

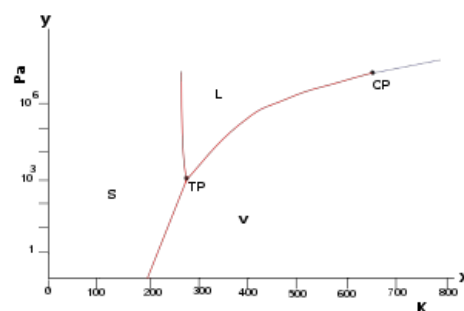
Gibbs phase rule

A **dispersion system** is a system containing at least two phases or two components (one – the proportion is dispersed in the other – the environment). A two-phase dispersion system is **heterogeneous** because there are clear boundaries between the dispersion fractions in the dispersion medium. Conversely, a system consisting of two components in one phase is **homogeneous** (sugar dissolved in water) and its components are not optically distinguishable.

Gibbs phase rule: $f + v = s + 2$

s = number of components of the system, f = number of phases of the system, v = degrees of freedom (temperature, pressure)

- The liquid and its vapor ($s = 1$, $f = 2$) have one degree of freedom - only the pressure or only the temperature can be changed.
- If we want to change both temperature and pressure, there can only be one phase.
- If phase three is to be maintained in equilibrium, it will only happen at a given temperature and pressure ($v = 0$) – at the so-called **triple point**.
 - For water, the triple point is $273.16\text{ K}^{[1]}$ (0.01 °C) at a pressure of 610.6 Pa



Water phase diagram

Links

Source

- KUBATOVA, Senta. *Biofot* [online]. [cit. 2011-01-31]. <<https://uloz.to/!CM6zAi6z/biofot-doc>>.

Reference

1.