

Name : ----- Date : -----

Electronegativity Difference and Chemical Bond Type Worksheet

This is how electronegativity is related to the type of bonds formed in a compound.

Difference in Electronegativity	Type of Bond
> 1.7	Ionic
0.3-1.7	Polar Covalent
0-0.29	Nonpolar Covalent

Determine the type of bond formed with the help of this periodic table of electronegativity values.

1 H 2.1																
3 Li 1.0	4 Be 1.5											5 B 2.0	6 C 2.5	7 N 3.0	8 O 3.5	9 F 4.0
11 Na 0.9	12 Mg 1.2											13 Al 1.5	14 Si 1.8	15 P 2.1	16 S 2.5	17 Cl 3.0
19 K 0.8	20 Ca 1.0	21 Sc 1.3	22 Ti 1.5	23 V 1.6	24 Cr 1.6	25 Mn 1.5	26 Fe 1.8	27 Co 1.9	28 Ni 1.9	29 Cu 1.9	30 Zn 1.6	31 Ga 1.6	32 Ge 1.8	33 As 2.0	34 Se 2.4	35 Br 2.8
37 Rb 0.8	38 Sr 1.0	39 Y 1.2	40 Zr 1.4	41 Nb 1.6	42 Mo 1.8	43 Tc 1.9	44 Ru 2.2	45 Rh 2.2	46 Pd 2.2	47 Ag 1.9	48 Cd 1.7	49 In 1.7	50 Sn 1.8	51 Sb 1.9	52 Te 2.1	53 I 2.5
55 Cs 0.7	56 Ba 0.9	57 La 1.1	72 Hf 1.3	73 Ta 1.5	74 W 1.7	75 Re 1.9	76 Os 2.2	77 Ir 2.2	78 Pt 2.2	79 Au 2.4	80 Hg 1.9	81 Tl 1.8	82 Pb 1.9	83 Bi 1.9	84 Po 2.0	85 At 2.2
87 Fr 0.7	88 Ra 0.9	89 Ac 1.1														

(1) Cl and Br →

(5) C and N →

(2) H and F →

(6) K and Cl →

(3) Zn and O →

(7) Br and Br →

(4) Na and Cl →

(8) O and F →

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Answers

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87 Fr 0.7	88 Ra 0.9	89 Ac 1.1														

(1) Cl and Br $\rightarrow 3.0 - 2.8 = 0.2$;
Nonpolar Covalent

(5) C and N $\rightarrow 3.0 - 2.5 = 1.5$;
Polar Covalent

(2) H and F $\rightarrow 4.0 - 2.1 = 1.9$; Ionic

(6) K and Cl $\rightarrow 3.0 - 0.8 = 2.2$; Ionic

(3) Zn and O $\rightarrow 3.5 - 1.6 = 1.9$; Ionic

(7) Br and Br $\rightarrow 2.8 - 2.8 = 0$; Nonpolar Covalent

(4) Na and Cl $\rightarrow 3.0 - 0.9 = 2.1$; Ionic

(8) O and F $\rightarrow 4.0 - 3.5 = 1.5$; Polar Covalent