Name:

first (print)   family (print)   date

Enthalpy of solution : Table of data and results

DATA *(must be filled in ink)*

Mass of $Na_2S_2O_3 \cdot 5H_2O$ (recorded $\pm$ 0.0001 g)	m =	g
Volume of water (recorded $\pm$ 0.1 mL)	V =	mL
Initial temperature of the solution (before reaction)	$T_{initial}$ =	°C
Final temperature of the reaction (after reaction)	T_{final} =	°C

Results *(calculations can be completed in pencil)*

Mass of water used (ρ_{water} = 0.998 g/mL)	m =	g
Total mass of the solution ($Na_2S_2O_3 \cdot 5H_2O$ + water)	m_{sol} =	g
Temperature change of the solution ($\Delta T_{sol} = T_{final} - T_{initial}$)	ΔT_{sol} =	°C
Heat <u>absorbed / lost</u> by the solution ($Q_{sol} = m_{sol}\, c_p\, \Delta T_{sol}$)	Q_{sol} =	J
Heat of solution of the reaction ($Q_{reaction} = -\, Q_{sol}$)	$Q_{reaction}$ =	J
Mole of $Na_2S_2O_3 \cdot 5H_2O$ used (mol.mass: 248.19 g/mol)	n =	mol
Molar enthalpy of solution of $Na_2S_2O_3 \cdot 5H_2O$	**$\Delta \overline{H} = Q/mol$ =**	**kJ/mol**
	%error =	**%**

Note: Never round off your numbers throughout a calculation, always keep the maximum number available. Round-off only the final answer.

Sample calculations

Total heat absorbed / released by the solution ($Q_{sol} = m\, c_p\, \Delta T$):   (1 mark)

Enthalpy of solution of $Na_2S_2O_3 \cdot 5H_2O$ ($\Delta \overline{H}_{sol} = Q_{sol} / n$):   (1 mark)

$$\%error = \frac{|\text{value obtained} - \text{value literature}|}{\text{value literature}} \times 100\%$$

(1 mark)

(note: for $Na_2S_2O_3 \cdot 5H_2O$: $\Delta \overline{H}_{sol} = 48.8$ kJ/mol.).