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CHAPTER 4

Binary Ionic Compounds

BLM 2-12

Goal • Demonstrate your ability to write the names and formulas of binary ionic compounds.

What to Do

1. Complete the following table.

Name of Compound	Formula
(a) beryllium fluoride	BeF_2
(b) sodium nitride	Na_3N
(c) calcium sulphide	CaS
(d) aluminum chloride	AlCl_3
(e) lithium oxide	Li_2O
(f) magnesium nitride	Mg_3N_2
(g) gallium sulphide	Ga_2S_3
(h) barium bromide	BaBr_2

Names and Formulas of Binary Ionic Compounds

Goal • Use this page to review the names and formulas of binary ionic compounds.

What to Do

1. Fill in the missing names of these ionic compounds.

Formula	Metal Ion	Name of Compound
(a) FeCl_3	Fe^{3+}	<i>Iron (III) Chloride</i>
(b) FeO	Fe^{2+}	<i>Iron (II) Oxide</i>
(c) Cu_2S	Cu^+	<i>Copper (I) sulfide</i>
(d) PbO_2	Pb^{4+}	<i>Lead (IV) oxide</i>

2. Fill in the missing formulas for these ionic compounds.

Name of Compound	Chemical Formula
(a) copper(I) oxide	<i>Cu_2O</i>
(b) lead(IV) bromide	<i>PbBr_4</i>
(c) iron(III) sulphide	<i>Fe_2S_3</i>
(d) nickel(III) fluoride	<i>NiF_3</i>
(e) manganese(IV) sulphide	<i>MnS_2</i>

3. Fill in the missing names for these ionic compounds.

Formula	Name of Compound
(a) Ti_2O_3	<i>Titanium (III) oxide</i>
(b) NaCl	<i>Sodium chloride</i>
(c) CuCl_2	<i>copper (II) chloride</i>
(d) NO_2	<i>nitrogen dioxide</i>

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CHAPTER 4**Chemical Names and Formulas****BLM 2-14**

Goal • Review your understanding of chemical names and formulas.

What to Do

Complete the following table.

	Chemical Formula	Ionic or Covalent?	Name of Compound
1.	NH_4Cl	ionic	Ammonium Chloride
2.		I	potassium sulphide
3.	Cl_4	C	carbon tetra iodide
4.		I	calcium oxide
5.	NH_4Cl	I	ammonium chloride
6.	Li_3N	I	lithium nitride
7.	$\text{Mg}(\text{OH})_2$	I	Magnesium hydroxide
8.	ZnO	I	zinc oxide
9.	CuNO_3	I	Copper (I) nitrate
10.	OCl_2	C	oxygen dichloride
11.	CuCl	I	Copper (I) chloride
12.	FeCl_2	I	Iron (II) chloride
13.	CBr_4	C	carbon tetrabromide
14.	$\text{Al}_2(\text{CrO}_4)_3$	I	aluminum chromate

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CHAPTER 4**Chemical Compounds****BLM 2-15****Goal** • Use this page to identify chemical compounds.

1. Complete the following table.

Name	Formula	Ionic or Covalent?
(a) Sodium chloride	NaCl	I
(b) Magnesium Oxide	MgO	I
(c) lithium iodide	Li ₂ I	I
(d) carbon dioxide	CO ₂	C
(e) strontium hydroxide	Sr(OH) ₂	I
(f) potassium sulfide	K ₂ S	I
(g) copper (II) bromide	CuBr ₂	I
(h) sulphur trioxide	SO SO ₃	C
(i) barium phosphate	Ba ₃ (PO ₄) ₂	I
(j) aluminum hydroxide	Al(OH) ₃	I
(k) oxygen difluoride	OF ₂	C
(l) ammonium cyanide	NH ₄ CN	I
(m) iron(III) nitrate	Fe(NO ₃) ₃	I
(n) gold(III) sulphate	Au ₂ (SO ₄) ₃	I
(o) iron(II) carbonate	FeCO ₃	I
(p) carbon tetraiodide	CI ₄	C
(q) iron(III) iodide	FeI ₃	I
(r) dinitrogen trioxide	N ₂ O ₃	C