

Quiz for Video 8 – Thermochemistry

- Which of the following is NOT a form of energy?
 - Heat
 - Work
 - Kinetic Energy
 - Temperature
- If object A has a heat capacity of 1000 J/K, while object B has a heat capacity of 1500 J/K, which one will increase in temperature more when 5000 J of heat is applied?
 - Object A
 - Object B
 - Both will increase equivalently
 - Not enough information
- What is the difference between a specific heat capacity and a heat capacity?
 - Heat capacity refers to an object while specific heat capacity refers to 1 gram of a substance
 - Specific heat capacity is more accurate
 - Only specific heat capacity can calculate temperature changes
 - Both are interchangeable
- We run a reaction in a perfect calorimeter, and the calorimeter increases in thermal energy by 400 J. What does this mean about the energy of the reaction?
 - It gained 400 J
 - It gained less than 400 J
 - It lost 400 J
 - It lost more than 400 J
- The enthalpy of combustion of ethanol is shown as: $\Delta H_c = -1366.8 \text{ kJ/mol}$. What does this mean about the enthalpy of the reactants compared to the products?
 - Reactants have more enthalpy
 - Reactants have less enthalpy
 - Reactants have the same enthalpy
 - Not enough information
- The enthalpy of combustion of ethanol is shown as: $\Delta H_c = -1366.8 \text{ kJ/mol}$. How much energy is released or absorbed when 0.10 moles of ethanol combust?
 - 136.68 kJ are released
 - 136.68 kJ are absorbed
 - 0.10 kJ is released
 - 0.10 kJ is absorbed
- The specific heat capacity of water is 4.184 J/g °C. If we add 210 J of heat to a 2.5 gram sample of water, calculate the change in its temperature.
 - It increases 2.5 °C
 - It increases 4.184 °C
 - It increases 20.0 °C
 - It increases 210 °C
- If a 3.0 g cube of hot metal is placed into a water bath, and the water absorbs 25 J from the metal. How much energy was lost from the metal?
 - 1.0 J
 - 3.0 J
 - 8.3 J
 - 25 J
- If a 3.0 g cube of metal loses 400 J of energy while also decreasing in temperature 50 °C, what is the specific heat capacity of the metal?
 - 2.67 J/g °C
 - 5.12 J/g °C
 - 8.0 J/g °C
 - 10.0 J/g °C
- Why do we need to sometimes use heat capacity rather than specific heat capacity?
 - We don't
 - Heat capacity is more accurate
 - Some objects are made from multiple materials
 - We never use specific heat capacity