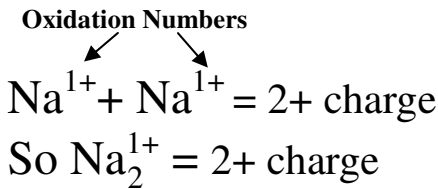


Ionic Compounds

Ion Charges Add

An ion is an atom with a positive or negative charge because it has gained or lost electrons.
As ions add together, so do their charges.

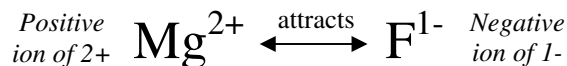


Each Sodium atom gives up 1 electron, so 2 Sodium atoms (Na_2) will give up 2 electrons and have a charge of 2+.

Opposites Ions Attract

Just as with protons and electrons: oppositely charged atoms attract. Positive ions (metals) attract negative ions (nonmetals), forming ionic compounds.

Positive ions attract Negative ions

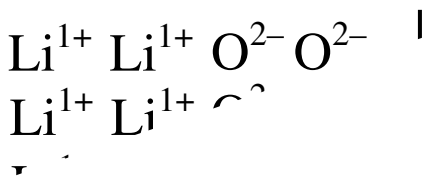


Ions make **ionic** compounds. \longrightarrow MgF_2 Magnesium Fluoride
Two F^{1-} for every

Balanced Ionic Compounds

Ionic compounds always combine in a particular ratio (same number of each)

If Lithium atoms are placed near Oxygen atoms they will combine and form ionic bonds in a certain ratio.



A

Sample from page 1 "Ionic Compounds" Unit 3no3

<p style="text-align: center;">combine</p> <p style="text-align: center;">2 Chlorines</p> <p style="text-align: center;"> $\text{Mg}^{2+} \begin{array}{c} \longrightarrow \\ \longrightarrow \end{array} \text{Cl}^{1-}$ $\text{Mg}^{2+} \begin{array}{c} \longrightarrow \\ \longrightarrow \end{array} \text{Cl}^{1-}$ </p> <p style="text-align: center;">electron</p> <p style="text-align: center;">Cl^{1-}</p>	<p style="text-align: center;"><i>Magnesium Sulfide: MgS</i></p> <p style="text-align: center;"> $\text{Mg}^{2+} \begin{array}{c} \longrightarrow \\ \longrightarrow \end{array} \text{S}^{2-}$ </p> <p style="text-align: center;"> $\text{Mg}^{2+} \begin{array}{c} \longrightarrow \\ \longrightarrow \end{array} \text{S}^{2-}$ </p> <p style="text-align: center;">Magnesium Chloride: MgCl_2 (a 1:2 ratio)</p>
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How to Balance Ionic

- Step 1: Write the symbols for each element.
- Step 2: Write the oxidation numbers on each symbol.
- Step 3: Balance so the # of electrons lost = # gained.
If you need to, use visual aid like Lewis Dot Diagrams or Electron Arrows to help you.

Ex. Find the balanced ionic formula for Calcium Bromide.

- Step 1: Ca Br
- Step 2: $\text{Ca}^{2+} \text{Br}^{1-} = 1+$ Not balanced: attracts another Br^{1-}
- Step 3: $\text{Ca}^{2+} \text{Br}_2^{1-} = 0$ Balanced! **Calcium Bromide is ALWAYS: CaBr_2**