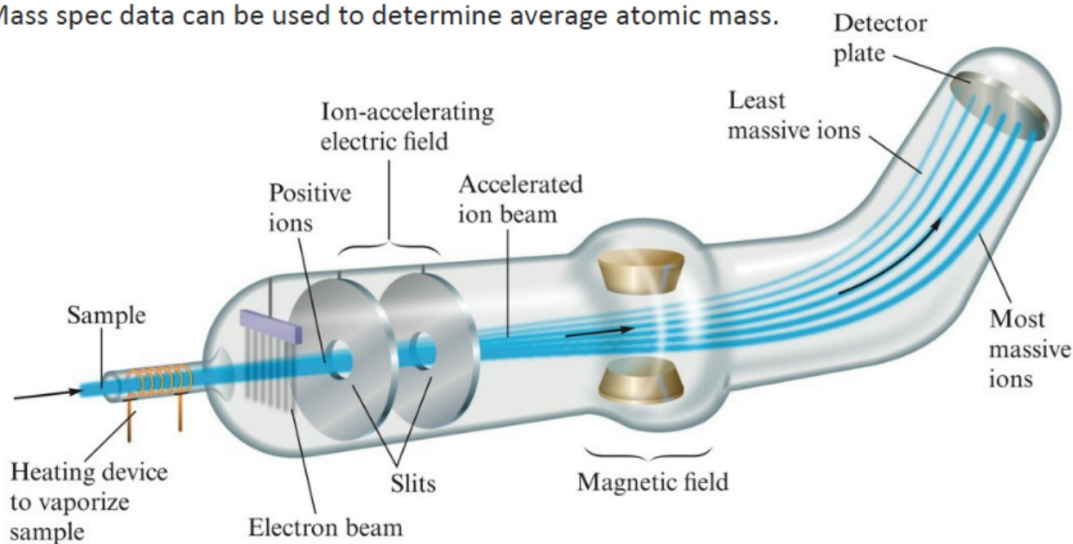
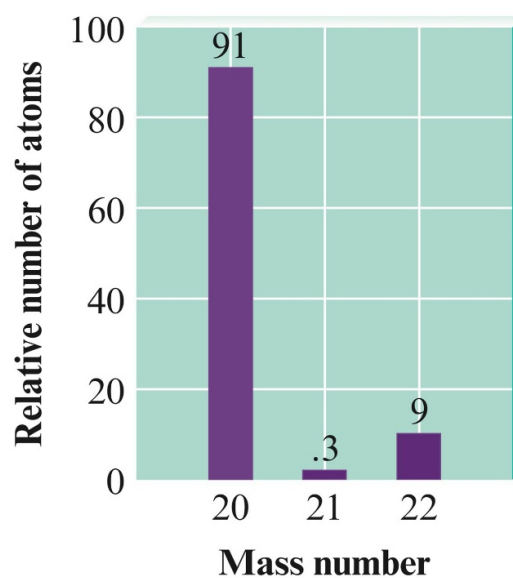
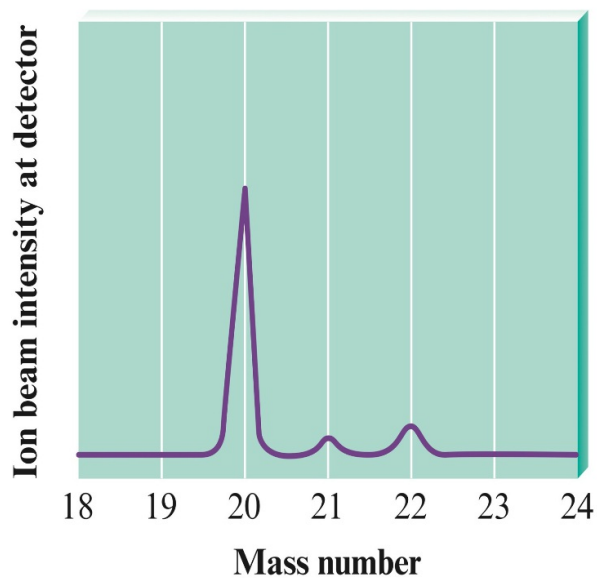


Mass Spectroscopy

- Mass spec data is evidence that isotopes exist.
- Mass spec data can be used to determine average atomic mass.

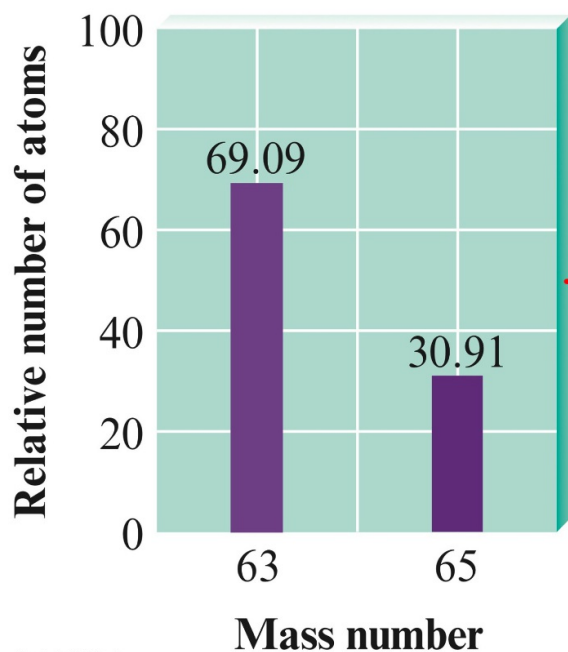


When a pure sample of neon is loaded into a mass spectrometer, the results shown in the figures below are obtained. The areas of the “peaks” or heights of the bars indicate the relative abundance of the three isotopes of neon.



Example Problem:

When a sample of natural copper is vaporized and injected into a mass spectrometer, the results shown in the figure are obtained. Use these data to calculate the average mass of natural copper. (The mass values for copper-63 are copper-65 are 62.93 amu and 64.93 amu, respectively.)



$$\begin{aligned} & \text{Cu-63} \quad \text{Cu-65} \\ & (.6909)(62.93 \text{ amu}) \\ & + (.3091)(64.93 \text{ amu}) \\ & \hline & \boxed{63.55 \text{ amu}} \end{aligned}$$