

Answer on Question #78447 - Chemistry - Physical Chemistry

Question: Estimate the osmotic pressure in 0.5 g/l solution of sucrose in water at 25 oC.

Solution:

$$\pi = cRT;$$

$$R = \text{universal gas constant} = 0.08206 \text{ L}\cdot\text{atm}/\text{mol}\cdot\text{K}$$

$$c = c'/M = 0.5/324 = 0.0015 \text{ mol/L};$$

$$\pi = 0.0015 \cdot 0.08206 \cdot (273+25) = 0.0377 \text{ atm.}$$

Answer: 0.0377 atm.

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