جامعة الملك سعود
King Saud University

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جامعة الملك سعود
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Surface Tension

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Definition

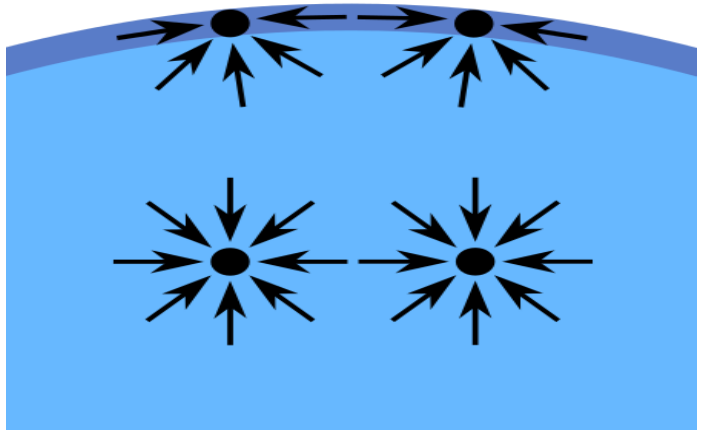
- Contractive tendency of the liquid surface that allows it to resist an external force.
- At liquid-air interface, surface tension results from the greater attraction of water molecules to each other

(due to cohesion)

than to air

(due to adhesion)

SURFACE TENSION



Units

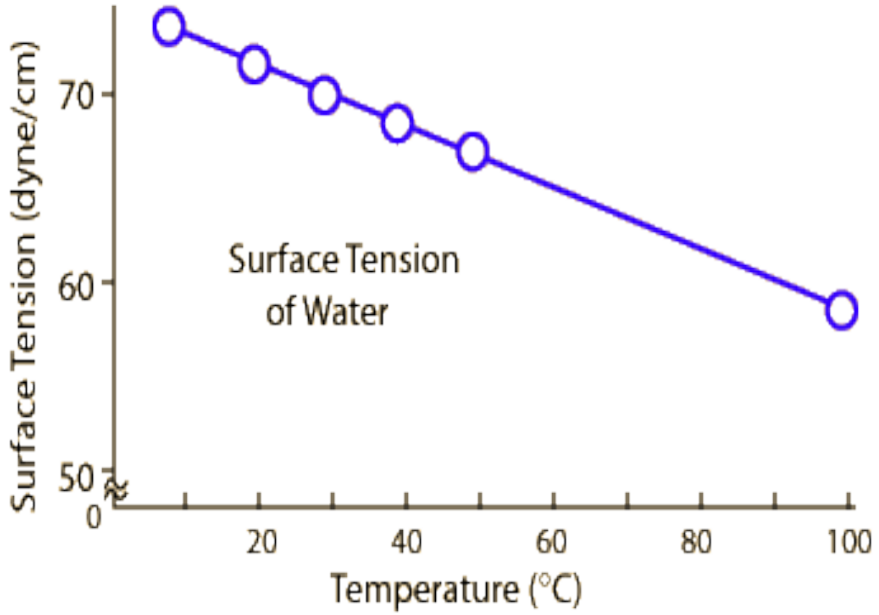
- $\gamma = \frac{F}{L}$
  - force/unit length
  - Newton/meter
    - Water (72.8 mN/m @ 20 ◦C)
      - What does it mean?
    - Mercury (487 mN/m @ 15 ◦C)
  - dyne/cm

Examples

- Walking on water
- Floating a needle
- Do not touch the tent
- Soap and detergents
- Washing with cold water

Parameters effect

- Temperature effect
  - Example (water)
  - Why hot water is better cleaning agent?
- IFT
  - Difference between ST & IFT
- Importance in oil industry applications
  - Should be discussed in the report



Videos

- http://www.youtube.com/watch?v=ynk4vJa-VaQ
- http://www.youtube.com/watch?v=u5AxlJSiEEs
- http://www.youtube.com/watch?v=whukr452ZvY&hd=1
- http://www.youtube.com/watch?v=ev9XyuLwjuI&hd=1