Question #80334, Chemistry / General Chemistry

What mass of lead (density 11.4 g/cm^3) would have a volume identical to 15.0 g of mercury (density 13.6 g/cm^3)

Solution:

$$\mathrm{V} = \frac{m}{p}$$

$$V = \frac{m(Hg)}{p(Hg)} = \frac{15.0\ g}{13.6\ g/cm^3} \approx 1.1\ cm^3$$

$$m(Pb) = V * p(Pb) = 1.1 cm^3 * 11.4\ g/cm^3 \approx 12.5\ g$$

Answer: $12.5\ g$

Source: https://serc.carleton.edu/mathyouneed/density/index.html