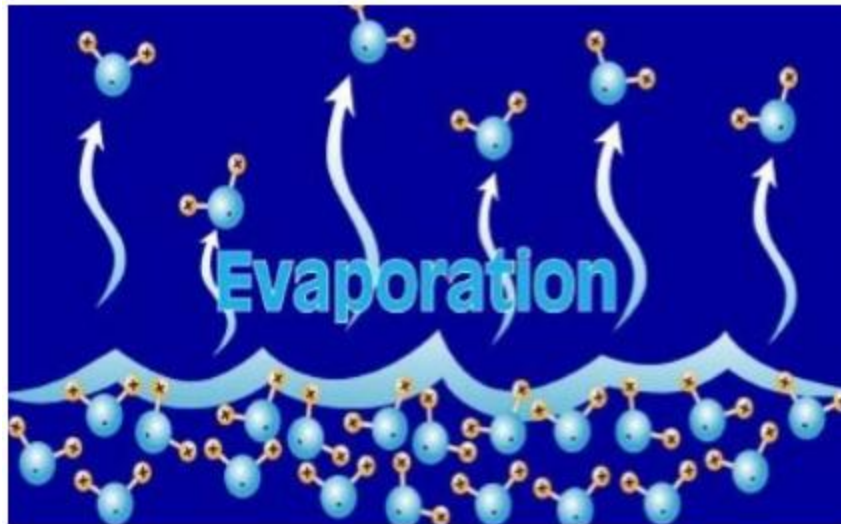
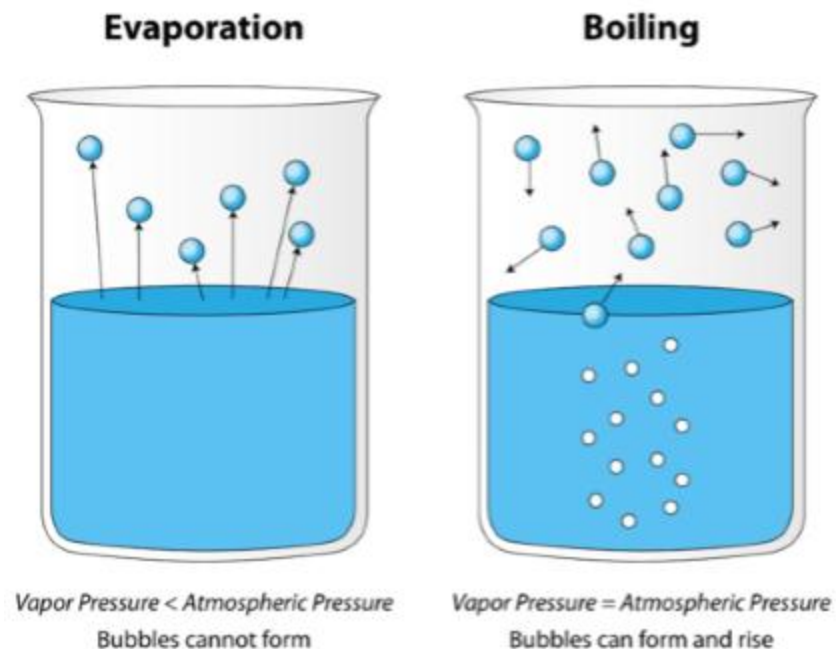


Evaporation



- We already know that –
 - Particles of matter are never at rest
 - Particles of matter possess different amounts of kinetic energy
- The particles of liquids have more kinetic energy. Therefore, they are able to overcome the forces of attraction and convert into vapor without any external forces.
- **Evaporation** – The phenomenon of change of a liquid into vapors at any given temperature below its boiling point is called **Evaporation**. Evaporation is different than boiling, as shown in the figure below.

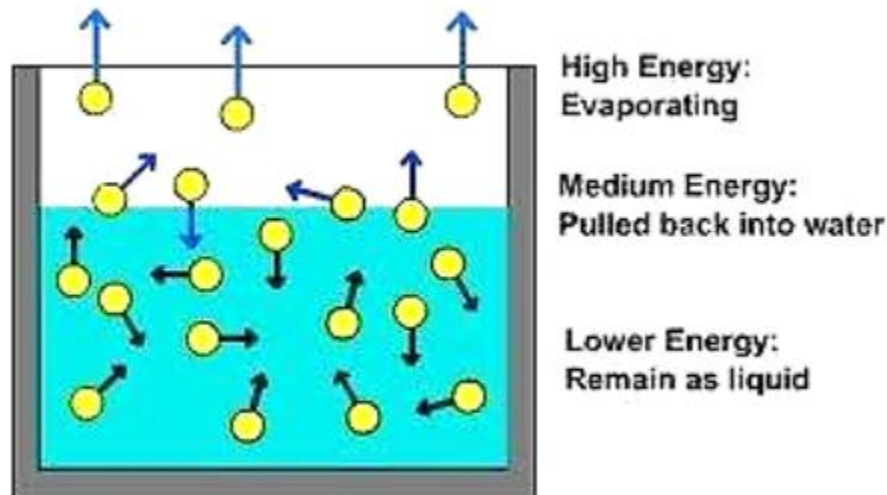


Factors Affecting Evaporation

Condition	Rate of Evaporation	Reason
Increase in Surface Area	Increases	Particles have more space and thus can evaporate easily
Increase in temperature	Increases	Kinetic energy among the particles increases
Increase in humidity	Decreases	Water content in air increases and so evaporation decreases
Increase in wind speed	Increases	Water vapours are blown away by winds allowing more evaporation

How evaporation causes cooling?

The process of evaporation uses the energy of the liquid particles. Therefore, the particles absorb energy from the surroundings in order to compensate the energy that is being lost in the process of evaporation. This results in cooling of the surrounding area.



- **For Example:**

- Our palms feel cool when we put some acetone (nail paint remover) on it
- People sprinkle water on their roofs or ground on sunny days to cool the area
- We are able to sip hot tea faster in a saucer than in a cup

Why people wear cotton clothes in summer?

We perspire more in summer. As the sweat evaporates it takes energy from our body surface and keeps our body cool. Cotton can absorb the sweat easily and exposes it to the atmosphere causing evaporation to take place easily. This, in turn, keeps us cool in summer days.

Why water droplets appear on the surroundings of a glass with ice-cold water?

There are water vapours present in the air. When they come in contact with the walls of the glass that has ice-cold water in it they condense. As a result, their state changes from gaseous state to liquid state thus forming tiny water droplets on the walls of the glass.