$$\rho = \frac{n' A_C}{V_C N_A}$$

$$= \frac{(8 \text{ atoms/unit cell})(12.01 \text{ g/g-atom})}{\left(4.51 \text{ x } 10^{-23} \text{ cm}^3/\text{unit cell}\right)\left(6.023 \text{ x } 10^{23} \text{ atoms/g-atom}\right)}$$

$$= 3.54 \text{ g/cm}^3$$

The measured density is 3.51 g/cm^3.