

## Answer on Question #64314, Chemistry / General Chemistry

What is the valence of the element belonging to group 2, 16?

### Answer:

The group number is the number of valence electrons in an atom of these elements. In other words:

Group 2: 2 valence electrons

The Group 2 alkaline earth metals include Beryllium, Magnesium, Calcium, Barium, Strontium and Radium and are soft, silver metals that are less metallic in character than the Group 1 Alkali Metals. Although many characteristics are common throughout the group, the heavier metals such as Ca, Sr, Ba, and Ra are almost as reactive as the Group 1 Alkali Metals. All the elements in Group 2 have two electrons in their valence shells, giving them an oxidation state of +2.

Group 16: 6 valence electrons

The oxygen family, also called the chalcogens, consists of the elements found in Group 16 of the periodic table and is considered among the main group elements. It consists of the elements oxygen, sulfur, selenium, tellurium and polonium.

Properties of oxygen are very different from other elements of the group, but they all have 2 electrons in the outer s orbital, and 4 electrons in the p orbitals, usually written as  $s^2p^4$

The electron configurations for each element are given below:

Oxygen:  $1s^2 2s^2 2p^4$

Sulfur:  $1s^2 2s^2p^6 3s^2p^4$

Selenium:  $1s^2 2s^2p^6 3s^2p^6d^{10} 4s^2p^4$

Tellurium:  $1s^2 2s^2p^6 3s^2p^6d^{10} 4s^2p^6d^{10} 5s^2p^4$

Polonium:  $1s^2 2s^2p^6 3s^2p^6d^{10} 4s^2p^6d^{10}f^{14} 5s^2p^6d^{10} 6s^2p^4$