

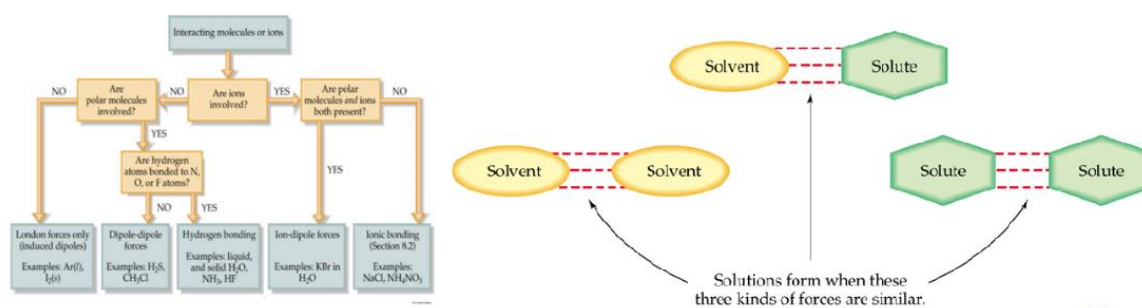
Salt Lake Community College, Chemistry Department

Chem 1110 Workshop 10

Topic: Solutions

Objective:

- To be able to understand the solution process
- Ions in solution- Electrolytes
- To be able to express concentrations in appropriate units
- Calculate volume or concentration changes for dilutions of solutions
- Calculate mole and mass relationships within reactions



Practice Problems:

1. Determine whether the following substances dissolve in CCl₄ or H₂O?

C ₇ H ₁₆	
Na ₂ SO ₄	
HCl	
C ₂ H ₅ OH	
I ₂	
SiCl ₄	

2. Calculate the concentration of the following aqueous solutions in molarity (M).

a) 1.25 moles glucose in 7.40 L solution

b) 4.28 g (NH₄)₂S in 0.300 L solution

3. Calculate the concentration of the following aqueous solution in vol %(v/v)?

a) 450 mL $\text{CH}_3\text{CH}_2\text{OH}$ in 1 L solution

4. How many moles of Na^+ are present in 343 mL of a 1.27 M solution of Na_2SO_4 ?
5. How many milliequivalents (mEq) of chloride are contained in a sample that is determined to contain 0.725 g of chloride ion?
6. How many mL of 0.105 M NaNO_3 are needed for an experiment that requires 0.005 moles of NaNO_3 ?
7. If 10.0 mL of 12 M HCl is diluted to 600 mL, what is the new concentration of the acid?
8. How many milliliters of 0.150 M BaCl_2 are needed to react completely with 35.0 mL of 0.200 M Na_2SO_4 according to the following equation?

