

Chem - Practice: Nomenclature

1. Name the following:

- | | | |
|-----------------|---------------|-------------|
| a) KI | f) Cu_2SO_4 | k) CO |
| b) CaI_2 | g) $CuSO_4$ | l) CO_2 |
| c) Li_3N | h) $GaPO_4$ | m) SO_3 |
| d) $LiNO_3$ | i) Ga_3PO_4 | n) ICl |
| e) $Al(NO_3)_3$ | j) Al_2O_3 | o) N_2O_4 |

2. Give a chemical formula for the following:

- | | |
|-------------------------|--------------------------|
| a) rubidium bromide | b) Aluminum sulfide |
| c) indium chloride | d) thallium (I) chloride |
| e) bismuth (III) iodide | f) sodium arsenide |
| g) lead phosphate | h) silicon dioxide |
| i) dinitrogen pentoxide | |

Chem . Practice - Nomenclature

1. All compounds from a to j contain either a metal + a non-metal or a molecular ion & so are ionic.

a) KI : I : group VII $\Rightarrow I^-$ iodide ion
 $\therefore 1 \times K$ must be K^+ . group I, so potassium ion

\therefore potassium iodide

b) CaI_2 I : group VII $\Rightarrow I^-$ iodide ion. Two of them $\Rightarrow 2-$ total
 Ca : must be Ca^{2+} . Group II \Rightarrow calcium ion

\therefore calcium iodide

c) Li_3N : N : group V $\Rightarrow N^{3-}$ nitride ion
 \therefore need total of 3+, so each Li must be Li^+ . lithium ion

\therefore lithium nitride

d) $LiNO_3$: NO_3^- . nitrate ion (from the "memorize" list)
 $\therefore Li^+$: lithium ion

\therefore lithium nitrate

e) $Al(NO_3)_3$: NO_3^- : nitrate ion. there are 3 of them $\Rightarrow 3-$ total

$\therefore Al$ must be Al^{3+} . Al in group III, so aluminum ion

\therefore Aluminum nitrate

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1 f) Cu_2SO_4 : SO_4^{2-} sulfate ion \Rightarrow total of -2

\therefore total of +2, on two copper - so Cu^+ : copper I ion

\therefore Copper (I) sulfate

g) CuSO_4 : SO_4^{2-} sulfate ion \Rightarrow total of -2

\therefore total of +2 on one copper \Rightarrow Cu^{2+} copper (II) ion

\therefore Copper (II) sulfate

h) GaPO_4 : PO_4^{3-} phosphate ion \Rightarrow total of -3

\therefore total of +3, on one gallium \Rightarrow Ga^{3+} group III - gallium ion

\therefore Gallium phosphate

i) Ga_3PO_4 : PO_4^{3-} as above \Rightarrow total -3

\therefore total of +3, on three gallium \Rightarrow Ga^+ group III - gallium (I) ion

\therefore Gallium (I) phosphate

j) Al_2O_3 : O - group VI \Rightarrow O^{2-} oxide ion \therefore total 6-

total of 6+, on 2 Al \Rightarrow Al^{3+} group III : aluminum ion

\therefore Aluminum oxide

Chem - Practice - Nomenclature

1 k-o are all two non-metal elements \Rightarrow covalent

1k) CO : One carbon & one oxygen : Carbon monoxide

l) CO₂ : One carbon & two oxygen : Carbon dioxide

m) SO₃ : One sulfur & three oxygen : Sulfur trioxide

n) ICl : One iodine & one chloride : Iodine monochloride

o) N₂O₄ : Two nitrogen & four oxygen : Dinitrogen tetraoxide

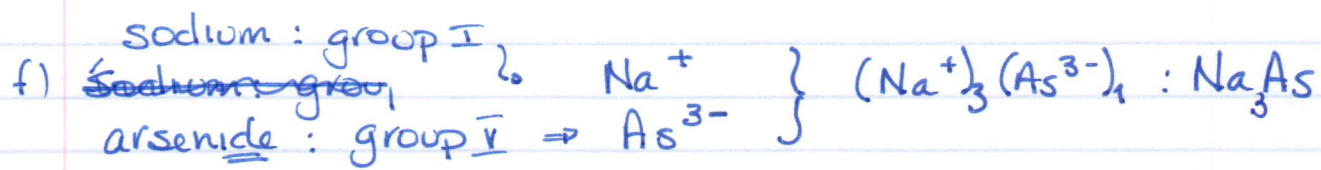
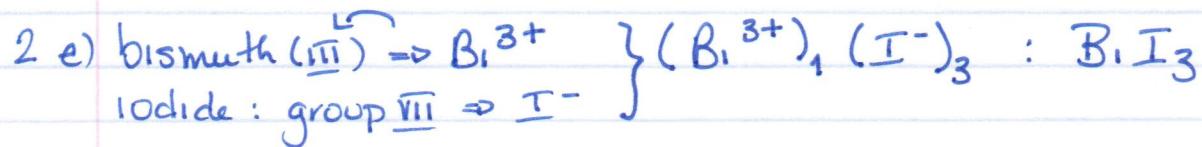
2. a) rubidium - group I \Rightarrow Rb⁺ } (Rb⁺)₁ (Br⁻)₁ \Rightarrow RbBr
bromide - group VII \Rightarrow Br⁻ }

b) Aluminum: group III \Rightarrow Al³⁺ } (Al³⁺)₂ (S²⁻)₃ : Al₂S₃
sulfide : group VI \Rightarrow S²⁻ }

c) Indium ~~chloride~~ group III \Rightarrow In³⁺ } (In³⁺)₁ (Cl⁻)₃ : InCl₃
chloride: group VII \Rightarrow Cl⁻ }

d) Thallium(I) ~~chloride~~ must be Tl⁺ } (Tl⁺)₁ (Cl⁻)₁ \Rightarrow TlCl
chloride: group VII Cl⁻ }

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g) ~~lead~~

h) silicon dioxide : (prefix \rightarrow covalent!) SiO_2

i) dinitrogen pentoxide (" " ") N_2O_5

