

Name _____ Date _____

Worksheet 13.1: Decomposition of calcium carbonate

Analysis of results

- 1 Record your observations from the experiment, including those which could be evaluated as sources of errors.

- 2 Record raw quantitative data in a table. You need to include units and absolute uncertainties where appropriate.

- 3 Write out a Hess's law energy cycle for the reactions taking place.

- 4 Calculate the heat energy per mole for calcium carbonate and hydrochloric acid.

- 5 Calculate the heat energy per mole for calcium oxide and hydrochloric acid.

- 6 Calculate the enthalpy change of decomposition for calcium carbonate.

- 7 Calculate the percentage uncertainties for both reactions.

- 8 Calculate the overall uncertainty for the reaction.

Evaluation of results

9 Work out the percentage error based on the literature value for this reaction.

10 How would you reduce the random error for this experiment?

11 List all the systematic errors you can think of for this experiment and give an improvement for each one.
