Parameters	Temp in °C	Temp in ° Kelvin
Initial Temp. in °C	25	298
Final Temp. in °C	40	313
Water Enthalpy at Initial Temp of Water in KJ/mol	104.83	
Water Enthalpy at Final Temp of Water in KJ/mol	167.53	
ΔH°	62.7	

Van't Hoff Equation	1.2128
e Value	2.7183
	3.3629053
Kw	3.3898E-14

pKw	13.47
pH	6.73

However, at 50 °C the pH difference given in standard table is 6.63 and through above calculation, it comes to 6.29

Water ionization constant as a function of temperature

T (°C)	K_w	pK_w	neutral pH
0	0.114×10^{-14}	14.94	7.47
5	0.186×10^{-14}	14.73	7.37
10	0.293×10^{-14}	14.53	7.27
15	0.457×10^{-14}	14.34	7.17
20	0.681×10^{-14}	14.17	7.08
25	1.008×10^{-14}	14	7
30	1.471×10^{-14}	13.83	6.92
35	2.089×10^{-14}	13.68	6.84
40	2.916×10^{-14}	13.54	6.77
45	4.074×10^{-14}	13.39	6.7
50	5.476×10^{-14}	13.26	6.63
55	7.244×10^{-14}	13.14	6.57
60	9.550×10^{-14}	13.02	6.51
65	12.58×10^{-14}	12.9	6.45
70	15.85×10^{-14}	12.8	6.4
75	20.42×10^{-14}	12.69	6.35
80	25.12×10^{-14}	12.6	6.3
85	30.90×10^{-14}	12.51	6.26
90	38.02×10^{-14}	12.42	6.21
95	45.71×10^{-14}	12.34	6.17
100	51.3×10^{-14}	12.29	6.14