

CHEM 36
General Chemistry
Quiz #2

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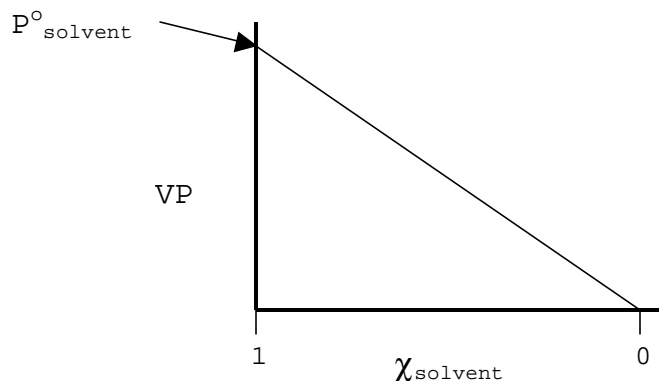
Name: Key, Francis S.

1. In looking at the energetics of dissolution, we've considered three processes that must occur: disruption of solute-solute intermolecular forces (IMFs), disruption of solvent-solvent IMFs, and formation of solute-solvent IMFs. Which of these processes is *exothermic*; explain briefly.

ΔH is *negative* for exothermic processes and results in the *loss* of energy from the system. In order to disrupt IMFs, energy has to be *added* to the system - these processes, then, are **endothermic**. However, when IMFs are established between solute and solvent, energy is *released* and the process is **exothermic**.

2. Raoult's Law describes the effect of dissolved solute on the solvent vapor pressure above the solution. In one sentence, state Raoult's Law and sketch a plot of solvent vapor pressure versus solvent mole fraction.

Raoult's Law: *The vapor pressure of a volatile solvent above a solution is directly proportional to the mole fraction of the solvent.*



3. Raoult's Law applies only to *ideal* solutions -- what is an *ideal* solution?

A solution in which solvent-solute intermolecular forces are comparable in magnitude to solvent-solvent (and solute-solute) intermolecular forces.