

Name: _____

Section: _____

Data for Part A: Clearly show calculations on another space, $(s) = 3.70 \text{ J / g } ^\circ\text{C}$

Mass of Mg _____

Mass of Empty Calorimeter + Lid _____ = _____

Mass of Calorimeter + Lid + Final Solution _____

Initial Temperature of HCl Solution _____

Final Temperature of Solution _____

Mass of Final Solution _____

ΔT of Solution _____

ΔH for reaction **Part A**, kJ/mole Mg _____

Average ΔH_A _____ kJ / mol Mg

Data for Part B: Clearly show calculations on another space, $(s) = 3.70 \text{ J / g } ^\circ\text{C}$

Mass of Empty Calorimeter + Lid _____ = _____

Mass of Calorimeter + Lid + Final Solution _____

Mass of Weighing Dish _____

Mass of Weighing Dish + MgO _____

Initial Temperature of HCl _____

Final Temperature of Solution _____

ΔT of Solution _____

Mass of MgO _____

Mass of Final Solution _____

ΔH for reaction **Part B**, kJ / mole MgO _____

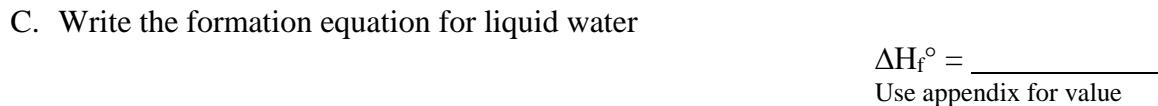
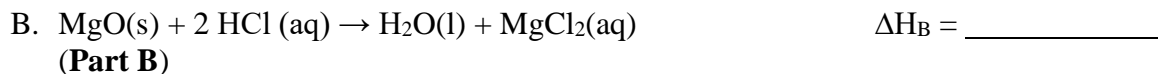
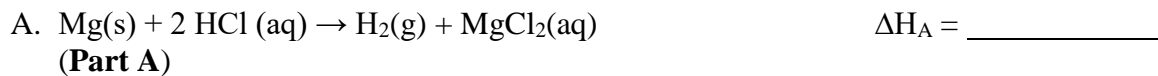
Average ΔH_B _____ kJ / mol MgO

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Data Analysis and Calculations

Use Hess's Law and the following information to determine the heat of formation of MgO:



D. Write the formation equation for MgO(s)

E. Use Hess's Law and the above information to calculate the heat of formation for MgO(s).
Show all your work.

F. Look up the literature value of ΔH_f° for MgO and calculate the % error.

Theoretical ΔH_f° MgO _____ kJ / mol % error _____