

13.43 (b) $X_{H_2SO_4} = \frac{m_{H_2SO_4}}{m_{H_2SO_4} + m_{H_2O}}$ $\frac{1329}{12}$

$\frac{571.6}{98} + \frac{757.4}{18}$

$M = \frac{m_{H_2SO_4}}{V_{soln}} = \frac{571.6}{1} = 5.43M$

1329 TOTAL
= 571.6 H₂SO₄
757.4 H₂O

Jan 7-7:50 AM

13.50 1.5L ~~0.110M~~ (NH₄)₂SO₄

$\frac{0.110 \text{ mole } (NH_4)_2SO_4}{1L}$

0.110 mole (NH₄)₂SO₄ 1L	1.5L	132 g (NH₄)₂SO₄ 1 mole (NH ₄) ₂ SO ₄
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21.785
(NH₄)₂SO₄

Jan 7-8:21 AM

(B. sol) [?] 120g Na_2CO_3 0.65m Na_2CO_3
 Solution
 Solute + Solvent
 68.9g + 51.1g
 Na_2CO_3 H_2O
 Part
 $\frac{68.9\text{g Na}_2\text{CO}_3}{1068.9\text{g sol}} = \frac{X}{120\text{g sol}}$ ~~??~~
 Whole
 $\frac{68.9\text{g Na}_2\text{CO}_3}{1068.9\text{g total mass}} = \frac{X}{1\text{Kg solvent.}}$
 $\frac{68.9\text{g Na}_2\text{CO}_3}{1068.9\text{g total mass}}$
 1 Kg H_2O + 68.9g Na_2CO_3

Jan 7-8:25 AM

$\Delta T = (K \cdot m) i$
 Normal BP + $\Delta T =$ New BP
 Normal FP - $\Delta T =$ New FP
 Hot gets hotter!
 Cold gets colder.

Jan 7-8:35 AM

Add 25g NaCl to 1l sugar new BP = ?

$\Delta BP = 100^\circ C$

$\Delta T = (K * M) \cdot l$

$\Delta T = (0.51 * \frac{25}{58}) \cdot 2$

$\Delta T = 0.44^\circ$

New BP = 100.44°

$K_b = 0.51 \text{ m/}^\circ C$
 $K_f = 1.86 \text{ m/}^\circ C$

$\frac{1g}{1m} \cdot \frac{1000g}{1000m} = \frac{1Kg}{1l}$

Jan 7-8:37 AM

Add 25g NaCl to 1l H₂O → 1000ml 1000g

ΔBP bc we ΔVP Vapor Pressure.

$VP_{\text{Soln}} = X_{\text{Solvent}} \cdot P_{\text{Water}}$

P_{Water} Pure solvent

$\frac{1000g}{18} + \frac{25}{58} = X_{\text{H}_2\text{O}}$

$\frac{1000}{18} + \frac{25}{58} = X_{\text{H}_2\text{O}}$

VP H₂O Pure

Text

Raoult's Law

Jan 7-8:41 AM

PS 13 #1-15
Skip 3, 9, 11

Jan 7-8:47 AM