

Answer on Question # 64871, Chemistry, General Chemistry

An irregular shaped piece of metal D has a mass of 118.14 g. You put it into a 100 mL graduated cylinder containing 38.5 mL of water, and the water level rises to 83.5 mL. What is the density of metal D

Solution

$$1 \text{ mL} = 1 \text{ cm}^3$$
$$V_{\text{metal}} = V_{\text{water}_2} - V_{\text{water}_1} = 83.5 \text{ cm}^3 - 38.5 \text{ cm}^3 = 45 \text{ cm}^3$$
$$\rho = \frac{m}{V} = \frac{118.14 \text{ g}}{45 \text{ cm}^3} \approx 2.625 \text{ g/cm}^3$$

Answer: $\rho_D = 2.625 \text{ g/cm}^3$

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