

Atom	Z	Electron configuration	IE_1 $\frac{kJ}{mol}$	Z_{eff}	Trends in IE_1 is Explained by: a. Z increases b. Electron –electron repulsion c. New shell d. l increases or Z_{eff} decreases (shielding)	Ions (Ions Electron configuration)
He	2	$1s^2$	2373			He ⁺ $1s^1$
Li	3	$1s^2 2s^1$	520			Li ⁺ $1s^2$
Be	4	$1s^2 2s^2$	899			Be ⁺ $1s^2 2s^1$
B	5	$1s^2 2s^2 2p_x^1$	801			B ⁺
C	6	$1s^2 2s^2 2p_x^1 2p_y^1$	1086			C ⁺ $1s^2 2s^2 2p_x^1$
N	7		1400			N ⁺ $1s^2 2s^2 2p_x^1 2p_y^1$
O	8		1314			O ⁺ $1s^2 2s^2 2p_x^1 2p_y^1 2p_z^1$
F	9	$1s^2 2s^2 2p_x^2 2p_y^2 2p_z^1$	1680			F ⁺
Ne	10		2080			Ne ⁺ $1s^2 2s^2 2p_x^2 2p_y^2 2p_z^1$
Na	11		496			Na ⁺ $1s^2 2s^2 2p_x^2 2p_y^2 2p_z^2$
Mg	12	$1s^2 2s^2 2p_x^2 2p_y^2 2p_z^2 3s^1$ = [Ne] $3s^2$	738			Mg ⁺ [Ne] $3s^1$
Al	13	[Ne] $3s^2 3p_x^1$	578			Al ⁺ [Ne] $3s^2$

Atom	Z	Ions (Ions Electron configuration)	IE_2 $\frac{kJ}{mol}$	Z_{eff} For the Ions	Trends in IE_2 is Explained by: a. Z increases b. Electron – electron repulsion c. New shell d. l increases or Z_{eff} decreases (shielding)
He	2	He ⁺ 1s ¹	5248		
Li	3	Li ⁺ 1s ²	7300		
Be	4	Be ⁺ 1s ² 2s ¹	1757		
B	5	B ⁺	2430		
C	6	C ⁺ 1s ² 2s ² 2p _x ¹	2350		
N	7	N ⁺ 1s ² 2s ² 2p _x ¹ 2p _y ¹	2860		
O	8	O ⁺ 1s ² 2s ² 2p _x ¹ 2p _y ¹ 2p _z ¹	3390		
F	9	F ⁺	3370		
Ne	10	Ne ⁺ 1s ² 2s ² 2p _x ² 2p _y ² 2p _z ¹	3950		
Na	11	Na ⁺ 1s ² 2s ² 2p _x ² 2p _y ² 2p _z ²	4560		
Mg	12	Mg ⁺ [Ne]3s ¹	1450		
Al	13	Al ⁺ [Ne]3s ²	1820		