

Question 24 (4 marks)

In the margarine industry, alkenes are often hydrogenated to convert unsaturated oils into solid fats that have a greater proportion of saturated molecules.

- (a) Using ethene as an example, write an equation for this reaction and state the type of reaction this represents. 2

$C_2H_4 + H_2O \rightarrow C_2H_5OH$. Ethene when added with H_2O forms ethanol in a hydration reaction (addition).

- (b) Describe a test that could be used to confirm that all the ethene has been converted. 2

Add Bromine water to the solution and take note of any changes to colour. If there is a change in colour, this means that the ethene has reacted and is therefore still present in the solution and has not converted.