

2/2/15

Given: 6.85 M ethanol in water

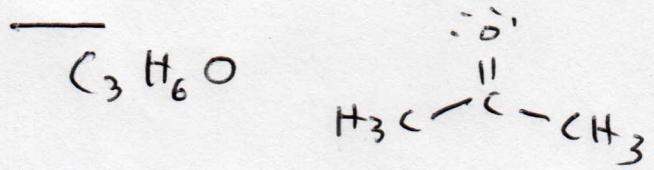
$$\rho = 0.9507 \text{ g/mL}$$

$$1000 \text{ g sol'n} \times \text{density} = 950.7 \text{ g solution}$$

$$\begin{aligned} \text{mass ethanol} &= \text{mol ethanol} \times \text{MM ethanol} \\ &= 6.85 \times 46 \approx 315 \text{ g} \end{aligned}$$

$$\text{mass of water} = 950 - 315 = 635 \text{ g H}_2\text{O}$$

$$m = \frac{\text{moles solute}}{\text{kg solvent}} = \frac{6.85}{.635} = 10.8 \text{ m}$$



9.873g in 125.0g water
→ -2.52°C
(corrected)

$$\Delta T = K \cdot m \cdot i$$

$$-2.52 = (-1.86) (m) (i)$$

$$m = \frac{9.873\text{g} / 58}{.125}$$

$$-2.52 = (-1.86) (1.35) i$$

$$= 1.35$$

$$i \approx 1$$

Because i is only 1,
no dissociation occurs

$\text{PbI}_2 \rightarrow$ insoluble $K_{sp} \ll 1$

$$\Delta G = -RT \ln K \quad \Delta G > 0$$

$$\Delta G = \Delta H - T\Delta S$$

$$\Delta G > 0 \quad \Delta H > 0 \quad \Delta S > 0$$

→ endothermic → T ↓

