

Atomic Mass and the "amu"

Mass

P^+ and n^0 contain all the significant mass in the atom

Mass # is the # of P^+ and n^0 in the atomic structure.

Atomic Mass

Mass of the p^+ and n^0 (Mass #) of an isotope in amu (atomic mass unit)

Atomic Mass Unit (amu) is the mass of 1 p^+ or 1 n^0

Calculating atomic mass

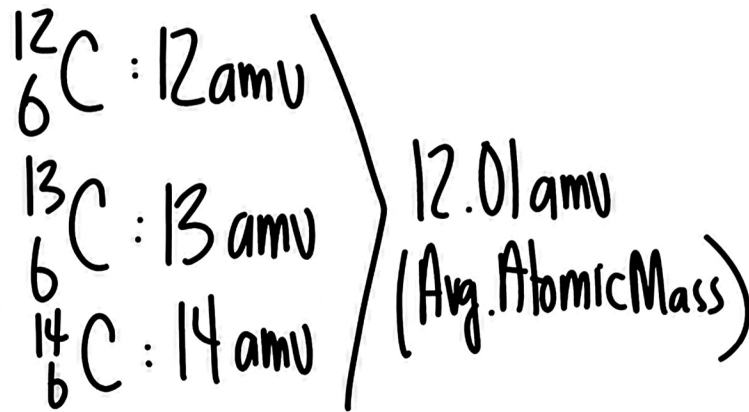
1 amu = Mass p^+ or n^0 in grams (g)

1 amu = 1.67×10^{-24} g/amu (converting amu $\rightarrow$ g)

$$\begin{array}{l} {}_{6}^{12}\text{C} : 12 \text{ amu} \times 1.67 \times 10^{-24} \text{ g/amu} \\ \text{(Carbon-12)} \end{array} = \frac{12 \text{ amu} \times 1.67 \times 10^{-24} \text{ g}}{1 \text{ amu}} = \underline{2.004 \times 10^{-23} \text{ g}}$$

Average Atomic Mass

Avg. mass of all isotopes of an element.
(given on periodic table)



$$\begin{aligned} & 12.01 \text{ amu} \times 1.67 \times 10^{-24} \text{ g/amu} \\ &= \underline{2.006 \times 10^{-23} \text{ g}} \\ & \text{Avg. Atomic Mass in g} \\ & (\text{rnd to 3 pl. after decimal}) \end{aligned}$$