

Distinguishing Between Atoms

Isotopes:

Same number of protons, different number of neutrons.

2 ways to write isotopes:

Atomic number:

The number of protons in the nucleus of an atom

Atoms are neutral, therefore:

protons = # electrons

APE

Mass number = Protons + Neutrons

(the mass of a single isotope)

| element | atomic # | mass # | # protons | # electrons | # neutrons |
|---------|----------|--------|-----------|-------------|------------|
| | 12 | 25 | | | |
| | | | 8 | | 9 |
| C | | 14 | | | |
| | | | | 25 | 28 |

Atomic Mass Vs. Mass Number

Atomic mass: Weighted average of all the known isotopes of an element

Mass number: the mass of ONE atom (protons + neutrons)

Uranium has three common isotopes. If the abundance of ^{234}U is 0.01%, the abundance of ^{235}U is 0.71%, and the abundance of ^{238}U is 99.28%, what is the average atomic mass of uranium?