Name: _____ Date: _____

Heat Transfer: Counting Calories Activity – Evaluation and Improvement Worksheet

Calorimeter Performance

Okay, now you have conducted the experiments, observed the reaction, and collected the data. The question still remains though, did your calorimeter do the job well? The enthalpy of solution of Potassium Chloride at 25° Celsius (roughly room temperature) is 17.22 kJ/mol. To determine how well your calorimeter performed, convert the value you observed into the proper units, using the following formula. This will give you the deviation from the ideal, accepted value.

$$\% \, Error = \frac{|Q_{ideal} - Q_{exp}|}{Q_{ideal}}$$

Where:

$Q_{ideal} =$ the ideal heat of solution expected from the accepted value, and

$Q_{exp} =$ the heat of solution you derived from your experiment.

Room for Improvement

One of the most important aspects of engineering is to redesign and improve your project, whether it be a chemical process, an airplane wing, or an engine based on the following critique.

1. What do you think caused the error in you measurements?

_____

_____

2. What would you do differently if you had more resources at your disposal?

_____

_____

3. Draw a modified design on the back of this sheet.