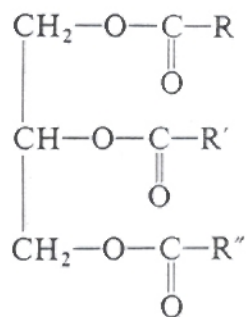


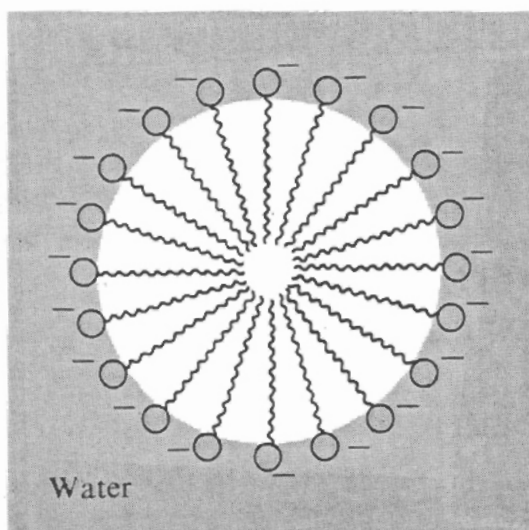
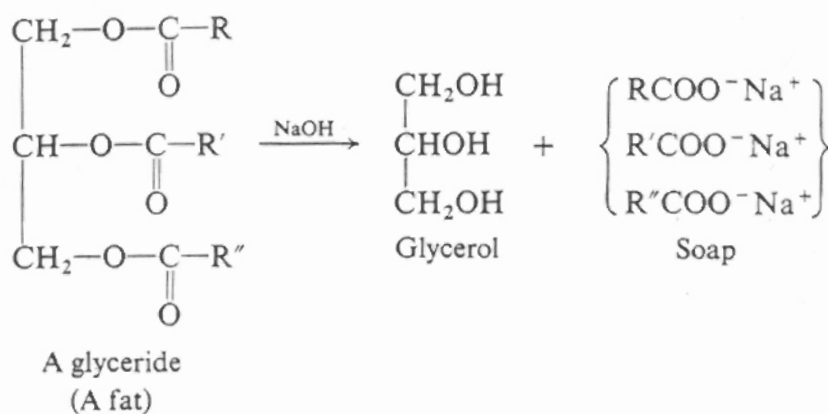
# Lipids

## Occurrence and composition of fats



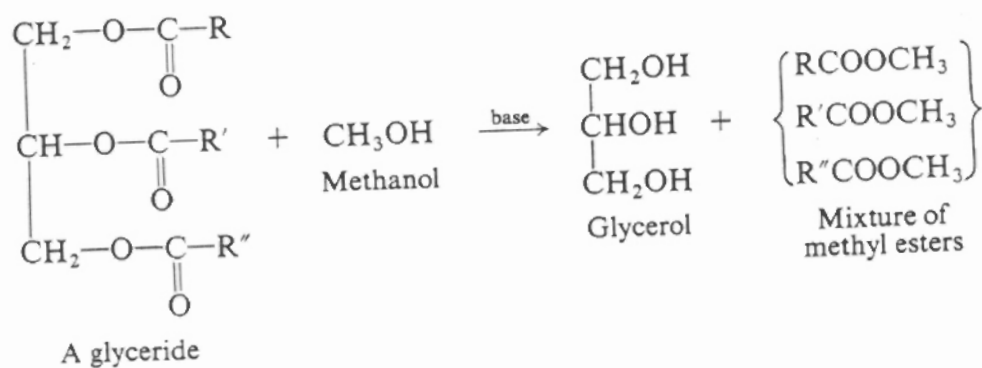
A triacylglycerol  
(A glyceride)

## Hydrolysis of fats. Soap. Micelles

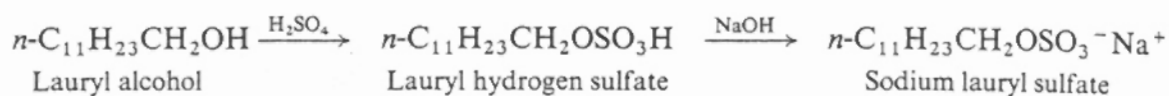


Soap micelle. The non-polar hydrocarbon chains "dissolve" in each other. The polar  $\text{COO}^-$  groups dissolve in water. Similarly charged micelles repel each other.

## Fats as sources of pure acids and alcohols

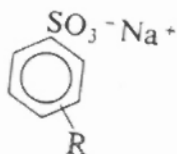
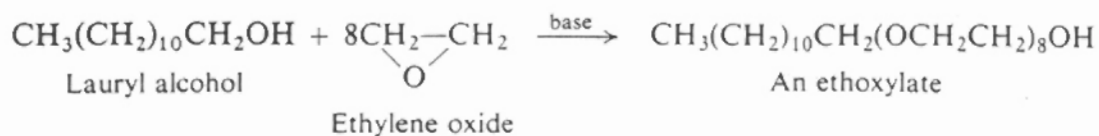


## Detergents



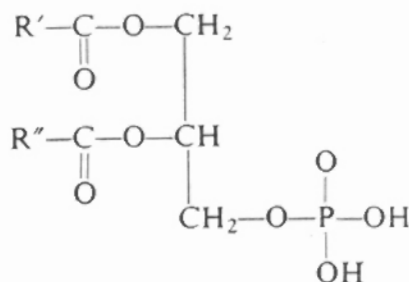
For these, the non-polar end is the long chain, and the polar end is the  $-\text{OSO}_3^- \text{Na}^+$ .

Treatment of alcohols with ethylene oxide (Sec. 13.23) yields a *non-ionic* detergent:

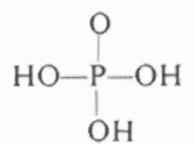


## Unsaturated fats. Hardening of oils. Drying oils

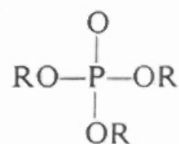
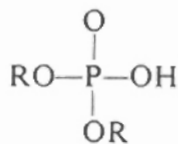
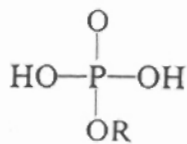
## Phosphoglycerides. Phosphate esters



Phosphatidic acid  
(A phosphoglyceride)



Phosphoric acid



Phosphate esters

