

Section 8.3 Names and Formulas for Ionic Compounds

In your textbook, read about communicating what is in a compound and naming ions and ionic compounds.

Use each of the terms below just once to complete the passage.

anion	-ate	cation	electrons	zero
lower right	monatomic	one	oxidation number	-ite
oxyanion	polyatomic	subscript		

A one-atom ion is called a(n) **(1)** _____ ion. The charge of such an ion is equal to the atom's **(2)** _____, which is the number of **(3)** _____ transferred to or from the atom to form the ion. In ionic compounds, the sum of the charges of all the ions equals **(4)** _____. Ions made up of more than one atom are called **(5)** _____ ions. If such an ion is negatively charged and includes one or more oxygen atoms, it is called a(n) **(6)** _____. If two such ions can be formed that contain different numbers of oxygen atoms, the name for the ion with more oxygen atoms ends with the suffix **(7)** _____. The name for the ion with fewer oxygen atoms ends with **(8)** _____.

In the chemical formula for any ionic compound, the chemical symbol for the **(9)** _____ is written first, followed by the chemical symbol for the **(10)** _____. A(n) **(11)** _____ is a small number used to represent the number of ions of a given element in a chemical formula. Such numbers are written to the **(12)** _____ of the symbol for the element. If no number appears, the assumption is that the number equals **(13)** _____.

For each formula in Column A, write the letter of the matching name in Column B.

Column A

- _____ 14. ClO_2^-
 _____ 15. ClO_4^-
 _____ 16. ClO^-
 _____ 17. Cl^-
 _____ 18. ClO_3^-

Column B

- a. chlorate
 b. hypochlorite
 c. chloride
 d. perchlorate
 e. chlorite

Section 8.3 *continued*

For each of the following chemical formulas, write the correct name of the ionic compound represented. You may refer to the periodic table on pages 156–157 and Table 8.7 for help.

19. NaI _____
20. CaCl₂ _____
21. K₂S _____
22. MgO _____
23. LiHSO₄ _____
24. NH₄Br _____
25. Ca₃N₂ _____
26. Cs₃P _____
27. KBrO₃ _____
28. Mg(ClO)₂ _____
29. Li₂O₂ _____
30. Be₃(PO₄)₂ _____
31. (NH₄)₂CO₃ _____
32. NaBrO₃ _____
33. Fe₂O₃ _____
34. Fe(IO₃)₂ _____

For each of the following ionic compounds, write the correct formula for the compound. You may refer to the periodic table on pages 156–157 and Table 8.7 for help.

35. beryllium nitride _____
36. nickel(II) chloride _____
37. potassium chlorite _____
38. copper(I) oxide _____
39. magnesium sulfite _____
40. ammonium sulfide _____
41. calcium iodate _____
42. iron(III) perchlorate _____
43. sodium nitride _____