Question

Use the 5-step method and be sure to include units where appropriate. Round your answers to the correct number of significant digits.

Adjust the density formula and solve the problems below:

What is the mass of a 1350 cm^3 sample of pure silicon with a density of 21.336 g/cm^3?

Solution

The equation for density is

$$\rho = mV,$$

where ρ – density, m – mass and V – volume. So

$$m = \rho \cdot V$$

We know that V = 1350 cm^3 and ρ = 21.336 g/cm^3.

Substituting the given values into the equation we can obtain the mass:

$$m = 21.336\ g/cm3 \cdot 1350\ cm3 = 28800\ g$$