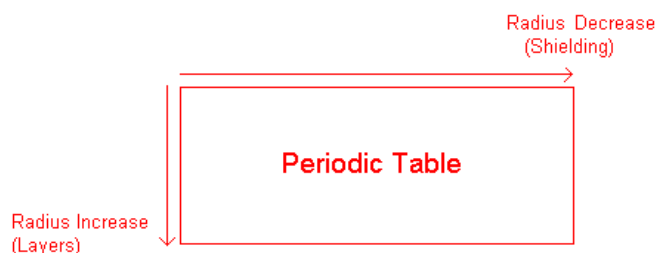


Atomic and Ionic Radius

1. Trends in atomic radius



2. Trends in ionic radius

Cations are smaller than their atomic counterpart. This is because; as the atoms lose electrons, the positive charge (Z_{eff}) gets larger. The more positivity the electrons feel, the closer the electrons pull in.

Anions are larger than their atomic counterparts. This is because; as the atoms gain electrons, the greater the negativity felt (smaller Z_{eff}). The increased negativity causes the electrons to repel one another – pushing each other further apart.

1. Arrange the following in order of increasing size

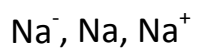
- a. Ba, F, Si

Ba is in the 6th row. F is in the 2nd row. Si is in the 3rd row. Atomic size increases going down the periodic table so $F < Si < Ba$

2. K, Br, Ni

K, Br and Ni are all in the 4th row. Thus we will arrange these knowing that the radius decreases going from group 1 \rightarrow group 8. Thus $Br < Ni < K$

3. Order in terms of increasing radius



Remember that because of positive/negative attraction – cations are smaller than the neutral atom and because of negative/negative repulsion - anions are larger than the neutral atom.

This leads to:

