

AVERAGE ATOMIC MASS

1. Why can't we mass atoms in grams?
2. What solution did chemists come up with?
3. What does amu stand for?
4. The mass number is NOT found on the periodic table. What is mass number again?

What does the larger number on the periodic table refer to?

5. What is average atomic mass?
6. How do you calculate the average atomic mass?

To sum it up with a formula:

Rule of convenience: round average atomic masses to TWO DECIMAL PLACES!

Example 1

Calculate the average atomic mass for silicon with the given information:

Isotope name	Isotope mass (amu)	Relative abundance
Silicon- 28	27.98	92.21%
Silicon- 29	28.98	4.70%
Silicon- 30	29.97	3.09%

Example 2

Calculate the estimated average atomic mass of neon if neon exists naturally as 90.92% neon-20, 0.257% neon-21, and the rest is neon-22.

Average Atomic Mass CLASSWORK

1. The element Eu occurs naturally as a mixture of 47.82% ^{151}Eu and 52.18% ^{153}Eu . Calculate the average atomic mass of Eu.

2. Three isotopes of magnesium occur in nature. Their abundances and masses are listed below. Use this information to calculate the average atomic mass of magnesium. USE actual mass (amu).

<u>Isotope</u>	<u>Mass (amu)</u>	<u>% Abundance</u>
^{24}Mg	23.98504	78.70
^{25}Mg	24.98584	10.13
^{26}Mg	25.98259	11.17

3. Naturally occurring chlorine consists of two isotopes: 75.53% of the atoms in a sample are ^{35}Cl (mass = 34.96885 amu), and the other 24.47% are ^{37}Cl (mass = 36.96590 amu). Calculate the average atomic mass of chlorine.

4. Find the average atomic mass of an unknown element if 51.83% of the atoms have a mass of 30.086 amu and the rest have a mass of 31.879 amu.

What element is this? (hint- use a periodic table)