COLLOID-CHEMICAL PROPERTIES OF THE PRODUCED DETERGENTS

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Soaps and detergents are products of regular consumption. The main component of detergents is soluble salts of saturated and unsaturated fatty acids.

Alkaline detergents - allotted mainly to remove grease and various kinds of contaminants. These products are used in large quantities not only for dishes but also because they are highly reactive also for equipment. Usually, they include a concentrated surfactant, complexing agents, alkaline reagents, sodium hypochlorite as a disinfe\ctant, anti-corrosion ingredients, etc. The total alkali content in the composition of detergents is from 4 to 5% by weight [1].

Acidic detergents are mainly used to remove rust, scale, minerals. However, they are very aggressive. The composition of such detergents includes organic and inorganic acids, active and inhibitory additives, as well as an optimized mixture of surfactants, a corrosion inhibitor [2].

According to the results of [3] studies, the saponification process occurring in heterogeneous systems at the “saponifiable system–alkaline solution” phase boundary is not reduced solely to a chemical reaction of the interaction of lipids and an alkaline reagent but, it represented a more complex and multidimensional process.

Choosing the optimal composition of detergents is selected based on their purpose.

We have previously developed a recipe consisting of PFA waste, since soapstock, JK, waste clay. By consistency, they were divided into ointment and pasty. Wastewater from the hydration process of light oils was used as water in this recipe. This water contains phospholipids, tri acetyl glycerols, wax-like substances, etc. These wastewaters after the grease trap are sent to the sewer, although it contains these valuable components, which are good surfactants. The results are shown in the table. 1.

Table 1.

Recipe for Ointment and Paste Detergent

Name of the components of the pasty detergent	The content of components, wt.%	
	Recipe for a greasy detergent	Detergent Paste Recipe
Soapstock (light vegetable oils)	10	15
Waste clay	5	10
FAD (fatty acid distillation of cottonseed vegetable oils)	5	10
Na_2CO_3	2	2
Na_2SiO_3	2	2
NaOH	1	8

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KOH	-	12
H_2O_2	-	1
TiO	-	1
Water (PCWW)	75	39
Purifying ability, %	82	88

In this table. 1 shows the optimal composition of a previously developed recipe selected for high washing abilities. In the ointment formulation, the amount of waste clay does not exceed 5%, in the pasty detergent formulation, 10%. A further increase in its amount harmed detergent and commercial properties.

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