

Exp #15

Objective:

A. To determine the specific heat of a substance. To see the change in temperature in a substance.

B. The materials that we used in this experiment were Safety goggles to protect our eyes. We used 600 mL beaker were we had the water boiling. To be able to boiled the water we used a ring stand, ring support, wire gauze, and a gas burner. We used a centigram balance to see how many lead we used. Also we used a thermometer to check the temperature of the water.

Data

C.

Data Table 1: Measurements of Mass and Temperature

	Trail 1	Trail 2
Mass of lead shot	98.60	118.54
Initial Temperature of water in cup	23.6 °C	26.1 °C
Initial Temperature of lead shot (temperature of Pb boiling water)	100 °C	100.4 °C
Maximum temperature	26.2 °C	31 °C
Mass of water	100. g	100. g

D. When we boiled the metal the temperature increase. But when we put the lead in the cold water the temperature of the lead went down and the temperature of the water started to raise.

Analysis And Calculations

E.

1. Trial 1

$$\Delta T_{H_2O} = T_f - (T_{H_2O})_i$$

$$25.54^\circ\text{C} - 23.00^\circ\text{C} = 2.54^\circ\text{C}$$

$$\Delta T_{Pb} = T_f - (T_{Pb})_i$$

$$25.54^\circ\text{C} - 99.02^\circ\text{C} = -73.48^\circ\text{C}$$

Trail 2

$$26.1^\circ\text{C} - 31.0^\circ\text{C} = -4.9^\circ\text{C}$$

$$100.4^\circ\text{C} - 31.0^\circ\text{C} = 69.4^\circ\text{C}$$