



Study of types of Types Of Cleaning Detergents, Their advantages and disadvantages

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Introduction : *Surfactants (short for surface-active agents) are molecules that contain a hydrophilic, or “water-loving” end, and a hydrophobic, or “water-fearing” end. The electrical charge on the water-loving end of the molecule distinguishes between the different*

types of surfactants. Surfactants are usually organic compounds that are amphiphilic, meaning they contain both hydrophobic groups (their tails) and hydrophilic groups (their heads). Therefore, a surfactant contains both a water-insoluble (or oil-soluble) component and a water-soluble component. Surfactants will diffuse in water and adsorb at interfaces between air and water or at the interface between oil and water, in the case where water is mixed with oil. The water-insoluble hydrophobic group may extend out of the bulk water phase, into the air or into the oil phase, while the water-soluble head group remains in the water phase.

A detergent is a surfactant or a mixture of surfactants with "cleaning properties in dilute solutions. These substances are usually alkylbenzenesulfonates, a family of compounds that are similar to soap but are more soluble in hard water, because the polar sulfonate (of detergents) is less likely than the polar carboxyl (of soap) to bind to calcium and other ions found in hard water. In most household contexts, the term detergent by itself refers specifically to laundry detergent or dish detergent, as opposed to hand soap or other types of cleaning agents. Detergents are commonly available as powders or concentrated solutions. Surfactants come in four different types: Anionic, nonionic, cationic and amphoteric.

1. Anionic Detergents :

Structure and Chemical Composition

Anionic detergents consist of a long hydrocarbon tail and a negatively charged head group. However they differ from soaps in that the head is a different ion to carboxylate. Common anionic detergents include alkyl phosphates, where heads are benzenesulfonate or phosphate ions respectively.



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