EXPERIMENT/SUBJECT		DATE	
	LAB PARTNER Guanru	LOCKER/DESK NO.	COURSE & SECTION NO.

m s	Volume (mL)
16:30	0.861
3:16:45	0.860
3:17:00	0.860
3:17:15	0.859
3:17:30	0.856
3:17:45	0.853
3:18:00	0.852
3:18:15	0.852
3:18:30	0.851
3:18:45	0.850
3:19:00	0.850
3:19:15	0.850 —
3:19:30	0.850 ✗ hmm
3:20:30	0.844
3:21:30	0.841
3:22:30	0.839
3:23:30	0.835
3:24:30	0.832
3:25:30	0.830

CALCULATIONS

$V_1 = 0.975 \, mL \qquad V_2 = 0.863 \, mL$

$\Delta V = 0.112 \, mL \qquad m_{mg} = 0.599 \, g$

$\Delta V = \dfrac{\text{mass water produced}}{d \, water} - \dfrac{\text{mass ice melted}}{d \, ice}$

$\Delta V = m \times (1/1.000 - 1/0.917) - m \times (-0.091)$

$m = \Delta V \times (-11.05)$

$\quad = 0.112 \, mL \times (-11.05) = 1.2376 \, g$

$n_{water} = n_{ice} = \dfrac{1.2376 \, g}{18.01 \, g/mol} = 0.068694 \ mol$

$\Delta H \, vessel \, B = (6.011 \, kJ/mol)(0.068684 \, mol)$

$\qquad = 0.41285 \, kJ \sim 0.413 \, kJ$

$\Delta H \, vessel \, A = -\Delta H \, vessel \, B = -0.413 \, kJ$

∴ The enthalpy of reaction is $-0.413 \, kJ$.

$\Delta H_{ice} = m \cdot (333.55 \, J/g)$

$\qquad = 1.2376 \, g \cdot 333.55 \, J/g$

$\qquad = 412.8 \, J$

(ML)

$\Delta H_{ice} = -\Delta H_{mg}$

$\Delta H_{mg} = -412.8 \sim -413 \, J$

$\dfrac{-413 \, J}{1000} = -0.413 \, kJ$

$\dfrac{}{0.068694 \, mol \, mg} = -6.01 \, kJ/mol$

$mol \, Hg = \dfrac{0.0599 \, g \, Mg}{24.31 \, g/mol} = 2.46 \times 10^{-3} \, mol$

∴ $\dfrac{-0.413 \, kJ}{2.46 \times 10^{-3} \, mol \, Mg} = -168 \, kJ/mol$

∴ The enthalpy of reaction is $168 \, kJ/mol$.

SIGNATURE		DATE	WITNESS/TA		DATE

THE HAYDEN-McNEIL STUDENT LAB NOTEBOOK

NOTE: INSERT DIVIDER UNDER COPY SHEET BEFORE WRITING