

name _____

ID# _____

Experiment 10

Specific Heat and Heat of Fusion

Specific Heat

Mass of the empty calorimeter and cup _____

Mass of the copper _____

Mass of the water _____

Initial temperature of the water _____

Initial temperature of the copper _____

Final temperature of the copper and water _____

Specific heat of copper = _____

% error = _____

Show calculations here:

Heat of Fusion

Mass of the calorimeter and warm water _____

Initial temperature _____

Mass of the calorimeter, water, and ice _____

Final temperature _____

Latent heat of fusion for ice = _____

% error = _____

Show equations and calculations here:

(8 points)

A phase change can also occur when liquids evaporate or when gases condense. Why does perspiring help you keep cool in summer? Why do vegetables cook when you put them in a basket over boiling water, when they never touch the water?

Questions

1. Which experienced a greater temperature change, the water or the copper? Why?
(3 points)

2. Which experienced the greater change in heat, the water or the copper? Why?
(3 points)

3. If you wanted to cool a glass of tea which would be better, adding 50 g of water at 0° or 40 g of ice at 0° ? Why?
(3 points)

4. An active person eats about 2000 Calories every day, How much energy does this provide in Joules? How much water could you heat from 0°C to boiling with 2000 dietary calories?
(3 points)