Answer on Question #54208 – Chemistry – General chemistry

Question:

How many moles is 12.6cm^3 of platinum? The density of platinum is 21.45 g/cm^3.

Answer:

The mass of platinum is defined by the equation:

m = Vd, where V –the volume and d – the density.

$m = 12.6\ cm^3 \times 21.45\ g/cm^3 = 270.27\ g$

The number of moles equals:

v = m/M, where M – the molar mass of Platinum

$v = 270.27\ g / 195.08\ g\ mol^{-1} = 1.3854$ moles