

Surface Tension

The first known use of the phrase 'Surface Tension' was in 1876 and was used in the definition of above.

The Full Definition of Surface Tension:

The attractive force exerted upon the surface molecules of a liquid by the molecules beneath that tends to draw the surface molecules into the bulk of the liquid and makes the liquid assume the shape having the least surface area.

"Surface tension." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/surface%20tension. Accessed 16 Jan. 2021.

The molecules at the surface do not have the same molecules on all sides of them and therefore are pulled inward.

Surface Tension is what allows some insects to slide and float on the surface of water without sinking.

The Technical Definition of Surface Tension:

The force that causes molecules that are on the surface of a liquid to be pushed together forming a layer.

Surface Tension could also be described as the tendency of liquid surfaces to shrink into the minimum surface area.

Liquid-Air Interfaces

Where air and water meet creates a greater attraction of the liquid molecules to each other than to the molecules in the air.

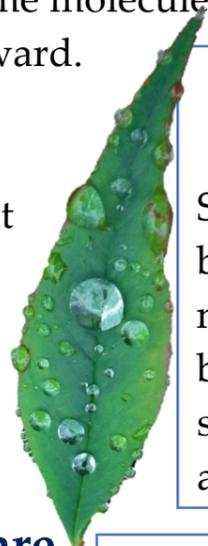
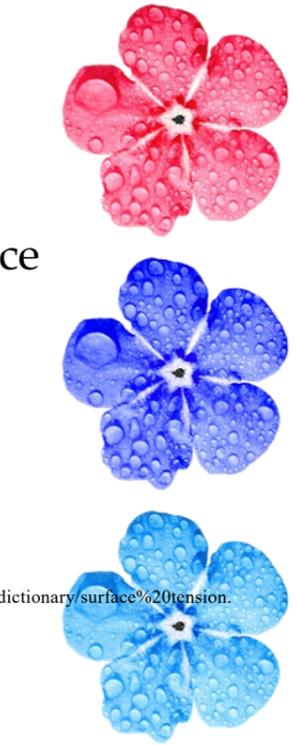
The forces of attraction acting between the molecules of same type are called cohesive forces while those acting between the molecules of different types are called adhesive forces.

Think about a glass that's half full of water. On the surface of water - the top of the water, where the air and water meet, the molecules don't have other water molecules to cling to because there is air, this creates a stronger bond for them with the ones that are next to them.

Surface tension has the dimension of force per unit length, or of energy per unit area.

In materials science, surface tension is used for either surface stress or surface energy.

Surface tension is responsible for the shape of liquid droplets.

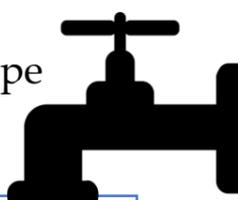


Beading of Rain Water

Surface tension gives the beaded rainwater their near-spherical shape, because a sphere has the smallest possible surface area to volume ratio.

Formation of Drops

Drops occur when water is ad-hearing to a surface such as a tap and the mass of water molecules gains and stretches so much that its surface pressure can no longer keep it attached and therefore it separates forming a drop of water.



Objects Floating

Flotation of objects that are denser than water occur when that object has a weight that is tiny enough to be borne by forces arising from the surface tension and the object that don't absorb water - that are non-wetable

Effects of Surface Tension

Separating Liquids

Oil and Water are 2 liquids that separate instead of mixing. This is caused because of the tension in the surface between the liquids. In Chemistry it called Interface Tension

