

Lab 9: pH of Acids, Bases, and Salt Solutions

Data sets
A - D

Data Table 1. Comparing Measured pH with Theoretical pH of HCl solutions

	Data Set A	Data Set B	Data Set C	Data Set D
Conc. of HCl	Measured pH	Measured pH	Measured pH	Measured pH
1.0×10^{-1} M	1.07	1.11	0.98	0.98
1.0×10^{-2} M	2.04	2.04	2.10	1.99
1.0×10^{-3} M	2.88	2.95	3.03	2.88
1.0×10^{-4} M	3.95	4.05	3.96	4.03

Data Tables 2A and 2B

	Data Set A	Data Set B	Data Set C	Data Set D
Conc. of CH_3COOH	Measured pH	Measured pH	Measured pH	Measured pH
1.0×10^{-1} M	2.87	2.88	2.90	2.87
1.0×10^{-2} M	3.43	3.45	3.40	3.41
1.0×10^{-3} M	3.95	3.92	3.95	3.99
1.0×10^{-4} M	4.50	4.41	4.44	4.46

Data Table 3. Hydrolysis reactions of salts.

	Data Set A	Data Set B	Data Set C	Data Set D
Salt solution	Measured pH	Measured pH	Measured pH	Measured pH
NaCl	7.55	6.67	6.77	7.19
$\text{NaC}_2\text{H}_3\text{O}_2$	8.03	8.21	8.55	8.62
Na_2CO_3	10.93	11.03	11.12	10.93
NH_4Cl	5.02	5.02	5.02	5.02
$\text{NH}_4\text{C}_2\text{H}_3\text{O}_2$	7.88	7.76	7.7	7.91