

Question #75120, Chemistry / General Chemistry

If a 0.85 g/L sample of gas at 4.0 atm of pressure dissolves in water, at what pressure will a 0.65 g/L sample of gas dissolve?

Solution

Henry's law is a gas law that states that the amount of dissolved gas is proportional to its partial pressure in the gas phase.

$m = K_H \cdot p$, where K_H is a constant.

That is why:

$$\frac{m_1}{m_2} = \frac{p_1}{p_2}$$

$$p_2 = \frac{m_2 \cdot p_1}{m_1}$$

$$p_2 = \frac{0.65 \cdot 4}{0.85} = 3.06 \text{ atm}$$

Answer

3.6 atm

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