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MOLE LAB (Part II)
Data & Observations

ACCEPTED VALUES FOR ATOMIC RADIUS

- Aluminum 1.25×10^{-8} cm

Iron 1.16×10^{-8} cmCopper 1.17×10^{-8} cmZinc 1.25×10^{-8} cm

Calculate the percent error between your findings, which is known as the experimental value, and the accepted (actual) value. Use the formula below to calculate percent difference. Record these findings in the table.

Easy

$$\% \text{ error} = \left(\frac{\text{Actual} - \text{Experimental}}{\text{Actual}} \right) \times 100\%$$

Calculations:

$$\text{Al} \rightarrow \left(\frac{1.25 \times 10^{-8} \text{ cm} - 1.23 \times 10^{-8} \text{ cm}}{1.25 \times 10^{-8} \text{ cm}} \right)$$

$$\frac{2 \times 10^{-10} \text{ cm}}{1.25 \times 10^{-8} \text{ cm}} = \boxed{0.016} \%$$

$$\text{Fe} \rightarrow \left(\frac{1.16 \times 10^{-8} \text{ cm} - 1.096 \times 10^{-8} \text{ cm}}{1.16 \times 10^{-8} \text{ cm}} \right)$$

$$\frac{6 \times 10^{-10}}{1.16 \times 10^{-8}} = \boxed{0.052} \%$$

$$\text{Cu} \rightarrow \left(\frac{1.17 \times 10^{-8} \text{ cm} - 1.09 \times 10^{-8} \text{ cm}}{1.17 \times 10^{-8} \text{ cm}} \right)$$

$$\frac{8 \times 10^{-10}}{1.17 \times 10^{-8}} = \boxed{0.068} \%$$

$$\text{Zn} \rightarrow \left(\frac{1.25 \times 10^{-8} \text{ cm} - 1.12 \times 10^{-8} \text{ cm}}{1.25 \times 10^{-8} \text{ cm}} \right)$$

$$\frac{1.3 \times 10^{-9}}{1.25 \times 10^{-8}} =$$

$$\boxed{0.116} \%$$

Element	Actual Value	Experimental Value	Percent Error
Aluminum (Al)	1.25×10^{-8} cm	1.23×10^{-8} cm	0.016%
Iron (Fe)	1.16×10^{-8} cm	1.10×10^{-8} cm	0.052%
Copper (Cu)	1.17×10^{-8} cm	1.087×10^{-8} cm	0.068%
Zinc (Zn)	1.25×10^{-8} cm	1.12×10^{-8} cm	0.116%