

4 Al atoms / cell

$$m_{\text{cell}} = 4 \text{ atom} \left(\frac{1 \text{ mol}}{6.02 \times 10^{23} \text{ atom}} \right) \left(\frac{26.98 \text{ g}}{1 \text{ mol}} \right)$$
$$= 1.7927 \times 10^{-22} \text{ g}$$

$$V_{\text{cell}} = (404.55 \times 10^{-10} \text{ cm})^3 = 6.6209 \times 10^{-23} \text{ cm}^3$$

$$d = \frac{m}{V} = 2.7076 \text{ g/cm}^3$$

$$V_{\text{atom}} = \frac{V_{\text{cell}} \cdot 0.74}{4} = \frac{(404.55 \text{ pm})^3 \cdot 0.74}{4}$$
$$= 1.2249 \times 10^7 \text{ pm}^3$$

$$V = \frac{4}{3} \pi r^3 \quad r = \sqrt[3]{\frac{3V}{4\pi}} = 143.00 \text{ pm}$$