Name_____ H. Chem, Period _____

# *Emulsions and surfactants*

1. What is an emulsion and give a real-life example.

An emulsion is a colloid of two or more immiscible liquids where one liquid contains a dispersion of the other liquid. An example is ice cream or oil and water when shaken.

2. What is the dispersion phase and the dispersion medium?

Dispersed Phase: This is the component that is present in smaller amounts and is distributed throughout the larger component. It's essentially the "particles" that are spread out in the colloid.

Dispersion Medium: This is the component that is present in larger amounts and provides the environment for the dispersed phase to be distributed. It's the "medium" in which the particles are suspended.

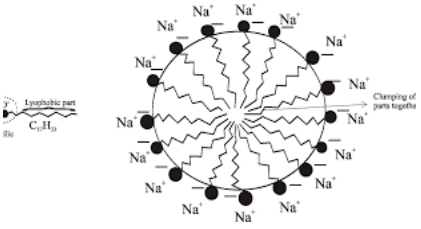
3. What is an emulsifier or emulsifying agent?

An emulsifier or emulsifying agent is a type of surfactant and is a compound or substance that acts as a stabilizer for emulsions, preventing liquids that ordinarily don't mix from separating. Emulsifiers have a polar head and nonpolar tail able to form micelles to stabilize the emulsion.

4. What is a surface acting agent? Give a real-life example:

Surface Active Agents = surfactants. A substance the concentrates on the interface of the between two phases. It is derived from fats and has polar and nonpolar quantities. A surfactant has a polar head and a long non-polar tail made up of hydrocarbons. The polar head will be in the polar part of the solution and the nonpolar tail will be in the non-polar portion of the solution.

5. Draw a picture of a micelle and explain how it forms?




A micelle spontaneously arranges themselves in aqueous solutions to form spherical structures with hydrophobic tails inward trapping any nonpolar substances and hydrophilic heads outward where the polar solvent is. If oil is the medium and water is the dispersion phase, the micelle could reverse with the polar heads facing inwards and the nonpolar tails outwards.

6. Explain how soap helps wash oil off your hands.

The soap is a surfactant and has a polar head with a nonpolar tail. The surfactant can form micelles around the oil trapping the oil in the interior of the micelle. The polar heads are facing outward toward the water. As you wash away the soap from your hands, the micelles with the polar heads will be attracted to the water washing away the soap and oil from your hands.