

Thermochemistry

Reading Assignments

Chemistry (sixth edition), Chpt. 6, appendix 4 (selected thermochemical data)

Supplementary Reading

none

Homework/Activities

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|---|------------|
| • Chapter 6 review #22-36e
(energy, heat, work, enthalpy) | Due: _____ |
| • Chapter 6 review #38-48e
(calorimetry, heat capacity, specific heat) | Due: _____ |
| • Chapter 6 review #50-58e
(Hess' Law) | Due: _____ |
| • Chapter 6 review #60-68e
(Enthalpies of formation) | Due: _____ |
| • Chapter 6 review #76-90e, 92a
(mixed practice) | Due: _____ |
| • TBA: _____ | Due: _____ |

Concepts/Topics

- System and surroundings, internal energy, heat, work, $\Delta E = q + w$
- PV work, $w = -P\Delta V$
- Enthalpy, change in enthalpy (breaking and making of bonds)
- Calorimetry (constant pressure/coffee cup, bomb calorimeters)
- Heat Capacity, Specific Heat (intensive properties (temp), extensive properties (heat))
- Hess' Law (state functions, reversing reaction, multiplying coefficients, elements in std. state)
- Standard conditions (**not** the same as STP)
- Enthalpies of formation (enthalpy of formation = enthalpies of products - reactants)

Web Resources

Heat Transfer (water + misc)	science.widener.edu/svb/tutorial/heatxfer2csn7.html
Heat Transfer (water only)	science.widener.edu/svb/tutorial/heatxfer1csn7.html
Hess' Law	science.widener.edu/svb/tutorial/hesslawcsn7.html
Hess' Law	www.sciencegeek.net/Activities/Hesslaw.html

On heat transfer problems, for water + misc just work on the specific heat of the other substance or final temp. For water only, just work on final temp.