Heat of Reaction Lab Report

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Contents

1 Is the Reaction Endothermic or Exothermic?

The reaction is exothermic. ΔH is therefore negative.

2 Data Table

Data	Value
Mass MgO	2.8054 g
Initial Temperature (°C)	25.01
Final Temperature (°C)	46.33

3 Total Heat Released

$$
\begin{aligned}
Q_{env} &= mc\Delta t && (1)\\
&= 100 \cdot 4.18 \cdot 21.29 && (2)\\
&= 8899.22 \text{ J} && (3)
\end{aligned}
$$

4 Moles of MgO

$$
\begin{aligned}
n &= \frac{m}{mm} && (4)\\
&= \frac{2.0845}{40.304} && (5)\\
&= 0.0517 \text{ mol} && (6)
\end{aligned}
$$

5 Calculating ΔH_{rxm}

$$\Delta H = -\frac{Q_{env}}{0.0517} \tag{7}$$

$$= -\frac{8899.22}{0.0517} \cdot \frac{1}{1000} \tag{8}$$

$$= 172.13\text{kJ} \tag{9}$$

6 Table of Results

Mass of the Rxn Mixture	ΔT	Total Heat Released	mol MgO	$\frac{\Delta H_{rxn}}{\text{mol}}$
100 g	21.3 $^{\circ}C$	$8.90 \cdot 10^3$J	0.0517 mol	-172 kJ