

Study Guide Topics

Chemical Formulas and Nomenclature

How are topics and ideas that should be included in your Chemical Formulas and Nomenclature Study Guide. Be sure to include examples and explanations rather than simple definitions.

- ✓ Types of Formulas
 - Empirical formula
 - Molecular formula
 - Structural Formulas
- ✓ Ions
 - Monatomic ion
 - Polyatomic ion
 - Oxidation state
- ✓ Binary Compounds vs. Ternary Compounds
- ✓ Nomenclature for Ionic Compounds

For each of the following write the chemical name and a sentence or two explaining how you arrived at the name.

(a) NaBr (b) FeCl₂ (c) FeCl₃ (d) CuNO₃ (e) K₂SO₄
- ✓ When are Roman Numerals needed in a chemical name?
- ✓ List the prefixes used for naming molecular substances.
- ✓ Nomenclature for Molecular Compounds

For each of the following write the chemical name using both the traditional prefix system and the Stock System. Then write a sentence or two explaining how you arrived at each name for letters a and b.

(a) N₂O (b) NO (c) N₂O₃ (d) NO₂ (e) N₂O₅
- ✓ Nomenclature for Acids

For each of the following write the chemical name and a sentence or two explaining how you arrived at the name

(a) H₂S (aq) (b) H₂SO₄ (aq) (c) H₂SO₃ (aq)
- ✓ Explain the difference between a formula unit and a molecule.
- ✓ What is the net charge on a compound?

(Key)

WORKSHEET: ALL CHEMICAL NAMING AND FORMULAS

For each of the following chemical formulas write the corresponding chemical name.

1) BaCO_3 barium carbonate

2) KBr potassium bromide

3) NiBr_2 nickel (II) bromide

4) NO_2 nitrogen dioxide

5) H_3PO_4 (aq)
phosphoric acid

6) Ba(OH)_2
barium hydroxide

7) PCl_3
phosphorus trichloride

8) PbO_2
lead (IV) oxide

9) AlCl_3

aluminum chloride

10) N_2O_4

dinitrogen tetroxide

11) H_2S (aq)

hydrosulfuric acid

12) SiO_2

silicon dioxide

13) Na_2S

sodium sulfide

14) HClO_3 (aq)

chloric acid

15) $\text{Sr(NO}_3)_2$

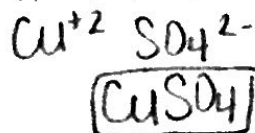
nitric acid

16) Li_2SO_3

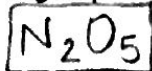
lithium sulfite

For each of the following chemical names, write the appropriate chemical formula.

17) copper (II) sulfate



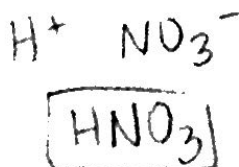
18) dinitrogen pentoxide



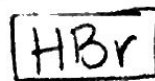
~~19) carbon (IV) chloride~~

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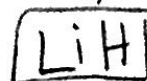
20) nitric acid



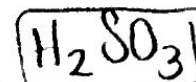
21) hydrobromic acid



22) lithium hydride



23) ~~sulfurous acid~~ ^{from sulfate (SO_3^{2-})}
 $\text{H}^+ \text{SO}_3^{2-}$



24) sulfur trioxide

