

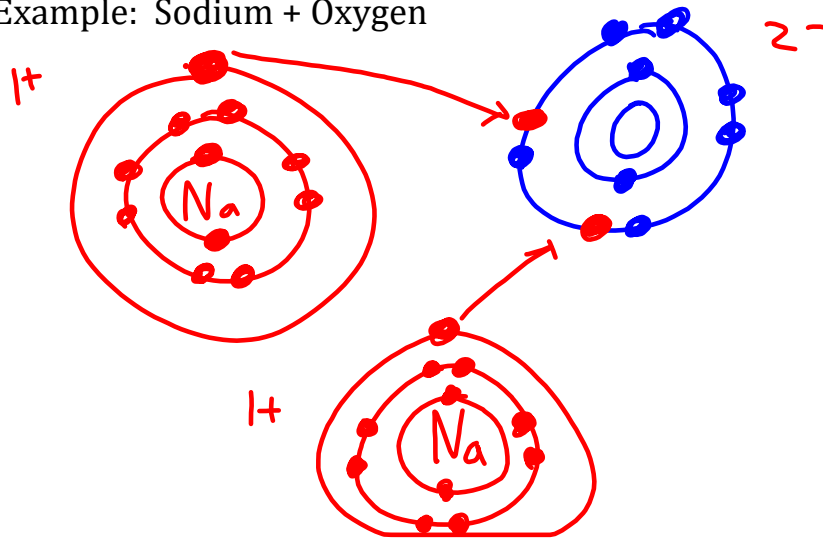
How Elements Form Compounds

Ionic Compounds: Made up of positive (cation) and negative (anion) ions.

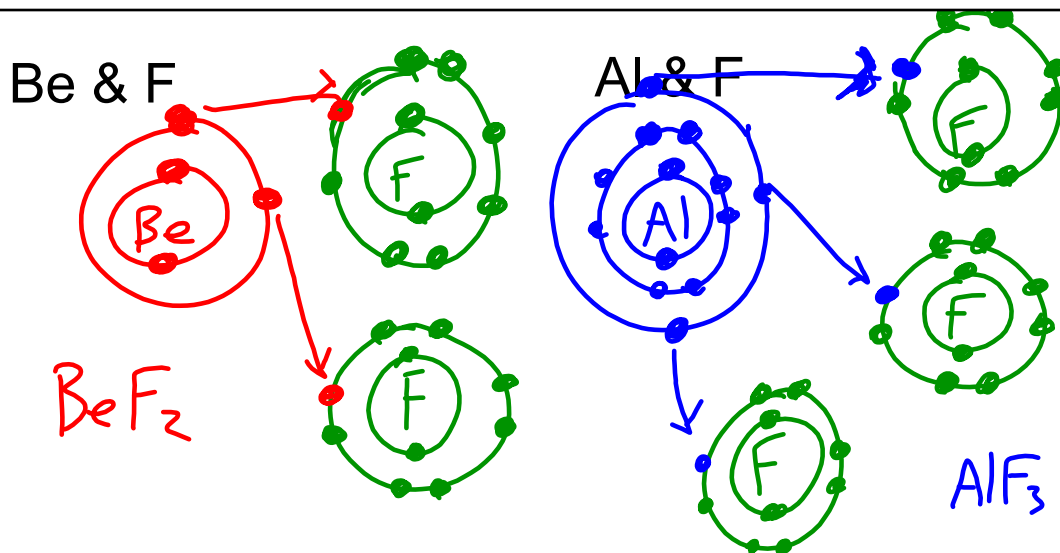
Electrons get transferred from a metal to a non-metal.

All ionic compounds have a neutral charge.

Example: Sodium + Oxygen



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Naming Ionic Compounds

1. Write the name of the metal, or positive ion first.

2. Follow it with the name of the negative ion with the ending switched to "ide".

N- nitride

F- fluoride

P- phosphide

S- sulfide

Cl- chloride

Br- bromide

I- iodide

O- oxide

Se- selenide

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Practice:

Name the following compounds:

lithium and fluorine

lithium fluoride

AlN

aluminum nitride

calcium and bromine

calcium bromide

KCl

potassium chloride

sodium and nitrogen

sodium nitride

CaF₂

calcium fluoride

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Writing Formulas for Ionic Compounds

1. Write the symbols with the positive ion first.

Example: Calcium iodide.



2. Write the ionic charge above each symbol.



3. Determine how many of each you need to balance to zero.

$$\text{Ca} = 2+ \times 1 = 2+$$

$$\text{I} = 1- \times 2 = 2-$$

4. Write the formula using subscripts to indicate the # of ions.

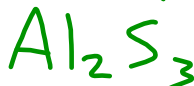


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Criss-Cross Rule

Write the ionic charges above the symbols, then criss-cross the #'s and use them as subscripts.

Example: Aluminum sulfide

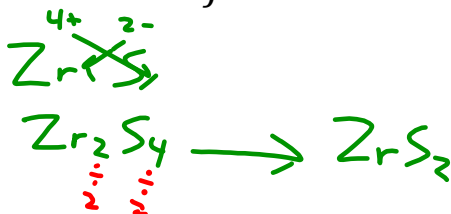


Exception: Use the minimum # of ions necessary to balance the charge.

Example: magnesium oxide



Example: zirconium sulfide



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Practice:

Write the formula for the following compounds:

Lithium Fluoride -



Sodium Nitride-



Potassium Oxide-



Calcium Bromide-



Magnesium Oxide-



Aluminum Sulfide-



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Atoms with only one ionic charge

Name the following compounds.

1. KCl Potassium Chloride
2. Li_2O Lithium Oxide
3. CaBr_2 Calcium Bromide
4. LiH Lithium Hydroxide
5. MgBr_2 Magnesium Bromide
6. K_2O Potassium Oxide
7. ZnO Zinc Oxide
8. SrS Strontium Sulfide
9. CaS Calcium Sulfide
10. Ag_2S Silver Sulfide

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Write formulas.

1. sodium bromide NaBr
2. calcium oxide CaO
3. silver chloride AgCl
4. silver oxide Ag_2O
5. aluminum nitride AlN
6. zinc iodide ZnI_2
7. magnesium nitride Mg_3N_2
8. calcium hydride CaH_2
9. potassium phosphide K_3P
10. calcium fluoride CaF_2

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Attachments

Ionic Bond.jfif