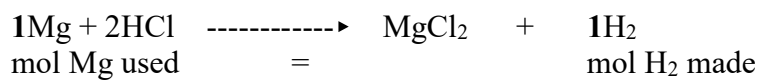


CHEMISTRY 060
LAB 11 - Mg and HCl

Name _____
Date _____



Data

length of Mg _____ mm

mass of Mg per metre _____ g

barometric pressure _____ mmHg

temperature (1) _____ °C

volume of H₂ (2) _____ mL

vapour pressure of H₂O at room temperature _____ mmHg

Calculations

mass of Mg used (length of Mg(mm) × mass of 1mm Mg) _____ g

moles of Mg used (3) (mass of Mg ÷ molar mass of Mg) _____ mol

pressure of H₂ (4) (barometric pressure - vapour pressure of H₂O) _____ mmHg

Fill out this column

P_1	P_{hydrogen} (4)	mHg	P_2	Standard Pressure	760 mmHg
V_1	Volume of H_2 (2)	L	V_2	What we are trying to find	L
n_1	mol Mg used (3)	mol	n_2	We want the vol of 1 mol	1 mol
T_1	Room temp (1)	K	T_2	Standard temperature	273 K

$$\frac{P_1 V_1}{n_1 T_1} = \frac{P_2 V_2}{n_2 T_2}$$

solve for V_2 (which is the volume of 1 mol of gas at STP)

$$V_2 = \frac{P_1 V_1 n_2 T_2}{n_1 T_1 P_2}$$

$$V_2 = \underline{\hspace{2cm}} \text{ L}$$

Conclusion

The volume of 1 mole of H_2 at STP is L

The correct value is 22.4 L

$$\% \text{ Error} = \frac{(\text{Theoretical value} - \text{Experimental value})}{(\text{Theoretical value})} \times 100$$

$$= \underline{\hspace{2cm}}$$