

Multivalent Ionic Compounds

Names and Formulas for Ions With More Than One Ionic Charge

Transition metals tend to have more than one valence # (ion charge).

Example: Copper can be a 1+ or 2+

We name them the same way, except a Roman Numeral is in the name.

1	2	3	4	5	6
I	II	III	IV	V	VI

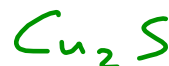
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Examples:

²⁺ copper(II) ²⁻ sulfide



¹⁺ copper(I) ²⁻ sulfide



³⁺ ^{1- × 3} FeF₃

iron (III) fluoride

²⁺ ²⁻ Cu₂O

Copper (I) oxide

⁴⁺ ⁴⁻ MnS₂

manganese(IV) sulfide

⁴⁺ ⁴⁻ SnCl₄

tin(IV) chloride

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Pg 195 #7, 8, 9

Then..

Bottom of ionic compounds worksheet.

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7. a) CuBr b) CuBr_2 c) FeS

8. a) tin(II) chloride b) tin(IV) chloride

c) lead(II) bromide

9. a) Fe_2O_3 - iron(III) oxide

b) CaF_2 - calcium fluoride

c) Cu_2S - copper(I) sulfide

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Name the following compounds.

1. $\overset{+2}{\text{Ni}}\overset{-2}{\text{Br}}_2$ nickel (II) bromide
2. $\overset{+2}{\text{Fe}}\overset{-2}{\text{O}}$ iron (II) oxide
3. $\overset{+3}{\text{Fe}}_2\overset{-3}{\text{O}}_3$ iron (III) oxide
4. $\overset{+4}{\text{Sn}}\overset{-1}{\text{Cl}}_4$ tin (IV) chloride
5. $\overset{+4}{\text{Pb}}\overset{-1}{\text{Cl}}_4$ lead (IV) chloride
6. $\overset{+2}{\text{Sn}}\overset{-2}{\text{Br}}_2$ tin (II) bromide
7. $\overset{+3}{\text{Cr}}\overset{-3}{\text{P}}$ chromium (III) phosphide
8. $\overset{+2}{\text{Fe}}\overset{-2}{\text{F}}_2$ iron (II) fluoride
9. $\overset{+3}{\text{Au}}\overset{-1}{\text{Cl}}_3$ gold (III) chloride
10. $\overset{+4}{\text{Sn}}\overset{-2}{\text{O}}_2$ tin (IV) oxide
11. $\overset{+2}{\text{Sn}}\overset{-1}{\text{Cl}}_2$ tin (II) chloride
12. $\overset{+3}{\text{Ni}}_2\overset{-3}{\text{O}}_3$ nickel (III) oxide
13. $\overset{+2}{\text{Hg}}\overset{-2}{\text{F}}_2$ mercury (II) fluoride

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Write formulas.

1. iron (III) chloride₃ FeCl_3
2. copper (I) oxide Cu_2O
3. mercury (II) oxide HgO
4. cobalt (II) bromide₂ CoBr_2
5. lead (II) iodide₂ PbI_2
6. mercury (II) bromide₂ HgBr_2
7. lead (II) sulfide PbS
8. tin (IV) iodide₄ SnI_4
9. chromium (III) oxide₃ Cr_2O_3
10. tin (II) fluoride₂ SnF_2
11. mercury (II) sulfide HgS
12. lead (IV) chloride₄ PbCl_4
13. nickel (II) phosphide₃ Ni_3P_2

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