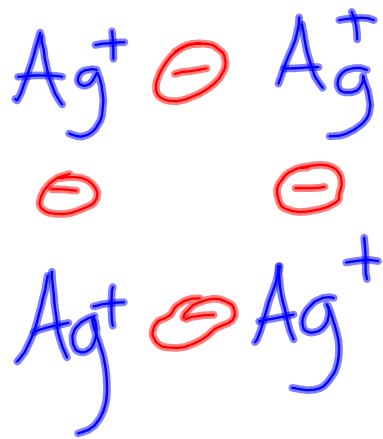
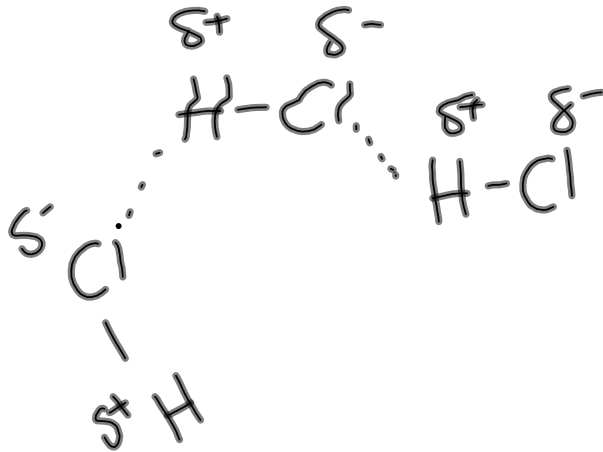


Chemical Bonding Topics

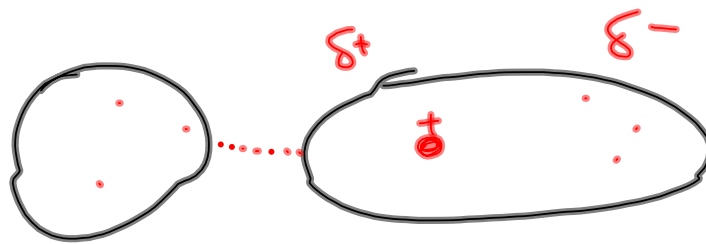
- Octet Rule
- Electron Dot Structure
- Metallic Bonding
- Covalent Bonding
- Coordinate Covalent Bonding
- VSEPR Theory
- Hybridization
- Polarity
- Intermolecular Forces
- Properties of Ionic Crystals, Covalent Compounds, Network Solids



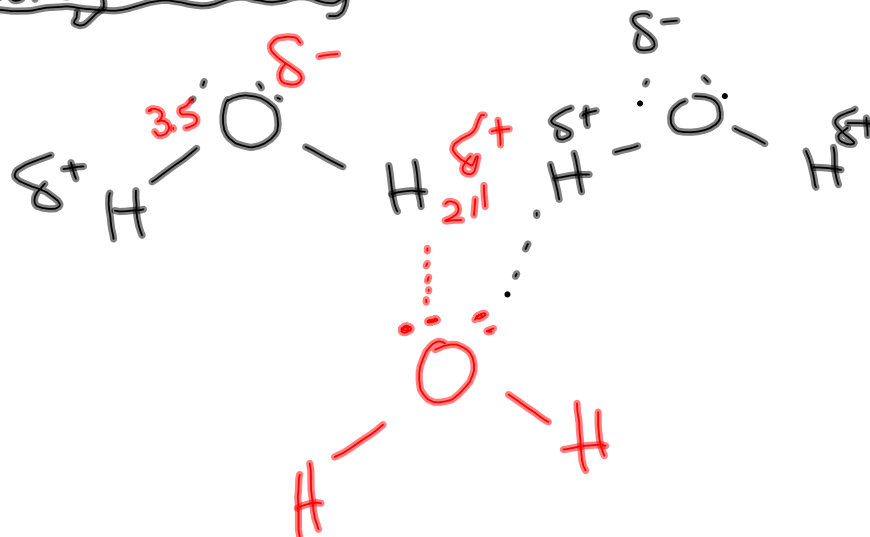
Dipole Interactions (POLAR)

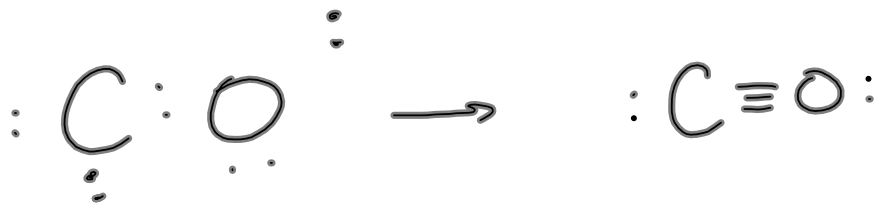


LDF (nonpolar)

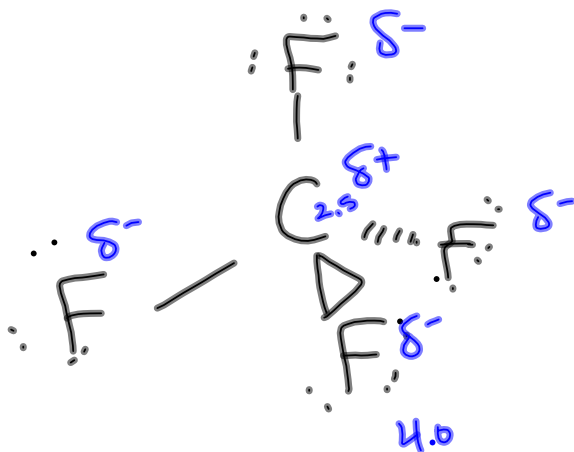
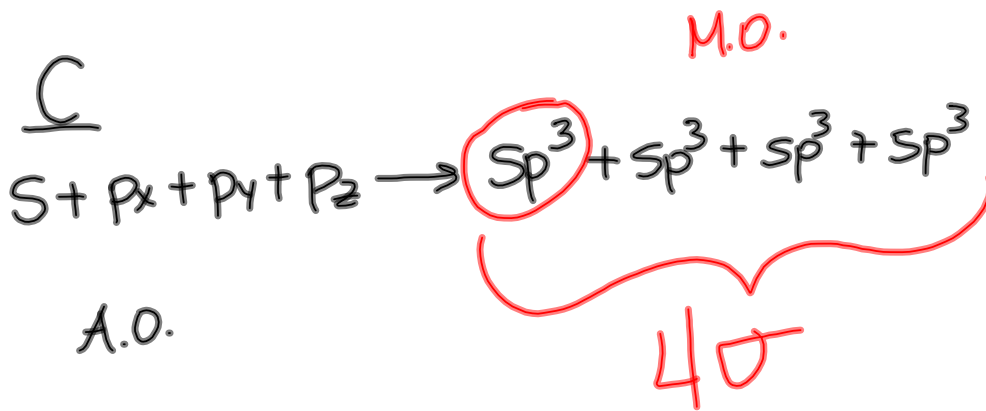
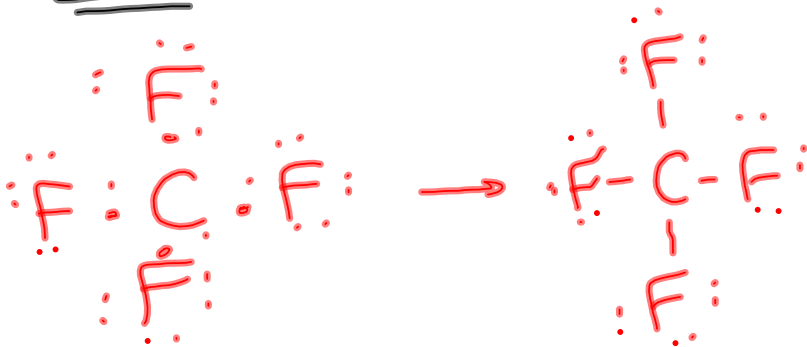


Hydrogen Bonding



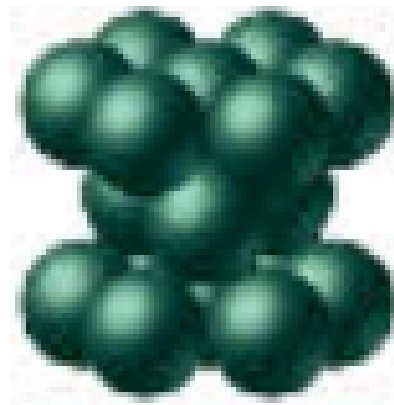
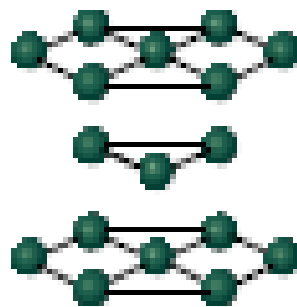
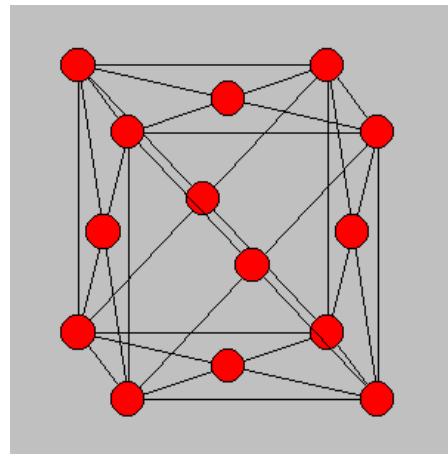
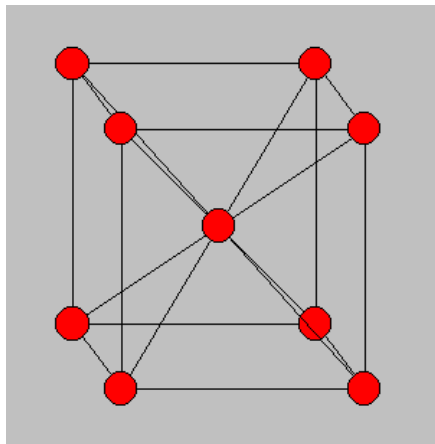


CF₄ → ~~orb~~ structure, shape, hybrid, polarity

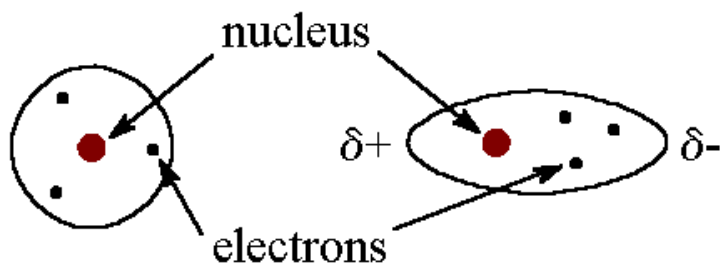
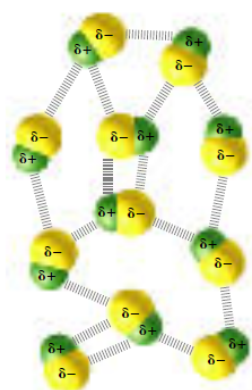


nonpolar





Hexagonal close-packed



symmetrical
distribution

unsymmetrical
distribution

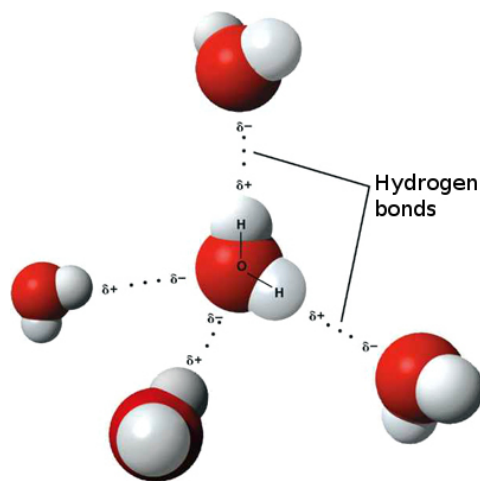
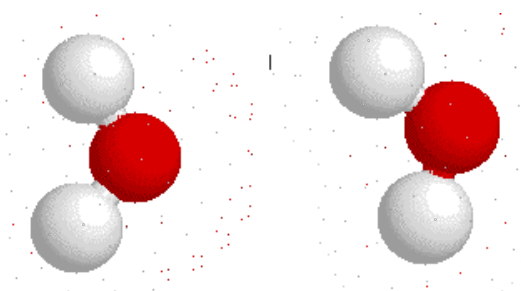
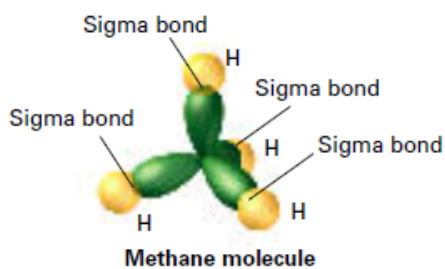
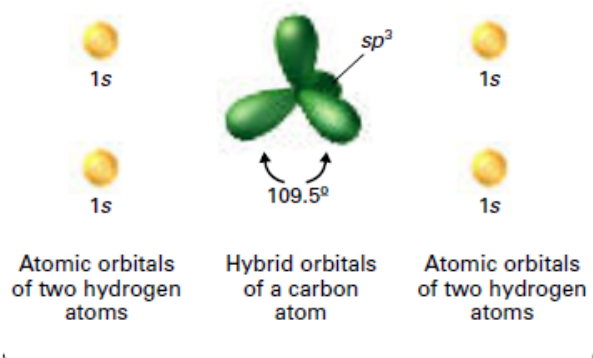
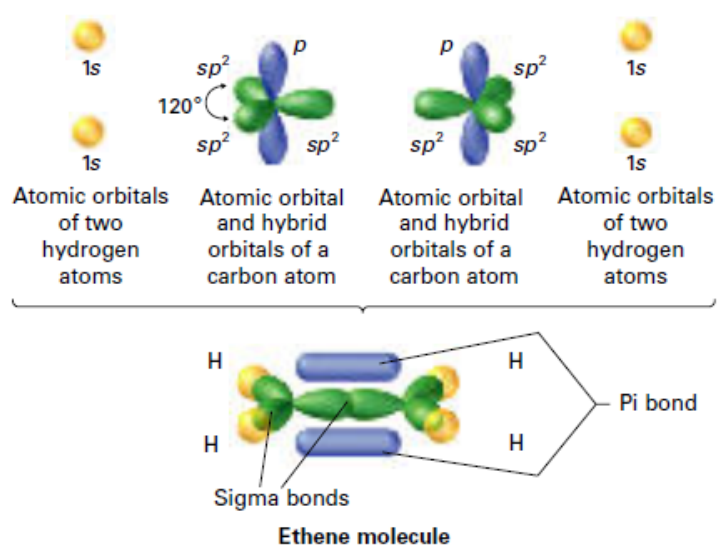


Table 6.3 Electronegativity Differences and Bond Types

Electronegativity difference range	Most probable type of bond	Example
0.0-0.4	Nonpolar covalent	H - H (0.0)
0.4-1.0	Moderately polar covalent	H - Cl (0.9)
1.0-2.0	Very polar covalent	H - F (1.9)
≥ 2.0	Ionic	Na⁺ Cl⁻ (2.1)

*** No sharp boundary between ionic and covalent**





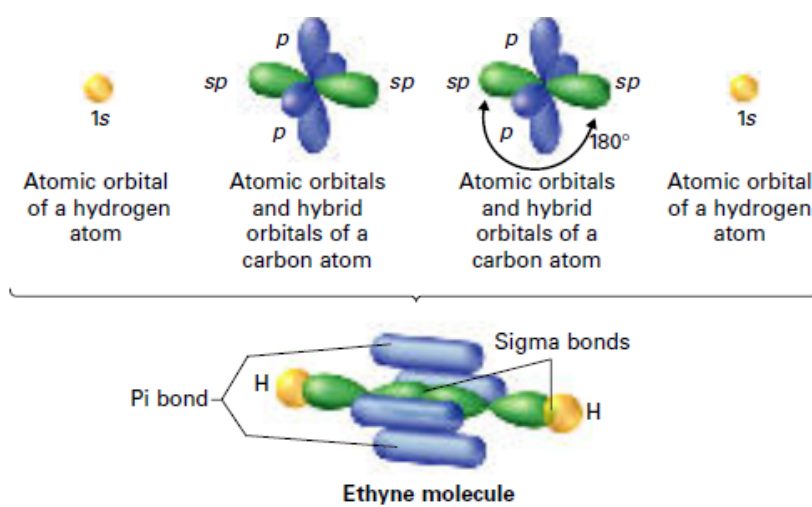


Table 6.2

Electronegativity Values for Selected Elements

H 2.1						
Li 1.0	Be 1.5	B 2.0	C 2.5	N 3.0	O 3.5	F 4.0
Na 0.9	Mg 1.2	Al 1.5	Si 1.8	P 2.1	S 2.5	Cl 3.0
K 0.8	Ca 1.0	Ga 1.6	Ge 1.8	As 2.0	Se 2.4	Br 2.8
Rb 0.8	Sr 1.0	In 1.7	Sn 1.8	Sb 1.9	Te 2.1	I 2.5
Cs 0.7	Ba 0.9	Tl 1.8	Pb 1.9	Bi 1.9		

Chapter 8 Review

p. 207-209 #48, 49, 60, 63, 65, 75, 78

p. 247-249 #39-61-65, 72, 73, 75, 76