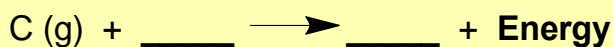


## CONCEPT: PERIODIC TREND: ELECTRON AFFINITY (SIMPLIFIED)

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



- **Exceptions:** Electron affinity \_\_\_\_\_ means the element will not readily accept an electron.
  - **Reason:** Uniquely stable electron configurations (arrangements).
- **Periodic Trend:** Electron affinity \_\_\_\_\_ moving from left to right across a period and going up a group.
- \_\_\_\_\_ EA: Electron not easily accepted
- \_\_\_\_\_ EA: Electron is easily accepted.

|           |            |           |            |            |           |            |           |            |            |           |           |                    |  |            |           |            |           | Electron Affinity _____ |            |           |           |           |           |           |
|-----------|------------|-----------|------------|------------|-----------|------------|-----------|------------|------------|-----------|-----------|--------------------|--|------------|-----------|------------|-----------|-------------------------|------------|-----------|-----------|-----------|-----------|-----------|
| 1A<br>(1) |            | 2A<br>(2) |            |            |           |            |           |            |            |           |           | 8B<br>(8) (9) (10) |  | 1B<br>(11) |           | 2B<br>(12) |           | 3A<br>(3)               | 4A<br>(4)  | 5A<br>(5) | 6A<br>(6) | 7A<br>(7) | 8A<br>(8) |           |
| 1         | H<br>72.8  |           |            |            |           |            |           |            |            |           |           |                    |  |            |           |            |           |                         |            |           |           |           |           | He<br>£ 0 |
| 2         | Li<br>59.6 | Be<br>£ 0 |            |            |           |            |           |            |            |           |           |                    |  |            |           |            |           |                         | B<br>27.0  | C<br>122  | N<br>£ 0  | O<br>141  | F<br>328  | Ne<br>£ 0 |
| 3         | Na<br>52.9 | Mg<br>£ 0 |            |            |           |            |           |            |            |           |           |                    |  |            |           |            |           |                         | Al<br>41.8 | Si<br>134 | P<br>72.0 | S<br>200  | Cl<br>349 | Ar<br>£ 0 |
| 4         | K<br>48.4  | Ca<br>£ 0 | Sc<br>18.0 | Ti<br>8.00 | V<br>51.0 | Cr<br>65.2 | Mn<br>£ 0 | Fe<br>15.0 | Co<br>64.0 | Ni<br>112 | Cu<br>119 | Zn<br>£ 0          |  | Ga<br>40.0 | Ge<br>119 | As<br>78.0 | Se<br>195 | Br<br>325               |            |           |           |           |           | Kr<br>£ 0 |
| 5         |            |           |            |            |           |            |           |            |            |           |           |                    |  |            |           |            |           |                         |            |           |           |           |           |           |
| 6         |            |           |            |            |           |            |           |            |            |           |           |                    |  |            |           |            |           |                         |            |           |           |           |           |           |
| 7         |            |           |            |            |           |            |           |            |            |           |           |                    |  |            |           |            |           |                         |            |           |           |           |           |           |

**EXAMPLE:** Which of the following halogens will release the most energy with the addition of an electron?

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

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

- a) N                      b) O                      c) C                      d) B                      e) Ne

**CONCEPT: PERIODIC TREND: ELECTRON AFFINITY (SIMPLIFIED)**

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

**PRACTICE:** Which one of the following atoms has the least tendency to gain another electron?

a) Neon

b) Oxygen

c) Chlorine

d) Sodium

e) Hydrogen

**PRACTICE:** Arrange the following elements from greatest to least tendency to accept an electron: F, Li, C, O, Be