

6 Propane-1,2-diol has the structure $\text{CH}_2(\text{OH})\text{CH}(\text{OH})\text{CH}_3$. It is used to make polyesters and is one of the main substances in electronic cigarettes (E-cigarettes).

A sample of propane-1,2-diol was refluxed with a large excess of potassium dichromate(VI) and sulfuric acid.

0 6 . 1 Draw the skeletal formula of propane-1,2-diol.

[1 mark]

0 6 . 2 Write an equation for this oxidation reaction of propane-1,2-diol under reflux, using [O] to represent the oxidizing agent.

Show the displayed formula of the organic product.

[2 marks]



0 6 . **3** Draw a labelled diagram to show how you would set up apparatus for refluxing.

[2 marks]

0 6 . **4** Anti-bumping granules are placed in the flask when refluxing.
Suggest why these granules prevent bumping.

[1 mark]

0 6 . **5** Draw the structure of a different organic product formed when the acidified potassium dichromate(VI) is not in excess.

[1 mark]

