

Electron Affinity

The type of bond formed during a reaction is related to each atom's attraction for electrons. Electron affinity is a measure of the tendency of an atom to accept an electron. Excluding noble gases, electron affinity increases with increasing atomic number within a period and decreases with increasing atomic number within a group. The scale of electronegativities allows chemists to evaluate the electron affinity of specific atoms in a compound. Electronegativity indicates the relative ability of an atom to attract electrons in a chemical bond. Note that electronegativity values were assigned, whereas electron affinity values were measured.

Teaching Strategy

Electronegativity and Polarity Have two students help with a quick demo. Ask both students to pull on a rope with equal strength. Tell the class the rope represents a shared pair of electrons. Ask the class what this represents when atoms share electrons. **equal sharing of electrons** Ask one student to pull harder than the other student. The second student should be pulled toward the first student. Ask the class what this represents when atoms share electrons. **unequal sharing of electrons** Have students identify which atoms have a greater tendency to gain electrons. **the ones with the greatest pull on the electrons** Ask students what type of bond is represented if the electron is completely pulled away from one atom. **an ionic bond**