Experimental Procedure For Calorimeter

Calorimeter

1. Examine the calorimeter, the calorimeter material is aluminum with the following properties:

$$C_{c,av} = 0.214 \text{ cal/(g·°C)} \text{ [can be considered exact]}$$

2. The sample is selected and weighed several times to determine an average mass. The mass is given in the data file on D2L.
3. A thermocouple with software cold-junction compensation and ITLL LabStations was used to take temperature readings of the aluminum calorimeter.
4. To obtain good temperature readings the thermocouple must maintain good contact with the aluminum calorimeter. The thermocouple is placed into the hole provided and secured with high temperature cotton before replacing the insulation cap (as shown in lab demonstration).
5. The sample is immersed in boiling water for about 10 minutes so it can be assumed to be in equilibrium with the boiling water.
6. Five minutes before removing the sample from the water, the *Temperature History VI* is initiated. It is set to take samples every second.
7. Just before removing the sample from the boiling water, the temperature of the water is recorded. Using tongs, the sample is removed and shaken to remove excess water. It is quickly placed in the calorimeter. The time at which the sample is placed in the calorimeter is recorded and the calorimeter is quickly sealed.
8. The VI runs for approximately 10 more minutes before concluding the run.
9. The program is terminated and the data saved.

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