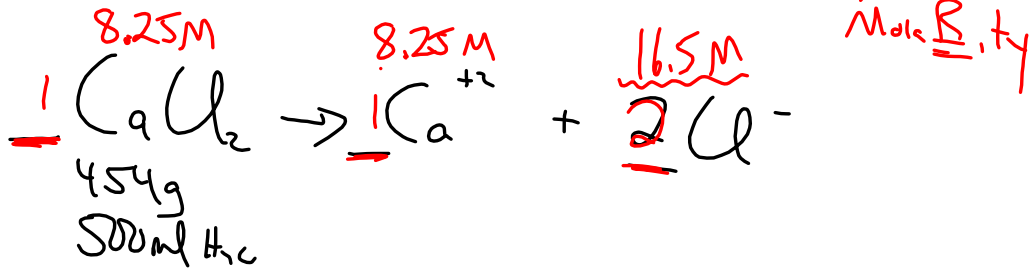


PS13

454g CaCl_2 in ^{500ml} H_2O . Find $[\text{Cl}^-]$



$M \text{ CaCl}_2 = \frac{\text{mass CaCl}_2}{V}$

454g CaCl_2	1 mole CaCl_2	= 8.25 M CaCl_2
0.5 l	110g CaCl_2	

Jan 19-8:09 AM

⑤

$X_{\text{methanol}} = \frac{\text{mole methanol}}{\text{mole methanol} + \text{mole H}_2\text{O}}$

P.T.

$\text{CH}_3\text{OH} = 32\text{g/mole}$
 $\text{H}_2\text{O} = 18\text{g/mole}$

32g CH_3OH
 +
 32g H_2O

$$= \frac{\frac{32}{32}}{\frac{32}{32} + \frac{32}{18}} = \frac{1}{1 + \frac{32}{18}} = 0.36$$

Jan 19-8:19 AM

⑩ Henry's Law

$$S_g = K P_g$$

Solubility of gas = constant Pressure

Lowest Solubility = small # \Rightarrow He (2 atm)

Jan 19-8:26 AM

⑭ 125 mg ^{Solute} Caffeine + 100g ^{Solvent (MORE)} Cyclohexane

$\Delta T = 0.13 K$. Calc. $\frac{g}{kg}$ Caffeine

$K_f = 20.1 \frac{K}{m}$ Cyclohex.

$\Delta T = (K_f * m)$

$0.13 = (20.1 * m)$

$m = \frac{m_{\text{des solute}}}{kg \text{ Solvent}} = \frac{\frac{g}{mw}}{kg}$

$0.0065 m$

$0.0065 = \frac{0.125}{mw}}{0.1 kg}$

Jan 19-8:30 AM

(13) In glucose BP = 100.51°C ΔT = 0.51°C

What is ΔT in Al₂(SO₄)₃?

$\Delta T = (K \times m) i$ } $\Delta T = (K \times M) i$
 glucose 0.51 = (K_b × 1) i } Similar = i
 S(0.51) = 2.55

K_b = 0.51

Jan 19-8:39 AM

(16) 0.25g cyt.c, 50ml soln, 1.52 kPa, 25°C

Find mw

$PV = nRT$

$\frac{PV}{1} = \frac{g}{MW} RT$

$\frac{MW}{1} = \frac{gRT}{PV} = \frac{(0.25)(0.08206)(298)}{(0.015)(50 \times 10^{-3} \text{ l})}$

$R = \frac{\text{l} \times \text{atm}}{\text{mole} \times \text{K}}$

6169.93g

1.52 kPa	1 atm
	101.3 kPa = 0.015 m

Jan 19-8:42 AM