

Answer on Question #78390 - Chemistry - General Chemistry

Question: The solubility of CO₂ in water is 3.2×10⁻²M at 25 °C and 1 atm pressure.

What is the Henry's-law constant for CO₂ in mol/(L·atm)?

Solution:

The solubility:

$$S = kP,$$

where:

$$S = \text{solubility} = 0.032 \text{ mol/L};$$

k = Henry's constant (unknown);

$$P = \text{pressure} = 1 \text{ atm};$$

$$k = S/P = 0.032/1 = 0.032 \text{ mol/(L·atm)}.$$

Answer: 0.032 mol/(L·atm).