

TABLE 6. "Carbonic acid."

100 × concn. (molal)	P (atm.)	Δp_r	$\Delta^1 p_r$	$\gamma_{\pm}^2$	K_a^P/K_a^{1*} (molal scale)	
At 25°						
2.56	1	1.606	394	0.977	(4.2×10^{-7})	
"	2080	5.332	454	0.966	8.26	
"	2930	7.821	468	0.961	16.7	
2.91	1	1.528	394	0.974	(4.3×10^{-7})	
"	1050	2.918	430	0.969	3.04	
"	2040	4.945	454	0.963	7.85	
"	2930	7.455	468	0.958	16.7	
2.92	1	1.493	394	0.974	(4.1×10^{-7})	
"	1270	3.243	435	0.969	3.85	
"	2540	6.147	463	0.960	12.2	
2.73	1	1.538	394	0.976	(4.1×10^{-7})	
"	1050	2.951	431	0.972	3.07	
"	2070	5.071	455	0.969	8.14	
"	2860	7.532	468	0.960	16.9	
2.05	1	1.777	394	0.979	(4.1×10^{-7})	
"	1030	3.353	430	0.975	2.98	
"	2010	5.725	454	0.970	7.81	
"	2930	8.743	469	0.963	17.0	
3.20	1	1.402	394	0.976	(4.0×10^{-7})	
"	1010	2.606	439	0.972	2.90	
"	2010	4.458	454	0.963	7.54	
"	2850	6.873	467	0.959	16.9	
$\Delta V^1 = -26.5$ c.c. mole ⁻¹ ; $\Delta V^{3000} = -20.7$ c.c. mole ⁻¹ ; Average $\Delta K = -0.0019$ atm. ⁻¹ c.c. mole ⁻¹ .						
At 35°						
3.32	1	1.696	448	0.974	(4.7×10^{-7})	
"	1390	3.809	492	0.966	4.16	
"	2930	7.791	521	0.956	15.5	
3.19	1	1.714	448	0.974	(4.6×10^{-7})	
"	1030	3.161	481	0.969	2.93	
"	2040	5.343	507	0.962	7.54	
"	2930	7.968	521	0.956	15.9	
3.46	1	1.695	448	0.974	(4.9×10^{-7})	
"	1010	3.066	481	0.968	2.82	
"	2040	5.261	507	0.961	7.46	
"	2930	7.856	521	0.955	15.8	
... ..	1.51	1	2.558	448	0.978	(4.9×10^{-7})
"	1030	4.720	482	0.973	2.94	
"	2030	7.940	507	0.968	7.51	
"	2930	11.85	521	0.963	15.9	
1.18	1	2.970	448	0.979	(5.1×10^{-7})	
"	1390	6.386	492	0.974	3.83	
"	2640	12.01	517	0.966	12.3	
2.53	1	1.972	448	0.977	(4.8×10^{-7})	
"	1390	4.397	492	0.970	4.11	
"	2780	8.527	519	0.961	13.9	
3.40	1	1.674	448	0.975	(4.7×10^{-7})	
"	1050	3.130	482	0.970	3.00	
"	2030	5.144	507	0.964	7.33	
"	2930	7.700	521	0.959	15.6	
$\Delta V^1 = -25.4$ c.c. mole ⁻¹ ; $\Delta V^{3000} = -20.0$ c.c. mole ⁻¹ ; Average $\Delta K = -0.0018$ atm. ⁻¹ c.c. mole ⁻¹ .						
At 45°						
2.99	1	2.066	506	0.976	(4.9×10^{-7})	
"	1320	4.250	547	0.968	3.61	
"	2500	7.397	576	0.960	9.83	
2.48	1	2.276	506	0.975	(4.9×10^{-7})	
"	1030	4.117	540	0.970	2.85	
"	2010	6.728	565	0.965	6.99	
"	2930	10.11	586	0.960	14.7	
3.74	1	1.903	506	0.972	(5.2×10^{-7})	
"	1030	3.420	540	0.967	2.83	
"	2030	5.614	565	0.961	6.95	
"	3000	8.544	587	0.954	14.9	

* Values of K_a at $P = 1$ in parentheses.

TABLE 6. (Continued.)

100 × concn. (molal)	P (atm.)	$\Delta\rho_r$	$\Delta^1\rho_r$	$\gamma_{\pm}^2$	K_a^P/K_a^{1*} (molal scale)
At 45°					
3.71	1	1.850	506	0.972	(4.8 × 10 ⁻⁷)
"	1010	3.238	539	0.968	2.70
"	2010	5.328	565	0.962	6.63
"	2780	7.487	582	0.957	12.3
"	2930	7.933	585	0.956	13.7
2.94	1	2.075	506	0.976	(4.8 × 10 ⁻⁷)
"	1020	3.633	539	0.970	2.70
"	2010	5.951	565	0.964	6.57
"	3000	9.192	587	0.959	14.5
2.48	1	2.264	506	0.975	(4.9 × 10 ⁻⁷)
"	1390	4.931	549	0.969	4.03
"	2780	9.30	583	0.961	12.7
"	3000	10.16	588	0.959	14.9
$\Delta V^1 = -24.8$ c.c. mole ⁻¹ ; $\Delta V^{3000} = -18.4$ c.c. mole ⁻¹ ; Average $\Delta K = -0.0021$ atm. ⁻¹ c.c. mole ⁻¹ .					
At 55°					
3.71	1	2.009	550	0.973	(4.8 × 10 ⁻⁷)
"	1350	4.195	595	0.963	3.70
"	2850	7.996	632	0.958	11.9
2.50	1	2.544	550	0.974	(5.2 × 10 ⁻⁷)
"	1020	4.444	584	0.970	2.71
"	2010	7.159	613	0.965	6.37
"	2780	9.932	631	0.961	11.6
2.37	1	2.549	550	0.974	(5.0 × 10 ⁻⁷)
"	1740	6.291	606	0.967	5.01
"	2850	10.15	631	0.961	12.05
2.49	1	2.443	550	0.974	(4.8 × 10 ⁻⁷)
"	1020	4.295	585	0.970	2.73
"	2440	8.252	622	0.963	8.90
"	2840	9.740	632	0.960	12.0
"	2940	10.12	634	0.960	12.9
1.45	1	3.297	550	0.978	(5.1 × 10 ⁻⁷)
"	1020	5.865	586	0.972	2.79
"	2010	9.373	613	0.970	6.52
"	2810	13.11	631	0.965	12.0
"	2930	13.70	634	0.964	13.1
3.37	1	2.116	550	0.973	(4.9 × 10 ⁻⁷)
"	720	3.189	574	0.969	2.08
"	1770	5.364	607	0.967	5.28
"	3000	9.133	635	0.966	14.0
2.72	1	2.353	550	0.974	(4.9 × 10 ⁻⁷)
"	1420	5.017	596	0.968	3.87
"	2930	9.857	634	0.959	13.19
$\Delta V^1 = -24.3$ c.c. mole ⁻¹ ; $\Delta V^{3000} = -17.5$ c.c. mole ⁻¹ ; Average $\Delta K = -0.0023$ atm. ⁻¹ c.c. mole ⁻¹ .					
At 65°					
2.46	1	2.706	606	0.975	(4.8 × 10 ⁻⁷)
"	1080	4.726	644	0.971	2.70
"	2080	7.558	671	0.966	6.34
"	2850	10.45	689	0.963	11.5
2.32	1	2.845	606	0.975	(5.0 × 10 ⁻⁷)
"	1010	4.922	642	0.972	2.67
"	2010	7.886	669	0.965	6.30
"	2700	10.44	685	0.961	10.5
"	2780	10.87	687	0.961	11.3
3.71	1	2.193	606	0.974	(4.8 × 10 ⁻⁷)
"	1060	3.840	642	0.968	2.72
"	2080	6.127	671	0.962	6.33
"	2790	8.215	687	0.959	10.8
1.59	1	3.380	606	0.978	(4.9 × 10 ⁻⁷)
"	1400	6.997	653	0.972	3.68
"	2790	12.69	688	0.965	10.9
2.50	1	2.724	606	0.975	(5.0 × 10 ⁻⁷)
"	1040	4.729	642	0.970	2.67
"	2570	9.531	683	0.963	9.62
$\Delta V^1 = -23.6$ c.c. mole ⁻¹ ; $\Delta V^{3000} = -16.8$ c.c. mole ⁻¹ ; Average $\Delta K = -0.0023$ atm. ⁻¹ c.c. mole ⁻¹ .					

* Values of K_a at $P = 1$ in parentheses.