

Determining Covalent Bonds

Steps to Determine Type of Covalent Bonds

Covalent bonds are determined with the following steps:

1. Draw a single line between atoms
2. Add unpaired electrons to all atoms
3. Count electrons around all atoms
 - Bonds act as two electrons
4. Add additional lines when an atom does not have enough electrons
 - 6 electrons: 1 extra line
 - 4 electrons: 2 extra lines

Element Group Number
of bonds and pairs

Central Atom Group #	Number of Electron Pairs	Number of Single Bonds
Group 1A	0	1
Group 4A	0	4
Group 5A	1	3
Group 6A	2	2
Group 7A	3	1
Group 8A	4	0