

Electron Affinity

1. What is electron affinity?

The energy change when an e^- is added to a gaseous atom.

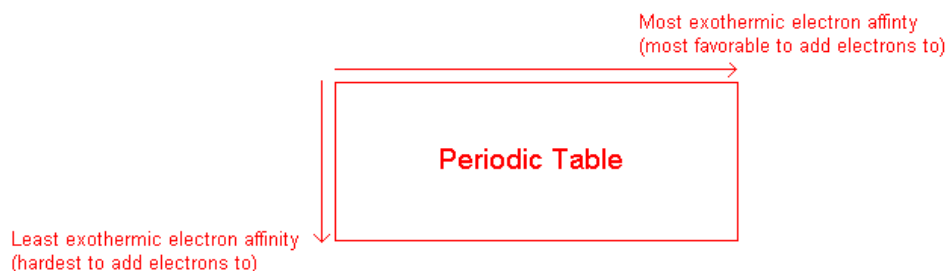


An endothermic process.

2. What element has the greatest electron affinity?

Chlorine has the greatest electron affinity. The reason that chlorine has a greater electron affinity than fluorine is that fluorine's small size leads to some electron-electron repulsion – making it less favorable.

3. General trends on the periodic table:



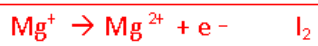
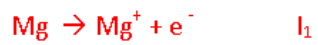
4. How would you determine the electron affinity for Mg^{2+} ?

Look at the second ionization energy of magnesium.

Remember that electron affinity means adding an electron -



This reaction is the reverse of the second ionization energy of Mg.



notice this is the reverse
reaction

So to determine the energy associated with the flip reaction – just change the sign of the ionization energy.