Review

What solute will lower the freezing point of a solvent the most? NaCl, CH_4, $Mg(OH)_2$

$Na^+ Cl^-$ $i = 2$

CH_4 $i = 1$

Mg^{2+} $OH^- OH^-$ $i = 3$

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Review

Describe what happens when you add 1 crystal to the following solutions:

saturated solution: remains unchanged

supersaturated solution: crystals grow

unsaturated solution: crystals dissolve

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Review

What substances are likely to dissolve in water?

"likes dissolve likes"

- ionic compounds
- polar covalent

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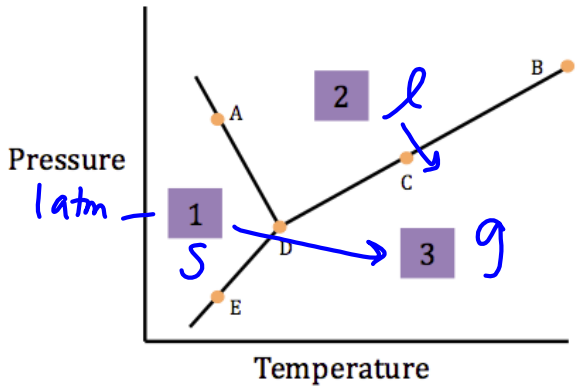
Review

1. Determine the phase for each of the numbers labeled in the diagram below.
2. What phase change is happening at letter c? vapor., evap., boil.
3. What term is used to describe point D? triple point
4. What change is happening to the solution when it moves from 1 to 3?

Sublimation



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Review

Na^+ OH^- 2

What will the freezing point be of a solution containing 40 grams of NaOH in 500 kg of water? (k_f = 1.86°C/m)

$\Delta T_f = m \cdot i \cdot k_f$

$m = \frac{mol}{kg}$

$40g \times \frac{1 mol}{40g} = 1 mol NaOH$

$\frac{1 mol NaOH}{500 kg} = .002 m$

$.002m \cdot 2 \cdot 1.86°C/m = .00744°C$

$0°C - .00744 = -0.00744°C$

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Review

What is the molality of a solution that has 50 moles of solute in 1000 mL of water?

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Review

What is the volume of a 0.5 M solution that has 10 moles of solute?

$M = \frac{mol}{L}$

$\frac{0.5M}{1} = \frac{10mol}{XL}$ $= 20L$

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