

Atomic Structure

COMPOSITION OF THE NUCLEUS

- ▶ Made of protons and neutrons
- ▶ # of protons determines the atom's identity
- ▶ Nuclear forces: short-range forces between p-n, p-p, and n-n hold the nucleus together

SUBATOMIC PARTICLES

Table 4.1

Properties of Subatomic Particles

Particle	Symbol	Relative charge	Relative mass (mass of proton = 1)	Actual mass (g)
Electron	e^{-}	1-	1/1840	9.11×10^{-28}
Proton	p^{+}	1+	1	1.67×10^{-24}
Neutron	n^0	0	1	1.67×10^{-24}

COUNTING ATOMS

- ▶ Atomic number (Z)
- ▶ Number of Protons = atomic number
- ▶ In a neutral atom
Number of electrons = number of protons
- ▶ Mass number = number of protons + number of neutrons