Unit 2 - Compounds

- Introduction
- Ionic Compounds
- Molecular Compounds
- Acids and Bases

NAMES
&
FORMULAS

Unit 2 - Compounds

COMPOUNDS are conventionally divided into three classes:

(1) **metal - nonmetal** (ionic compounds)

Ex. salt **NaCl**

(2) **nonmetal - nonmetal** (molecular compounds)

Ex. sulfur dioxide **SO_2**

(3) **metal - metal** (intermolecular compounds)

Ex. brass Cu - Zn

we will not be studying metal-metal

"tested"

Empirical Definitions

transfer of electrons

Ionic Compounds - solids at SATP
- when dissolved in water they conduct electricity
- no change in litmus paper

Molecular Compounds - solids, liquids and gases which, when dissolved in water, do not conduct electricity
- no change in litmus paper

share electrons

ACIDS - when pure, resemble molecular substances
(can be solids, liquids or gases at SATP)
- in solution, their conductivity suggests a separate third class.
(do conduct electricity, but strength varies)
- in solution, make blue litmus turn red.

BASES - compounds whose aqueous solutions make red litmus turn blue.

FOUR STATES OF MATTER SUBSCRIPTS
(s) - solids
(l) - liquids
(g) - gases
(aq) - aqueous (dissolved in water)

Ex. $H_2O_{(l)}$

DIAGNOSTIC TESTS : [A] Conductivity Test
[B] Litmus Test

7e-
8e-
2e-
17p+
Cl

7e-
2e-
9p+
F

Li^+ $1s^2$

F^- $1s^2 2s^2 2p^6$

$2e^-$
$3p^+$
Li^+

$8e^-$
$2e^-$
$9p^+$
F^-

2e-
2e-
4p+

1+ 2+ 3+ X 3- 2- 1- X

Periodic Table of the Elements

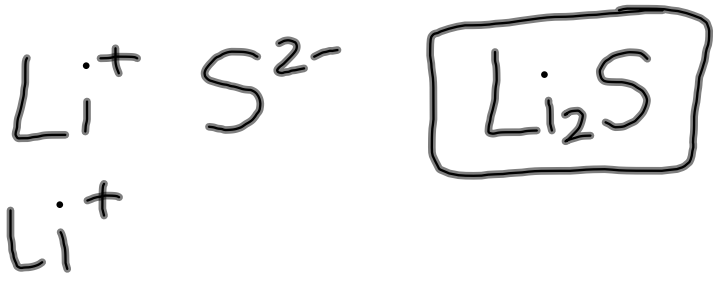
	IA	IIA	IIIB	IVB	VB	VIB	VIIB	VIII	IB	IIB	IIIA	IVA	VA	VIA	VIIA	0
1	1 H 1.00794															2 He 4.0026
2	3 Li 6.941	4 Be 9.01218									5 B 10.811	6 C 12.011	7 N 14.0067	8 O 16.00	9 F 18.9984	10 Ne 20.1797
3	11 Na 22.9898	12 Mg 24.305									13 Al 27.98	14 Si 28.086	15 P 30.974	16 S 32.066	17 Cl 35.453	18 Ar 39.948
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba	57 * La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra	89 + Ac	104 Rf	105 Ha	106 106	107 107	108 108	109 109	110 110								

* Lanthanide Series	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
+ Actinide Series	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

CHEMICAL NAMES AND FORMULA's
Type I Binary Ionic Compounds

Writing the chemical symbol from the name

Ex. lithium sulfide



Writing the name from the chemical symbol.

Ex. $CaBr_2$

Open to periodic table
on inside cover