

Manufacturing Detergents using Benzol Sulfonates as an Ingredient

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Abstract

The use of alkylbenzene as a washing facility is discussed in this article. This scientific paper also provides the most cost-effective and low-cost method of producing soap. Household detergents can be solid, liquid, or powder; powder detergents differ from liquid detergents not only in physical form but also in the proportions of their components; the amount of surfactants in powder detergents is greater than in liquid detergents; and liquid detergents studies of spatial separation observation during long-term storage are presented.

The article also examines the investigation of the addition of detergent surfactants to increase the washing qualities of soap and limit its absorption, as well as the cost reduction of soap owing to the inclusion of clay from local raw resources.

Keywords: *Amphoteric, Structure, SAW, Cationic, Anionic, Ferment*

INTRODUCTION

It is estimated that household goods account for 75% of global demand for surfactants (Surfactants). The majority of these are made up of mist surfactants. Surfactants employed in the washing

process have varied requirements: one to disperse the oil, another to stain, a third to scatter the various types of filth, and a fourth to act as a resorbent to prevent re-absorption of the washed dirt. distinguished by Surfactants are adsorbed

on the surface near the phase boundary, lowering surface tension; the surface moistens, generating a stable foam. Micelles are formed, and oils and contaminants are emulsified. Figure 1 depicts the structure of a perfect mycelium.

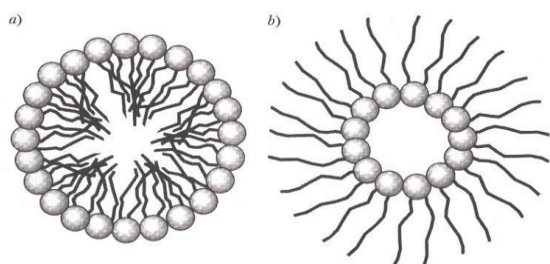


Fig. 1: Schematic structure of spherical (a) and inverted (b) micelles

As seen in the image, the micelle is connected with either hydrophilic or hydrophobic sections depending on the surroundings. Surfactant interaction in water or other polar solvents results in a reduction in the free energy of the solution. This results in the formation of a surface that separates the aqueous medium from the hydrophobic portion of the surfactants. The literature contains extensive information on surfactants linked with this surface.

The criteria for surfactants used in detergents vary, and some of them are listed here.

1. The presence of wetness and hydrophilic properties.
2. Availability of detergent characteristics
3. Dirt and oil particle suspension and emulsification
4. Create enough foam
5. Disperse dirt
6. Prevents dirt re-absorption
7. Good solubility and quick melting
8. Surface adsorption
9. Bactericidal characteristics
10. Environmental qualities that are biodegradable and non-toxic
11. Resistance to hard water salts
12. Raw material availability and reasonable pricing

Linear alkylbenzenesulfonate is fully responsible for all these properties. It is also the most effective of the anionic surfactants. The above requirements reflect the most important properties of surfactants. These indicators are very useful when choosing an surfactants depending on the industry.

Typically, surfactants are classified according to the charge they generate when dissociated in water. The solution should be pH = 7, ie neutral. In this article, we will focus on the four classes of surfactants:

1. Anionic surfactants. Substances belonging to this class form negatively charged particles in surfactants. They foam well in water and wash well. It is widely used in the manufacture of detergents in everyday life due to the high dispersion of oils and stains on the fabric. Examples of anionic surfactants include sulfoethoxylates, alkylbenzenesulfonates, saturated fatty alcohol sulfoethoxylates, and soaps derived from oils.
 2. Non-ionic surfactants. They do not decompose into ions when dissolved in water; foaming is lower than that of anionic SFM larvae. But washing oily laundry is more efficient. It is especially effective in highly dispersing oily soils in synthetic materials. Non-ionic SFMs are used in the preparation of composite washing powders based on these properties or in combination with anionic surfactants.
 3. Cations are formed when cationic surfactants dissolve in water. Surfactants of this class show antiseptic properties as well as creating a soft softness in washable fabrics. Cationic surfactants contain relatively few substances. These include quaternary ammonium compounds.
 4. Amphoteric (sweater ionic) surfactants. When dissolved in water, such substances may be in the form of anions or cations, depending on the medium of the solution. These surfactants have high washing properties. Due to the relative cost of the price tag, laundry detergent is not made from them. They are used in the manufacture of shampoos, creams and other cosmetic products. Amphoteric surfactants include lecithin, a natural substance, and alkylbetain, alkylsulfobetain, and imidazoline derivatives with similar structures.
- Household detergents can be solid, liquid or powder. Detergents in powder form differ from liquid form not only in physical form, but also in the proportions of its components. In the liquid state, the filler components are relatively small or non-existent. The amount of SFM is higher than in powder form. Spatial separation can be observed when liquid detergents are stored for a long time. Therefore, when preparing SF solutions from them, the solution must be stable over a wide range of temperatures. The production of

surfactants in powder form in industry can be done in different ways.

Their physical properties vary depending on the method of production. There are various technologies for the production of powder detergents. The most important of these is the powder drying method of surfactants solutions. This will reduce the bulk density of the detergents.

Although the concentration of surfactants in the spray solution is small, its concentration increases as a result of construction. The literature on this technology is detailed. This is the first technology to be used in the production of powder detergents. According to this technology, a suspension consisting of surfactants and fillers is sprayed on a hot

air stream and dried. The result is a layered washing powder. The resulting washing powder has a bulk density of 0.25 - 0.5 g / ml.

In the agglomeration method, the dry detergent surfactants are granulated by combining with liquid binders. The density of the resulting agglomeration product is in the range of 0.5-1 g / ml, which in most cases is close to the highest value.

The third method is to make a dry powder by mixing the ingredients together. This method is very simple and does not require complex technology. However, the surfactants used must be in powder or powder form. In this regard, the number of surfactants used in this method is limited.

Table 1: The ratio of components used in the preparation of anionic SFMs by spraying

No.	Reagent function	Name of components	Quantity %
1.	SFM	Sodium alkylbenzene sulfonate	12-20
2.	Structured	Sodium carbonate Zeolite A	15-30 15
3.	Structural and anti-corrosion	Sodium silicate (solid state)	3-6
4.	Ferment	Ferment	0-2

5.	Resorbent (against dirt re-sinking)	KMS	1-4
6.	Bleach	Persol	0.1-0.3
7.	Smelling	Aromatizator	0.1-0.3
8.	Water	Water	2-4
9.	Filler	Sodium sulfate	Until 100%

Although the density of detergents generated via agglomeration on the basis of anionic surfactants is high, they have strong foaming and a high surfactant

concentration. This method of preparing washing powder effectively removes grime. Table 2 shows the proportions of the elements used to make baking soda.

Table 2: The ratio of ingredients used in the preparation of baking soda by agglomeration

No.	Reagent function	Name of components	Quantity %
1.	PAV	Dodecylbenzene sulfonate alcohol ethoxylates	8-12 2-4
2.	Structured	Sodium carbonate	20-50
3.	Structural and anti-corrosion	Sodium silicate (aqueous)	6-10
4.	Prevents dirt from settling again	KMS	0.5-2
5.	Bleach	Fluoresentlar	0.1-0.5
6.	Smelling	Aromatizator	0.1-0.3
7.	Water	Water	1-3

8.	Filler	Sodium sulfate	Until 100%
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CONCLUSION

Following reactions reveal that when trash is neutralised with ammonia, nitrogen fertiliser and Labsani ammonium salt are produced. These chemicals are completely safe to use in agriculture.

Surfactants are widely employed in almost all fields of agriculture, according to the literature. Surfactants are very beneficial in strengthening soil structure. In this sense, alkyl sulphates and alkylbenzene sulfonates are quite effective. The density of the soil lowers and the porosity rises when they are utilised. As a result, cultivating the land has become easier. This results in the formation of the ammonium salt alkylbenzene sulfonate. Surfactants are more abundant in ammonium salt than in alkali metal salt solutions.

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