

Chemguide – questions

THE MANUFACTURE OF ETHANOL

Ethanol is manufactured by reacting ethene with steam.



Only 5% of the ethene is converted to ethanol at each pass through the reactor. The ethanol is separated from the mixture, and the ethene is recycled through the reactor.

1. State the temperature used during the process, and explain the choice of temperature.
2.
 - a) State the pressure used during the process.
 - b) Explain why, according to Le Chatelier, you would expect that the pressure used would be very high.
 - c) In fact, the pressure used isn't *very* high. Give two different reasons why a very high pressure isn't used.
3. The proportion of ethene to steam used during the process is 1 volume of ethene to 0.6 volumes of steam. That means that it would be only be possible to get 60% conversion of the ethene to ethanol even if the reaction was one-way rather than reversible. Explain why more steam isn't used.