

Solubility of gases

Henry's law constants in H₂O
(atm x 10³)

He	131
N ₂	86
CO	57
O ₂	43
Ar	40
CO ₂	1.6

Problem: What is the solubility of O₂ in sea water given that the Partial pressure of O₂ is 0.8 atm?

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Problem: What is the solubility of O_2 in sea water given that the partial pressure of O_2 is 0.8 atm?

$$x_{O_2} = \frac{P_{O_2}}{K_H}$$

$$x_{O_2} = \frac{0.8 \text{ atm}}{43,000 \text{ atm}} = 1.86 \times 10^{-5}$$

$$c_{O_2} \approx x_{O_2} c_{H_2O} = (1.86 \times 10^{-5})(55.5 \text{ M})$$

$$c_{O_2} \approx 1.03 \times 10^{-3}$$