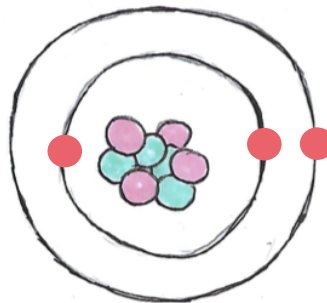


atoms, ions & compounds

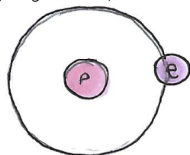


A proton has virtually the same mass as a neutron, of 1. An electron has negligible mass of about $1/1836^{\text{th}}$ of the mass of a proton. A proton has a charge of $1+$, whilst an electron has a charge of $1-$, and a neutron has a charge of 0/neutral.

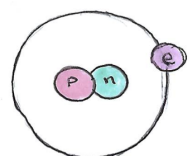
Every atom of the same element contains the same number of protons. Different elements contain atoms that have different numbers of protons. The periodic table lists elements in order of the number of protons in the nucleus, known as the atomic number.

isotopes

Hydrogen Isotopes



Hydrogen-1



Hydrogen-2

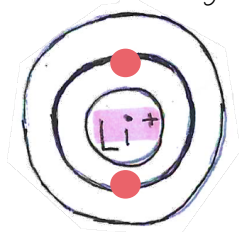
Every atom of an element has the same number of protons. Unlike protons, the number of neutrons in an atom of an element can be different — this creates isotopes.

There may be small differences in physical properties, with heavier mass isotopes of an element having a higher melting point, boiling point and density, but the chemical reactions are the same.

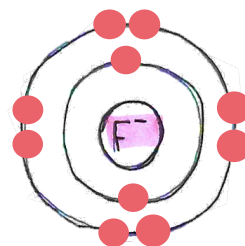
definitions

atomic structure of ions

An ion is a charged atom. The number of electrons is different from the number of protons. Cations have an overall positive charge. Anions have an overall negative charge.



Cation- Li^+



Anion- F^-

relative mass

Relative mass (atomic), A_r , is the weighted mean mass of an atom of an element compared with $1/12^{\text{th}}$ of the mass of an atom of carbon-12.