

Atomic Bonding

Name _____

Date _____

Period _____

The number of atoms in the outermost energy shell, or valence electron shell, determines whether an atom will form bonds to make a compound. A bond forms when there is a transfer, or sharing, of electrons from one atom to another. The compounds below are formed by combining positive (+) charge atoms with negative (-) charged atoms to form neutral compounds.

1. Fill in the charge of each of the columns on the Periodic Table above each column.

1 H Hydrogen 1.0	Element Box																2 He Helium 4.0	
3 Li Lithium 6.9	4 Be Beryllium 9.0	Atomic Number → 18																
11 Na Sodium 23.0	12 Mg Magnesium 24.3	Chemical Symbol → Ar																
19 K Potassium 39.1	20 Ca Calcium 40.1	21 Sc Scandium 45.0	22 Ti Titanium 47.9	23 V Vanadium 50.9	24 Cr Chromium 52.0	25 Mn Manganese 54.9	26 Fe Iron 55.8	27 Co Cobalt 58.9	28 Ni Nickel 58.7	29 Cu Copper 63.5	30 Zn Zinc 65.4	31 Ga Gallium 69.7	32 Ge Germanium 72.6	33 As Arsenic 74.9	34 Se Selenium 79.0	35 Br Bromine 79.9	36 Kr Krypton 83.8	
37 Rb Rubidium 85.5	38 Sr Strontium 87.6	39 Y Yttrium 88.9	40 Zr Zirconium 91.2	41 Nb Niobium 92.9	42 Mo Molybdenum 95.9	43 Tc Technetium 97.9	44 Ru Ruthenium 101.1	45 Rh Rhodium 102.9	46 Pd Palladium 106.4	47 Ag Silver 107.9	48 Cd Cadmium 112.4	49 In Indium 114.8	50 Sn Tin 118.7	51 Sb Antimony 121.8	52 Te Tellurium 127.6	53 I Iodine 126.9	54 Xe Xenon 131.3	
55 Cs Cesium 132.9	56 Ba Barium 137.3	57 La Lanthanum 138.9	72 Hf Hafnium 178.5	73 Ta Tantalum 180.9	74 W Tungsten 183.8	75 Re Rhenium 186.2	76 Os Osmium 190.2	77 Ir Iridium 192.2	78 Pt Platinum 195.1	79 Au Gold 197.0	80 Hg Mercury 200.6	81 Tl Thallium 204.4	82 Pb Lead 207.2	83 Bi Bismuth 209.0	84 Po Polonium (209.0)	85 At Astatine (210.0)	86 Rn Radon (222.0)	
87 Fr Francium (223.0)	88 Ra Radium (226.0)	89 Ac Actinium (227.0)	104 Rf Rutherfordium (261.1)	105 Db Dubnium (262.1)	106 Sg Seaborgium (263.1)	107 Bh Bohrium (262.1)	108 Hs Hassium (265.0)	109 Mt Meitnerium (266.0)	110 Uun Ununilium (271)	111 Uuu Unununium (272)	112 Uub Ununbium (277)							

H^+ combines with F^- to make $\rightarrow HF$ (a neutral compound)

$Be^{+2} + F^{-1} \rightarrow BeF_2$ (We need 2 F's to balance out Be's +2 charge)

2. Combine the following atoms to make new compounds.

- $Mg^{+2} + Cl^{-1} \rightarrow$ _____
- $Na^{+1} + Cl^{-1} \rightarrow$ _____
- $K^+ + O^{-2} + H^+ \rightarrow$ _____
- $Na^{+1} + H^{+1} + C^{+4} + O^{-2} \rightarrow$ _____
- $Mg^{+2} + O^{-2} \rightarrow$ _____
- $C^{+4} + O^{-2} \rightarrow$ _____
- $Be + C \rightarrow$ _____
- $Li + C + O \rightarrow$ _____
- $Li + O \rightarrow$ _____
- $N + H \rightarrow$ _____
- $K + Cl \rightarrow$ _____

- $K + C + O \rightarrow$ _____
- $Be + Cl \rightarrow$ _____
- $H + Li + N \rightarrow$ _____
- $Na + H + Li + C \rightarrow$ _____
- $H + Cl \rightarrow$ _____
- $H + O \rightarrow$ _____
- $C + O \rightarrow$ _____
- $Na + Li + N \rightarrow$ _____
- $Li + Cl \rightarrow$ _____
- $Ca + Cl \rightarrow$ _____
- $H + S \rightarrow$ _____