Electronegativity Chart of Elements

(*Representative and Transition Elements*)

H 2.1																
Li 1.0	Be 1.5											B 2.0	C 2.5	N 3.0	O 3.5	F 4.0
Na 0.9	Mg 1.2											Al 1.5	Si 1.8	P 2.1	S 2.5	Cl 3.0
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 1.9	Ni 1.9	Cu 1.9	Zn 1.6	Ga 1.6	Ge 1.8	As 2.0	Se 2.4	Br 2.8
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
Cs 0.7	Ba 0.9	La 1.1	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 1.9	Bi 1.9	Po 2.0	At 2.2
Fr 0.7	Ra 0.9	Ac 1.1														

Electronegativity values given are relative values (*without units*)
[Range = 0.7 (*Fr*), lowest value, to 4.0 (*F*), highest value]

Electronegativity Difference (*ED*)

$$ED = E_{Highest} - E_{Lowest}$$

Bond Types

(*Based on Electronegativity Difference*)

Bond Type	ED Range	Element One	Element Two	Electron Relationship
Diatomic Element	0.0	Non-Metal (Same Element)	Non-Metal (Same Element)	Sharing Electrons Equally
Non-Polar Covalent	0.0 – 0.5	Non-Metal	Non-Metal	Sharing Electrons Equally
Acid	0.51 – 1.90	Hydrogen	Non-Metal	Sharing Electrons Unequally Transfer Electrons in Water
Polar Covalent	0.51 – 1.90	Non-Metal	Non-Metal	Sharing Electrons Unequally based on Electronegativity
Ionic	0.91 – 3.50	Metal	Non-Metal	Transfer of Electrons

Common Element Bond Types

(*Based on Electronegativity Difference*)

C - H	Non-Polar	0.4	C - N	Non-Polar	0.5	C - O	Polar	0.9
C - F	Polar	1.4	C - Cl	Non-Polar	0.5	C - Br	Non-Polar	0.3
N - H	Polar	0.9	N - O	Non-Polar	0.5	N - S	Non-Polar	0.5
N - F	Polar	1.0	N - Cl	Non-Polar	0.0	N - Br	Non-Polar	0.2
O - H	Polar	1.4	O – S	Polar	1.0	O - P	Polar	1.4
O - F	Polar	1.0	O - Cl	Non-Polar	0.5	O - Br	Polar	0.7