Exercise 90

Calculate these masses.

(a) What is the mass of 4.00 cm^3 of sodium, density $= 0.97$ g/cm^3?

(b) What is the mass of 125 mL gaseous chlorine, density $= 3.16$ g/L?

Solution

Part (a)

Start with the given volume of sodium and use the density to determine the mass.

$$4.00 \ \cancel{cm^3} \times \frac{0.97 \text{ g}}{1 \ \cancel{cm^3}} \approx 3.9 \text{ g}$$

Part (b)

Start with the given volume of gaseous chlorine and use the density to determine the mass.

$$125 \ \cancel{mL} \times \frac{1 \ \cancel{L}}{1000 \ \cancel{mL}} \times \frac{3.16 \text{ g}}{1 \ \cancel{L}} = 0.395 \text{ g}$$