

Atoms: The Building Blocks of Matter that retains the chemical properties of that element. They are made up of a nucleus (protons and neutrons) and a cloud of electrons. The number of protons in the nucleus determines its atomic number, which defines the element. For example, Hydrogen has 1 proton and 1 electron. Helium has 2 protons and 2 electrons. The nucleus is made up of a positively charged center of an atom. It contains the protons and neutrons, which are held together by the strong nuclear force. Electrons are negatively charged particles that orbit the nucleus in discrete energy levels, called electron shells. These shells are not orbits in the classical sense, but rather regions of probability. More electrons can fit in the inner shells, while outer shells can hold fewer. The atoms are held together by the electromagnetic force, which is the attraction between the positively charged protons in the nucleus and the negatively charged electrons. The overall charge of an atom is neutral, meaning the number of protons equals the number of electrons. Atoms are the fundamental building blocks of matter, composed of protons, neutrons, and electrons. The