Answer on Question #48775, Chemistry, Other

Task:

Carbon dioxide, CO_2 is added to a tank containing nitrogen at 2.00 atmospheres and oxygen at 1.00 atmosphere until the total pressure within the tank is 4.6 atmosphere what is the partial pressure of the CO_2?

Answer:

According to Dalton's Law, in a mixture of non-reacting gases a total pressure is equal to the sum of partial pressures of individual gases.

$$P = \sum_{i=1}^{n} p_i$$

$$p(CO_2) = P - (p(N_2) + p(O_2))$$

$$p(CO_2) = 4.6 - (2 + 1) = 1.6\,atm$$