Chapter 6   Chemical Bonds

Writing Formulas for Ionic Compounds

What is the ratio of the ions in magnesium iodide?
What is the formula for magnesium iodide?

Math Skill: Ratios and Proportions

You may want to read more about this **Math Skill** in the **Skills and Reference Handbook** at the end of your textbook.

1. Read and Understand

What information are you given?

The name of the compound is magnesium iodide.

2. Plan and Solve

List the symbols and charges for the cation and anion.

Mg ion has a charge of 2+ and I ion has a charge of 1−.

Determine the ratio of ions in the compound.

Mg with a 2+ charge needs two I ions, each with a charge of 1−.
The ratio of the ions in the compound is 1 to 2.

Write the formula for magnesium iodide.

MgI_2

3. Look Back and Check

Is your answer reasonable?

Each magnesium atom loses two electrons and each iodine atom gains one electron. So there should be a 1-to-2 ratio of magnesium ions to iodide ions.

Math Practice

On a separate sheet of paper, solve the following problems.
Refer to Figures 16, 17, and 19 to help you solve the problems.

1. What is the formula for magnesium fluoride?

2. What is the formula for iron(III) chloride?

3. What is the formula for mercury(II) sulfide?

4. What is the formula for potassium dichromate?

5. What is the formula for barium nitrate?