

Basics

Everything is made up of matter	Only 25 elements are essential for life
Matter is made up of atoms	96% of living matter is N,H,C,O
Atoms consist of protons, Neutrons, and Electrons	4% of living matter is Ca,K,S,P

Bonding Properties

Electron Effects-

determine chemical behavior of atom

depends on the # of the electrons in the outermost shell called the "valance electrons" & "Valance shell"

atoms want a complete octate (8 valance electrons) except for hydrogen (wants 4)

Chemical Reactivity

Atoms tend to complete a partially filled valance shell or empty a partially filled valance shell.

This drives reactions & completes bonds

Bonds in chemistry

Strong Bonds	Weak Bonds
Covalent Bond -> share electrons evenly	Hydrogen Bond -> attraction between + and -
	Ionic

Covalent Bonds

Why are covalent bonds so strong? Multiple covalent bonds

* 2 atoms share a pair of electrons

* Double Bonds ex: O₂

* both atoms are holding on

* 2 Pairs of electrons

* Very stable

* Triple bonds ex: N₂ (very strong)

* Forms Molecules ex: H₂O

* 3 pairs of electrons

Polar vs Non Polar Covalent Bonds

Polar Covalent

Non-Polar Covalent

No areas of + or - because electrons are shared evenly

Electrons are shared unequally by atoms

Ex: Hydrocarbons (Methane CH₄)

Ex: (H₂O) -> O is more - and pulls electrons away from the H making O have a - charge.

Balanced and stable

Hydrogen Bonding

Attraction between +H in one H₂O molecule and the -O in another H₂O molecule

Weak Bond



By **STEMhighschool**

Published 30th March, 2020.

Last updated 30th March, 2020.

Page 1 of 1.

Sponsored by **ApolloPad.com**

Everyone has a novel in them. Finish Yours!

<https://apollopad.com>