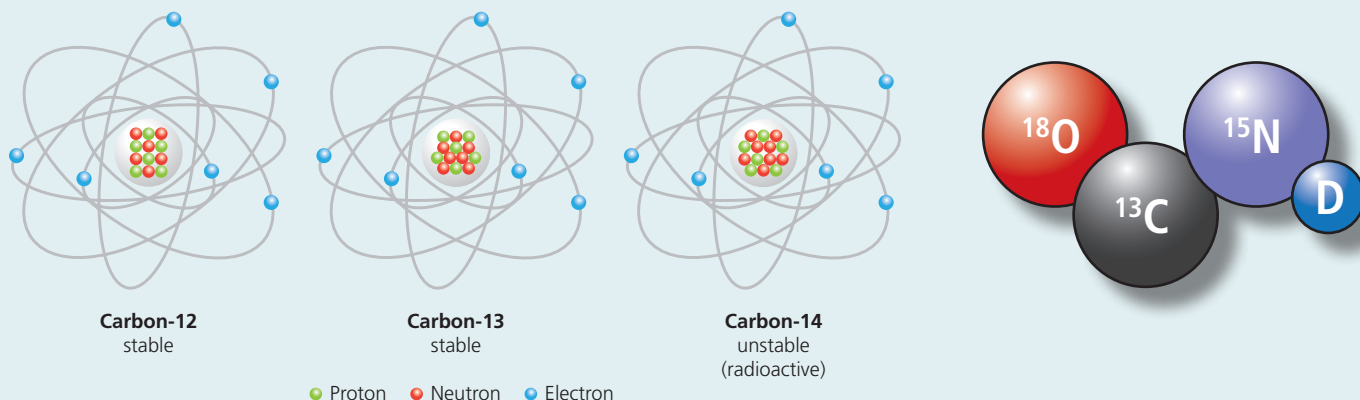


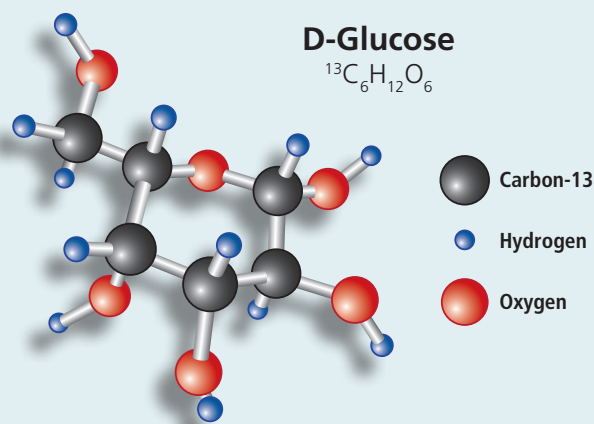
What Is an Isotope?

An isotope is any of two or more forms of a chemical element, having the same number of protons in the nucleus, or the same atomic number, but having different numbers of neutrons in the nucleus, or different atomic weights. There are 275 isotopes of the 81 stable elements, in addition to over 800 radioactive isotopes, and every element has known isotopic forms. Isotopes of a single element possess almost identical properties.



Calculating Isotopic Enrichment

Isotopic enrichment is the average enrichment for each labeled atom in the molecule. **It is not the percentage of the molecules that are completely isotope labeled.** For instance, D-Glucose ($^{13}\text{C}_6$, 99%) is not 99% $^{13}\text{C}_6$, and 1% $^{12}\text{C}_6$. Each carbon atom position (1,2,3,4,5 and 6) has a 99% chance of being ^{13}C labeled and a 1% chance of being ^{12}C labeled. Thus, $(99\%)^6$ or ~94% of the molecules will have a molecular mass 6 AMU higher than native glucose and ~6% will have a molecular mass 5 AMU higher than native glucose. Theoretically, only $(1\%)^6$ or ~ $10^{-10}\%$ will have the molecular mass of $^{12}\text{C}_6$ D-Glucose.



99% enriched

Please note: Products with high isotopic enrichment are denoted as **-H** and shaded gray throughout the catalog.