Electronegativity Chart

H 2.1																	He ---
Li 1.0	Be 1.5											B 2.0	C 2.5	N 3.0	O 3.5	F 4.0	Ne ---
Na 0.9	Mg 1.2											Al 1.5	Si 1.8	P 2.2	S 2.5	Cl 3.0	Ar ---
K 0.8	Ca 1.0	Sc 1.3	Ti 1.5	V 1.6	Cr 1.6	Mn 1.5	Fe 1.8	Co 1.8	Ni 1.8	Cu 1.9	Zn 1.6	Ga 1.6	Ge 1.8	As 2.0	Se 2.4	Br 2.8	Kr 3.0
Rb 0.8	Sr 1.0	Y 1.2	Zr 1.4	Nb 1.6	Mo 1.8	Tc 1.9	Ru 2.2	Rh 2.2	Pd 2.2	Ag 1.9	Cd 1.7	In 1.7	Sn 1.8	Sb 1.9	Te 2.1	I 2.5	Xe 2.6
Cs 0.7	Ba 0.9	La-Lu 1.1-1.2	Hf 1.3	Ta 1.5	W 1.7	Re 1.9	Os 2.2	Ir 2.2	Pt 2.2	Au 2.4	Hg 1.9	Tl 1.8	Pb 1.8	Bi 1.9	Po 2.0	At 2.2	Rn ---
Fr 0.7	Ra 0.9	Ac-No 1.1-1.7															

Electronegativity Difference (*ED*)

$$ED = E_{higher} - E_{lower}$$

Ionic Bond
Transfer of Electrons
ED > 1.4 (*w/metal*)

Polar Covalent Bond
Unequal Sharing of Electrons
ED < 1.4 & > 0.50

Non-Polar Covalent Bond
Equal Sharing of Electrons
ED ≤ 0.50

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Ionization and Lewis Dot Structures

1 val e⁻	2 val e⁻	3 val e⁻	4 val e⁻
X	X	X	X
5 val e⁻	6 val e⁻	7 val e⁻	8 val e⁻
X	X	X	X

Neutral Atom Lewis Dot Structures *based on valence e⁻*

$[X]^+$ $[:\ddot{X}:]^-$

Cation (+) Anion (-)

Group Number	Lose/Gain	Group Number	Lose/Gain
1A / 1	Lose 1e⁻	5A / 15	Gain 3e⁻
2A / 2	Lose 2e⁻	6A / 16	Gain 2e⁻
3A / 13	Lose 3e⁻	7A / 17	Gain 1e⁻
4A / 14	Lose 4e⁻	8A / 18	No Ions

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Binary* Covalent Nomenclature

Naming Format

Prefix Element *A* Prefix Element *B* *-ide*

Element A, *do not* write "*mono"* if element number is **1**

Covalent Molecule Prefixes

Number of Atoms	1	2	3	4	5	6
Prefix	Mono	Di	Tri	Tetra	Penta	Hexa

* **Binary** molecules have the format X_aY_b (*Binary = 2*)

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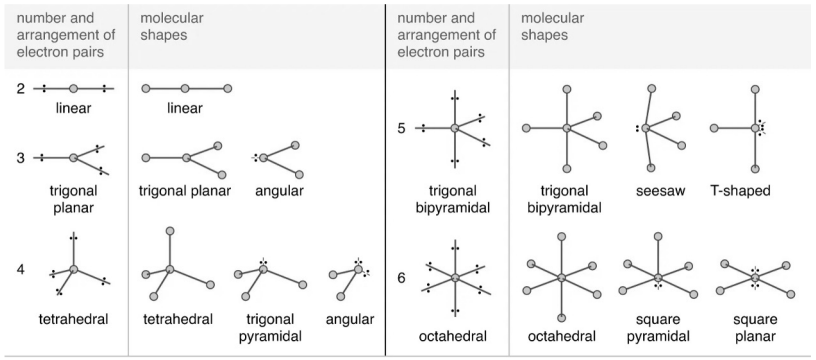
Valence Shell Electron Pair Repulsion

VSEPR Theory – Molecules take shape based on e^- pair repulsion



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