



1. Fatty Acids

- a. **Emulsification Test:** Oil and water do not mix because of the high surface tension of water. In the presence of certain substances, which lower the surface tension water (known as emulsifying agents), oil is dispersed in water. The resulting mixture is known as an emulsion. The absorption fat from intestine in the presence of bile salt and cleansing action of soap are accounted for by their emulsifying properties.
 - i. *Required chemicals:* Dilute Na_2CO_3 , Sunflower oil
 - ii. *Procedure:* Take 2 test tubes, add 5 ml water to the first tube and 4 ml dilute Na_2CO_3 solution to the second tube. Two drops of oil are then added to both tubes and the tubes are examined for emulsion formation.

- b. **Esterification:** It is aimed to show ester formation in the reaction related to the formation of lipids. It is the reaction of an acid (condensation of the carboxyl group of the acid) with an alcohol (the hydroxyl group of the alcohol) in the presence of a catalyst.
 - i. *Required chemicals:* Ethyl alcohol, acetic acid, concentrated H_2SO_4
 - ii. *Procedure:* Equal and small amounts of acetic acid, ethyl alcohol and concentrated sulfuric acid are added to a test tube. After waiting for a few minutes, when poured into a beaker containing water, the smell of pleasant fruit essence is felt instead of the pricking smell of acetic acid due to the esterification between acetic acid and alcohol.