| **Dougherty Valley HS AP Chemistry** | | **Name:** | |
| --- | --- | --- | --- |
| **Enthalpy of Reaction** | | **Date:** | |
|  |  | **Period:** | **Seat #:** |

| **Quantitative Data Table** [fill in title]: | | | | |
| --- | --- | --- | --- | --- |
|  | **Exp** | **Reaction 1** | **Reaction 2** | **Reaction 3** |
| Maximum temperature (°C) | **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **AVG** |  |  |  |
| Initial temperature (°C) | **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **AVG** |  |  |  |
| Temperature change (∆*T*) | **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **AVG** |  |  |  |

\*To be completed after the experiment in the google doc, not below, but you may put notes down for yourself

| **Discussion Questions** | **Your answers** |
| --- | --- |
| 1. Calculate the amount of heat energy, *q*, produced in each reaction. Use 1.03 g/mL for the density of all solutions. Use the specific heat of water, 4.18 J/(g•°C), for all solutions. | Show work on a separate sheet of paper and add photo/scan of that work to another page in this doc. Be sure to number the problem |
| 1. Calculate the enthalpy change, ∆*H*, for each reaction in terms of kJ/mol of each reactant. | Show work on a separate sheet of paper and add photo/scan of that work to another page in this doc. Be sure to number the problem |
| 1. Use your answers from 2 above and Hess’s law to determine the experimental molar enthalpy for Reaction 3. | Show work on a separate sheet of paper and add photo/scan of that work to another page in this doc. Be sure to number the problem |
| 1. Use Hess’s law, and the accepted values of Δ*H* in the Pre-Lab Exercise to calculate the Δ*H* for Reaction 3. How does the accepted value compare to your experimental value? | [Fill in answer here] |
| 1. Does this experimental process support Hess’s law? Suggest ways of improving your results. | [Fill in answer here] |
| 1. During the experiment, the lid of the coffee cup calorimeter was left off. How could this have affected the calculated Δ*H*? | [Fill in answer here] |

CHECK GC TO DOWNLOAD LOGGER PRO TO YOUR COMPUTER SO THAT YOU CAN OPEN FILES

LINK TO LOGGER PRO FILE for DATA - [HERE](https://drive.google.com/drive/folders/1LUmn9hAFur4njZ9qbjG4G7uVJOycFAyj?usp=sharing)