

# Chemistry Study Materials for Class 9 (NCERT Based notes of Chapter -01)

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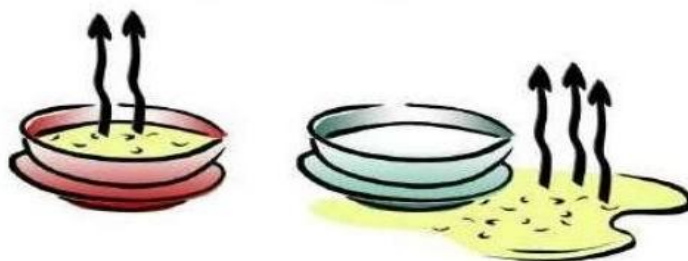
## MATTER IN OUR SURROUNDINGS

### SURFACE AREA

Evaporation increases with increase in surface area and decreases with decrease in surface area.

Since evaporation takes place at the surface of liquid only, hence if the more surface of liquid is exposed to atmosphere more particles will receive the required temperature to get the required kinetic energy to escape in air.

Therefore, evaporation takes place more rapidly with larger surface area. This means rate of evaporation increases with increase in surface area and decreases with decrease in surface area.



After rain roads are dried up quickly than pot holes. This happens because of increase in surface area of water. On roads water is spread over a large area, because of that large area of water exposed to atmosphere, and evaporation of water takes place quickly resulting in quickly drying of the roads. While in pot holes less water surface is exposed to air because of that less water area could come in contact with air and receives less temperature, resulting in delayed evaporation. That's why water dried from road quickly than in pot holes.

Wet clothes are spread up over the laundry line to get them dried up quickly. More surface area of water exposes to the air because of spreading of clothes this speeds up the rate of evaporation and clothes are dried up quickly. On the other hand if wet clothes are left even in the sun without spreading, they take more time to get dried because of less surface area exposed to air. That's why wet clothes are kept spread over laundry line to get dried up quickly.

Water kept in a plate evaporates quickly than water kept in a tumbler (glass). This happens because in plate more surface area of water exposed to atmosphere which receives more heat and evaporates quickly. While in a glass less surface area of water exposed to atmosphere because of that less molecules of water receives heat from the atmosphere and evaporates slowly compare to the water exposed with large surface area.

Hence, rate of evaporation increases with increase in surface area and decreases with decrease the surface area.

## **HUMIDITY IN AIR AND EVAPORATION**

Evaporation decreases with increase in humidity and increases with decrease in humidity present in air. This means rate of evaporation is indirectly proportional to the humidity present in air.

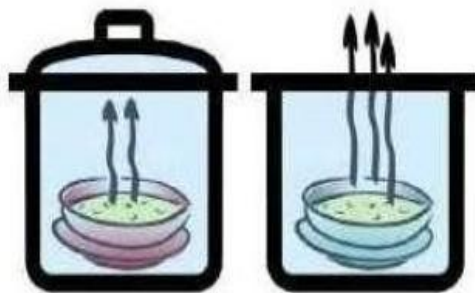
Humidity is the amount of water vapor present in air. In weather reports, which are published in news paper or given on the TVs channels, the humidity percent is given, which shows the percent of water vapor present in air.

Because of more water vapor present in air the water holding capacity of atmosphere decreases which decrease the rate of evaporation.

If air is dry then it can hold more water and thus in dry air rate of evaporation increases.

This is the cause that our clothes get dried up quickly in summer and winter than in rainy season. Because in rainy season there is more water vapor present in air, which decreases the water holding capacity of atmosphere resulting in decrease the rate of evaporation and our clothes do not dry up quickly in the rainy season.

Our sweat does not dry up quickly in rainy season. Because of that we feel uneasiness because of damp. This is because of higher percent of humidity present in air decreases the rate of evaporation in rainy season and our sweat does not evaporate quickly and we feel uneasy because of damp.



## **WIND SPEED AND EVAPORATION**

Evaporation increases with the increase in wind speed and decreases with decrease in wind speed. This means rate of evaporation is directly proportional to the speed of wind.



Speedy wind propelled away some of the particles of water with it which speeds up the rate of evaporation. That's why speedy wind speeds up the rate of evaporation.

We see that wet cloth is dried up quickly in a windy day since the wind speeds up the rate of evaporation.

The wet clothes are given jerks before hanging them on laundry line because by giving jerks some of the water droplets propelled out. This reduces the presence of water in the wet cloths and they dried up quickly.

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