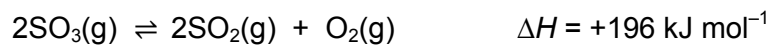


0 5

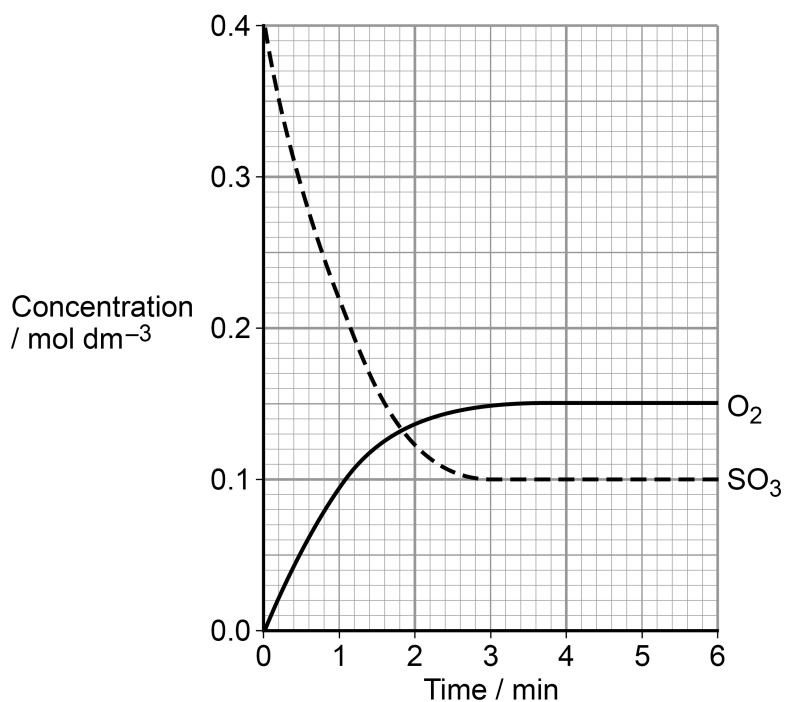
This question is about equilibrium.

Sulfur trioxide decomposes to form sulfur dioxide and oxygen at temperature T_1 according to the equilibrium shown.



The graph in **Figure 4** shows the concentrations of sulfur trioxide and of oxygen over a period of 6 minutes at temperature T_1

Figure 4



0 5 . 1

State the time, to the nearest minute, when equilibrium is first established.
Explain your answer.

[2 marks]

Time _____ minutes

Explanation _____



0 5 . **2** Sketch on the graph in **Figure 4** how the concentration of sulfur dioxide changes over these 6 minutes at temperature T_1

[2 marks]

0 5 . **3** The temperature of the mixture was changed to T_2 and the mixture left to establish a new equilibrium.
In the new equilibrium mixture the concentration of sulfur trioxide was found to be 0.07 mol dm^{-3}

Deduce which of T_1 and T_2 is the higher temperature.
Explain your deduction.

[2 marks]

Higher temperature _____

Explanation _____

6

Turn over for the next question

Turn over ►

