

Experimental 4: Heat of Neutralization

A. Heat Capacity of Calorimeter

Assuming: heat capacity of calorimeter is zero !!!

B. Heat of Neutralization of HCl+ NaOH

	1.0 M NaOH, 50 mL	1.0 M HCl, 50 mL
Temperature before mixing	22°C	22°C
Average (T_i)	22°C	
Temperature after reaction (T_f)	32°C	
Calculate Heat of Neutralization	$100g * 4.18jK - g * 10k$ 4,180J	

C. Heat of Neutralization of $CH_3COOH+NaOH$

	1.0 M NaOH, 50 mL	1.0 M CH_3COOH , 50 mL
Temperature before mixing	22°C	21.5°C
Average (T_i)	22°C	
Temperature after reaction (T_f)	27°C	
Calculate Heat of Neutralization	$100g * 4.18jK - g * 5k$ 2,090J	

D. Compare part B and C, discuss the results

The heat of neutralization for part C is less than part B. Both parts have the same specific heat capacity of 4.18. They both had the same average temperature; however, after both of their reactions, I realized that in part B, the temperature after reaction was higher than part C.

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