



A2 4.3/C

# MAKING A BUFFER SOLUTION



Aim

You are going to make a buffer solution of pH 5.20 and then test that it acts as a buffer solution.

Making the buffer

- 1) You will be supplied with solid sodium ethanoate and a solution of  $0.100 \text{ mol dm}^{-3}$  sodium ethanoate. Calculate the mass of sodium ethanoate to use to make  $50 \text{ cm}^3$  of buffer solution.

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- 2) Using a  $50 \text{ cm}^3$  volumetric flask, make up  $50 \text{ cm}^3$  of your buffer solution.

Testing the buffer

- 3) Calibrate a pH meter using two buffer solutions and store in deionised water.
- 4) Measure the pH of your buffer solution and record it here. ....
- 5) Take separate samples of your buffer into boiling tubes and add the following recording what happens to the pH.

Action	Effect on pH
A few drops of HCl	
A few $\text{cm}^3$ of HCl	
A few drops of NaOH	
A few $\text{cm}^3$ of NaOH	
A few $\text{cm}^3$ of $\text{H}_2\text{O}$	

- 6) Explain why the pH of the buffer hardly changes when a small amount of acid is added.

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- 7) Explain why the pH of the buffer hardly changes when a small amount of alkali is added.

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