

(Ec) 0.455g Thyrox + 10g Bz
 Solute Solvent
 Pure Bz FP = 5.44°C
 MW = ? g/mole
 FP = 5.14°C
 Soln
 $\Delta T_F = 0.3^\circ C$
 $K_f = 5.12^\circ C/m$

② $m = \frac{\text{mole Thy}}{K_f Bz} = \frac{\frac{g}{MW}}{K_f Bz}$

$\frac{0.0586}{1} = \frac{0.455}{MW}$
 $5.86 \times 10^{-4} = \frac{0.455}{MW}$

$MW = \frac{0.455}{5.86 \times 10^{-4}} = 771 \text{ g/mole}$

① $\Delta T = (K_f \times m) \cdot i$
 $0.3 = (5.12 \times m) \cdot 1$
 $m = 0.0586 \text{ m or Mole Thy} / K_f Bz$

Jan 12-7:38 AM

② 5.5g HCl in 200g C₂H₆O Soln
 Solute
 D = 0.79 g/ml soln

(HCl) $M = \frac{\text{moles solute (HCl)}}{\text{l soln}}$

5.5g HCl	1 mole HCl	0.79g	1000ml
205.5g Soln	36g HCl	1ml	1l

g → mole solute
 mass → volume
 Soln

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⑥ CH_3OH

$$\begin{array}{c} \text{H} \\ | \\ \text{H} - \text{C} - \text{OH} \\ | \\ \text{H} \end{array}$$

POLAR

⑧ Collig Prop

FP ↓ and BP ↑

Solute added to solvent

Solute → Water ?
 ↓
 Salt water 10°
 →
 Pure water

Jan 12-8:04 AM

⑨ 11.3g $\text{Ca}(\text{NO}_3)_2$ in 115g H_2O

Find new FP

$\text{FP} = 0^\circ\text{C}$ $K_f = 1.86^\circ\text{C}/m$

$$m = \frac{\text{Moles solute}}{\text{Kg Solvent}}$$

$$= \frac{11.3}{164}$$

$$= 0.115$$

$$\Delta T = (K_f \times m)$$

$$\Delta T = (1.86 \times 0.115)$$

0 - _____ = new

Jan 12-8:08 AM

⑩ $P_{dec}^0 = 250 \text{ mmHg}$ @ 120°C $\frac{1000g}{142}$

Find VP_{soln}

0.97 mole camphor in 1000g decane

$$VP_{soln} = X_{\text{solvent}} P^0$$

Pure solvent

$$VP_{soln} = (0.88) (250)$$

$$VP_{soln} = 219.7 \text{ mmHg}$$

$$X_{dec} = \frac{\text{mole dec}}{\text{mole dec} + \text{mole camph.}}$$

$$= \frac{7.04}{7.04 + 0.97}$$

$$= 0.88$$

Jan 12-8:16 AM