

Question#47459 – Chemistry – Other

Question:

A nugget of gold with a mass of 521g is added to 50.0ml of water. The water level rises to a volume of 77.0mL. What is the density of the gold?

Answer:

The difference in volume is due to the volume of a gold nugget:

$$\Delta V = 77.0ml - 50.0ml = 27.0ml$$

Density is defined as the mass of a body (in grams) per one cm^3 (or ml) of its volume:

$$d = \frac{m}{V} = \frac{m_{Au}}{V_{Au}} = \frac{521g}{27.0ml} = 19.3g/ml = 19.3g/cm^3$$