

Unit 2 – Ch 4.3 – Isotopes & Average Atomic Mass

ISOTOPES:

- DEFINITION:

- But isotopes are _____ alike - _____ number of _____ and _____.
- _____ and _____ dictate _____ behavior.

ATOMIC MASS:

- DEFINITION:

- Unit =

- MASSES:

- $p^+ =$ $n^0 =$ $e^- =$

AVERAGE ATOMIC MASS:

- Weighted Average:

- Applies only to _____ isotopes of an element.
- _____ isotope chosen as **standard**: _____ and considered as _____ element.
- Carbon Isotopes → _____
 - But only _____ isotopes (_____) are used to calculate _____.
- CARBON on the Periodic Table:
 - Average atomic mass (amu) is listed as _____ because most Carbon on Earth is _____.

CALCULATING AVERAGE ATOMIC MASS:

- Step #1:

- Step #2:

Ex #1: C-12 ; 98.89% → 12.000 amu C-13 ; 1.11% → 13.003 amu C-14 = Not used ; Unstable

Ex #2: Element "X" has three naturally occurring isotopes: 159.37 amu (30.60%), 162.79 amu (15.79%), and 163.92 amu (53.61%). What is the average atomic mass (amu) of element "X"?

Ex #3: Antimony has two naturally occurring isotopes: Sb-121, 120.903824 amu (57.30%) and Sb-123, 122.904222 amu (42.70%). What is the average atomic mass (amu) of antimony?

Ex #4: CHALLENGE – Boron has two naturally occurring isotopes: B-10, 10.013 amu (19.9%) and B-11. What is the atomic mass of B-11?