



Oxford Cambridge and RSA

**Friday 21 June 2024 – Morning**

**A Level Chemistry B (Salters)**

**H433/03 Practical skills in chemistry**

**Practical Insert**

**Time allowed: 1 hour 30 minutes**



### INSTRUCTIONS

- Do **not** send this Insert for marking. Keep it in the centre or recycle it.

### INFORMATION

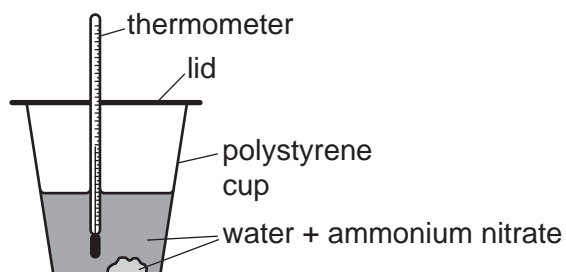
- This document has **4** pages.

## Investigating the enthalpy change of a solution

A group of students investigates the enthalpy change that occurs when ammonium nitrate,  $\text{NH}_4\text{NO}_3$ , is dissolved in water.

### Method

A simple polystyrene cup and lid is used as a well-insulated calorimeter for this investigation.



- 7.20 g of ammonium nitrate is weighed out.
- $100\text{ cm}^3$  of distilled water is poured into the cup, using a measuring cylinder.
- The temperature is taken at the start and then every minute for a total of 10 minutes.
- The ammonium nitrate is added after two minutes and stirred until it all dissolves.
- The results are tabulated below.

### Results

Time/minutes		Temperature/ $^{\circ}\text{C}$
	0.0	19.5
	1.0	19.4
$\text{NH}_4\text{NO}_3$ solid added	2.0	19.4
	3.0	17.8
	4.0	15.5
	5.0	14.6
	6.0	14.8
	7.0	15.0
	8.0	15.3
	9.0	15.5
	10.0	15.7

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