GENERAL INTERODUCTION

GENERAL INTRODUCTION

Fatty acids and their derivatives play an important role in the chemical industry because they are used as raw materials for a wide variety of industrial products like, textiles, plastics , paints, surfactants, rubber cosmetics, foods and pharmaceuticals.

The production of fatty acids from the non-edible oil resources upgrades them to be suitable for the manufacture of all types of surfactants and other products.

All organic surfactants comprise a characteristic feature in their molecular structure . The molecule must contain a portion which has affinity to oils (lypophilic), whereas the opposite end of the molecule, at some distance, has an attraction for water or aqueous solutions (hydrophilic). This ability within the same molecule will be a dual affinity for substances of entirely different natures, such character gave these substances surface active property in quite dilute solutions. This function is due to the tendency of the molecules to concentrate at interfaces between the solvent and a gas , solid, or other immiscible liquids. From this phanomenon, the term surface active agents or surfactants was derived. At the boundaries of the solvent, the molecules are oriented in such that; the hydrophobic hydrocarbon chain or "tail" of the molecule is directed toward the hydrophobic or oily phase and the hydrophilic or polar "head" is directed or embedded into the

aqueous or polar phase . This property leads to the ability of these materials to reduce surface tension, to cause foaming, and to exhibit other unique properites. Therefore, surfactants find utility in many fields the principal use being as detergents, wetting agents, dispersing agents and frothing agents. Consequently, they are widely incorporated in house hold cleaning products and in such diverse applications as agricultural sprays, cosmetics, floatation, foods, emulsifiers, lubricants, leather manufacture, inks, synthetic elastomer production and oil recovery operations.

The following is a concise review of literature covering some important aspects of fatty acid derivatives and application. This review is cited in the following order; naturally occuring epoxy derivaties, dihydroxy fatty acids, synthetic surface active agents (anionic , nonionic); surface properites of nonionic surfactant; field of application and biodegradability.

In this manner, it is hoped that this review would present the necessary knowledge on the concerned subject.