

Naming Compounds

List

- name compounds from their formulas and write the correct formula from a compound's name

Notes

Naming metal ions

- ★ The metal always comes first in the name and the formula
- ★ Monatomic metal ions
 - ☆ univalent (only one oxidation state): the ion is named the same as the element
 - ★ Na = sodium; Na^+ = sodium
 - ★ Ba = barium; Ba^{+2} = barium
 - ☆ polyvalent (multiple oxidation states): a roman numeral indicates the oxidation state
 - ★ Fe^{+2} = iron II; Fe^{+3} = iron III
 - ★ Cu^{+1} = copper I; Cu^{+2} = copper II
 - ★ C^{+2} = carbon II; C^{+4} = carbon IV
- ★ Polyatomic metal ions: Look on *Table E* - NH_4^+ = ammonium

Naming nonmetal ions

- ★ The nonmetal always comes last in the name and in the formula
- ★ Monatomic nonmetal ions - delete the last part of the elements name and add "IDE"
 - ☆ S = sulfur; S^{-2} = sulfIDE
 - ☆ O = oxygen; O^{-2} = oxIDE
 - ☆ I = iodine; I^{-1} = iodIDE
- ★ Polyatomic nonmetal ions: Look on *Table E*
 - ☆ SO_4^{-2} = sulfate
 - ☆ OH^- = hydroxide

Examples

- ★ $\text{Cu}_3(\text{PO}_4)_2$ = copper II phosphate
- ★ ZnCl_2 = zinc chloride
- ★ CO_2 = carbon IV oxide (carbon dioxide)
- ★ CO = carbon II oxide (carbon monoxide)

Answer the questions below by circling the number of the correct response

1. What is the correct formula for copper II nitrate? (1) $\text{Cu}(\text{NO}_3)_2$
(2) Cu_3N_2 (3) Cu_2NO_3 (4) Cu_2N_3
2. What is the correct name for BaO ? (1) barium oxide (2) barium oxygen (3) barium II oxide (4) barium oxalate
3. The formula for zinc hydroxide is (1) $\text{Zn}(\text{OH})_2$, (2) ZnOH_2 ,
(3) ZnH_2 , (4) Zn_2H .
4. The formula for ammonium carbonate is (1) $(\text{NH}_3)_2(\text{CO}_3)_3$,
(2) $\text{NH}_2(\text{CO}_3)_4$, (3) $(\text{NH}_4)_3\text{CO}$, (4) $(\text{NH}_4)_2\text{CO}_3$.
5. The formula for iron II sulfide is (1) $\text{Fe}_2(\text{SO}_4)_3$, (2) FeS , (3) Fe_2S_3
(4) FeSO_4 .
6. The name of the compound CuCO_3 is (1) copper II carbonate,
(2) copper I carbonate, (3) copper III carbonate, (4) copper oxide.
7. The formula for barium nitrate is (1) Ba_3NO_2 , (2) Ba_3N_2 ,
(3) $\text{Ba}(\text{NO}_3)_2$, (4) BaN .
8. The name of the compound H_2S is (1) hydrogen II sulfate,
(2) hydrogen sulfate, (3) helium I sulfide, (4) hydrogen sulfide.
9. Which is the compound whose formula is P_2O_5 ?
1 potassium (III) oxide
2 potassium (V) oxide
3 phosphorus (III) oxide
4 phosphorus (V) oxide