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F, Cl, Br, I	Single bonds only
B	Three Single bonds only
C	Four Single bonds Double bond + 2 single bonds Triple bond + single bond Two double bonds
N	Three Single bonds or Triple bond
O	Two Single bonds or Double bond
Si	Two double bonds
P, As	Three Single bonds only
S	2 Single bonds or 1 double bond
Se, Te	Two Single bonds

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<p>Boron maxes out with just 6 valence <math>e^-</math> Resonating Bonds in <math>O_3</math>, <math>C_6H_6</math> (benzene) <math>PCl_5</math> maxes out with 10 valence <math>e^-</math> <math>CO</math> and <math>NH_4^{+1}</math> also make coordinate covalent bonds</p>
<p>Ionic Bonding (transferring of electrons)</p> <p>Metals lose <math>e^-</math> form cations, which transfer <math>e^-</math> to nonmetals that form anions. The <math>e^-</math> transfer must be perfect, simple whole number ratios. Ion charges sum to zero.</p> <p>Must be metal and nonmetal, except <math>NH_4^{+1}</math></p>

The Three Intermolecular Attractions or IMF, weak to strong	
Electron dispersion	Caused by temporary movement of electrons, creates + and — “moments” in cloud
Dipole attraction	Caused by near constant + and — poles created by differences in EN values of bonding atoms in polar molecules
Hydrogen bonding	Caused by near constant + and — poles created by differences in EN values of bonding atoms in polar molecules — containing H atoms. Strongest of all three IMF

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