

### Hess's Law Lab Class Results - Chem 161 - Sec D Fall 2013



Team Members	Mass NaOH (g)	initial $t_{\text{water}}$ ( $^{\circ}\text{C}$ )	final $t_{\text{soln}}$ ( $^{\circ}\text{C}$ )	$\Delta t_{\text{soln}}$ ( $^{\circ}\text{C}$ )	$\Delta H_{\text{rxn A}}$ (kJ/g NaOH)	$\Delta H_{\text{rxn A}}$ (kJ/mol NaOH)
Xia He and David	1.957	15.7	20.3	4.6	0.98	-39
Hanna and Olga	2.015	14.6	19.8	5.2	1.08	-43
Andrian and Brandy	1.997	20.5	25.3	4.8	1.00	-40
Yumi and Jingyi	2.003	21.5	25.5	4.0	0.83	-33
Alvin and Ellice	2.087	18.4	22.2	3.8	0.76	-30
<b>Average</b>						<b>-41</b>
<b>ST DEV</b>						<b>5</b>
<b>% Error</b>						
<b>Theoretical</b>						
<b><math>\Delta H_{\text{rxn}}</math></b>						

Quite low! Excluded from average only!

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Team Members	Mass NaOH (g)	initial $t_{\text{HCl}}$ ( $^{\circ}\text{C}$ )	final $t_{\text{soln}}$ ( $^{\circ}\text{C}$ )	$\Delta t_{\text{soln}}$ ( $^{\circ}\text{C}$ )	$\Delta H_{\text{rxn B}}$ (kJ/g NaOH)	$\Delta H_{\text{rxn B}}$ (kJ/mol NaOH)
Jordan and Chris	1.977	19.8	30.4	10.6	2.2	-89.5
Michelle and Jerry	1.999	18.4	29.6	11.2	2.3	-93.6
Catherine and Kelsey	2.090	18.5	30.5	12.0	2.4	-95.9
Dian and Mark	2.040	18.3	29.2	10.9	2.2	-89.0
Hsin Yin and Kaixun	2.033	18.9	30.5	11.6	2.4	-95.3
Erika and Shelby	2.010	18.8	29.8	11.0	2.3	-91.4
<b>Average</b>						<b>-92.4</b>
<b>ST DEV</b>						<b>2.9</b>
<b>% Error</b>						
<b>Theoretical</b>						
<b><math>\Delta H_{\text{rxn}}</math></b>						



Team Members	initial $t_{\text{HCl}}$ ( $^{\circ}\text{C}$ )	final $t_{\text{soln}}$ ( $^{\circ}\text{C}$ )	$\Delta t_{\text{soln}}$ ( $^{\circ}\text{C}$ )	$\Delta H_{\text{rxn C}}$ (kJ/mol NaOH)
Xia He and David	20.0	26.6	6.6	-55.4
Michelle and Jerry	18.9	25.7	6.8	-57.0
Catherine and Kelsey	18.9	25.9	7.0	-58.4
Hsin Yin and Kaixun	19.3	26.4	7.1	-59.3
Jordan and Chris	20.6	27.2	6.6	-55.1
Andrian and Brandy	18.7	25.7	7.0	-58.4
Dian and Mark	18.7	26.0	7.3	-60.8
Hanna and Olga	20.2	26.5	6.4	-53.0
Yumi and Jingyi	20.0	23.6	3.6	-30.1
Erika and Shelby	19.2	26.1	6.9	-57.6
Alvin and Ellice	19.6	26.4	6.8	-56.8
<b>Average</b>				<b>-57.2</b>
<b>ST DEV</b>				<b>8.5</b>
<b>% Error</b>				
<b>Theoretical</b>				
<b><math>\Delta H_{\text{rxn}}</math></b>				

Quite low! Excluded from average only!