Study Guide or: How I Learned to Stop Worrying and Love Thermochem

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| **Given?** | **Asked to find?** | **Use:** |
| 1. A reaction **with** ΔH (kJ/mol) 2. **Either**:    1. g or mol of a substance    2. energy change (J or kJ) | 1. **Either**:    1. g or mol of a substance    2. energy change (J or kJ) | **Stoich!** Don’t forget to convert between moles of your substance of molesrxn |
| 1. A reaction **without** ΔH (kJ/mol) 2. A lot of bond energies | ΔHrxn | 1. Draw the Lewis structures. 2. Use the following:   ΔHrxn = Σ(BEreactants)− Σ(BEproducts) |
| 1. A reaction **without** ΔH (kJ/mol) 2. A lot of heats of formation (ΔHf) | ΔHrxn | ΔHrxn = ΣΔHf (products)− ΣΔHf (reactants) |
| 1. A reaction **without** ΔH (kJ/mol) 2. Multiple reactions **with** ΔH | ΔHrxn | **Hess’s Law!** Rearrange the equations to make the goal equation, then combine your new ΔH’s |
| 1. A phase change (vaporizing, condensing, freezing or melting) 2. ΔHvap orΔHfus | Energy change  (heat absorbed or released) | q = nΔH |
| 1. A temperature change 2. Mass or moles of a substance 3. Heat capacity ( or ) | Energy change  (heat absorbed or released) | q=mC ΔT  (or q=nC ΔT for molar specific heat) |