

Heat, Heat capacities, and Specific Heat Capacities Instructions for Submitting Answers

Answer the questions on Standard binder paper or type the answers. The answers should reflect clarity of thought: 1-2 sentences should suffice. Use good grammar, spelling, and syntax. Show your calculations with significant figures and units. The calculations should be easy to follow.

Part One: Make sure your answers are clear, you will lose points for messy and unreadable answers

Part Two: Using the graph, the textbook, and other reputable sources.

Part Three: Solve the following problems. Put the final answers in the report sheet in the space provided. Attach the pages for Part 1 and Part 2.

Phase changes

1. How many Joules of heat were added to melt the ice and warm the resulting water to 21.00°C?	
2. How many joules are required to convert 10.0g of solid ethyl alcohol at -180.3°C to the vapor state at the boiling point of 78.3°C?	

Warming or cooling material

1. What is the specific heat of the metal?	
2. What is the final temperature of the mixture when the two samples of water were mixed.	

Reactions in Calorimeters

1. What is the heat of the reaction in kJ/mol of AgCl?	
2. (a) What is the heat needed or released when barium hydroxide mixes with hydrochloric acid?	
(b) What is the temperature of the final mixture?	

Bomb Calorimeter

1. What is the heat capacity of the calorimeter?	
2. What is the energy of combustion in kJ/g and kJ/mol of quinone.	
3. (a) What is the heat capacity of the calorimeter using benzoic acid as a standard.	
(b) What is the energy of combustion of vanillin in kJ/g?	