

WRITING IONIC FORMULAS II

Formulas for ionic compounds are written by these rules:

Rule 1 **Write the formula (symbol) for the cation (without the charge) followed by a subscript; write the formula (symbol) for the anion (without the charge) followed by a subscript.**

Rule 2 Subscripts are chosen so that the charges in a compound add to zero.

These rules are the same as for IONIC FORMULAS I. However for these compounds the cation charge (oxidation number) is given in the name.

iron(II) chloride is written as follows:

iron(II) is Fe^{2+} (charge +2) chloride is Cl^- (charge -1)

try subscripts 1 (|charge| on anion) and 2 (charge on cation)

formula is FeCl_2

note: $(+2) \times 1 + (-1) \times 2 = 0$

chromium(III) oxide is written as follows:

chromium(III) is Cr^{3+} (charge +3) oxide is O^{2-} (charge -2)

try subscripts 2 and 3; so formula is Cr_2O_3

note: $(+3) \times 2 + (-2) \times 3 = 0$

lead(IV) sulfide is written as follows:

lead(IV) is Pb^{4+} (charge +4) sulfide is S^{2-} (charge -2)

try subscripts 2 and 4 so formula is Pb_2S_4

this should be reduced to simpler numbers PbS_2

note: $(+4) \times 1 + (-2) \times 2 = 0$

You should be able to write formulas for the following:

a. iron(II) sulfide

g. tin(II) iodide

m. chromium(III) phosphide

b. gold(III) oxide

h. cobalt(II) oxide

n. mercury(II) bromide

c. manganese(IV) oxide

i. iron(III) iodide

o. gold(III) chloride

d. tin(IV) fluoride

j. iron(III) oxide

p. mercury(II) sulfide

e. lead(IV) oxide

k. tin(II) sulfide

q. chromium(III) chloride

f. nickel(II) fluoride

l. copper(I) nitride

r. manganese(II) bromide

Answers are on the other side.