

9

CHEMICAL NAMES AND FORMULAS

Practice Problems

In your notebook, solve the following problems.

SECTION 9.1 NAMING IONS

- What is the charge on the ion typically formed by each element?

a. oxygen	2-	c. sodium	+	e. nickel, 2 electrons lost	2+
b. iodine	-	d. aluminum	3+	f. magnesium	2+
- How many electrons does the neutral atom gain or lose when each ion forms?

a. Cr^{3+}	3 lost	c. Li^+	1 lost	e. Cl^-	1 gained
b. P^{3-}	3 gained	d. Ca^{2+}	2 lost	f. O^{2-}	2 gained
- Name each ion. Identify each as a cation or an anion.

a. Sn^{2+}	Tin(II) C	c. Br^-	Bromide A	e. H^-	Hydride A
b. Co^{3+}	Cobalt(III) C	d. K^+	Potassium C	f. Mn^{2+}	Manganese(II) C
- Write the formula (including charge) for each ion. Use Table 9.3 if necessary.

a. carbonate ion	CO_3^{2-}	c. sulfate ion	SO_4^{2-}	e. chromate ion	CrO_4^{2-}
b. nitrite ion	NO_2^-	d. hydroxide ion	OH^-	f. ammonium ion	NH_4^+
- Name the following ions. Identify each as a cation or an anion.

a. CN^-	Cyanide A	c. PO_4^{3-}	phosphate A	e. Ca^{2+}	calcium C
b. HCO_3^-	hydrogencarbonate A	d. Cl^-	chloride A	f. SO_3^{2-}	sulfite A

SECTION 9.2 NAMING AND WRITING FORMULAS FOR IONIC COMPOUNDS

- Write the formulas for these binary ionic compounds.

a. magnesium oxide	MgO	c. potassium iodide	KI	e. sodium sulfide	Na_2S
b. tin(II) fluoride	SnF_2	d. aluminum chloride	AlCl_3	f. ferric bromide	FeBr_3
- Write the formulas for the compounds formed from these pairs of ions.

a. $\text{Ba}^{2+}, \text{Cl}^-$	BaCl_2	c. $\text{Ca}^{2+}, \text{S}^{2-}$	CaS	e. $\text{Al}^{3+}, \text{O}^{2-}$	Al_2O_3
b. Ag^+, I^-	AgI	d. K^+, Br^-	KBr	f. $\text{Fe}^{2+}, \text{O}^{2-}$	FeO
- Name the following binary ionic compounds.

a. MnO_2	c. CaCl_2	e. NiCl_2	g. CuCl_2
b. Li_3N	d. SrBr_2	f. K_2S	h. SnCl_4

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| A Manganese(II) Oxide | E Nickel Chloride |
| B Lithium Nitride | F Potassium Sulfide |
| C Calcium Chloride | G Copper(II) Chloride |
| D Strontium Bromide | H Tin(IV) Chloride |