

### Question #72499, Chemistry / Other / Completed

The element platinum is commonly used as a catalyst to accelerate the rates of chemical reactions. How many atoms of platinum (Pt) are present in 85.50 grams of platinum? Report your answer to 3 significant figures.

#### Solution

The atomic weight of platinum is 195.084 [1]

$N = v \cdot N_A$  – is a formula for calculations

$N_A$  - Avogadro constant,  $6.022 \times 10^{23} \text{ mol}^{-1}$

$v = m / M = 85.50 \text{ g} / 195.084 \text{ g/mol} = 0.43827 \text{ mol}$

So  $N = 0.43827 \text{ mol} \cdot 6.022 \times 10^{23} \text{ mol}^{-1} = 2.64 \times 10^{23} \text{ atoms}$

**Answer:  $2.64 \times 10^{23}$  atoms.**

1. <https://en.wikipedia.org/wiki/Platinum>