

Monatomic Ions

Ions are atoms that have _____, making them a charged particle.

A _____ of electrons results in a positive ion or _____.

A _____ of electrons results in a negative ion or _____.

Simple cations are named by saying the element and adding the word "ion."

Na⁺ is called "sodium ion"

Mg²⁺ is called "magnesium ion"

Simple anions are named by dropping the ending off the element name and adding "ide."

F⁻ is called "fluoride"

O²⁻ is called "oxide"

Hint: the charge of a monatomic anion is equal to the group number minus 18.

Element Name	Element Symbol	Ion Name	Ion Formula
1. sodium			
2. bromine			
3. magnesium			
4. chlorine			
5. oxygen			
6. boron			
7. lithium			
8. neon			
9. phosphorus			
10. aluminum			
11. calcium			
12. iodine			
13. nitrogen			
14. cesium			
15. sulfur			
16. fluorine			
17. potassium			
18. barium			
19. hydrogen			
20. helium			

Simple Binary Ionic Compounds

Ionic compounds are compounds formed by the combination of a _____ and a _____.

Found in the combination of _____ and _____ elements.

When writing formulas for ionic compounds, _____ indicate how many of each atom is contained in the compound.

Remember that even though ions have charges, ionic compounds must be _____.

The net charge of an ionic compound equals zero.

Group # (Column)	Ion Charge	Examples
1	These elements <u>lose one</u> electron to form +1 ions.	Na ⁺ , Li ⁺ , K ⁺
2	These elements <u>lose two</u> electrons to form +2 ions.	Mg ²⁺ , Ca ²⁺ , Ba ²⁺
Groups 3-12	The elements in groups 3-12 are called transition metals. These elements always lose electrons to form positive ions (cations) but their charges vary. For example, iron can form a +2 or a +3 ion. <i>In cases like these, you must be told which ion to use.</i>	Fe ²⁺ , Fe ³⁺
13	These elements <u>lose three</u> electrons to form +3 ion.	Al ³⁺
14	The charges on these ions vary. Carbon and silicon do not form ions. For the rest of the group, you must be given the charge.	Sn ²⁺ , Pb ²⁺
15	These elements <u>gain three</u> electrons and form -3 ions.	N ³⁻ , P ³⁻
16	These elements <u>gain two</u> electrons to form -2 ions.	O ²⁻ , S ²⁻
17	These elements <u>gain one</u> electron to form -1 ions.	F ⁻ , Cl ⁻ , Br ⁻ , I ⁻
18	These atoms do NOT form ions. Their charge is always zero .	He, Ne, Ar, Kr

Name of Ionic Compound	Formula of Ionic Compound
1. Sodium bromide	
2. Calcium chloride	
3. Magnesium sulfide	
4. Aluminum oxide	
5. Lithium phosphide	
6. Cesium nitride	
7. Potassium iodide	
8. Barium fluoride	
9. Rubidium nitride	
10. Barium oxide	
11.	K_2O
12.	MgI_2
13.	$AlCl_3$
14.	$CaBr_2$
15.	Na_3N
16.	LiF
17.	Ba_3P_2
18.	Cs_2S
19.	SrF_2
20.	$NaCl$