

During Class Invention

Name(s) with Lab section in Group

Specific Heat of Aluminum

Enter the following data that you collected in the BCE

Mass of the aluminum: _____ grams

Mass of the water: _____ grams

Initial temperature of the water in the coffee-cup calorimeter: _____ °C

Initial temperature of the aluminum: _____ °C

Final temperature of the water in the coffee-cup calorimeter: _____ °C

Final temperature of the aluminum in the coffee-cup calorimeter: _____ °C

Specific heat of aluminum: _____

In your group compare the calculated specific heat of aluminum you obtained in your BCE.

Discuss any difference in calculated value and come to a consensus value for the specific heat of aluminum

What is the literature value for the specific heat of aluminum.

Is there any difference between your experimental specific heat of aluminum and the literature value?

If the experimental and literature values do not agree suggest possible reasons.

BP of water is less than 100 °C (at the location the experiment was performed)

BP of water is greater than 100 °C

Heat is lost from the water to air during the transfer.

Heat is lost from aluminum to air during the transfer.

Water evaporated so the mass is actually less than measured.

Heat from the aluminum is gained by the thermometer and the coffee-cup calorimeter as well as the water.

CLICKER QUESTIONS

Two questions:

Pick from the list of explanations for error, the other to pick from a list of aluminum specific heats (THAT WE WOULD GET FROM THE literature.)

Additional clicker questions formatted correctly;

Does heat flow from the aluminum to the water or from the water to the aluminum in this experiment?

Calculate the heat absorbed by the water. How does the heat absorbed by the water compare to the heat absorbed by the aluminum?

After calculating the specific heat of the aluminum ask some questions like;

if the amount of aluminum in the experiment is halved, how would that effect the initial temperature of the aluminum or the water?

Would more heat or less heat be released by the aluminum?

Would more heat or less heat be absorbed by the water?

Does the value of the specific heat of aluminum change?

If the amount of water used in the experiment were higher;

would that change anything in the experiment? Initial temperatures, final temperatures? Heat released by aluminum? Heat absorbed by the water? The specific heat of the aluminum?

How does heat flow from the hot solid aluminum cylinder (contains aluminum atoms) to the water molecules in the liquid phase?