

Naming Compounds

Part 1 Naming Binary Compounds

Two types of Binary (two elements) Compounds

- 1. **Ionic Binary Compounds** have two elements, first is always a metal, second element is always a nonmetal. Subscripts are ignored.
- NaCl MgCl₂ Na₂O
- 2. **Molecular Binary Compounds** have two elements also, but both are nonmetals. Subscripts are not ignored.
- H₂O N₂O PCl₅

Rules for Naming Binary Ionic Compounds

- Name the first element, second part add ide to the ending. (capitalization doesn't matter)
- **(SUBSCRIPT DOESN'T MATTER)**

NaCl

sodium chloride

MgCl₂

magnesium chloride

Na₂O

sodium oxide

Rules for Naming Binary Molecular Compounds

- Name the first element, second part add ide to the ending. (capitalization doesn't matter) Add prefix **(SUBSCRIPT DOES MATTER)**

- If the prefix is:

one add mono (except if it is the first element)

Two add di five add penta eight add octa

Three add tri six add hexa nine add nona

Four add tetra seven add hepta ten add deca

1-mono
2-di
3-tri
4-tetra
5-penta
6-hexa
7-hepta
8-octa
9-nona
10-deca

Examples of naming binary molecular compounds

H₂O

dihydrogen monoxide

N₃O

trinitrogen monoxide

PCl₅

phosphorus pentachloride

- CO
- carbon monoxide
- CO₂
- carbon dioxide
- H₂S
- dihydrogen monosulfide

Part 2 Naming Ionic Compounds with polyatomic ions

- Always two parts, first is positive second is negative. Find the break between the two.
- Name polyatomic and element if second, add "ide"
- Examples:
- NH₄Cl
- Ammonium chloride

- NaHCO₃
- sodium bicarbonate
- NaC₂H₃O₂
- Sodium acetate
- Al(BrO₃)₃
- Aluminum bromate
- NaOH
- Sodium hydroxide
- NH₄NO₃
- Ammonium nitrate
- NH₄C₂H₃O₂
- Ammonium acetate

Naming Acidic Compounds all acids start with H (hydrogen)

- Part 1 Naming Binary (two elements) acids
- Hydro _____ ic acid
- HCl
- Hydrochloric acid
- HF
- Hydrofluoric acid

Naming acids continued

- Naming acids with a polyatomic (more than two elements).
- 1. if polyatomic ends in "ate"
- _____ ic acid
- H₂SO₄
- Sulfuric acid
- HNO₃
- Nitric acid

- Naming acids with a polyatomic (more than two elements).
- 2. if polyatomic ends in "ite"
- _____ ous acid
- H₂SO₃
- Sulfurous acid
- HNO₂
- Nitrous acid
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