

more P \rightarrow $\text{-}\dot{\text{C}}\text{-OH}$

more NP \rightarrow C-C-C-C-C-C-C-OH

$6M^{HCl} = 6 \text{ Molar} = \frac{6 \text{ Mole HCl}}{1 \text{ l Soln}}$

$6m^{HCl} = 6 \text{ Molar} = \frac{6 \text{ mole HCl}}{1 \text{ Kg H}_2\text{O}}$

$1 \text{ Kg} \sim 1 \text{ l}$

$1 \text{ g} = 1 \text{ mg}$

$\frac{1 \text{ Kg}}{\text{H}_2\text{O}} \rightarrow \text{HCl}$

Jan 5-7:41 AM

~~GAS~~ HCl (aq) - Concentrated = 12M

Total 100g \rightarrow 36% by mass HCl Find m

\therefore 64% H_2O

$\frac{36 \text{ g HCl}}{36 \text{ g H}_2\text{O}} = \frac{1 \text{ mole HCl}}{1 \text{ mole H}_2\text{O}}$

Moles solute $\frac{1 \text{ mole}}{0.064 \text{ Kg}} = 15.6 \text{ m}$

kg solvent

Jan 5-7:55 AM

Henry's Law

$S_g = k P_g$

equality

$S_g \approx P_g$
 proportion
 $S_g \propto P_g$

Solubility of a gas in solvent

Henry's LAW Constant

Pressure exerted on that gas

Jan 5-8:04 AM

Math

$d_{soln} = \frac{0.876g}{ml}$

Find M of soln

Moles solute / l of solution = $\frac{0.054 \text{ mole solute } C_7H_8}{0.26256 \text{ l}}$

$0.21M$

Solute S_g Toluene C_7H_8
 225g benzene C_6H_6
 solvent (MORE)

| | | | |
|-------|----------|-----------------|--------------|
| S_g | C_7H_8 | 1 mole C_7H_8 | 92g C_7H_8 |
| | | | 92g C_7H_8 |

have 230g of soln
 S_g solute + 225g solvent

| | |
|----------|----------------|
| SOLUTION | |
| 1ml | 230g = 262.56g |
| 10.876g | |

0.26256 l

Jan 5-8:24 AM

Colligative Properties of a solution.

Δ Concentrations \Rightarrow Δ FP \downarrow , Δ BP \uparrow , Δ viscosity \uparrow
Add solute to solvent make syrup.

Δ amt of solute in soln
 (Ex) pure H₂O $\frac{FP}{BP}$ | 100
 Saltwater $FP \downarrow$ | $BP \uparrow$
 $< 0^\circ C$ | $> 100^\circ C$

Δ Osmotic Pressure \uparrow

$$PV = nRT$$

$$P = \frac{n}{V} RT$$

$$P = M RT$$

$$\pi = MRT$$

Jan 5-8:51 AM

Raoult's Law

$$VP_A = X_A VP_A$$

VP_A : Vapor pressure of Solution (Solute + solvent)
 X_A : mole fraction of the SOLVENT
 VP_A : Vapor Pressure of pure solvent

Jan 5-9:04 AM

Glycerine $C_3H_8O_3$
 at 25°

Calc VP_{saen} of 50ml glycerine + 50ml H₂O

$d = \frac{1.26g}{ml}$

VP pure H₂O @ $25^\circ C = 23.8 \text{ torr}$

$P_A = X_A P_A^0$
 Soln Solvent Solvent
 (23.8 torr)

$X_{H_2O} = \frac{\text{mole H}_2\text{O}}{\text{Mole H}_2\text{O} + \text{mole glycerine}} = \frac{2.7}{2.7 + \dots}$

Jan 5-9:10 AM

50ml H₂O = _____ moles

| | | |
|--------------------------------|----------------------|------------------------|
| 50ml H₂O | 1g H ₂ O | 1mole H ₂ O |
| | 1ml H ₂ O | 18g H ₂ O |

= 2.7 mole H₂O

| | | |
|----------------|-------|------|
| 50ml glycerine | 1.26g | mole |
| | 1ml | g |

Jan 5-9:14 AM

13/44, 50a, 62a

Jan 5-9:17 AM