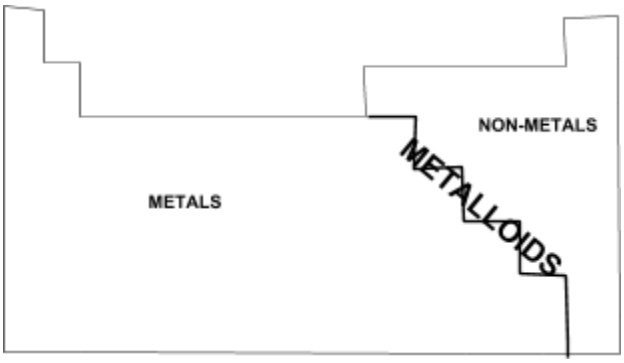
Chemistry 20	Science 10 Review
Lesson 3&4:Chemical Formulas/Ionic Compounds	84 mins

Chemical Formulas - What do they tell us?

$TiCl_{4\,(aq)}$	1) Elements invloved 2) Number of Atoms 3) State of Matter (s), (l), (g), (aq)

Ionic Compounds

- (+) charges attracted to (-) charges



- Charges MUST balance

- Polyatomic ions
  - A group of elements that collectively act as an ion. (DO NOT MEMORIZE)
  - Just recognize NH_4^+

Metals + Non-Metals
Ex)
$CaF_{2(s)}$ (calcium flouride)
$ScBr_{2(aq)}$ (scandium bromide)

Strontium Phosphide

Sr^{2+} Sr^{2+} Sr^{2+}	P^{3-} P^{3-}

$Sr_3P_{2(s)}$

$BaSO_{4(s)}$ (Barium sulfate)
(NOTE: SO_4 is a polyatomic ion (DO NOT use "ide")
$(NH_4)_2OOCCOO_{(aq)}$ (ammonium oxalate)

- Transition Metals
  - Multivalent Ions - Many charges

$Cu_2SO_{4(aq)}$

Cu = copper Metal!.. But a transition... must check the non-metal ion for the charge Charges $Cu^{?}$ $Cu^{?}$ (each must have 1+ each to balance)	SO_4 Must be ONE ion Polyatomic Charges SO_4^{2-}

Copper (I) sulfate

copper (I) Cu^{2+} and copper (II) Cu^{+}

$CuF_{(s)}$ (copper (I) fluoride)
$CuF_{2(s)}$ (copper (II) fluoride)

EX.

vanadium (V) phosphate

vanadium (V) Matal (MUST be IONIC) CHARGES V^{5+} $V^{5+}$$V^{5+}$	Phosphate Polyatomic PO_4^{3-} PO_4^{3-} PO_4^{3-} PO_4^{3-} PO_4^{3-}

$V_3(PO_4)_{5(s)}$

Covalent Compounds

- SHARE valence elections
- Are NOT made from ions
- 2 or more non-metals
  - $C_6H_{12}O_{6\ (s)}$ - glucose
  - $C_{12}H_{22}O_{11(s)}$ - sucrose (table sugar)
  -

USE PREFIXES (second element gets -ide)

# of Atoms	Prefix
1	Mono (do NOT use for 1st element)
2	Di
3	Tri
4	Tetra
5	Penta
6	Hexa
7	Hapta
8	Octa
9	Nona
10	Deca

$CO_{2(g)}$ - Carbon dioxide
$CO_{(g)}$ - Carbon monoxide
$N_2H_{4(g)}$- dinitrogen tetrahydride (hydrazine)
$P_2O_{5(g)}$ - diphosphorus pentoxide
$C_3H_{8(g)}$ - tricarbon octahydride (propane)
$SO_{3(g)}$ - sulfur trioxide

Chemistry 20 - Science 10 Review - Nomenclature

Name: _____

1. Write names for each of the following chemical compounds.
    a. $TaBr_{5(s)}$

    b. $Y_2S_{3(aq)}$

    c. $In_2Se_{3(l)}$

    d. $C_6H_{6(l)}$

    e. $C_6H_{12}O_{6(aq)}$

    f. $Po(NO_3)_{2(aq)}$

    g. $Cr(ClO_2)_{3(l)}$

    h. $C_5H_{10(g)}$

2. Write formulas for each of the following chemical compounds.
    a. solid zirconium arsenide

    b. solid antimony (V) fluoride

    c. aqueous europium (III) carbide

    d. liquid iridium dihydrogen phosphate

    e. gaseous einsteinium thiocyanate

    f. liquid sucrose

    g. solid tetracarbon hexahydride

    h. gaseous dinitrogen monoxide