

Discussion of Results

For this experiment we obtained data for temperature change every 10 seconds for a fuel burning inside a bomb. We measured results for two different types of fuels, benzoic acid and diesel fuel. With the benzoic acid we obtained a total temperature change of 2.62 degrees celsius and a heating value of 26,430. The diesel fuel gave us a total temperature change of 3.60 degrees celsius and a heating value of about 45,148. This shows the diesel fuel to be a more effective source than the benzoic acid pellet.

The experimental error for our lab was relatively small with a value of only 2.79%. Causes for this error could be due to human error or possibly errors from the lab equipment. Human errors may have occurred while weighing the materials or recording the temperature. Also obtaining and handling the deionized water may have caused some error, while measuring the water and lowering the combustion chamber into the water we may have compromised some of the qualities of the deionized water. Errors with the lab equipment may have been caused by the paddlewheel, with low temperature changes and the system running at low temperature the work inputted by the paddlewheel may have cause slight error in our results.

We expected the diesel fuel to have a greater temperature difference and a higher heating value than the benzoic acid tablet. These predictions were correct and confirmed from the experimental data we obtained.