Day # 18  **March 9**

CONCEPT: Why do ionic salts dissolve in water?

We’ve seen everything in this section before. In the beginning of the semester we talked about different types of reactions and salts dissolving (or ions precipitating) was one class of reactions.

TOOLS: Equilibrium constants!

Focus on the reaction type – dissolution and precipitation

Look at the forces involved

Delta G = delta H – T delta S

K is a measure of G.

Some definitions:
Solvent – liquid solids dissolve in
Solute – things being dissolved

Saturated solution – limit of solubility, nothing more can be dissolved, at equilibrium

Solubility = amount of solid needed to produce a given volume of a saturated solution

Common ion effect = logical consequence of equilibrium – amount of a solute than can be dissolved is affected by “common ions” already present in solution.

E.g.  AgCl \( \rightarrow \) Ag + + Cl- and then NaCl can also be a source of Cl- ions

Three categories of salts:

Soluble > 10 g L^-1  (e.g. NaCl)
Sparingly soluble 0.1 g – 10 g L^-1
Insoluble < 0.1 g L^-1

But as we’ll see insoluble salts can be important.

Show the concentrations of metal ions in sea water

Examples from marine systems
Then do other problems