Answer on Question #51888, Chemistry, Other

Question: In a standardization titration involving hydrochloric acid and sodium carbonate, a student recorded the following results for the volume of hydrochloric acid used against 10.00mL of the sodium carbonate solution: 15.60; 14.50; 14.70 and 14.20. If the concentration of the Na2CO3 standard solution is 0.75moldm^-3, calculate the concentration of the HCl solution

1.02 Ml

1.03mL

1.07mL

1.04M

Answer: The average titre value for HCl is: (15.60 + 14.50 + 14.70 + 14.20)/4 = 14.75mL

Then we need to use the formula: $M_{acid}V_{acid} = 2M_{base}V_{base}$; $M_{acid} = M_{base}V_{base}/V_{acid}$;

M_{acid} = (2*0.75*0.01L)/0.01475 = 1.02M