

T3: Ionic Names and Ionic Formulas

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Ionic compounds are created when non-metallic atoms borrow electrons from metallic atoms. The ions created attract each other electrostatically.

Naming Rule: Name the metallic element first followed by the non-metallic element that has its end removed and replaced by the suffix – ide.

Carbon	→ Carbide	Nitrogen	→ Nitride	Arsenic	→ Arsenide
Phosphorus	→ Phosphide	Bromine	→ Bromide	Iodine	→ Iodide
Oxygen	→ Oxide	Fluorine	→ Fluoride	Sulfur	→ Sulfide

Note: *The number subscripts are not included in the naming*, however, they identify how many of each element belongs in the compound.

1. Name the following ionic compounds:

1) CaCl_2 **calcium chloride**

2) Mg_3N_2 **magnesium nitride**

3) BeBr_2 **beryllium bromide**

4) Na_3P **sodium phosphide**

5) LiCl **lithium chloride**

6) AgAs **silver arsenide**

7) MgO **magnesium oxide**

8) AgBr **silver bromide**

9) Ca_3N_2 **calcium nitride**

10) Al_4C_3 **aluminum carbide**

11) HF **hydrogen fluoride** * *actually an acid*

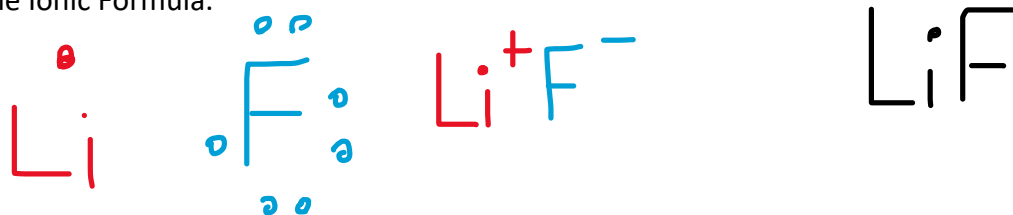
12) CaO **calcium oxide**

13) K_2S **potassium sulfide**

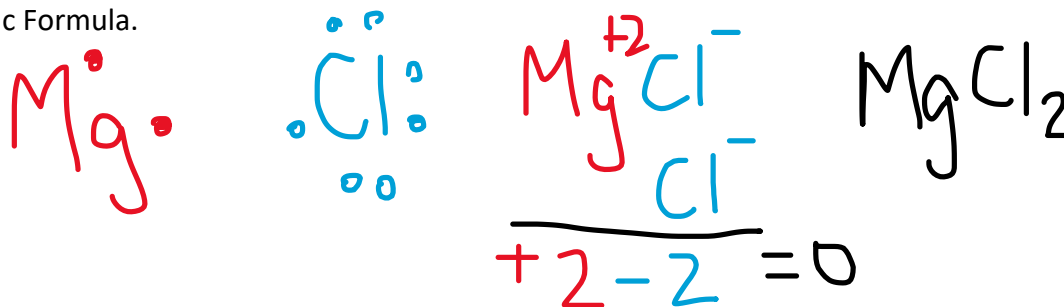
14) Ag_3N **silver nitride**

15) BaI_2 **barium iodide**

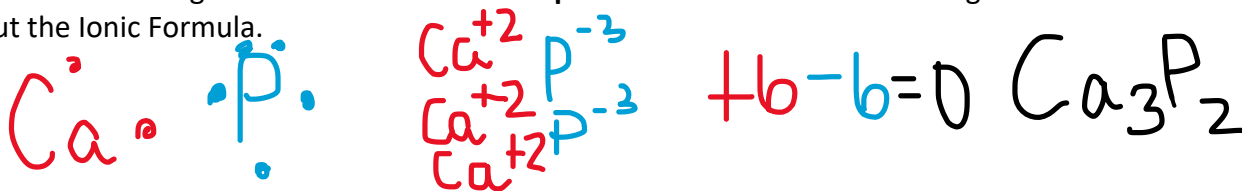
Draw the Lewis dot diagrams for **Lithium** and **Fluorine**. Then write the ion charges of the elements to help figure out the Ionic Formula.



Draw the Lewis dot diagrams for **Magnesium** and **Chlorine**. Then write the ion charges of the elements to help figure out the Ionic Formula.



Draw the Lewis dot diagrams for **Calcium** and **Phosphorus**. Then write the ion charges of the elements to help figure out the Ionic Formula.



Combining Elements	Ion symbol of metallic element	Ion symbol of non-metallic element	Name	Ionic Formula
Calcium and Phosphorous	Ca^{2+}	P^{3-}	Calcium Phosphide	Ca_3P_2
Magnesium and Oxygen	Mg^{2+}	O^{2-}	Magnesium oxide	MgO
Beryllium and Sulfur	Be^{2+}	S^{2-}	Beryllium sulfide	BeS
Sodium and Iodine	Na^{+1}	I^{1-}	Sodium iodide	NaI
Lithium and Nitrogen	Li^{1+}	N^{3-}	Lithium nitride	Li_3N
Barium and Chlorine	Ba^{2+}	Cl^{-}	Barium chloride	BaCl_2
Magnesium and Fluorine	Mg^{2+}	F^{1-}	Magnesium fluoride	MgF_2
Calcium and Sulfur	Ca^{2+}	S^{2-}	Calcium sulfide	CaS
Aluminum and Nitrogen	Al^{3+}	N^{3-}	Aluminum nitride	AlN
Potassium and Oxygen	K^{+}	O^{2-}	Potassium oxide	K_2O
Barium and Nitrogen	Ba^{2+}	N^{3-}	Barium nitride	Ba_3N_2
Calcium and Oxygen	Ca^{2+}	O^{2-}	Calcium oxide	CaO
Aluminum and Chlorine	Al^{3+}	Cl^{1-}	Aluminum chloride	AlCl_3