

## Chemical Symbols and Formula

-different languages use different words for the elements

EX: fer, fier, iron

-scientists use symbols

Oxygen → O

Hydrogen → H

Nitrogen → N

Silver → Ag

Mercury → Hg

Lead → Pb

Gold → Au

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## Chemical Formula

-formula represent the combination of atoms

EX: water  $H_2O$

Carbon Dioxide  $CO_2$

vinegar  $CH_3COOH$

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## ***Rules for Naming Compounds***

- 1) Metals combine with non-metals in many compounds
- 2) Write the name of the metal first and then the non-metal
- 3) Change the ending of the non-metal to "-ide"
- 4) Each atom has its own *combining capacity*
- 5) Atoms combine so that EACH can fill its combining capacity.

*Examples* \*combining capacities are from Tables 2, 3 and 4 on pages 64-65

Aluminum (Al) has a combining capacity of 3

Chlorine (Cl) has a combining capacity of 1

Therefore a compound of aluminum and chlorine would be

$\text{AlCl}_3$  and would be called *aluminum chloride*

Try This!

Name the compound and write the formula for the compound formed by Potassium and Oxygen

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### Further Examples

Aluminum and oxygen

aluminum (combining capacity 3)

oxygen (combining capacity 2)

$\text{Al}_2\text{O}_3$  *aluminum oxide*

Some metals have more than one combining capacity

ex: copper, iron, lead, tin

Rule 6-Use the Roman Numeral to indicate the combining capacity of the metal element in the name

Example Iron has a combining capacity of either 2 or 3

Oxygen has a combining capacity of 2

therefore,  $\text{FeO}$  is Iron II oxide and  $\text{Fe}_2\text{O}_3$  is iron III oxide

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