VA DİMETILGLIOKSIM KOMPLEKSINING TAHLILI // Universum: texnicheskie nauki. 2021 yil. №5-6 (86). URL: https://cyberleninka.ru/article/n/analysis-of-ni-ii-ion-and-dimetylglioxime-complex-in-used-adsorbent

11. Кодирова Дилшодхон Тулановна, Абидова Мамурахон Алишеровна ПОЛУЧЕНИЕ МЭА ФОРМАЛЬДЕГИДНЫХ СМОЛ ИЗ КУБОВОГО ОСТАТКА // Universum: технические науки. 2021. №6-3 (87). URL: https://cyberleninka.ru/article/n/poluchenie-mea-formaldegidnyh-smol-iz-kubovogo-ostatka

12. Kodirova Dilshodkhon Tulanovna, Abidova Mamuraxon Alisherovna, Solijonov Sherzodbek Hoshimjon o'g'li, & Ne'matova Sarvinozxon Avazjon qizi. (2022). Studying the Synthesis of Modified Formaldehyde Resins from Vat Residue. Eurasian Research Bulletin, 9, 47–50. Retrieved from https://geniusjournals.org/index.php/erb/article/view/1813

13. МОДИФИКАЦИЯ МОДИФОРМАЛЬДЕГИДНОЙ СМОЛЫ РАСТВОРОМ МЭА, ИСПОЛЬЗУЕМОЙ В АБСОРБЦИОННОЙ КОЛОННЕ ПРОИЗВОДСТВА АММИАКА // Universum: технические науки : электрон. научн. журн. Кодирова Д.Т. [и др.]. 2022. 7(100). URL: https://7universum.com/ru/tech/archive/item/14067