

Name _____ Period _____

Ionic Compounds – Study Guide

Fill in the blank

Elements tend to _____ or _____ to be like their nearest _____.
Elements that have more than _____ tend to gain some until they have _____, and those with less than _____ tend to lose until they have _____. In their ion form, they are said to have a _____. The _____ charges of ions attract to form _____.
These ionic “salts” tend to _____ when mixed with water and can _____ electricity.

Noble gas configuration	Opposite	Lose	Dissolve	4 valence electrons
8 valence electrons	Electrons		Ionic Compounds	Conduct
4 valence electrons	No valence electrons		Gain	Noble Gas

Identify the number of valence electrons and most common charge formed by each of the following

valence electrons

Common charge

1)	Mg	_____	_____
2)	Na	_____	_____
3)	Te	_____	_____
4)	I	_____	_____
5)	Al	_____	_____

Fill in the blank

When naming ionic compounds the _____ tends to be a metal with a _____ charge and is written _____. If it is an element that can form multiple charges, then the charge should be written in _____ after the name of the element. You (should/should not) alter the name of the cation. The second half of the name is for the _____ which tends to be a non-metal with a _____ charge. If it is an element, then you (should/should not) alter its name by changing the ending to _____. Either the cation or anion can be a polyatomic ion, in which case you (should/should not) alter its name.

Anion positive first cation negative parentheses -ide

Write the name of each compound. Example – $\text{CaCl}_2 \rightarrow$ “Calcium Chloride”

6)	NaF	_____
7)	Al_2O_3	_____
8)	FeCO_3	_____

Fill in the blank

To write the formula for a compound from its name, you must first identify the _____ that represent each ion/polyatomic ion. Next, identify the _____ of each ion. The charges on each must be _____ by adding that indicate how many of each ion is in the molecule. Polyatomic ions use _____ to show that there are multiples of the entire ion within a molecule.

Charge symbols parentheses subscripts balanced

Write the formula for each compound. Example – “Magnesium Fluoride” → MgF_2

- 9) Sodium Bromide _____
- 10) Aluminum Sulfide _____
- 11) Silver Nitrate _____
- 12) Cobalt (III) Nitrate _____

13) How do you know whether a compound is ionic or covalent? Example CH_3OH vs $MgSO_4$

HONORS

A yellow, soluble salt is commonly used in water treatment. A 100 g sample of this compound consists of 27.931% iron, 48.013% oxygen, and 24.056% sulfur. Please find the formula and name of this substance. This substance contains a polyatomic anion which is present in the table below.

Common Polyatomic ions			
Hydroxide OH^-	Nitrate NO_3^-	Acetate $C_2H_3O_2^-$	Cyanide CN^-
Oxalate $C_2O_4^{2-}$	Perchlorate ClO_4^-	Nitrite NO_2^-	
Ammonium NH_4^+	Thiosulfate $S_2O_3^{2-}$	Sulfate SO_4^{2-}	