

How?

Liquids that dissolve, mix. Molecules mingle.

All gases mix, molecules move freely.

Particles on the surface of a solid get surrounded by solvent particles (solvation) and lifted out of the solute.

This is called the Water of Solvation. NOT to be confused with sAlvation.

Remember... Jesus saves and water dissolves!

How do you find the extent of hydration?

$\text{MgSO}_4 \times 7\text{H}_2\text{O}$

- Each formula unit of MgSO_4 is surrounded by 7 water molecules. In the crystal, i.e. water of hydration.

How to find the Extent of Hydration

1. Use % of water to find masses of water and salt in 100g
2. Convert to moles using formula mass
3. Find mole ratio

Concentration

How do you express concentration?

- Mass % composition
 - $\text{Mass of solute} / \text{total} \times 100\%$
- Molarity
 - $\text{Mols solute} / \text{L solution (M)}$
- Molality
 - $\text{Moles solute} / \text{kg solvent (m)}$
- Mole Fraction
 - $\text{Moles solute} / \text{moles total}$
- Density
 - $\text{Mass} / \text{volume (g/mL or g/mL)}$