
Question 21 (3 marks)

A 0.001 mol L^{-1} solution of hydrochloric acid and a 0.056 mol L^{-1} solution of ethanoic acid both have a pH of 3.0. **3**

Why do both solutions have the same pH?

Hydrochloric acid is a strong acid, meaning it completely ionises in solution. Ethanoic acid is a weak acid and incompletely ionises in solution. Although the ethanoic acid solution has a higher concentration of 0.056 M compared to 0.001 M of HCl , due to its incomplete ionisation it has the same pH as HCl , 0.001 M .