



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

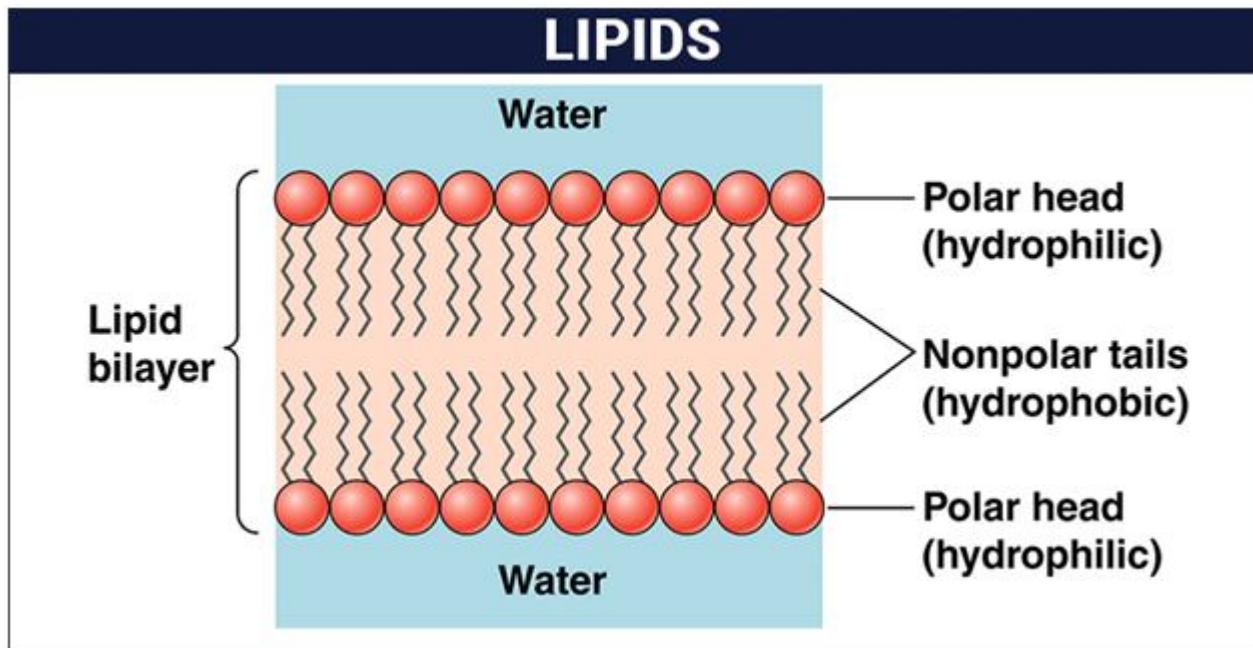
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## Lipids



Lipids are organic compounds that contain hydrocarbons which are the foundation for the structure and function of living cells. Lipids are nonpolar so they are soluble in nonpolar environments thus not being water soluble because water is polar.



The Lipids are a heterogeneous group of compounds, including fats, oils, steroids, waxes, and other compounds, which are related more by their physical than by their chemical properties. Lipids are a class of compounds distinguished by their insolubility in water and solubility in nonpolar solvents. Lipids are important in biological systems because they form the cell membrane, a mechanical barrier that divides a cell from the external environment. Lipids also provide energy for life and several essential vitamins are lipids. Lipids can be divided into two major classes, nonsaponifiable lipids, and saponifiable lipids. A nonsaponifiable lipid cannot be broken up into smaller molecules by hydrolysis, which includes triglycerides, waxes, phospholipids, and sphingolipids.

A saponifiable lipid contains one or more ester groups allowing it to undergo hydrolysis in the presence of an acid, base, or enzymes. Nonsaponifiable lipids include steroids, prostaglandins,



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and terpenes. Within these two major classes of lipids, there are several specific types of lipids important to life, including fatty acids, triglycerides, glycerophospholipids, sphingolipids, and steroids.

Each of these categories can be further broken down. Nonpolar lipids, such as triglycerides, are used for energy storage and fuel. Polar lipids, which can form a barrier with an external water environment, are used in membranes. Polar lipids include glycerophospholipids and sphingolipids. Fatty acids are important components of all of these lipids.