An electrophilic atom is an electron-deficient atom in a molecule or ion. Use the following generalizations to identify most common types of electron-deficient atoms:

1. An atom that lacks an octet of valence electrons in one or more resonance forms is electron-deficient.
   
   eg. 1:
   
   ![Diagram of molecule with boron and three hydrogens showing electron-deficient B atom]
   
   eg. 2:
   
   ![Diagram of molecule with carbon and four hydrogens showing electron-deficient C atom]
   
   eg. 3:
   
   ![Diagram showing resonance between two forms of molecule with carbon, oxygen, and hydrogens showing electron-deficient C atom]

2. A formally neutral atom bearing a partial positive charge but no lone pairs is an electron-deficient atom.

   eg. 1:
   
   ![Diagram of molecule with carbon, chlorine, and hydrogen showing electron-deficient C atom]
   
   eg. 2:
   
   ![Diagram of molecule with carbon, bromine, and hydrogens showing electron-deficient C atom]
eg. 3:

see also nucleophilic atom, nucleophile, electrophile

Contributors

• Gamini Gunawardena from the OChemPal site (Utah Valley University)