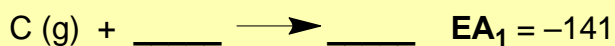


CONCEPT: PERIODIC TREND: ELECTRON AFFINITY

- **Electron Affinity (EA):** Energy *released* (exothermic) from the addition of an electron to a gaseous atom or ion in ____.



- **Exothermic Reaction:** Reaction *releases* energy in order to create a bond.
 - More _____ electron affinity value = more exothermic reaction.
 - **Exceptions:** Electron affinity _____ means the element will not readily accept an electron.
- **Periodic Trend:** Electron affinity _____ moving from left to right across a period and going up a group.

Electron Affinity																		
Electron Affinity																		
1A (1)	2A (2)											3A (3)	4A (4)	5A (5)	6A (6)	7A (7)	8A (8)	
1 H -72.8																		He 3 0
2 Li -59.6	Be 3 0	3B	4B	5B	6B	7B	8B			1B	2B	B -27.0	C -122	N 3 0	O -141	F -328	Ne 3 0	
3 Na -52.9	Mg 737.7	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Al -41.8	Si -134	P -72.0	S -200	Cl -349	Ar 3 0	
4 K -48.4	Ca -2.40	Sc -18.0	Ti -8.00	V -51.0	Cr -65.2	Mn 3 0	Fe -15.0	Co -64.0	Ni -112	Cu -119	Zn 3 0	Ga -40.0	Ge -119	As -78.0	Se -195	Br -325	Kr 3 0	
5 Rb -46.9	Sr -5.00	Y -30.0	Zr -41.0	Nb -86.0	Mo -72.1	Tc -60.0	Ru -101	Rh -110	Pd -54.2	Ag -126	Cd 3 0	In -39.0	Sn -107	Sb -101	Te -190	I -295	Xe 3 0	
6 Cs -45.5	Ba -14.0	La -45.0	Hf 3 0	Ta -31.0	W -79.0	Re -20.0	Os -104	Ir -151	Pt -205	Au -223	Hg 3 0	Tl -37.0	Pb -35.0	Bi -90.9	Po -180	At -270	Rn 3 0	
7																		

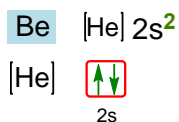
EXAMPLE: Which of the following halogens will have the most exothermic electron affinity?

- a) S b) Ne c) N d) At e) Br

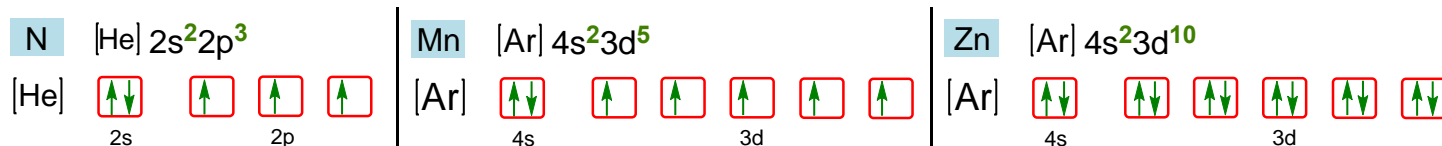
Exceptions to Electron Affinity

- **Exceptions:** Elements that possess stable, symmetrical orbitals are less likely to accept an electron.

- s subshell orbitals: most stable when totally-filled with electrons.

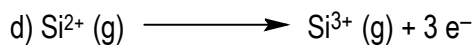
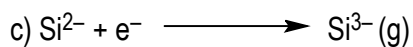
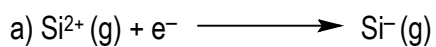


- p and d subshell orbitals: most stable when half-filled or totally-filled with electrons.



CONCEPT: PERIODIC TREND: ELECTRON AFFINITY

PRACTICE: Which of the following represents the **third electron affinity** of Si?



PRACTICE: Determine which atom in the following set has the most exothermic electron affinity: N, O, C, B, Ne

a) N

b) O

c) C

d) B

e) Ne

PRACTICE: Rank the following elements in order of increasing electron affinity: Cs, Hg, F, S