

Answer on Question #63060 - Chemistry - General Chemistry

Question

You have a 44 L gas tank that contains a mixture of gases. The pressure exerted on the tank is 1.4 atmospheres. If 24% of the molecules are oxygen, what is the partial pressure of oxygen?

Solution:

$p(\text{O}_2) = P_{\text{total}} \cdot x(\text{O}_2)$ where $x(\text{O}_2)$ – mole fraction of O_2

$p(\text{O}_2) = P_{\text{total}} \cdot x(\text{O}_2) = 1.4 \cdot 0.24 = 0.336 \text{ (atm)}$

Answer: partial pressure of oxygen 0.336 atm.

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