Homework

p.258 #8,9
p. 262 #10,11

a) K^+ (cation) → potassium ion

b) O^{2-} (anion) → oxide ion

c) Sn^{2+} (cation) → tin (II) ion

f) Co^{3+} (cation) → cobalt (III) ion

9. a) NH_4^+ ammonium

c) CrO_4^{2-} chromate

d) NO_3^- nitrate

10. a) Ba^{2+}, S^{2-}

BaS

11. b) stannous chloride

Sn^{2+} Cl^- Cl^- → $SnCl_2$

c) potassium sulfide

K^+ K^+ S^{2-} → K_2S

Multi-Valent Metals

- can form more than one type of ion (always positive).
- include transition metals and some representative metals.

Ex. Fe^{+3} and Fe^{+2} Pb^{+2} and Pb^{+4}

In the periodic table the most common ion is usually listed in the key.

In naming multi-valent compounds (from a formula):

[a] name the two ions
[b] place the charge of the metal ion in roman numerals after the metal ion.
[c] end the anion with an -ide suffix.

Type II Binary Ionic Compounds

Formula to Name :

CuF_2

Cu^{2+} F^- F^- copper (II) fluoride

Ex. Name to Formula:

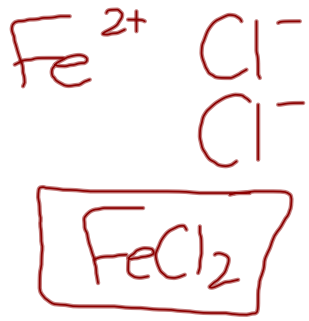
iron (III) oxide

Fe^{3+} Fe^{3+} O^{2-} O^{2-} O^{2-} Fe_2O_3

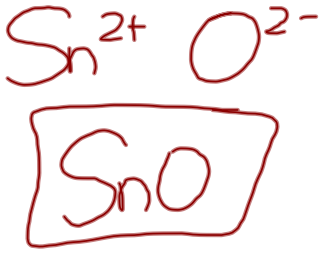
$1s^2 2s^2 2p^6$

Write the chemical formula for the following ionic compounds:

a) iron (II) chloride



b) tin (II) oxide



c) lead (II) oxide

d) iron (III) sulfide

Write the name for the following ionic compounds:

e) $CuCl_2$

Cu^{2+} Cl^-
Cl^-

Copper(II) chloride

f) PbO_2

Pb^{4+} O^{2-}
O^{2-}

lead(IV) oxide

g) CuBr

h) Ni_3P_2

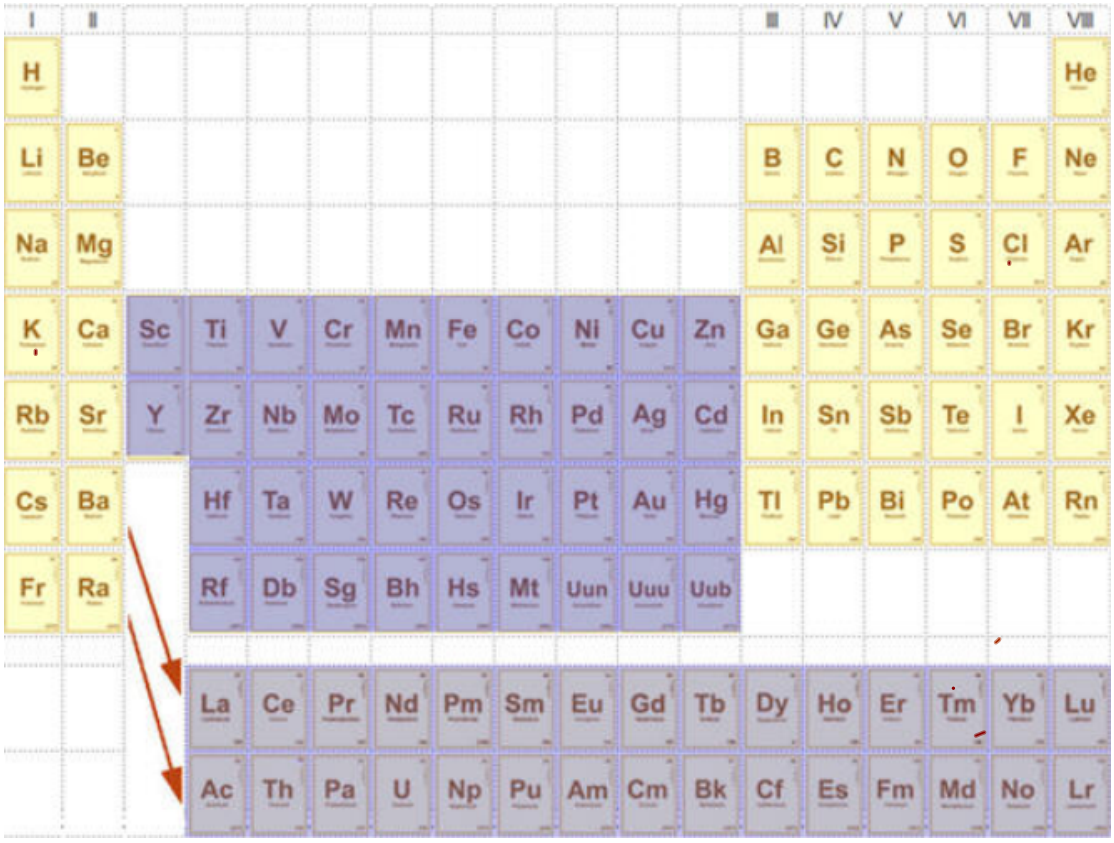
Fe^{3+} Cl^- Cl^- Cl^-

a) $Fe_{(s)} + Cl_{2(g)} \longrightarrow FeCl_{3(s)}$

iron (III) chloride

Binary Ionic Compounds Type II

Worksheet


I II III IV V VI VII VIII
H He
Li Be B C N O F Ne
Na Mg Al Si P S Cl Ar
K Ca Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga Ge As Se Br Kr
Rb Sr Y Zr Nb Mo Tc Ru Rh Pd Ag Cd In Sn Sb Te I Xe
Cs Ba Hf Ta W Re Os Ir Pt Au Hg Tl Pb Bi Po At Rn
Fr Ra Rf Db Sg Bh Hs Mt Uun Uuu Uub
La Ce Pr Nd Pm Sm Eu Gd Tb Dy Ho Er Tm Yb Lu
Ac Th Pa U Np Pu Am Cm Bk Cf Es Fm Md No Lr