Topics -> Quiz: All Ionic Compounds

1. a) be able to identify monatomic ions
   b) be able to write the names of monatomic ions given their chemical symbols and vice versa
2. be able to write the names of simple binary ionic compounds given their formulas and vice versa
3. a) be able to identify polyatomic ions by their symbols and names ("ate", "ite" and some "ide" endings)
   b) know where to find the names and symbols of polyatomic ions on the periodic table
   c) be able to write the names of ionic compounds containing polyatomic ions given their formulas and vice versa
4. a) be able to identify multi-valent metals
   b) be able to write the names of ionic compounds containing multivalent metals given their formulas and vice versa
   c) be able to write the names of ionic compounds containing multivalent metals and polyatomic ions given their formulas and vice versa

1. a) be able to identify monatomic ions
   b) be able to write the names of monatomic ions given their chemical symbols and vice versa

Mg^{2+}

Ca^{2+} → calcium ion

Y^{3+}

Se^{2-}

Iodide ion

N^{3-} nitride ion

O^{2-}

I^{-}

2. be able to write the names of simple binary ionic compounds given their formulas and vice versa

metal nonmetal

NaCl

KCl

potassium chloride

3. a) be able to identify polyatomic ions by their symbols and names ("ate", "ite" and some "ide" endings)
   b) know where to find the names and symbols of polyatomic ions on the periodic table
   c) be able to write the names of ionic compounds containing polyatomic ions given their formulas and vice versa

$NaNO_3$ → Sodium nitrate

4. a) be able to identify multi-valent metals

   b) be able to write the names of ionic compounds containing multivalent metals given their formulas and vice versa

   $FeCl_3$ → Iron(III) chloride

   c) be able to write the names of ionic compounds containing multivalent metals and polyatomic ions given their formulas and vice versa

   $FePO_4$ → Iron (III) phosphate

$Fe(NO_2)_3$

Iron (III) nitrite

NaCl

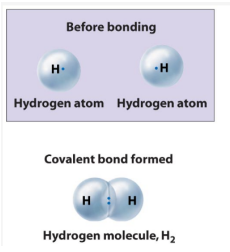
Sodium chloride

Li_2S Li^2S

$Li^+ S^{2-}$ Li_2S

Covalent Bond

A covalent bond is a chemical bond that involves the sharing of **one or more electron pairs** between two nonmetals or between a nonmetal and a metalloid. Two or more atoms held together by covalent bonds are called molecular/covalent compounds or molecules.



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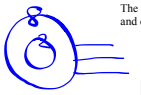
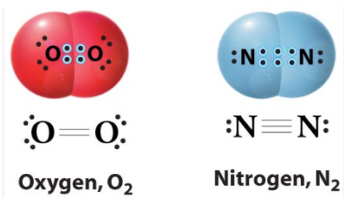
The Hindenburg was an airship or "air blimp" that was filled with the highly flammable and combustible hydrogen gas, rather than an inert, non-flammable gas, such as, helium.





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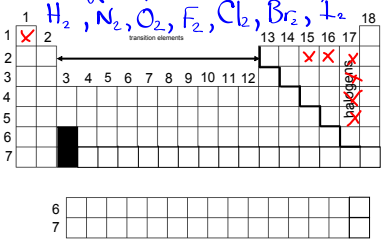
Diatomic Molecules

"7" "hockey stick"

2 atoms

H_2, N_2, O_2, F_2, Cl_2, Br_2, I_2



Other Special Molecules

molecular phosphorous -> P_4

molecular sulfur -> S_8

NOTE:

element symbol	ion symbol	molecule formula
F	F^-	F_2

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Naming Binary Molecular Compounds

2

Chemists use prefixes to indicate the number of atoms in each compound. Prefixes are necessary because atoms can combine in any whole number ratio. Learn the prefixes below.

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

When naming binary molecular compounds, the first element name is given followed by the second element with an "ide" ending. The first element gets a prefix when there is more than one atom in the compound. The second always gets a prefix.

Compound	Name
NO	nitrogen monoxide
N_2O	dinitrogen monoxide
NO_2	nitrogen dioxide
N_2O_3	dinitrogen trioxide
N_2O_5	dinitrogen pentaoxide

NO
N_2O

Common Names

	H_2O	water
	H_2O_2	hydrogen peroxide
	NH_3	ammonia
organic compounds	CH_4	methane
	C_2H_6	ethane
	C_3H_8	propane
	C_4H_{10}	butane

1.a) CO

name: carbon monoxide

2a) boron trichloride

formula: BCl_3

1.g) N_2S_3

name: dinitrogen trisulfide

"Perfix rule"

Covalent Compound Sheet - Answers

1. CO carbon monoxide
   CO_2 carbon dioxide
   NO nitrogen monoxide
   NO_2 nitrogen dioxide
   SF_6 sulfer hexafloride
   N_2S_3 dinitrogen trisulfide
   B_2H_6 diboron hexahydride
   SO_2 sulfer dioxide
   CH_4 methane
   SiF_4 Silicon tetrafluoride

2. a) boron trichloride BCl_3
hitrogen monoxide NO
dinitrogen monoxide N_2O
dinitrogen pentoxide N_2O_5
sulfer hexachloride SCl_6
carbon monoxide CO
Carbon disulfide CS_2
oxygen difluoride OF_2
dinitrogen tetrahydride N_2H_4
Silicon tetrahydride SiH_4

Attachments

Science 10 - Grade 9 Chem Topics.docx

Science 10 - Grade 9 Chem - What Do You Know.docx

Science 10 - Activity - Molecular Models.docx

Science 10 - Answer Key - Ions and Subatomic Particles.pdf