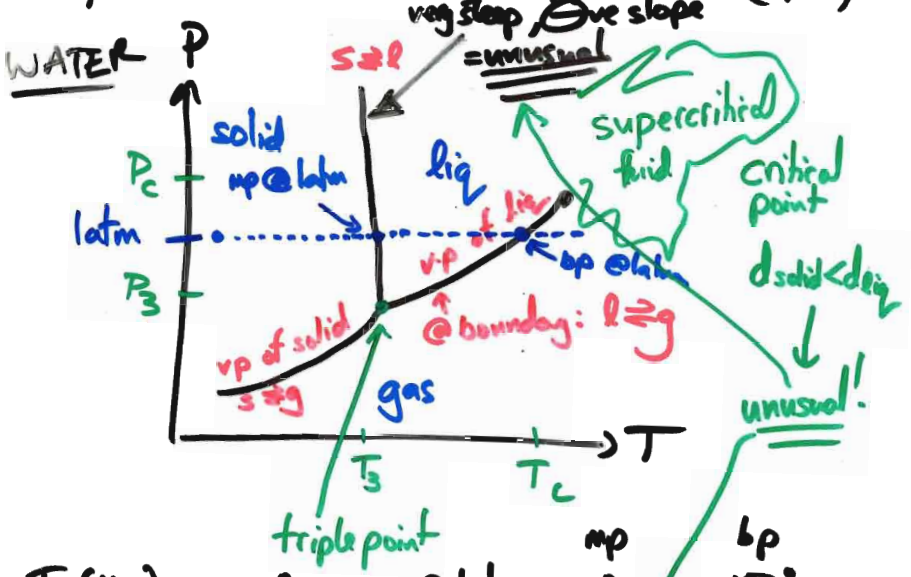
Lab Switch!

Next week: 9-Bottles
Following week: colligative props.

Phase Diagrams

Map of the most stable phase @ (P,T)



T_c - critical temp.
- if $T > T_c$, cannot liquify gas by compression.

because thermal energy (from T) is overcoming IMF.

High T_c = High IMF
Low T_c = Low IMF.

CO_2 : $T_c \sim 37°C$ (I think).

31 °C

Ch 13 ~ Solutions

Physical Properties of sol^{n}s.

Sol^{n} : Homogeneous mixture of 2 or more components.

Solute is dissolved in Solvent
(smaller component(s)) (largest component)

ex: soda water: $CO_2(g)$ in $H_2O(l)$
air : $O_2(g) + Ar(g)$ in $N_2(g)$
brine $NaCl(s)$ in $H_2O(l)$
bronze $Sn(s)$ in $Cu(s)$

Definitions: Saturated Sol^{n} (max solute)
Un " —— " (less ")
unstable → Super " —— " (more than max...)
Concentrated : solute↑
Dilute : solute↓

Rule of thumb:

"like-dissolves-like"

- Polar solutes "like" to dissolve in polar solvents
- Non-Polar " —— " non-polar solvents.

ex: NaCl / H_2O
ionic dipole-dipole
+/− H-Bonding.

CCl_4 / C_8H_{18}
non-polar + non-polar
London London

Concentration Units

Quantitative measures :

3 common units —

(1) Percent by mass , $\%_{(w/w)}$

(2) Molarity , $\frac{mol}{L}$ or M

(3) Molality , $\frac{mol}{kg}$ or m