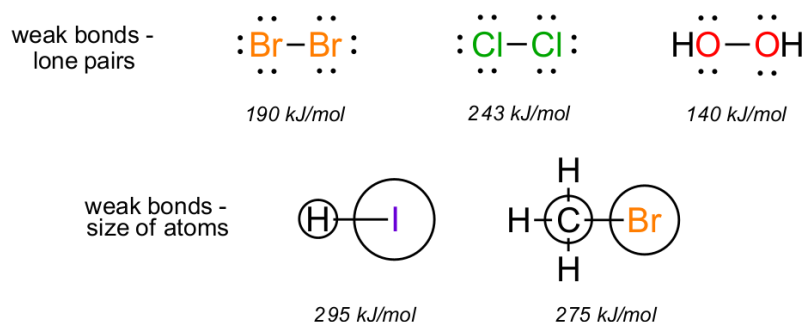


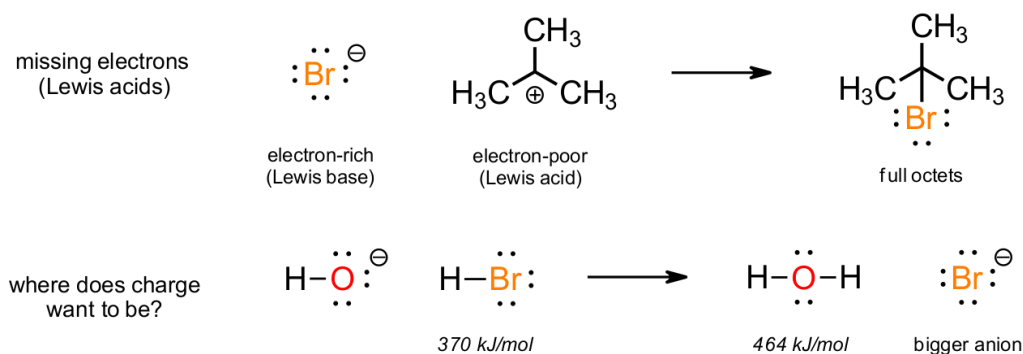
Reactivity: Molecules Want to Become Stable

What makes Organic molecules reactive?

- As in General Chemistry, molecules are going to react with other molecules so that the whole system becomes more stable. Weak bonds get swapped for stronger bonds while charge (positive or negative) finds its way to the best location possible. These ideas are used throughout the Organic sequence to explain how chemicals change.
- What constitutes a reactive molecule? Weak bonds are a good place to start. Numerous reactions feature reagents such as Br-Br, HO-OH and similar which have atoms with multiple lone pairs directly next to each other. These bonds will always be broken along the way during reactions to give more stable outcomes. Likewise, when atoms of quite different size bond together those bonds tend to be weak and easily broken.



- When an atom is missing electrons from the octet (e.g. B, Al, C⁺) they will be reactive towards electron-rich species. Positively charged carbon (i.e. carbocations) will feature regularly in Organic 1 and 2 and serve as electron-poor reactive intermediates. Their reactions as Lewis acids with electron-rich Lewis bases gives molecules with full octets. Also, when negative charge may be swapped from less stable (maybe smaller) atoms to one able to stabilize the charge better, this will result in predictable reactions.



- Over the course of two semesters of Organic Chemistry you will become much more comfortable with what constitutes reactivity and why molecules undergo change.