

SPECIFIC HEAT OF A LIQUID

PART 1

Data:

(Data should be recorded with the proper units and number of significant digits)

Mass of cold water _____

Mass of hot water _____

<u>Time</u>	<u>Temperature of cold water</u>	<u>Temperature of mixture</u>	<u>Temperature of hot water</u>
1 min	_____		_____
2 min	_____		_____
3 min	_____		_____
4 min	_____		_____
5 min		<u>XXXXXXX</u>	
6 min		_____	
7 min		_____	
8 min		_____	
9 min		_____	
10 min		_____	

Use graph to obtain the following data:

Cold water temperature at 5 min _____

Hot water temperature at 5 min _____

Mixture temperature at 5 min _____

Change in temperature of hot water (ΔT_w): _____Change in temperature of cold water (ΔT_c): _____**Calculations:**

(All calculations should include equation, substitution and answers with the correct units and significant figures)

Heat lost by warm water:

Specific heat of cold water:

Part II

Mass of ethyl alcohol _____

Mass of hot water _____

<u>Time</u>	<u>Temperature of ethyl alcohol</u>	<u>Temperature of mixture</u>	<u>Temperature of hot water</u>
1 min	_____		_____
2 min	_____		_____
3 min	_____		_____
4 min	_____		_____
5 min		<u>XXXXXXX</u>	
6 min		_____	
7 min		_____	
8 min		_____	
9 min		_____	
10 min		_____	

Use graph to obtain the following data:

Ethyl alcohol temperature at 5 min _____

Hot water temperature at 5 min _____

Mixture temperature at 5 min _____

Change in temperature of hot water (ΔT_w): _____

Change in temperature of ethyl alcohol (ΔT_c): _____

Calculations:

(All calculations should include equation, substitution and answers with the correct units and significant figures)

Heat lost by warm water:

Specific heat of ethyl alcohol:

Questions:

1. Calculate the Percentage Error in your experiment. (The theoretical value for the ethanol is 0.588 cal/g°C)
2. The ΔT for alcohol is (greater, lesser) than the ΔT for water. (Circle the correct answer.)
3. The calculated specific heat of alcohol is (greater, lesser) than the specific heat of water. (Circle the correct answer.)
4. ΔT and specific heat are (directly, inversely) proportional. (Circle the correct answer.)

Specific Heat

Sample graph

