

Review

What substances are likely to dissolve in water?

- polar
- ionic
- small

Apr 26-7:57 AM

Review

A solution containing 30% by mass sodium sulfate in an aqueous solution contains how many grams of sodium sulfate in a 200 g sample?

$$\frac{\text{mass solute}}{\text{mass sol}} \times 100\% = \% \text{ mass}$$

$$30\% = 100 \times \frac{X \text{ g}}{200 \text{ g}}$$

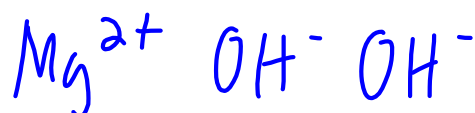
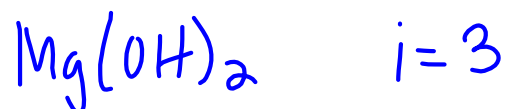
$$.30 = \frac{X}{200 \text{ g}}$$

$$X = 60 \text{ g}$$

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What solute will lower the freezing point of a solvent the most? NaCl, CH₄, Mg(OH)₂



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Review

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

saturated solution: unchanged

supersaturated solution: crystal grows

unsaturated solution: dissolves

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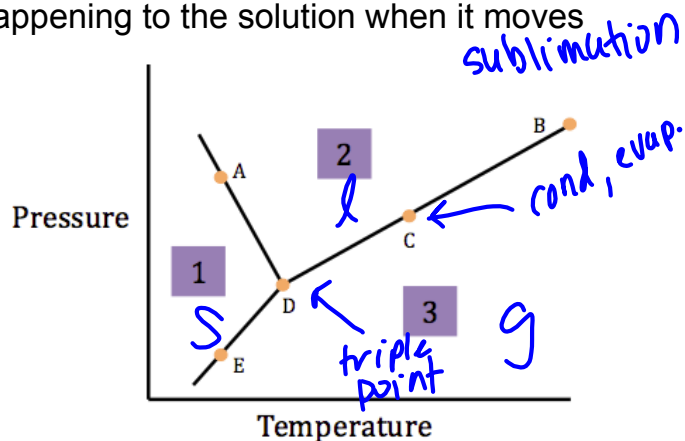
Review

Determine the percent by mass of a solution containing 10 moles of sodium sulfide and 100 grams of water.

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



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What will the freezing point be of a solution containing 40 grams of NaOH in 500 kg of water? ($k_f = 1.86^\circ\text{C}/m$)

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



$$m = \frac{\text{mol}}{\text{kg}} \quad 40\text{g NaOH} \times \frac{1\text{ mol}}{40\text{ g}} = \frac{1\text{ mol}}{500\text{kg}} = .002m$$

$$\Delta T_f = .002m \cdot 1.8^\circ\text{C}/m \cdot 2 = .007^\circ\text{C}$$

$$0^\circ\text{C} - .007^\circ\text{C} = \boxed{-.007^\circ\text{C}}$$

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

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

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

$$\frac{0.5M}{1} = \frac{10\text{mol}}{xL}$$

$$= 20L$$

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