

Ch 100: Fundamentals for Chemistry
Chapter 6: Nomenclature of Inorganic Compounds

Naming elements (part 1):

Using the periodic table (or table of elements) write the chemical formula for each element and determine whether each element is a metal, metalloid, or non-metal.

- | | |
|-------------|-------------|
| a) hydrogen | e) chlorine |
| b) helium | f) silicon |
| c) calcium | g) sodium |
| d) gold | h) sulfur |

Naming elements (part 2):

Using a Table of Elements write the chemical name for each element and determine whether each element is a metal, metalloid, or non-metal

- | | |
|-------|-------|
| a) Pb | e) Hg |
| b) K | f) As |
| c) Ag | g) Ne |
| d) Pt | h) Fe |

Identifying Ions using the Periodic Table:

Identify the type of ion (cation or anion) and charge (2+, 1-, etc.) that is formed by each of the following elements:

- | | |
|-------|-------|
| a) H | d) Ca |
| b) Cl | e) Al |
| c) Ne | f) O |

Naming the Ions:

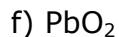
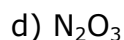
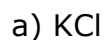
Name the ion formed by the following elements (use the periodic table if necessary):

- | | |
|-------|-------|
| a) Na | d) Mg |
| b) I | e) Al |
| c) He | f) Hg |

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Naming Simple Compounds (part 1):

Write the chemical name (systemic) for each substance.



Naming Simple Compounds (part 2):

Write the chemical formula for each substance.

a) oxygen

d) iron(III) chloride

b) lithium sulfide

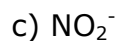
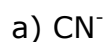
e) copper(I) oxide

c) nitrogen dioxide

f) tricarbon octahydride

Naming Polyatomic Ions (Part 1):

Name the following ions:



Naming Polyatomic Ions (Part 2):

Write the chemical formula for the following ions:

a) carbonate

d) sulfide

b) peroxide

e) nitrate

c) acetate

f) phosphate

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Naming Simple Compounds (part 3):

Write the chemical name (systemic) for each substance.

- | | |
|---------------------------------|---------------------------------|
| a) NH_4Cl | d) $\text{Fe}_2(\text{SO}_4)_3$ |
| b) NaNO_3 | e) $(\text{NH}_4)_2\text{SO}_4$ |
| c) $\text{Ca}_3(\text{PO}_4)_2$ | f) $\text{Ba}(\text{OH})_2$ |

Naming Simple Compounds (part 4):

Write the chemical name (systemic) for each substance.

- | | |
|------------------------|------------------------|
| a) potassium nitrate | d) calcium bicarbonate |
| b) ammonium hydroxide | e) copper(II) acetate |
| c) sodium hypochlorite | f) potassium cyanide |

Naming Acids (part 1):

Write the chemical name (systemic) for each acid.

- | | |
|----------------------------|----------------------------|
| a) HCl | d) H_2SO_3 |
| b) HNO_3 | e) HClO |
| c) H_3PO_4 | f) H_2S |

Naming Acids (part 2):

Write the chemical name (systemic) for each acid.

- | | |
|----------------------|---------------------|
| a) hydrofluoric acid | d) hydrocyanic acid |
| b) nitrous acid | e) acetic acid |
| c) phosphorous acid | f) carbonic acid |

Reference Chart: Useful Polyatomic Ions

<u>Ion</u>	<u>Name</u>
NH_4^+	ammonium
NO_2^-	nitrite
NO_3^-	nitrate
SO_3^{2-}	sulfite
SO_4^{2-}	sulfate
HSO_4^-	hydrogen sulfate (bisulfate)
OH^-	hydroxide
CN^-	cyanide
PO_4^{3-}	phosphate
HPO_4^{2-}	hydrogen phosphate (biphosphate)
H_2PO_4^-	dihydrogen phosphate
CO_3^{2-}	carbonate
HCO_3^-	hydrogen carbonate (bicarbonate)
ClO^-	hypochlorite
ClO_2^-	chlorite
ClO_3^-	chlorate
ClO_4^-	perchlorate
$\text{C}_2\text{H}_3\text{O}_2^-$	acetate
O_2^{2-}	peroxide