Ionic Compounds

Molecular Compounds

Tonic bonds

Nat CI-Sodium chloride

Na 152252p6360-

transfer dectrons

metal -> nonmetal

No+ C1-H-attraction Covalent bonds

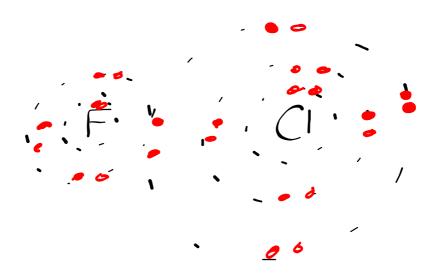
F 13232ps

Share electrons

honmetals

502

sulfur dioxide



Molecular Compounds

MOLECULAR THEORY -nonmetal atoms share electrons in a **covalent bond** to attain a maximum number of valence electrons (complete outer shell) rather than gaining electrons from metal atoms.

Ex. CO₂

Molecular elements- although the chemical formula of metals are frequently shown alone as a single atom (Na), nonmetals frequently form diatomic molecules.

Ex. H₂, N₂, O₂, F₂, Cl₂, Br₂, I₂

Bra HONCIATE

Also: O_3 , P_4 , S_8

Naming Binary molecular compounds

As outlined by IUPAC rules, some molecular compounds signify the number of atoms in the molecular formula by using the same prefixes as hydrates.

Ex. CS₂

see Table 9.4 p. 269

The prefix system is usually not used for hydrogen molecular compounds

Ex. water - H₂O

Worksheets

Naming and Writing Formulas for Acids and Bases

Reminder:

Acids are aqueous hydrogen compounds that turn blue litmus red.

Bases are aqueous solutions of ionic hydroxides that turn red litmus blue.

IDENTIFYING ACIDS AND BASES FROM FORMULA'S

Most acid can be identified from **starting with H**or ending in COOH.

i.e. HCl, H₂SO₄, CH₃COOH

Note: NH₃ and CH₄ are not acids!

Most bases can be identified from ending in -OH

Bases are named using the rules for naming ionic compounds.

Ex. NaOH sodium hydroxide

When naming acids, common names (for common acids) or IUPAC names can be used.

Classical Acid Names

- used the suffix -ic Ex. sulfuric
- used hydro and the suffix -ic Ex. hydrochloric
- used suffix -ous Ex. sulfurous
- and others (see inside back cover)

IUPAC (modern) Acid Names

- name the acid as an aqueous hydrogen compound

Ex. aqueous hydrogen sulfide - $H_2S_{(aq)}$

Rules for Naming Acids

1. If anion ends in -ide, the acid is "hydro_	ic acid'
Ex. HCl	
2. If anion ends in -ate, the acid is "	_ic acid"
Ex. H ₂ SO ₄	
3. If anion ends in -ite, the acid is "	ous acid"
Ex. H ₂ SO ₃	

p. 271-273

EXERCISE # 26-33