

Question #58492, Chemistry / General Chemistry

Calculate the pressure in atmospheres of 10.6 g of CO₂ in a 1.48 L container at 141 °C.

Answer

$$P \cdot V = \nu \cdot R \cdot T$$

$$\nu = \frac{m}{Mr} = \frac{10.6}{44} = 0.241 \text{ g/mole}$$

$$T = 273 + 141 = 414 \text{ K}$$

$$P = \frac{\nu \cdot R \cdot T}{V} = \frac{0.241 \cdot 8.312 \cdot 414}{1.48} = 560 \text{ kPa}$$