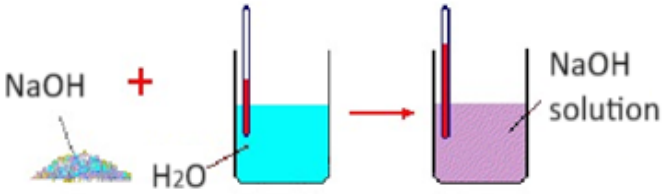
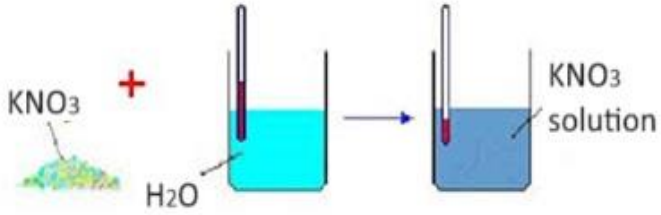
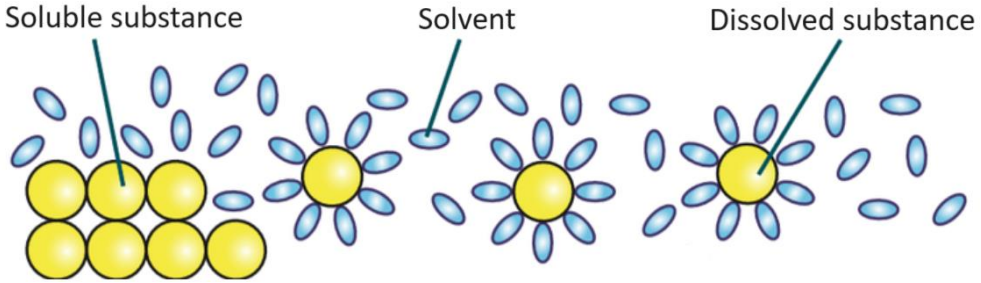
Energetics of dissolution





General dissolution mechanism

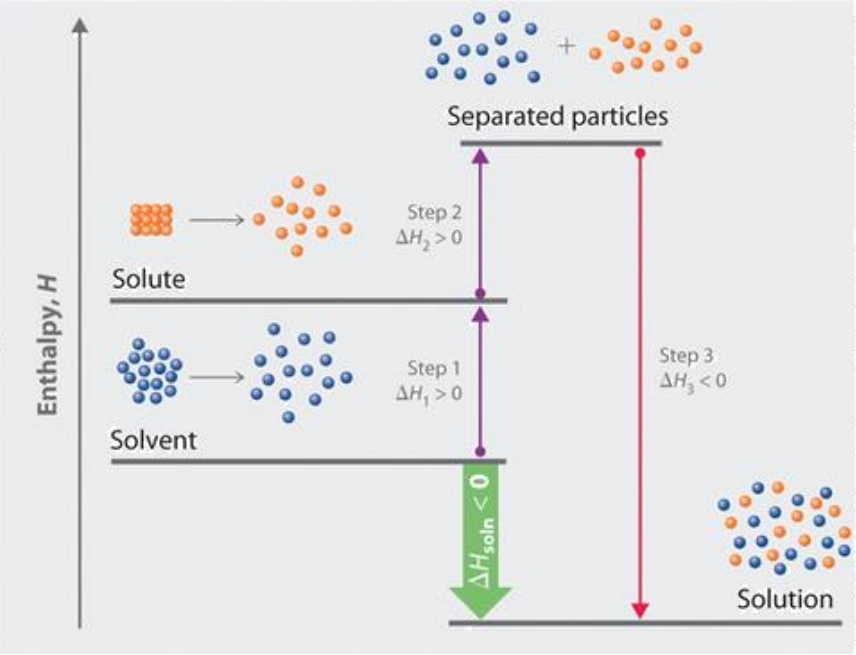


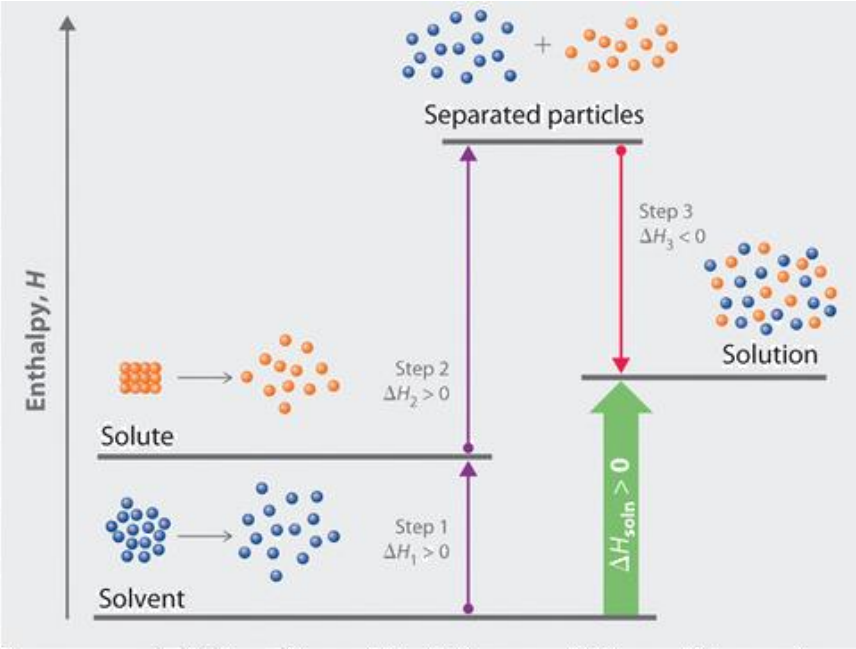
Exothermic dissolution
heat energy is released when the solute dissolves in a solution
$\Delta H_{solv} < 0$

Endothermic dissolution
heat energy is absorbed when the solute dissolves in a solution
$\Delta H_{solv} > 0$

ΔH_{solv} : the heat of solution is the enthalpy change associated with the dissolution of a substance in a solvent at constant pressure resulting in infinite dilution.

$$\Delta H_{solv} = |\Delta H_1 + \Delta H_2| - |\Delta H_3|$$





Application e.g.: cooling bags for sprains, minor burns

Sources:
https://chem.libretexts.org/Courses/Sacramento_City_College/SCC%3A_Chem_400__General_Chemistry_I/Text/13%3A_Solutions/13.3%3A_Energetics_of_Solution_Formation
https://en.wikipedia.org/wiki/Enthalpy_change_of_solution
https://nat2012.nkp.hu/tankonyv/kemia_7/lecke_02_004