Edexcel Chemistry A-Level

Core Practical 14 - Activation energy

Flashcards

What is activation energy?

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The minimum energy required to break all chemical bonds in the reactants for the reaction to then occur.

What is an example method to determine the activation energy of a reaction?

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- Repeat for various temperatures 15°C to 75°C (in water baths):
- Add equal volumes of bromide/bromate solution and phenol. Add methyl red indicator.
- Add H_2SO_4 solution and time how long it takes for the solution to go colourless.

How would you analyse this data?

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- Plot a graph of ln *t* (on the y-axis) against 1/T (on the x-axis)
- The gradient = E_a/R
- Therefore, E_a = gradient x R
- Where *t* = time, T = temperature, R = 8.314 J K^{-1} mol^{-1}.

How do you measure the gradient of a line?

How do you measure the gradient of a line?

Gradient = Change in y-coordinate ÷ Change in x-coordinate

Why sometimes is a log scale used?

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- To show a large range of values without compressing the scale.
- To show percentage change or multiplication factors.