

Bonding Basics Review

Name _____

1. Complete the chart using your knowledge of atoms.

| Element | Atomic Symbol | Total # of Electrons | # of Valence Electrons | # of Electrons Gained or Lost | Oxidation Number |
|------------|---------------|----------------------|------------------------|-------------------------------|------------------|
| Bromine | | | | | |
| Lithium | | | | | |
| Calcium | | | | | |
| Sulfur | | | | | |
| Boron | | | | | |
| Silicon | | | | | |
| Phosphorus | | | | | |

2. Ionic Bonds - Draw the Lewis structures for each atom, draw arrows to show the transfer of electrons, write the charge for each ion, and then write the chemical formula.

(A) Potassium + Iodine

(B) Magnesium + Oxygen

(C) Lithium + Nitrogen

3. Covalent Bonds – Draw the Lewis structures for each atom, draw circles to show the electrons that are shared, and then write the bond structure and chemical formula.

(A) Fluorine + Fluorine

(B) 3 Hydrogen + 1 Phosphorus

(C) 2 Hydrogen + 1 Sulfur

Bonding Basics Review

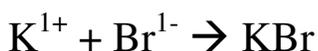
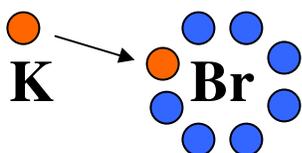
ANSWER KEY

1. Complete the chart using your knowledge of atoms.

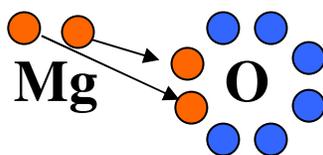
| Element | Atomic Symbol | Total # of Electrons | # of Valence Electrons | # of Electrons Gained or Lost | Oxidation Number |
|------------|---------------|----------------------|------------------------|-------------------------------|------------------|
| Bromine | Br | 35 | 7 | Gain 1 | 1- |
| Lithium | Li | 3 | 1 | Lose 1 | 1+ |
| Calcium | Ca | 20 | 2 | Lose 2 | 2+ |
| Sulfur | S | 16 | 6 | Gain 2 | 2- |
| Boron | B | 5 | 3 | Lose 3 | 3+ |
| Silicon | Si | 14 | 4 | Gain/Lose 4 | 4+ 4- |
| Phosphorus | P | 15 | 5 | Gain 3 | 3- |

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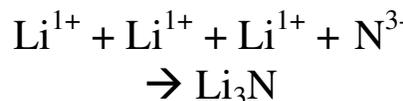
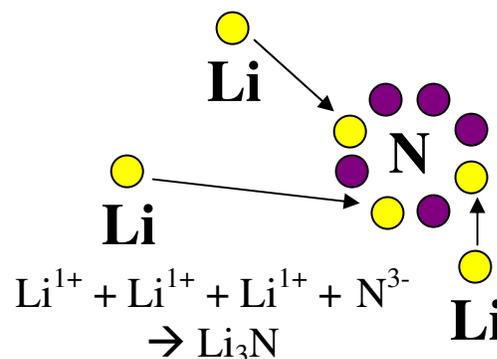
(A) Potassium + Bromine



(B) Magnesium + Oxygen

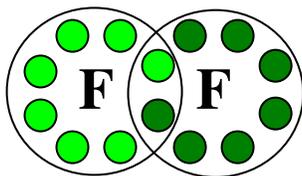


(C) Lithium + Nitrogen

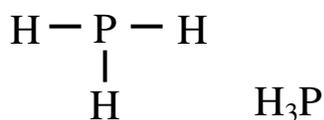
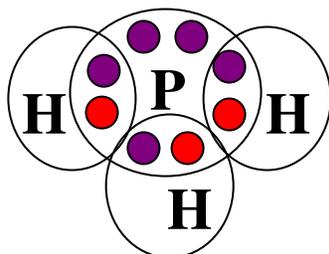


3. Covalent Bonds - Draw the Lewis structures for each atom, draw circles to show the electrons that are shared, and then write the bond structure and chemical formula.

(A) Fluorine + Fluorine



(B) 3 Hydrogen + 1 Phosphorus



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