

Periodic Trend Data Tables

The following data tables are provided to help understand periodic trends on the periodic table.

Atomic Radius

Group Trend (up to down): Atom Size **increases** from top to bottom of periodic table

Period Trend (left to right): Atom Size **decreases** from left to right of periodic table

Atomic Radius (*pm*) for representative (A) elements on periodic table

1A (1) 2A (2) 3A (13) 4A (14) 5A (15) 6A (16) 7A (17) 8A (18)

H 32							He 37
Li 130	Be 99	B 84	C 75	N 71	O 64	F 60	Ne 62
Na 160	Mg 140	Al 124	Si 114	P 109	S 104	Cl 100	Ar 101
K 200	Ca 174	Ga 123	Ge 120	As 120	Se 118	Br 117	Kr 116
Rb 215	Sr 190	In 142	Sn 140	Sb 140	Te 137	I 136	Xe 136
Cs 238	Ba 206	Tl 144	Pb 145	Bi 150	Po 142	At 148	Rn 146

Ion Radius

Cations (+ ion, lose e^-): Cations are **smaller** than the neutral atom

Anions (- ion, gain e^-): Anions are **larger** than the neutral atom

Neutral Atom and Ion Radius (*pm*) for select elements on periodic table

1A (1) 2A (2) 3A (13) 6A (16) 7A (17)

Li 134	Li¹⁺ 90	Be 90	Be²⁺ 59	B 82	B³⁺ 41	O 73	O²⁻ 126	F 71	F¹⁻ 119
Na 154	Na¹⁺ 116	Mg 130	Mg²⁺ 86	Al 118	Al³⁺ 68	S 102	S²⁻ 170	Cl 99	Cl¹⁻ 167
K 196	K¹⁺ 152	Ca 174	Ca²⁺ 114	Ga 126	Ga³⁺ 76	Se 116	Se²⁻ 184	Br 114	Br¹⁻ 182
Rb 211	Rb¹⁺ 166	Sr 192	Sr²⁺ 132	In 144	In³⁺ 94	Te 135	Te²⁻ 207	I 133	I¹⁻ 206

Ionization Energy / Electron Affinity

Group Trend (up to down): Ionization Energy / EA **decreases** from top to bottom of periodic table

Period Trend (left to right): Ionization Energy / EA **increases** from left to right of periodic table

Ionization Energy (eV) for representative (A) elements on periodic table

1A (1) 2A (2) 3A (13) 4A (14) 5A (15) 6A (16) 7A (17) 8A (18)

H 13.59							He 24.58
Li 5.39	Be 9.32	B 8.30	C 11.26	N 14.53	O 13.61	F 17.42	Ne 21.56
Na 5.14	Mg 7.64	Al 5.98	Si 8.15	P 10.48	S 10.36	Cl 13.01	Ar 15.75
K 4.34	Ca 6.11	Ga 6.00	Ge 7.88	As 9.81	Se 9.75	Br 11.84	Kr 14.00
Rb 4.18	Sr 5.69	In 5.78	Sn 7.34	Sb 8.65	Te 9.01	I 10.45	Xe 12.13
Cs 3.89	Ba 5.21	Tl 6.10	Pb 7.41	Bi 7.29	Po 8.43	At 9.20	Rn 10.75

Electronegativity

Group Trend (up to down): Electronegativity **decreases** from top to bottom of periodic table

Period Trend (left to right): Electronegativity **increases** from left to right of periodic table

Electronegativity for representative (A) elements on periodic table

1A (1) 2A (2) 3A (13) 4A (14) 5A (15) 6A (16) 7A (17) 8A (18)

H 2.1							He* N/A
Li 1.0	Be 1.5	B 1.5	C 2.5	N 3.0	O 3.5	F 4.0	Ne* N/A
Na 0.9	Mg 1.2	Al 1.5	Si 1.8	P 2.1	S 2.5	Cl 3.0	Ar* N/A
K 0.8	Ca 1.0	Ga 1.6	Ge 1.8	As 2.0	Se 2.4	Br 2.8	Kr* N/A
Rb 0.8	Sr 1.0	In 1.7	Sn 1.8	Sb 1.9	Te 2.1	I 2.5	Xe* N/A
Cs 0.7	Ba 0.9	Tl 1.8	Pb 1.9	Bi 1.9	Po 2.0	At 2.2	Rn* N/A

* Noble Gases (8A/18) do not have electronegativities due to not bonding / sharing electrons