

Answer on Question # 68673, Chemistry, Physical Chemistry

A gas occupies a volume of 2.4 L at 14.1 kPa. What volume will the gas occupy at 84.6 kPa?

Solution

$$C_V = \frac{v_{urea}}{V_{solution}}$$
$$pV = const$$
$$p_1V_1 = p_2V_2$$
$$V_2 = \frac{p_1V_1}{p_2} = \frac{14.1 \text{ kPa} \times 2.4 \text{ L}}{84.6 \text{ kPa}} = 0.4 \text{ L}$$

Answer: 0.4 L.