Introduction

SYNTHETIC SURFACE ACTIVE AGENTS

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Surfactant is a short hand of surface active agent, they are substance with molecular structure consisting of two parts, one is hydrophobic (oil-soluble) and the other hydrophilic (water-soluble). Hydrophilic part may be

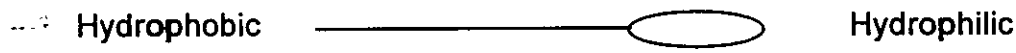
a- Anionic has negative charge like (sulfate, sulfonate, carboxylate, hydroxyl).

b- Cationic has positive charge like (tetra alkyl ammonium chloride).

c- Amphoteric has both positive and negative charges like betaine.

d- Uncharged likes nonionic (poly glycol ether groups) and hydrophobic part (is a hydrocarbon chain linear or branched) has sufficient length to give the required oil solubility.

The representation examples are:



The position of the hydrophilic part can be arranged at any placed of hydrophobic chain:

These compounds have a special property in solvents due to the variation of the structure and due to a conflict between hydrophilic and hydrophobic parts. Hydrophobic part is distributed in the oil layer, while the hydrophilic part arranged at the phase borders, an orientating alignment of surfactants molecules occur, this result in change of system properties such as:

a) Lowering of interfacial tension between water and adjacent phase.

b) Change of wetting properties.

c) Formation of electrical double layer at the interfaces.