

Some properties of the atomic nuclei: – Any atom is composed of the atomic nucleus, around which electrons are orbiting in elliptical shells. So, in a neutral atom the number of the protons in the nucleus equals the number of the orbital electrons. From these data the atomic mass is concentrated in the atomic nucleus, and the nuclear density is, approximately, constant and equals 10^{17} kg/m^3 (about 100 millions ton/cm^3). – The number of the protons in a nucleus is called its atomic number Z , while the total number of protons and neutrons, in it, is called the mass number A . So the number of neutrons N in a nucleus is $N = A - Z$. Symbolically, any atom is represented by the first letter written in capital, or by the first one in capital and other one written in small. – The nucleus of any element is composed of the same number of protons Z , but it may have different numbers of neutrons N . these 8 different forms of the same element are called isotopes of the element