Heat of Combustion Lab

Part I - Heat of Combustion of Magnesium Metal

	Reaction	Reactants	Initial Temp.	Final Temp.
1.	$Mg(s) + 2HCl(aq) \rightarrow MgCl_2(aq) + H_2(g)$	1.426 g Mg (approx. 1.0 g) 100 mL HCl	21.5°C	60.6°C
2.	$MgO(s) + 2HCl(aq) \rightarrow MgCl_2(aq) + H_2O(l)$	1.094 g MgO (approx. 1.5 g) 100 mL HCl	21.8°C	27.4°C
3.	$H_2(g) + {}^1/_2\, O_2(g) \rightarrow H_2O(l)$ $\Delta H° = -285.5$ kJ			

Part II - Heat of Combustion of Calcuim Metal

	Reaction	Reactants	Initial Temp.	Final Temp.
1.	$Ca(s) + 2HCl(aq) \rightarrow CaCl_2(aq) + H_2(g)$	1.500 g Ca (approx. 1.5 g) 100 mL HCl	21.5°C	64.2°C
2.	$CaO(s) + 2HCl(aq) \rightarrow CaCl_2(aq) + H_2O(l)$	2.036 g CaO (approx. 2.0 g) 100 mL HCl	21.3°C	26.7°C
3.	$H_2(g) + {}^1/_2\, O_2(g) \rightarrow H_2O(l)$ $\Delta H° = -285.5$ kJ			