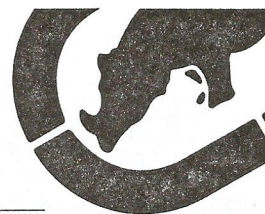


LISTA (7)



$$\textcircled{1} \ln x_{\text{soluto dissolvido}} = - \frac{\Delta_f H}{R} \left(\frac{1}{T} - \frac{1}{T_f} \right)$$

$$\ln(8 \times 10^{-3}) = - \frac{14900 \text{ J}}{\text{mol} \cdot 8,314 \text{ J}} \left(\frac{1}{298 \text{ K}} - \frac{1}{T_f} \right)$$

$$-4,828 = -1792,16 \left(0,0033557 - 1/T_f \right)$$

$$+0,002694 = + \left[0,0033557 - \frac{1}{T_f} \right]$$

$$\frac{1}{T_f} = 0,0006617$$

$$T_f = 1511 \text{ K}$$

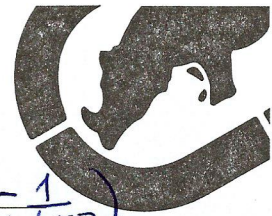
② Quantos graus de liberdade são necessários para especificar o ponto eutético em um sistema de dois componentes.

$$F = C - P + 2$$

$$F = 2 - \textcircled{3} + 2$$

$$F = 1$$

→ 2 sólidos em equilíbrio com a fase líquida



$$3) \ln x_{\text{soluto dissolvido}} = - \frac{3000 \text{ J}}{\text{mol}} \cdot \frac{1 \text{ mol K}}{8,314 \text{ J}} \left(\frac{1}{273 \text{ K}} - \frac{1}{453 \text{ K}} \right)$$

$$\ln x = - 360,837 (0,0014555)$$

$$\ln x = - 0,525$$

$$\boxed{x = 0,5916} \text{ de Li dissolvido em H}_2\text{O a } 0^\circ\text{C}$$

4) Eq. de van't Hoff

$$\pi = \frac{n}{V} RT, \text{ a } 25^\circ\text{C}$$

$$1,08 \text{ molal} = \frac{1,08 \text{ mols NaCl}}{1 \text{ Kg solvente}}$$

1Kg H₂O $\approx$ 1L solução $\Rightarrow$ considerando
 i) densidade da água $\approx 1 \text{ g/cm}^3$
 e ii) densidade do mar $\approx$ água

$$\pi = \frac{1,08 \text{ mol}}{1 \text{ L}} \times \frac{0,082 \text{ Latm}}{\text{mol} \cdot \text{K}} \cdot 298 \text{ K}$$

$$\pi = 26,39 \text{ atm ou } 26,74 \text{ bar}$$

$$\Delta T_f = K_f \cdot m = 1,08 \times 1,86 = 2,01^\circ\text{C} = 2,01^\circ\text{K}$$

Portanto, água do mar congela a $-2,01^\circ\text{C}$

$$\Delta T_{eb} = K_{eb} \cdot m = 1,08 \times 0,51 = 0,5508 \text{ K} = 0,5508^\circ\text{C}$$

Portanto, água do mar, evapora a $100,55^\circ\text{C}$