Problem 42

The density of aluminum is 2.7 g/cm^3. What is the density in kilograms per cubic meter?

Solution

Convert this density to kilograms per cubic meter by multiplying by the appropriate conversion factors.

$$2.7\ \frac{\text{g}}{\text{cm}^3} = 2.7\ \frac{\cancel{\text{g}}}{\cancel{\text{cm}^3}} \times \frac{1\ \text{kg}}{1000\ \cancel{\text{g}}} \times \left(\frac{100\ \cancel{\text{cm}}}{1\ \text{m}}\right)^3 = 2.7 \times 10^3\ \frac{\text{kg}}{\text{m}^3}$$