

Exercise on Ionic Bonding

Draw Lewis Dot Diagrams of the neutral atoms, show the movement of electrons and draw Lewis Dot Diagrams of the resulting ions (include the charge on the ion). Where it is necessary, draw extra atoms to account for the law of constant composition of the ionic compounds

K Cl

Ca O

Sr F

Na O

K N

Mg Br

Ba Cl

Cs F

K Br

Exercise on Covalent Bonding

Draw Lewis Dot Diagrams of the atoms. State how many electrons each atom needs, draw extra atoms where necessary to account for the composition of the covalent compounds, draw a Lewis Dot Diagram of the resulting covalent compound and finally, state how many electrons are shared in each bond and whether the bond is single, double or triple.

F F

Cl Cl

O O

N N

H H

(All of the above covalent compounds exist as gases at room temperature. Since each gas contains two atoms, they are referred to as diatomic gases. This is the naturally occurring state of each of these elements.)

N Cl

C O

H O

H Cl

C H

Worksheet: Ionic Versus Covalent Bonding

In each case, determine if an ionic or covalent compound will form. For ionic bonding show the transfer of all electrons and the resulting ions. For covalent cases, state how many electrons each atom needs to complete its octet and then draw the covalent compound. In both cases draw in any extra atoms that are needed.

1. N Cl

2. Se Cl

3. K F

4. Ba Cl

5. C H

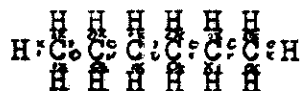
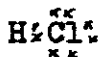
6. As H

7. Sr Br

8. Cs O

9. P Cl

Draw Stick Representations for each of the following.



Draw Stick Representations for each of the following, show the polarization of each bond, state if there is a net polarization and give its direction if there is one.

HBr

H₂S

O₂

SiO₂

Hand in tomorrow for bonus marks on the quiz scores. Apply the above instructions to:

C₂H₂ You must figure out an arrangement of the atoms and their electrons such that the octet rule is satisfied for each C and each H has two available electrons.