

Nomenclature:

Ionic (metal + non-metal)

Covalent (2 nonmetals)

Acids (H + _____)

Hydrates (_____ · H₂O)

- Chlorate ClO₃¹⁻
- Nitrate NO₃¹⁻
- Carbonate CO₃²⁻
- Acetate C₂H₃O₂¹⁻
- Sulfate SO₄²⁻
- phosphate PO₄³⁻
- hydroxide OH¹⁻
- peroxide O₂²⁻
- Ammonium NH₄¹⁺
- Cyanide CN¹⁻

Ionic

Say name of metal + ide to name of non-metal
(do not change the names of polyatomic ions)

- CaCl₂ calcium chloride
- ① iron (III) sulfate Fe₂(SO₄)₃
- ④ CCl₄ Carbon tetrachloride
- ⑤ Al₂(CO₃)₃
- ⑥ Al₂(CO₃)₃
- ⑦ copper (I) bromide CuBr
- Na(NO₃) sodium nitrate
- ⑧ transition w/ oxidation # Roman numeral (#17)
- ⑨ PCl₃ phosphorous trichloride
- ⑩ MgI₂ magnesium iodide

Covalent = use prefixes to explain what subscripts are

acids

Binary

H + non-metal (in water)

hydro_____ic acid
(ide → ic)

HCl(aq)

hydrochloric acid

HBr(aq) hydrobromic acid

Ternary

H + polyatomic (in water)

acid disease: ate → ic ide → ous

HClO₃(aq) Chloric acid

HClO₂(aq) Chlorous acid

H₂SO₄(aq) sulfuric acid

hydrates - ionic compound w/ H₂O attached

name ionic compound and prefix + hydrate

BaCl₂ · 2H₂O barium chloride dihydrate

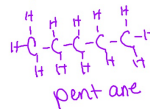
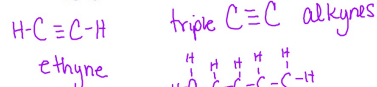
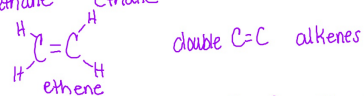
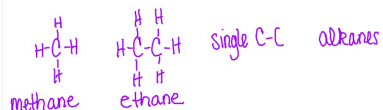
CuSO₄ · 5H₂O Copper (II) sulfate pentahydrate

Chemical Reactions

1. Direct Combination (Synthesis): reactants come together → 1 product
2. Single Replacement: Compound + element → release new element + new compound
3. Double Replacement: 2 compounds react → 2 new compounds
(metals switch places)
4. Decomposition: 1 reactant → multiple products
5. Combustion: Reactant + oxygen
 - a) metal + oxygen → metallic oxide
 - b) hydrocarbon + oxygen → CO₂ + H₂O

Organic - hydrocarbons - must contain carbon + hydrogen

formed from carbon backbone. (indicate # of carbon w/ # prefix)



meth = 1	polymers:
eth = 2	Chains of repeating units
prop = 3	<u>natural</u> polysaccharides
but = 4	DNA & RNA
penta = 5	Lipids (Fats)
hexa = 6	Proteins (amino acids)
hepta = 7	
octa = 8	<u>Synthetic</u>
nona = 9	Rayon
deca = 10	Nylon
	Kevlar
	polyester