

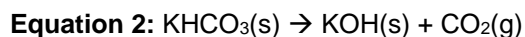
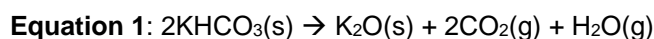
Investigation into the decomposition of potassium hydrogencarbonate

Education in Chemistry

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Potassium hydrocarbonate decomposes on heating. The three possible equations for the decomposition are:



You are going to carry out an experiment to determine which equation for the decomposition is correct. You will need to write up your investigation and results in full.

You have access to the following apparatus:

- Bunsen burner
- Tripod
- Pipe clay triangle
- Crucible and lid
- Tongs
- Heat proof mat
- Balance

Your write-up will need to include the following:

- An aim for your investigation.
- A suitable method for your investigation.
- An explanation of any risks encountered during the experiment and strategies for minimising the hazards.
- An explanation of how you have ensured that your results are accurate and reliable.
- A results table.
- Clear analysis of your results, using mole calculations as appropriate and any graphs as necessary, to identify the products formed.
- A discussion of any errors which may have impacted your results and suggestions for improvements.

Support sheet

1. Choose an appropriate mass of potassium hydrogencarbonate to start with (you may wish to measure some out to help you identify a suitable mass).
2. Determine the number of moles of potassium hydrogencarbonate.
3. Determine the mass of solid remaining after the thermal decomposition.
4. Complete the following table:

Solid	M_r of solid	Mass of solid after decomposition	Moles of solid
K_2O			
KOH			
K_2CO_3			

Compare your answers to the table above to determine which equation is the most plausible for the decomposition of potassium hydrogencarbonate.