

Chemical Bonds

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How do atoms fuse together to create molecules? Within the atom, the nucleus has a positive charge and is surrounded by a cloud of negatively charged electrons. As atoms approach each other the electron clouds interact to bond and form a molecule.



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There are two types of chemical bonds. The covalent bond, where two atoms share a pair of electrons, is found in non-metallic elements, such as carbon, oxygen and hydrogen. In the ionic bond, atoms gain or lose electrons, thus creating charged particles called ions. The atoms of non-metals gain electrons to acquire a negative charge, while hydrogen and metal atoms lose electrons, creating a positive charge. The opposite charges create the force of attraction that holds the molecules together.



Timeline

400 BCE

Democritus proposes that all matter is constructed of solid, indestructible units.



1808

English chemist John Dalton publishes his ground-breaking atomic theory.

Timeline

1811

Italian scientist Amedeo Avogadro proposes that molecules are formed by joining atoms.



1905

Einstein proves the existence of atoms by studying pollen grains.

Timeline

1909

Jean Baptiste Perrin makes the first estimate of Avogadro's constant.

1926



Perrin wins the Nobel Prize in physics for proving the existence of molecules.

Key words:

Bond – veza

Charge – naelektrisanje

Covalent bond – kovalentna veza

Ion – jon Ionic – jonski

Ionic bond – jonska veza

Gain/lose – steci/izgubiti

Force – sila

Estimate - procena