A Comparative Analysis of Empirical Equations Describing Pressure Dependence of Equilibrium and Reaction Rate Constants

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Supplementary Information

Contents

S.1 Inverse of Table 2.	S3
S.2 Table of a_i parameters of E1-E11 generated from Table 4.	S4
S.3 Simulated kinetic data generated using equations E4-E8 used to calculate t-statistics found in Table 5 of the text.	S5
S.4 Tables of simulated kinetic data sets generated by E4-E8 used for self- and cross-fitting (see text for details).	S8
S.5 Activation volumes (cm^3/mol) obtained by fitting equations E1-E11 to kinetic data in Tables S.4.1-S.4.15.	S23
S.6 Optimized values of fitting parameters a_i obtained by fitting equations E1-E11 to kinetic data in Tables S.4.1-S.4.15	S32
S.6 Explicit expressions for E4-E9 in their El'yanov-Gonikberg format	S41

S.1 Inverse of Table 2.

Equation	a_1	a_2	a_3	a_4
E1	$-\alpha$	$-\beta/2$	0	0
E2	$-\alpha$	0	$-\gamma/6$	0
E3	$-\alpha$	$-\beta/2$	$-\gamma/6$	0
E4	0	0	$-\alpha$	$-\beta/2\alpha$
E5	$3\beta^2/2\gamma-\alpha$	0	$-3\beta^2/2\gamma$	$-\gamma/3\beta$
E6	0	$-\alpha^2/\beta$	0	$-\beta/\alpha$
E7	$-\alpha+2\beta^2/\gamma$	$4\beta^3/\gamma^2$	0	$-\gamma/2\beta$
E8	$-\alpha$	0	$3\beta^2/4\gamma$	$-2\gamma/3\beta$
E9	$-\alpha-\beta^2/\gamma$	$-\beta^3/\gamma^2$	0	$-\gamma/\beta$

S.2 Table of a_i parameters of E1-E11 generated from Table 4.

Equation	Equation Coefficients [†]			
	a1	a2	a3	a4
E1	1.0084	-0.2017		
E2	1.0084		0.0504	
E3	1.0084	-0.2017	0.0504	
E4			1.0084	0.2000
E5	0.2017		0.8067	0.2500
E6		2.5211		0.4000
E7	-0.0672	2.8684		0.3750
E8	1.0084		-0.4034	0.5000
E9	1.5463	-0.7171		0.7500
E10	0.1580	2.1694	-0.0893	0.3920
E11	1.0084	-0.2000		

[†] Pressure in kbar; $\Delta V_0^\ddagger$ in $\text{cm}^3 \text{mol}^{-1}$; $\Delta \beta_0^\ddagger$ in $\text{cm}^3 \text{mol}^{-1} \text{kbar}^{-1}$; $\Delta \xi_0^\ddagger$ in $\text{cm}^3 \text{mol}^{-1} \text{kbar}^{-2}$

S.3 Simulated kinetic data generated using equations E4-E8 used to calculate t-statistics found in Table 5 of the text.

S.3.1 Activation volumes (cm³/mol) obtained by fitting equations E4-E8 to kinetic data generated using these equations with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over various pressure ranges and various levels of random relative errors (see text for details). *0-1 kbar*:

Generating Equation	E4			E5			E6			E7			E8		
Error Level	1%	5%	10%	1%	5%	10%	1%	5%	10%	1%	5%	10%	1%	5%	10%
P (kbar)															
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.02	0.0282	0.0601	0.0985	0.0094	-0.0344	-0.0919	0.0243	0.0410	0.0616	-0.0008	-0.0890	-0.2114	0.0282	0.0600	0.0984
0.04	0.0454	0.0667	0.0927	0.0325	0.0018	-0.0378	0.0343	0.0113	-0.0183	0.0232	-0.0469	-0.1421	0.0206	-0.0611	-0.1736
0.06	0.0804	0.1589	0.2490	0.0579	0.0501	0.0403	0.0631	0.0764	0.0928	0.0645	0.0830	0.1057	0.0508	0.0140	-0.0341
0.08	0.0820	0.0923	0.1050	0.0931	0.1461	0.2086	0.0773	0.0689	0.0582	0.0625	-0.0080	-0.1038	0.0913	0.1372	0.1918
0.1	0.0899	0.0532	0.0053	0.0821	0.0118	-0.0836	0.0987	0.0979	0.0969	0.1090	0.1483	0.1954	0.1120	0.1624	0.2220
0.12	0.1217	0.1356	0.1528	0.1220	0.1371	0.1556	0.1352	0.2003	0.2761	0.1174	0.1140	0.1098	0.1257	0.1546	0.1895
0.14	0.1328	0.1144	0.0909	0.1400	0.1507	0.1638	0.1502	0.1999	0.2587	0.1216	0.0560	-0.0326	0.1397	0.1478	0.1578
0.16	0.1643	0.1956	0.2333	0.1715	0.2300	0.2985	0.1436	0.0905	0.0200	0.1517	0.1330	0.1090	0.1538	0.1418	0.1267
0.18	0.1874	0.2345	0.2904	0.1660	0.1283	0.0789	0.1784	0.1909	0.2063	0.1854	0.2248	0.2721	0.1761	0.1779	0.1800
0.2	0.1945	0.1970	0.2000	0.1893	0.1700	0.1454	0.2110	0.2760	0.3518	0.1930	0.1892	0.1843	0.2012	0.2274	0.2593
0.22	0.2144	0.2221	0.2316	0.2217	0.2575	0.3005	0.1989	0.1418	0.0655	0.2213	0.2552	0.2960	0.1972	0.1307	0.0408
0.24	0.2400	0.2757	0.3185	0.2216	0.1828	0.1321	0.2319	0.2351	0.2391	0.2228	0.1891	0.1453	0.2297	0.2212	0.2105
0.26	0.2401	0.2028	0.1541	0.2433	0.2184	0.1865	0.2494	0.2494	0.2494	0.2511	0.2578	0.2661	0.2619	0.3073	0.3612
0.28	0.2588	0.2236	0.1778	0.2547	0.2016	0.1310	0.2555	0.2053	0.1388	0.2749	0.3038	0.3388	0.2708	0.2797	0.2907
0.3	0.2931	0.3233	0.3598	0.2680	0.1940	0.0931	0.2846	0.2800	0.2742	0.2708	0.2090	0.1260	0.2960	0.3321	0.3754
0.32	0.3112	0.3422	0.3796	0.2921	0.2450	0.1828	0.3011	0.2906	0.2774	0.3047	0.3094	0.3152	0.2963	0.2617	0.2166
0.34	0.3258	0.3448	0.3680	0.3416	0.4186	0.5072	0.3306	0.3664	0.4095	0.3412	0.4170	0.5043	0.3198	0.3082	0.2933
0.36	0.3299	0.2941	0.2476	0.3447	0.3669	0.39									

S.3.2 0-5 kbar:

Generating Equation	E4			E5			E6			E7			E8		
Error Level	1%	5%	10%	1%	5%	10%	1%	5%	10%	1%	5%	10%	1%	5%	10%
P (kbar)															
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.1	0.1070	0.1388	0.1773	0.0882	0.0444	-0.0131	0.1031	0.1198	0.1403	0.0780	-0.0102	-0.1326	0.1071	0.1389	0.1773
0.2	0.1993	0.2206	0.2466	0.1865	0.1558	0.1162	0.1883	0.1653	0.1358	0.1772	0.1071	0.0119	0.1751	0.0934	-0.0191
0.3	0.3060	0.3845	0.4746	0.2837	0.2760	0.2662	0.2891	0.3024	0.3187	0.2903	0.3088	0.3315	0.2777	0.2408	0.1928
0.4	0.3761	0.3864	0.3991	0.3877	0.4407	0.5032	0.3721	0.3637	0.3530	0.3571	0.2866	0.1908	0.3877	0.4336	0.4882
0.5	0.4494	0.4127	0.3649	0.4426	0.3723	0.2769	0.4595	0.4587	0.4577	0.4694	0.5088	0.5559	0.4751	0.5254	0.5850
0.6	0.5438	0.5577	0.5749	0.5457	0.5608	0.5793	0.5593	0.6244	0.7002	0.5409	0.5376	0.5334	0.5528	0.5817	0.6166
0.7	0.6147	0.5963	0.5728	0.6245	0.6351	0.6482	0.6352	0.6849	0.7437	0.6058	0.5402	0.4516	0.6284	0.6365	0.6465
0.8	0.7034	0.7347	0.7724	0.7143	0.7728	0.8413	0.6871	0.6341	0.5636	0.6942	0.6754	0.6514	0.7017	0.6898	0.6747
0.9	0.7813	0.8284	0.8844	0.7650	0.7272	0.6779	0.7783	0.7908	0.8062	0.7838	0.8232	0.8705	0.7811	0.7828	0.7850
1	0.8410	0.8434	0.8464	0.8423	0.8231	0.7985	0.8652	0.9303	1.0061	0.8453	0.8414	0.8365	0.8611	0.8873	0.9192
1.1	0.9112	0.9188	0.9283	0.9270	0.9628	1.0057	0.9055	0.8484	0.7722	0.9254	0.9593	1.0001	0.9100	0.8435	0.7536
1.2	0.9850	1.0206	1.0635	0.9772	0.9384	0.8877	0.9892	0.9924	0.9964	0.9769	0.9432	0.8994	0.9934	0.9849	0.9742
1.3	1.0313	0.9940	0.9453	1.0476	1.0228	0.9908	1.0556	1.0556	1.0556	1.0533	1.0600	1.0683	1.0747	1.1201	1.1740
1.4	1.0944	1.0592	1.0134	1.1061	1.0530	0.9824	1.1089	1.0587	0.9922	1.1237	1.1526	1.1876	1.1309	1.1398	1.1508
1.5	1.1713	1.2015	1.2380	1.1649	1.0910	0.9901	1.1838	1.1792	1.1734	1.1644	1.1027	1.0197	1.2017	1.2378	1.2812
1.6	1.2302	1.2613	1.2987	1.2333	1.1861	1.1239	1.2446	1.2341	1.2209	1.2418	1.2464	1.2522	1.2461	1.2114	1.1664
1.7	1.2842	1.3031	1.3263	1.3255	1.4025	1.4911	1.3171	1.3529	1.3959	1.3202	1.3960	1.4833	1.3120	1.3003	1.2855
1.8	1.3259	1.2902	1.2436	1.3702	1.3924	1.4195	1.3748	1.4044	1.4403	1.3549	1.3401	1.3214	1.3845	1.4267	1.4772
1.9	1.3901	1.3968	1.4051	1.4205	1.4127	1.4028	1.4366	1.4808	1.5335	1.4209	1.4426	1.4691	1.4284	1.4186	

S.3.3 0-10 kbar:

Generating Equation	E4			E5			E6			E7			E8		
Error Level	1%	5%	10%	1%	5%	10%	1%	5%	10%	1%	5%	10%	1%	5%	10%
P (kbar)															
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.2	0.2021	0.2339	0.2723	0.1833	0.1396	0.0820	0.1983	0.2150	0.2355	0.1731	0.0850	-0.0374	0.2026	0.2344	0.2728
0.4	0.3789	0.4002	0.4262	0.3665	0.3359	0.2962	0.3685	0.3455	0.3159	0.3572	0.2871	0.1919	0.3564	0.2747	0.1623
0.6	0.5609	0.6393	0.7295	0.5400	0.5323	0.5225	0.5457	0.5590	0.5754	0.5465	0.5650	0.5877	0.5365	0.4996	0.4515
0.8	0.6981	0.7084	0.7211	0.7129	0.7659	0.8284	0.6978	0.6894	0.6788	0.6819	0.6114	0.5155	0.7165	0.7624	0.8170
1	0.8314	0.7947	0.7468	0.8303	0.7600	0.6646	0.8481	0.8473	0.8463	0.8563	0.8957	0.9428	0.8674	0.9178	0.9774
1.2	0.9794	0.9934	1.0105	0.9905	1.0056	1.0241	1.0053	1.0704	1.1463	0.9843	0.9809	0.9767	1.0028	1.0317	1.0666
1.4	1.0984	1.0800	1.0566	1.1217	1.1323	1.1454	1.1339	1.1836	1.2424	1.1006	1.0350	0.9464	1.1307	1.1388	1.1488
1.6	1.2303	1.2616	1.2993	1.2599	1.3183	1.3868	1.2343	1.1813	1.1108	1.2360	1.2172	1.1932	1.2516	1.2397	1.2246
1.8	1.3468	1.3940	1.4499	1.3553	1.3175	1.2682	1.3704	1.3829	1.3983	1.3687	1.4081	1.4554	1.3741	1.3758	1.3780
2	1.4412	1.4437	1.4467	1.4743	1.4550	1.4305	1.4988	1.5639	1.6397	1.4698	1.4659	1.4611	1.4931	1.5193	1.5512
2.2	1.5426	1.5502	1.5597	1.5979	1.6337	1.6766	1.5777	1.5206	1.4444	1.5864	1.6203	1.6611	1.5773	1.5108	1.4209
2.4	1.6444	1.6800	1.7229	1.6847	1.6459	1.5952	1.6974	1.7006	1.7046	1.6715	1.6378	1.5940	1.6925	1.6841	1.6734
2.6	1.7158	1.6785	1.6298	1.7895	1.7647	1.7327	1.7974	1.7974	1.7974	1.7791	1.7858	1.7941	1.8024	1.8478	1.9017
2.8	1.8014	1.7662	1.7205	1.8806	1.8275	1.7569	1.8822	1.8320	1.7655	1.8782	1.9071	1.9421	1.8842	1.8931	1.9041
3	1.8985	1.9287	1.9652	1.9704	1.8964	1.7955	1.9866	1.9820	1.9762	1.9456	1.8838	1.8008	1.9776	2.0137	2.0571
3.2	1.9756	2.0066	2.0440	2.0682	2.0211	1.9588	2.0752	2.0648	2.0515	2.0477	2.0523	2.0581	2.0420	2.0073	1.9623
3.4	2.0457	2.0647	2.0879	2.1886	2.2656	2.3542	2.1739	2.2097	2.2528	2.1491	2.2249	2.3121	2.1254	2.1137	2.0989
3.6	2.1019	2.0662	2.0196	2.2603	2.2825	2.3096	2.2564	2.2860	2.3218	2.2052	2.1904	2.1716	2.2129	2.2552	2.3056
3.8	2.1790	2.1857	2.1940	2.3366	2.3288	2.3190	2.3415	2.3857	2.4384	2.2910	2.3127	2.3392	2.269		

S.4 Tables of simulated kinetic data sets generated by E4-E8 used for self- and cross-fitting (see text for details).

Table S.4.1 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E4 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-1 kbar:*

Generator Equation	Error Level	1%					5%					10%				
E4	P (kbar)	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.02	0.012	0.016	0.019	0.016	0.012	-0.022	0.001	0.017	-0.001	-0.022	-0.066	-0.019	0.014	-0.023	-0.066
	0.04	0.054	0.043	0.052	0.055	0.039	0.108	0.054	0.100	0.113	0.036	0.171	0.068	0.157	0.182	0.032
	0.06	0.059	0.068	0.056	0.047	0.044	0.057	0.102	0.041	-0.008	-0.023	0.055	0.142	0.022	-0.081	-0.112
	0.08	0.069	0.081	0.077	0.087	0.076	0.028	0.087	0.066	0.118	0.060	-0.026	0.094	0.052	0.154	0.041
	0.1	0.085	0.096	0.116	0.111	0.105	0.026	0.083	0.183	0.160	0.130	-0.053	0.067	0.261	0.218	0.161
	0.12	0.127	0.133	0.117	0.130	0.122	0.164	0.192	0.113	0.176	0.139	0.208	0.262	0.107	0.230	0.159
	0.14	0.136	0.155	0.142	0.150	0.134	0.131	0.221	0.158	0.199	0.119	0.125	0.299	0.178	0.257	0.100
	0.16	0.152	0.160	0.169	0.158	0.153	0.136	0.173	0.220	0.164	0.138	0.115	0.189	0.280	0.172	0.118
	0.18	0.184	0.197	0.174	0.179	0.162	0.218	0.280	0.168	0.195	0.106	0.259	0.375	0.161	0.214	0.031
	0.2	0.184	0.207	0.182	0.192	0.187	0.141	0.256	0.134	0.182	0.158	0.085	0.315	0.071	0.171	0.121
	0.22	0.224	0.217	0.212	0.226	0.195	0.266	0.233	0.211	0.277	0.120	0.317	0.253	0.210	0.338	0.018
	0.24	0.217	0.225	0.235	0.227	0.223	0.161	0.200	0.251	0.211	0.188	0.086	0.168	0.271	0.191	0.144
	0.26	0.231	0.247	0.258	0.256	0.234	0.157	0.238	0.294	0.284	0.173	0.054	0.227	0.338	0.317	0.090
	0.28	0.272	0.271	0.257	0.259	0.277	0.292	0.284	0.216	0.225	0.313	0.316	0.300	0.162	0.180	0.357
	0.3	0.290	0.278	0.261	0.280	0.277	0.306	0.250	0.159	0.256	0.243	0.326	0.212	0.013	0.225	0.198
	0.32	0.294	0.313	0.299	0.308	0.306	0.257	0.349	0.280	0.325	0.316	0.209	0.393	0.255	0.347	0.329
	0.34	0.312	0.320	0.311	0.323	0.328	0.273	0.317	0.269	0.331	0.355	0.223	0.312	0.214	0.340	0.389
	0.36	0.337	0.336	0.331	0.344	0.335	0.329	0.327	0.302	0.364	0.322	0.320	0.314	0.264	0.389	0.305
	0.38	0.363	0.355	0.351	0.350	0.354	0.390	0.349	0.330	0.327	0.346	0.423	0.341</			

Table S.4.2 Simulated kinetic data, $\ln(k/k_0)$, generated using equation **E5** with parameters $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-1 kbar:

Generator Equation	Error Level	1%					5%					10%				
E5	P (kbar)	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.02	0.012	0.016	0.019	0.016	0.012	-0.022	0.001	0.017	-0.001	-0.022	-0.066	-0.019	0.014	-0.023	-0.066
	0.04	0.054	0.043	0.052	0.055	0.039	0.108	0.054	0.100	0.113	0.036	0.171	0.068	0.157	0.182	0.032
	0.06	0.059	0.068	0.056	0.047	0.044	0.057	0.102	0.041	-0.008	-0.023	0.055	0.142	0.022	-0.081	-0.112
	0.08	0.069	0.081	0.077	0.087	0.076	0.028	0.087	0.066	0.118	0.060	-0.026	0.094	0.052	0.154	0.041
	0.1	0.085	0.096	0.116	0.111	0.105	0.026	0.083	0.183	0.160	0.130	-0.053	0.067	0.261	0.218	0.161
	0.12	0.128	0.134	0.117	0.130	0.122	0.164	0.192	0.113	0.176	0.139	0.208	0.262	0.107	0.230	0.159
	0.14	0.136	0.155	0.142	0.150	0.134	0.131	0.221	0.158	0.199	0.119	0.125	0.299	0.178	0.257	0.100
	0.16	0.152	0.160	0.169	0.158	0.153	0.136	0.173	0.220	0.164	0.138	0.115	0.189	0.280	0.172	0.118
	0.18	0.184	0.197	0.174	0.179	0.162	0.218	0.280	0.168	0.195	0.106	0.259	0.375	0.161	0.214	0.031
	0.2	0.184	0.207	0.182	0.192	0.187	0.141	0.256	0.134	0.183	0.158	0.085	0.315	0.071	0.171	0.121
	0.22	0.224	0.217	0.212	0.226	0.195	0.266	0.233	0.211	0.277	0.120	0.318	0.254	0.210	0.338	0.018
	0.24	0.217	0.225	0.235	0.227	0.223	0.161	0.200	0.251	0.211	0.188	0.086	0.169	0.271	0.191	0.144
	0.26	0.232	0.247	0.259	0.256	0.235	0.157	0.239	0.295	0.284	0.173	0.055	0.228	0.338	0.317	0.090
	0.28	0.273	0.271	0.257	0.259	0.277	0.292	0.284	0.216	0.225	0.314	0.316	0.300	0.162	0.180	0.357
	0.3	0.290	0.279	0.262	0.280	0.277	0.306	0.250	0.159	0.256	0.243	0.326	0.213	0.014	0.225	0.198
	0.32	0.295	0.313	0.299	0.308	0.306	0.257	0.350	0.280	0.326	0.316	0.209	0.393	0.256	0.347	0.329
	0.34	0.312	0.321	0.311	0.323	0.328	0.274	0.317	0.269	0.331	0.356	0.224	0.313	0.214	0.340	0.389
	0.36	0.337	0.337	0.332	0.344	0.336	0.330	0.327	0.302	0.364	0.323	0.320	0.315	0.264	0.389	0.306
	0.38	0.364	0.355	0.351	0.351	0.355	0.391	0.349	0.330	0.327	0.347	0.424	0.341	0.304	0.297	0.337
	0.4	0.380	0.357	0.380	0.370	0.388	0.404	0.285	0.405	0.354	0.442	0.434	0.187	0.436	0.333	0.505
	0.42	0.400	0.392	0.390	0.393	0.378	0.434	0.392	0.386	0.399	0.325	0.475	0.393	0.381	0.407	0.253
	0.44	0.406	0.427	0.415	0.396	0.392	0.397	0.500	0.438	0.344	0.322	0.386	0.583	0.467	0.275	0.227
	0.46	0.411	0.434	0.422	0.422	0.431	0.351	0.468	0.407	0.410	0.452	0.270	0.510	0.388	0.393	0.478
	0.48	0.435	0.433	0.446	0.442	0.459	0.406	0.394	0.458	0.438	0.524	0.368	0.343	0.473	0.433	0.599
	0.5	0.444	0.466	0.463	0.454	0.458	0.381	0.493	0.476	0.434	0.454	0.296	0.525	0.492	0.409	0.449
	0.52	0.484	0.483	0.482	0.472	0.480	0.515	0.508	0.506	0.454	0.494	0.551	0.539	0.535	0.432	0.511
	0.54	0.479	0.508	0.491	0.480	0.485	0.422	0.566	0.485	0.427	0.452	0.345	0.635	0.478	0.356	0.409
	0.56	0.498	0.506	0.522	0.508	0.502	0.450	0.495	0.571	0.504	0.472	0.388	0.481	0.630	0.499	0.434
	0.58	0.531	0.527	0.513	0.531	0.542	0.554	0.533	0.463	0.552	0.605	0.582	0.540	0.395	0.578	0.679
	0.6	0.545	0.557	0.536	0.530	0.529	0.558	0.615	0.514	0.483	0.477	0.573	0.682	0.484	0.420	0.408
	0.62	0.570	0.558	0.564	0.580	0.571	0.617	0.556	0.585	0.664	0.622	0.673	0.554	0.612	0.760	0.683
	0.64	0.576	0.589	0.573	0.580	0.583	0.584	0.647	0.569	0.604	0.617	0.593	0.715	0.564	0.633	0.659
	0.66	0.584	0.605	0.588	0.595	0.603	0.560	0.664	0.577	0.612	0.652	0.529	0.732	0.563	0.633	0.710
	0.68	0.613	0.600	0.616	0.602	0.609	0.641	0.574	0.656	0.588	0.619	0.675	0.540	0.704	0.569	0.631
	0.7	0.619	0.622	0.619	0.615	0.626	0.610	0.623	0.605	0.588	0.643	0.598	0.623	0.589	0.552	0.664
	0.72	0.624	0.645	0.637	0.655	0.614	0.570	0.673	0.637	0.724	0.512	0.498	0.706	0.636	0.804	0.368
	0.74	0.665	0.636	0.668	0.653	0.646	0.713	0.567	0.725	0.650	0.619	0.769	0.474	0.792	0.648	0.585
	0.76	0.661	0.662	0.663	0.675	0.671	0.629	0.638	0.642	0.699	0.680	0.588	0.606	0.614	0.728	0.692
	0.78	0.689	0.667	0.677	0.683	0.703	0.707	0.597	0.650	0.678	0.777	0.729	0.501	0.616	0.673	0.862
	0.8	0.706	0.685	0.689	0.709	0.687	0.732	0.625	0.648	0.747	0.638	0.764	0.546	0.594	0.793	0.574
	0.82	0.709	0.724	0.716	0.700	0.711	0.689	0.760	0.724	0.639	0.695	0.664	0.803	0.733	0.557	0.675
	0.84	0.728	0.743	0.734	0.736	0.725	0.720	0.797	0.751	0.762	0.708	0.711	0.861	0.773	0.793	0.687
	0.86	0.754	0.735	0.733	0.756	0.753	0.790	0.698	0.687	0.800	0.787	0.834	0.649	0.626	0.854	0.828
	0.88	0.757	0.762	0.768	0.733	0.759	0.749	0.771	0.799	0.618	0.757	0.738	0.783	0.838	0.453	0.754
	0.9	0.780	0.774	0.762	0.771	0.782	0.802	0.771	0.712	0.760	0.815	0.829	0.768	0.647	0.747	0.854
	0.92	0.802	0.788	0.803	0.784	0.788	0.854	0.785	0.856	0.766	0.784	0.914	0.780	0.919	0.742	0.778
	0.94	0.808	0.802	0.807	0.811	0.811	0.825	0.796	0.822	0.839	0.839	0.845	0.788	0.840	0.873	0.872
	0.96	0.797	0.829	0.815	0.808	0.833	0.706	0.870	0.802	0.764	0.892	0.580	0.919	0.785	0.706	0.961
	0.98	0.837	0.822	0.817	0.823	0.844	0.852	0.778	0.751	0.782	0.890	0.871	0.720	0.663	0.728	0.944
	1	0.847	0.842	0.854	0.860	0.854	0.849	0.821	0.880	0.911	0.883	0.851	0.794	0.913	0.972	0.917

Table S.4.3 Simulated kinetic data, $\ln(k/k_0)$, generated using equation **E6** with parameters $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-1 kbar:

Generator Equation	Error Level	1%					5%					10%				
E6	P (kbar)	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.02	0.012	0.016	0.019	0.016	0.012	-0.022	0.001	0.017	-0.001	-0.022	-0.066	-0.019	0.014	-0.023	-0.066
	0.04	0.054	0.043	0.052	0.055	0.039	0.108	0.054	0.100	0.113	0.036	0.171	0.068	0.157	0.182	0.032
	0.06	0.059	0.068	0.056	0.047	0.044	0.057	0.102	0.041	-0.008	-0.023	0.055	0.142	0.022	-0.081	-0.112
	0.08	0.069	0.081	0.077	0.087	0.076	0.028	0.087	0.066	0.118	0.060	-0.026	0.094	0.052	0.154	0.041
	0.1	0.085	0.096	0.116	0.111	0.105	0.026	0.083	0.183	0.160	0.130	-0.053	0.067	0.261	0.218	0.161
	0.12	0.128	0.134	0.117	0.130	0.122	0.164	0.192	0.113	0.176	0.139	0.208	0.262	0.107	0.230	0.159
	0.14	0.136	0.155	0.142	0.150	0.134	0.131	0.221	0.158	0.199	0.119	0.125	0.299	0.178	0.257	0.100
	0.16	0.152	0.160	0.169	0.158	0.153	0.136	0.173	0.220	0.164	0.138	0.115	0.189	0.280	0.172	0.118
	0.18	0.184	0.197	0.174	0.179	0.162	0.218	0.280	0.168	0.195	0.106	0.259	0.375	0.161	0.214	0.031
	0.2	0.184	0.207	0.182	0.192	0.187	0.141	0.256	0.134	0.183	0.158	0.085	0.315	0.071	0.171	0.121
	0.22	0.224	0.217	0.212	0.226	0.195	0.266	0.233	0.211	0.277	0.120	0.318	0.254	0.210	0.338	0.018
	0.24	0.218	0.225	0.235	0.227	0.223	0.161	0.200	0.251	0.211	0.188	0.086	0.169	0.271	0.191	0.144
	0.26	0.232	0.247	0.259	0.256	0.235	0.157	0.239	0.295	0.284	0.173	0.055	0.228	0.338	0.317	0.090
	0.28	0.273	0.271	0.258	0.259	0.277	0.292	0.284	0.216	0.225	0.314	0.316	0.300	0.162	0.180	0.357
	0.3	0.290	0.279	0.262	0.280	0.277	0.306	0.250	0.159	0.256	0.243	0.326	0.213	0.014	0.225	0.198
	0.32	0.295	0.313	0.299	0.308	0.306	0.258	0.350	0.280	0.326	0.316	0.209	0.394	0.256	0.347	0.329
	0.34	0.312	0.321	0.311	0.323	0.328	0.274	0.317	0.269	0.331	0.356	0.224	0.313	0.214	0.341	0.389
	0.36	0.337	0.337	0.332	0.344	0.336	0.330	0.327	0.302	0.364	0.323	0.321	0.315	0.264	0.389	0.306
	0.38	0.364	0.355	0.352	0.351	0.355	0.391	0.349	0.331	0.327	0.347	0.424	0.342	0.304	0.297	0.337
	0.4	0.380	0.357	0.381	0.370	0.388	0.404	0.285	0.406	0.354	0.442	0.434	0.187	0.436	0.333	0.505
	0.42	0.400	0.392	0.390	0.393	0.379	0.434	0.392	0.386	0.399	0.325	0.475	0.393	0.381	0.407	0.253
	0.44	0.406	0.428	0.415	0.396	0.392	0.397	0.500	0.438	0.344	0.322	0.386	0.583	0.467	0.276	0.227
	0.46	0.411	0.435	0.422	0.423	0.431	0.351	0.469	0.407	0.410	0.452	0.270	0.510	0.388	0.394	0.478
	0.48	0.436	0.433	0.446	0.442	0.460	0.406	0.394	0.458	0.438	0.524	0.369	0.343	0.473	0.434	0.599
	0.5	0.444	0.466	0.463	0.455	0.459	0.381	0.493	0.476	0.435	0.454	0.296	0.526	0.492	0.409	0.449
	0.52	0.484	0.483	0.482	0.472	0.480	0.515	0.508	0.506	0.454	0.494	0.552	0.540	0.535	0.432	0.511
	0.54	0.479	0.508	0.492	0.480	0.485	0.422	0.567	0.485	0.427	0.452	0.346	0.635	0.478	0.356	0.410
	0.56	0.498	0.507	0.522	0.509	0.502	0.451	0.495	0.572	0.505	0.473	0.388	0.481	0.630	0.500	0.435
	0.58	0.532	0.527	0.514	0.531	0.542	0.554	0.533	0.463	0.553	0.606	0.582	0.540	0.396	0.578	0.679
	0.6	0.545	0.557	0.537	0.531	0.530	0.558	0.615	0.514	0.483	0.477	0.573	0.683	0.485	0.420	0.408
	0.62	0.571	0.558	0.564	0.581	0.572	0.618	0.557	0.586	0.664	0.623	0.673	0.555	0.612	0.760	0.683
	0.64	0.577	0.590	0.574	0.581	0.583	0.584	0.648	0.570	0.604	0.618	0.594	0.716	0.565	0.633	0.659
	0.66	0.585	0.606	0.588	0.595	0.603	0.561	0.664	0.577	0.612	0.652	0.530	0.733	0.564	0.634	0.710
	0.68	0.614	0.600	0.617	0.603	0.609	0.642	0.574	0.657	0.588	0.619	0.676	0.540	0.705	0.570	0.632
	0.7	0.620	0.623	0.619	0.616	0.627	0.610	0.623	0.606	0.588	0.644	0.598	0.624	0.589	0.553	0.664
	0.72	0.625	0.645	0.638	0.656	0.614	0.571	0.673	0.637	0.725	0.512	0.499	0.707	0.636	0.805	0.368
	0.74	0.666	0.637	0.669	0.653	0.647	0.713	0.568	0.726	0.651	0.620	0.769	0.474	0.793	0.648	0.585
	0.76	0.661	0.663	0.664	0.675	0.672	0.630	0.638	0.642	0.699	0.681	0.588	0.607	0.615	0.729	0.692
	0.78	0.689	0.668	0.678	0.684	0.704	0.708	0.598	0.651	0.679	0.778	0.730	0.502	0.616	0.674	0.863
	0.8	0.707	0.686	0.690	0.710	0.688	0.733	0.626	0.649	0.748	0.639	0.765	0.546	0.595	0.794	0.574
	0.82	0.710	0.724	0.717	0.700	0.711	0.690	0.760	0.724	0.640	0.696	0.664	0.804	0.733	0.558	0.676
	0.84	0.729	0.744	0.735	0.737	0.726	0.721	0.798	0.752	0.762	0.709	0.712	0.862	0.773	0.793	0.688
	0.86	0.755	0.736	0.734	0.757	0.754	0.791	0.699	0.688	0.801	0.788	0.835	0.650	0.627	0.854	0.829
	0.88	0.758	0.763	0.768	0.734	0.760	0.750	0.772	0.800	0.619	0.758	0.739	0.784	0.839	0.454	0.755
	0.9	0.781	0.775	0.763	0.772	0.783	0.803	0.772	0.713	0.761	0.816	0.830	0.769	0.648	0.748	0.855
	0.92	0.803	0.789	0.804	0.785	0.789	0.855	0.786	0.857	0.767	0.785	0.915	0.781	0.920	0.743	0.779
	0.94	0.809	0.803	0.808	0.812	0.812	0.826	0.797	0.823	0.840	0.840	0.846	0.789	0.841	0.874	0.873
	0.96	0.798	0.830	0.816	0.809	0.835	0.707	0.871	0.803	0.765	0.893	0.581	0.920	0.786	0.707	0.962
	0.98	0.838	0.823	0.818	0.824	0.846	0.853	0.779	0.753	0.783	0.891	0.873	0.721	0.664	0.729	0.945
	1	0.849	0.843	0.855	0.861	0.856	0.850	0.822	0.882	0.912	0.884	0.852	0.795	0.914	0.973	0.919

Table S.4.4 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E7 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-1 kbar:*

Generator Equation	Error Level	1%					5%					10%				
E7	P (kbar)	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.02	0.012	0.016	0.019	0.016	0.012	-0.022	0.001	0.017	-0.001	-0.022	-0.066	-0.019	0.014	-0.023	-0.066
	0.04	0.054	0.043	0.052	0.055	0.039	0.108	0.054	0.100	0.113	0.036	0.171	0.068	0.157	0.182	0.032
	0.06	0.059	0.068	0.056	0.047	0.044	0.057	0.102	0.041	-0.008	-0.023	0.055	0.142	0.022	-0.081	-0.112
	0.08	0.069	0.081	0.077	0.087	0.076	0.028	0.087	0.066	0.118	0.060	-0.026	0.094	0.052	0.154	0.041
	0.1	0.085	0.096	0.116	0.111	0.105	0.026	0.083	0.183	0.160	0.130	-0.053	0.067	0.261	0.218	0.161
	0.12	0.128	0.134	0.117	0.130	0.122	0.164	0.192	0.113	0.176	0.139	0.208	0.262	0.107	0.230	0.159
	0.14	0.136	0.155	0.142	0.150	0.134	0.131	0.221	0.158	0.199	0.119	0.125	0.299	0.178	0.257	0.100
	0.16	0.152	0.160	0.169	0.158	0.153	0.136	0.173	0.220	0.164	0.138	0.115	0.189	0.280	0.172	0.118
	0.18	0.184	0.197	0.174	0.179	0.162	0.218	0.280	0.168	0.195	0.106	0.259	0.375	0.161	0.214	0.031
	0.2	0.184	0.207	0.182	0.192	0.187	0.141	0.256	0.134	0.183	0.158	0.085	0.315	0.071	0.171	0.121
	0.22	0.224	0.217	0.212	0.226	0.195	0.266	0.233	0.211	0.277	0.120	0.318	0.254	0.210	0.338	0.018
	0.24	0.217	0.225	0.235	0.227	0.223	0.161	0.200	0.251	0.211	0.188	0.086	0.169	0.271	0.191	0.144
	0.26	0.232	0.247	0.259	0.256	0.235	0.157	0.239	0.295	0.284	0.173	0.054	0.228	0.338	0.317	0.090
	0.28	0.273	0.271	0.257	0.259	0.277	0.292	0.284	0.216	0.225	0.314	0.316	0.300	0.162	0.180	0.357
	0.3	0.290	0.279	0.262	0.280	0.277	0.306	0.250	0.159	0.256	0.243	0.326	0.213	0.014	0.225	0.198
	0.32	0.295	0.313	0.299	0.308	0.306	0.257	0.350	0.280	0.326	0.316	0.209	0.393	0.256	0.347	0.329
	0.34	0.312	0.321	0.311	0.323	0.328	0.274	0.317	0.269	0.331	0.356	0.224	0.313	0.214	0.340	0.389
	0.36	0.337	0.337	0.332	0.344	0.336	0.330	0.327	0.302	0.364	0.323	0.320	0.315	0.264	0.389	0.306
	0.38	0.363	0.355	0.351	0.351	0.355	0.391	0.349	0.330	0.327	0.347	0.423	0.341	0.304	0.297	0.337
	0.4	0.380	0.357	0.380	0.370	0.388	0.404	0.285	0.405	0.354	0.442	0.434	0.187	0.436	0.333	0.505
	0.42	0.400	0.391	0.390	0.393	0.378	0.434	0.392	0.386	0.399	0.325	0.475	0.393	0.381	0.407	0.253
	0.44	0.406	0.427	0.415	0.396	0.392	0.397	0.499	0.438	0.344	0.322	0.386	0.583	0.467	0.275	0.227
	0.46	0.411	0.434	0.422	0.422	0.431	0.351	0.468	0.407	0.410	0.452	0.270	0.509	0.388	0.393	0.478
	0.48	0.435	0.433	0.446	0.442	0.459	0.406	0.394	0.458	0.438	0.524	0.368	0.343	0.473	0.433	0.599
	0.5	0.444	0.466	0.463	0.454	0.458	0.381	0.493	0.476	0.434	0.454	0.295	0.525	0.491	0.409	0.449
	0.52	0.484	0.483	0.482	0.472	0.480	0.514	0.508	0.506	0.454	0.493	0.551	0.539	0.534	0.431	0.510
	0.54	0.479	0.508	0.491	0.480	0.485	0.422	0.566	0.485	0.427	0.452	0.345	0.635	0.477	0.356	0.409
	0.56	0.498	0.506	0.522	0.508	0.502	0.450	0.495	0.571	0.504	0.472	0.388	0.481	0.630	0.499	0.434
	0.58	0.531	0.527	0.513	0.531	0.542	0.554	0.533	0.463	0.552	0.605	0.582	0.540	0.395	0.578	0.679
	0.6	0.545	0.557	0.536	0.530	0.529	0.557	0.615	0.513	0.483	0.477	0.573	0.682	0.484	0.420	0.408
	0.62	0.570	0.558	0.563	0.580	0.571	0.617	0.556	0.585	0.664	0.622	0.673	0.554	0.612	0.759	0.682
	0.64	0.576	0.589	0.573	0.580	0.583	0.584	0.647	0.569	0.604	0.617	0.593	0.715	0.564	0.633	0.658
	0.66	0.584	0.605	0.587	0.594	0.603	0.560	0.664	0.577	0.612	0.652	0.529	0.732	0.563	0.633	0.710
	0.68	0.613	0.599	0.616	0.602	0.608	0.641	0.573	0.656	0.588	0.619	0.675	0.540	0.704	0.569	0.631
	0.7	0.619	0.622	0.618	0.615	0.626	0.610	0.622	0.605	0.587	0.643	0.597	0.623	0.588	0.552	0.663
	0.72	0.624	0.644	0.637	0.655	0.613	0.570	0.672	0.636	0.724	0.511	0.498	0.706	0.635	0.804	0.367
	0.74	0.665	0.636	0.668	0.652	0.646	0.712	0.567	0.725	0.650	0.619	0.769	0.473	0.792	0.647	0.584
	0.76	0.660	0.662	0.663	0.674	0.671	0.629	0.637	0.641	0.698	0.680	0.587	0.606	0.614	0.728	0.691
	0.78	0.688	0.667	0.677	0.682	0.703	0.707	0.596	0.650	0.678	0.777	0.729	0.501	0.615	0.673	0.862
	0.8	0.705	0.684	0.689	0.709	0.687	0.732	0.625	0.647	0.747	0.638	0.764	0.545	0.593	0.793	0.573
	0.82	0.709	0.723	0.716	0.699	0.710	0.689	0.759	0.723	0.638	0.695	0.663	0.802	0.732	0.557	0.675
	0.84	0.727	0.743	0.733	0.736	0.725	0.720	0.797	0.751	0.761	0.708	0.711	0.860	0.772	0.792	0.686
	0.86	0.753	0.735	0.733	0.755	0.753	0.790	0.698	0.686	0.800	0.786	0.833	0.649	0.625	0.853	0.827
	0.88	0.757	0.761	0.767	0.732	0.758	0.748	0.771	0.799	0.617	0.756	0.737	0.782	0.837	0.452	0.754
	0.9	0.779	0.773	0.762	0.771	0.782	0.801	0.770	0.712	0.760	0.814	0.828	0.767	0.646	0.746	0.853
	0.92	0.802	0.787	0.802	0.784	0.787	0.853	0.784	0.855	0.765	0.783	0.914	0.780	0.918	0.741	0.777
	0.94	0.807	0.801	0.807	0.810	0.810	0.824	0.795	0.821	0.838	0.838	0.845	0.787	0.840	0.873	0.872
	0.96	0.796	0.828	0.814	0.807	0.833	0.705	0.869	0.801	0.763	0.891	0.579	0.918	0.784	0.705	0.960
	0.98	0.836	0.821	0.816	0.822	0.844	0.851	0.777	0.751	0.781	0.889	0.871	0.719	0.662	0.727	0.943
	1	0.847	0.841	0.853	0.859	0.854	0.848	0.820	0.880	0.910	0.882	0.850	0.793	0.912	0.971	0.917

Table S.4.5 Simulated kinetic data, $\ln(k/k_0)$, generated using equation **E8** with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-1 kbar:

Generator Equation	Error Level	1%					5%					10%				
E8	P (kbar)	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5	Set 1	Set 2	Set 3	Set 4	Set 5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.02	0.012	0.016	0.020	0.016	0.012	-0.022	0.001	0.017	-0.001	-0.022	-0.066	-0.019	0.014	-0.023	-0.066
	0.04	0.054	0.043	0.052	0.055	0.039	0.108	0.054	0.100	0.113	0.036	0.171	0.068	0.157	0.182	0.032
	0.06	0.059	0.068	0.056	0.047	0.044	0.057	0.102	0.041	-0.008	-0.022	0.055	0.142	0.022	-0.081	-0.112
	0.08	0.069	0.081	0.077	0.087	0.076	0.028	0.087	0.066	0.118	0.060	-0.026	0.094	0.052	0.154	0.041
	0.1	0.085	0.096	0.116	0.112	0.105	0.026	0.083	0.184	0.160	0.131	-0.053	0.067	0.261	0.218	0.161
	0.12	0.128	0.134	0.117	0.130	0.123	0.164	0.193	0.113	0.176	0.139	0.208	0.262	0.107	0.230	0.160
	0.14	0.136	0.155	0.142	0.150	0.134	0.131	0.222	0.158	0.199	0.119	0.125	0.299	0.179	0.257	0.100
	0.16	0.153	0.160	0.170	0.158	0.153	0.136	0.173	0.220	0.164	0.138	0.115	0.190	0.280	0.172	0.119
	0.18	0.184	0.198	0.174	0.180	0.162	0.218	0.280	0.169	0.195	0.106	0.259	0.375	0.162	0.214	0.032
	0.2	0.184	0.207	0.183	0.192	0.187	0.142	0.257	0.135	0.183	0.159	0.086	0.316	0.071	0.171	0.121
	0.22	0.224	0.217	0.213	0.226	0.195	0.267	0.234	0.212	0.278	0.121	0.318	0.254	0.210	0.339	0.019
	0.24	0.218	0.226	0.236	0.228	0.223	0.162	0.201	0.252	0.212	0.189	0.087	0.169	0.272	0.192	0.145
	0.26	0.232	0.248	0.259	0.257	0.235	0.158	0.239	0.295	0.285	0.174	0.055	0.228	0.339	0.318	0.091
	0.28	0.273	0.272	0.258	0.260	0.278	0.293	0.285	0.217	0.226	0.314	0.317	0.301	0.163	0.181	0.358
	0.3	0.291	0.280	0.263	0.281	0.278	0.307	0.251	0.160	0.257	0.244	0.327	0.214	0.015	0.226	0.199
	0.32	0.296	0.314	0.300	0.309	0.307	0.259	0.351	0.281	0.327	0.318	0.210	0.395	0.257	0.348	0.330
	0.34	0.313	0.322	0.313	0.325	0.330	0.275	0.318	0.271	0.332	0.357	0.225	0.314	0.216	0.342	0.390
	0.36	0.339	0.338	0.333	0.346	0.337	0.331	0.328	0.304	0.366	0.324	0.322	0.316	0.266	0.390	0.307
	0.38	0.365	0.357	0.353	0.352	0.356	0.392	0.351	0.332	0.329	0.348	0.425	0.343	0.305	0.298	0.338
	0.4	0.382	0.359	0.382	0.372	0.390	0.406	0.287	0.407	0.355	0.444	0.435	0.189	0.438	0.334	0.507
	0.42	0.402	0.394	0.392	0.395	0.380	0.436	0.394	0.388	0.401	0.327	0.477	0.395	0.383	0.409	0.255
	0.44	0.408	0.430	0.417	0.398	0.394	0.399	0.502	0.440	0.346	0.324	0.388	0.585	0.469	0.277	0.229
	0.46	0.413	0.437	0.424	0.425	0.433	0.353	0.471	0.409	0.412	0.454	0.272	0.512	0.390	0.396	0.480
	0.48	0.438	0.436	0.448	0.444	0.462	0.409	0.397	0.460	0.440	0.526	0.371	0.346	0.476	0.436	0.601
	0.5	0.447	0.469	0.465	0.457	0.461	0.383	0.496	0.478	0.437	0.457	0.298	0.528	0.494	0.412	0.451
	0.52	0.487	0.485	0.485	0.475	0.482	0.517	0.511	0.509	0.457	0.496	0.554	0.542	0.537	0.434	0.513
	0.54	0.482	0.511	0.494	0.483	0.488	0.425	0.569	0.488	0.430	0.455	0.348	0.638	0.481	0.359	0.412
	0.56	0.501	0.510	0.525	0.511	0.505	0.454	0.498	0.575	0.508	0.476	0.391	0.484	0.633	0.503	0.437
	0.58	0.535	0.530	0.517	0.534	0.545	0.557	0.536	0.466	0.556	0.609	0.585	0.543	0.399	0.581	0.682
	0.6	0.549	0.560	0.540	0.534	0.533	0.561	0.618	0.517	0.486	0.481	0.577	0.686	0.488	0.423	0.411
	0.62	0.574	0.561	0.567	0.584	0.575	0.621	0.560	0.589	0.668	0.626	0.677	0.558	0.616	0.763	0.686
	0.64	0.580	0.593	0.577	0.584	0.587	0.588	0.651	0.573	0.608	0.621	0.597	0.719	0.568	0.637	0.663
	0.66	0.588	0.609	0.592	0.599	0.607	0.564	0.668	0.581	0.616	0.656	0.533	0.737	0.567	0.638	0.714
	0.68	0.617	0.604	0.621	0.607	0.613	0.645	0.578	0.661	0.592	0.623	0.679	0.544	0.709	0.574	0.636
	0.7	0.624	0.626	0.623	0.620	0.631	0.614	0.627	0.610	0.592	0.648	0.602	0.628	0.593	0.557	0.668
	0.72	0.629	0.649	0.642	0.660	0.618	0.575	0.677	0.641	0.729	0.516	0.503	0.711	0.640	0.809	0.372
	0.74	0.670	0.641	0.673	0.657	0.651	0.718	0.572	0.730	0.655	0.624	0.774	0.478	0.797	0.653	0.590
	0.76	0.666	0.668	0.668	0.680	0.676	0.634	0.643	0.647	0.704	0.685	0.593	0.611	0.620	0.733	0.697
	0.78	0.694	0.672	0.683	0.688	0.709	0.712	0.602	0.656	0.684	0.782	0.735	0.507	0.621	0.678	0.868
	0.8	0.711	0.690	0.695	0.714	0.693	0.738	0.631	0.653	0.753	0.644	0.770	0.551	0.599	0.799	0.579
	0.82	0.715	0.729	0.722	0.705	0.716	0.695	0.765	0.729	0.644	0.701	0.669	0.809	0.738	0.563	0.681
	0.84	0.734	0.749	0.740	0.742	0.731	0.726	0.803	0.757	0.767	0.714	0.717	0.867	0.779	0.799	0.693
	0.86	0.760	0.741	0.739	0.762	0.759	0.796	0.704	0.693	0.807	0.793	0.840	0.656	0.632	0.860	0.834
	0.88	0.764	0.768	0.774	0.739	0.765	0.755	0.777	0.806	0.624	0.763	0.744	0.789	0.844	0.459	0.761
	0.9	0.786	0.780	0.769	0.778	0.789	0.808	0.777	0.719	0.767	0.821	0.835	0.774	0.653	0.753	0.860
	0.92	0.809	0.795	0.809	0.791	0.795	0.860	0.791	0.863	0.772	0.790	0.921	0.787	0.926	0.749	0.785
	0.94	0.815	0.809	0.814	0.818	0.818	0.831	0.803	0.829	0.846	0.845	0.852	0.795	0.847	0.880	0.879
	0.96	0.804	0.836	0.822	0.815	0.840	0.713	0.877	0.809	0.771	0.899	0.587	0.926	0.792	0.713	0.968
	0.98	0.844	0.829	0.824	0.830	0.852	0.859	0.785	0.759	0.789	0.897	0.879	0.727	0.670	0.735	0.951
	1	0.855	0.849	0.861	0.868	0.862	0.856	0.828	0.888	0.919	0.890	0.858	0.801	0.920	0.979	0.925

Table S.4.6 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E4 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-5 kbar:*

Generator Equation	Error Level	1%					5%					10%				
E4	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.111	0.105	0.094	0.099	0.108	0.159	0.131	0.075	0.101	0.144	0.215	0.161	0.050	0.104	0.188
	0.2	0.200	0.193	0.186	0.208	0.190	0.225	0.187	0.153	0.260	0.175	0.256	0.180	0.110	0.323	0.156
	0.3	0.286	0.284	0.286	0.289	0.277	0.291	0.280	0.287	0.302	0.241	0.296	0.274	0.288	0.318	0.194
	0.4	0.386	0.362	0.351	0.388	0.388	0.436	0.316	0.258	0.442	0.445	0.494	0.256	0.127	0.506	0.512
	0.5	0.461	0.445	0.464	0.465	0.428	0.471	0.390	0.486	0.493	0.294	0.483	0.317	0.512	0.526	0.096
	0.6	0.539	0.554	0.541	0.540	0.559	0.533	0.606	0.545	0.539	0.629	0.526	0.668	0.549	0.539	0.711
	0.7	0.628	0.619	0.625	0.615	0.605	0.662	0.617	0.646	0.596	0.548	0.702	0.615	0.672	0.573	0.471
	0.8	0.691	0.686	0.697	0.691	0.700	0.673	0.646	0.703	0.672	0.720	0.650	0.594	0.711	0.648	0.744
	0.9	0.771	0.777	0.762	0.764	0.744	0.777	0.807	0.731	0.744	0.639	0.784	0.843	0.692	0.718	0.490
	1.0	0.831	0.841	0.836	0.833	0.852	0.791	0.845	0.818	0.802	0.897	0.740	0.851	0.795	0.762	0.950
	1.1	0.920	0.921	0.906	0.916	0.912	0.962	0.968	0.894	0.945	0.925	1.012	1.023	0.879	0.979	0.941
	1.2	0.973	0.959	0.972	0.958	0.993	0.961	0.886	0.957	0.883	1.056	0.947	0.788	0.937	0.780	1.131
	1.3	1.019	1.043	1.052	1.038	1.037	0.930	1.053	1.097	1.027	1.022	0.807	1.065	1.151	1.014	1.002
	1.4	1.124	1.123	1.130	1.098	1.095	1.202	1.201	1.231	1.079	1.064	1.292	1.291	1.345	1.054	1.024
	1.5	1.165	1.157	1.178	1.166	1.161	1.169	1.129	1.231	1.176	1.152	1.175	1.094	1.295	1.187	1.140
	1.6	1.236	1.227	1.220	1.232	1.224	1.287	1.245	1.211	1.269	1.231	1.348	1.267	1.199	1.314	1.240
	1.7	1.294	1.312	1.284	1.292	1.297	1.349	1.434	1.303	1.343	1.362	1.415	1.569	1.326	1.403	1.439
	1.8	1.326	1.344	1.331	1.341	1.329	1.292	1.382	1.318	1.367	1.306	1.248	1.428	1.301	1.399	1.277
	1.9	1.400	1.407	1.403	1.390	1.394	1.446	1.476	1.457	1.397	1.414	1.501	1.557	1.522	1.405	1.439
	2.0	1.436	1.443	1.427	1.444	1.432	1.419	1.450	1.372	1.457	1.398	1.398	1.459	1.299	1.473	1.353
	2.1	1.505	1.510	1.496	1.494	1.496	1.559	1.582	1.515	1.505	1.516	1.622	1.665	1.539	1.518	1.541
	2.2	1.543	1.524	1.547	1.544	1.545	1.550	1.453	1.571	1.558	1.561	1.560	1.356	1.601	1.575	1.581
	2.3	1.581	1.602	1.591	1.581	1.565	1.549	1.654	1.602	1.549	1.467	1.508	1.716	1.615	1.508	1.328
	2.4	1.634	1.653	1.648	1.647	1.646	1.630	1.719	1.696	1.691	1.690	1.624	1.796	1.754	1.743	1.741
	2.5	1.686	1.665	1.682	1.694	1.669	1.709	1.601	1.685	1.744	1.622	1.736	1.515	1.690	1.803	1.559
	2.6	1.716	1.730	1.728	1.736	1.742	1.678	1.751	1.739	1.780	1.805	1.630	1.777	1.753	1.832	1.880
	2.7	1.753	1.772	1.748	1.755	1.761	1.693	1.787	1.661	1.702	1.733	1.612	1.805	1.542	1.632	1.697
	2.8	1.823	1.819	1.803	1.818	1.826	1.874	1.854	1.776	1.848	1.889	1.934	1.897	1.742	1.884	1.962
	2.9	1.843	1.848	1.863	1.844	1.863	1.813	1.836	1.908	1.814	1.912	1.774	1.820	1.962	1.775	1.969
	3.0	1.884	1.912	1.907	1.908	1.907	1.858	1.992	1.971	1.972	1.969	1.824	2.084	2.046	2.047	2.042
	3.1	1.925	1.920	1.933	1.941	1.921	1.904	1.879	1.947	1.984	1.883	1.878	1.826	1.964	2.035	1.835
	3.2	1.979	1.981	1.959	1.976	1.972	2.024	2.033	1.925	2.011	1.989	2.077	2.095	1.881	2.052	2.010
	3.3	1.994	2.017	1.998	2.010	2.010	1.948	2.063	1.968	2.031	2.032	1.889	2.118	1.930	2.056	2.059
	3.4	2.043	2.040	2.046	2.044	2.040	2.053	2.036	2.067	2.055	2.038	2.065	2.030	2.093	2.069	2.036
	3.5	2.078	2.085	2.068	2.063	2.076	2.085	2.122	2.036	2.009	2.074	2.093	2.165	1.993	1.937	2.072
	3.6	2.121	2.101	2.103	2.136	2.116	2.160	2.063	2.072	2.230	2.138	2.208	2.013	2.031	2.337	2.164
	3.7	2.137	2.155	2.147	2.127	2.144	2.105	2.196	2.159	2.055	2.140	2.064	2.246	2.174	1.956	2.136
	3.8	2.181	2.176	2.177	2.160	2.191	2.198	2.171	2.178	2.088	2.245	2.218	2.165	2.179	1.990	2.308
	3.9	2.211	2.211	2.209	2.200	2.230	2.219	2.219	2.206	2.163	2.306	2.229	2.228	2.202	2.115	2.394
	4.0	2.251	2.240	2.228	2.238	2.222	2.292	2.238	2.176	2.224	2.142	2.340	2.236	2.107	2.207	2.032
	4.1	2.265	2.283	2.274	2.272	2.268	2.236	2.325	2.285	2.273	2.253	2.200	2.375	2.298	2.275	2.233
	4.2	2.285	2.307	2.301	2.298	2.304	2.216	2.328	2.299	2.281	2.313	2.123	2.354	2.295	2.261	2.324
	4.3	2.326	2.355	2.331	2.320	2.330	2.306	2.446	2.329	2.271	2.323	2.279	2.550	2.326	2.206	2.315
	4.4	2.348	2.353	2.353	2.353	2.360	2.298	2.324	2.322	2.325	2.358	2.232	2.287	2.282	2.288	2.355
	4.5	2.392	2.373	2.372	2.396	2.390	2.408	2.309	2.304	2.428	2.395	2.428	2.223	2.213	2.466	2.403
	4.6	2.417	2.399	2.423	2.397	2.436	2.422	2.329	2.450	2.317	2.511	2.429	2.235	2.483	2.207	2.598
	4.7	2.444	2.438	2.437	2.444	2.443	2.446	2.418	2.413	2.448	2.443	2.448	2.393	2.382	2.453	2.442
	4.8	2.469	2.479	2.444	2.469	2.464	2.469	2.517	2.333	2.468	2.444	2.468	2.562	2.176	2.466	2.417
	4.9	2.508	2.488	2.488	2.496	2.494	2.557	2.457	2.459	2.495	2.486	2.615	2.416	2.421	2.495	2.475
	5.0	2.517	2.516	2.533	2.512	2.506	2.498	2.494	2.580	2.472	2.445	2.475	2.466	2.635	2.421	2.362

Table S.4.7 Simulated kinetic data, $\ln(k/k_0)$, generated using equation **E5** with parameters $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-5 kbar:

Generator Equation	Error Level	1%					5%					10%				
E5	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.111	0.105	0.094	0.099	0.108	0.159	0.131	0.075	0.101	0.144	0.215	0.161	0.050	0.104	0.188
	0.2	0.200	0.193	0.186	0.208	0.190	0.225	0.187	0.153	0.260	0.175	0.256	0.180	0.110	0.323	0.156
	0.3	0.287	0.285	0.286	0.289	0.277	0.291	0.280	0.287	0.302	0.241	0.296	0.274	0.289	0.318	0.194
	0.4	0.387	0.363	0.352	0.388	0.389	0.436	0.317	0.258	0.443	0.446	0.495	0.256	0.128	0.507	0.513
	0.5	0.462	0.446	0.465	0.466	0.429	0.472	0.391	0.487	0.494	0.295	0.484	0.318	0.514	0.527	0.097
	0.6	0.541	0.555	0.543	0.542	0.560	0.535	0.608	0.546	0.541	0.631	0.528	0.670	0.551	0.540	0.712
	0.7	0.630	0.621	0.627	0.617	0.608	0.664	0.620	0.649	0.599	0.551	0.705	0.617	0.675	0.576	0.474
	0.8	0.695	0.689	0.701	0.695	0.704	0.676	0.650	0.707	0.676	0.724	0.653	0.597	0.715	0.652	0.748
	0.9	0.776	0.782	0.767	0.769	0.750	0.782	0.812	0.736	0.749	0.644	0.789	0.848	0.697	0.723	0.495
	1	0.837	0.848	0.843	0.840	0.859	0.798	0.852	0.825	0.809	0.904	0.747	0.857	0.802	0.769	0.957
	1.1	0.929	0.930	0.915	0.925	0.921	0.971	0.976	0.903	0.953	0.934	1.021	1.031	0.888	0.988	0.950
	1.2	0.984	0.969	0.983	0.969	1.003	0.972	0.897	0.967	0.894	1.067	0.957	0.799	0.948	0.791	1.142
	1.3	1.033	1.056	1.065	1.051	1.050	0.944	1.066	1.110	1.041	1.035	0.820	1.079	1.164	1.027	1.016
	1.4	1.140	1.139	1.146	1.114	1.111	1.218	1.217	1.247	1.095	1.080	1.308	1.307	1.361	1.070	1.040
	1.5	1.184	1.176	1.197	1.185	1.180	1.188	1.149	1.250	1.195	1.171	1.194	1.113	1.314	1.206	1.159
	1.6	1.258	1.249	1.242	1.254	1.246	1.310	1.267	1.233	1.291	1.254	1.370	1.289	1.221	1.336	1.262
	1.7	1.320	1.338	1.310	1.318	1.322	1.375	1.460	1.329	1.369	1.388	1.441	1.595	1.352	1.429	1.465
	1.8	1.356	1.374	1.361	1.371	1.359	1.322	1.412	1.348	1.397	1.336	1.278	1.458	1.331	1.429	1.307
	1.9	1.434	1.441	1.437	1.424	1.428	1.480	1.510	1.491	1.431	1.448	1.535	1.591	1.556	1.439	1.473
	2	1.475	1.481	1.466	1.482	1.471	1.458	1.488	1.411	1.496	1.436	1.436	1.498	1.337	1.512	1.391
	2.1	1.548	1.553	1.539	1.537	1.540	1.602	1.625	1.558	1.548	1.560	1.665	1.708	1.582	1.561	1.584
	2.2	1.591	1.572	1.595	1.592	1.593	1.598	1.501	1.619	1.606	1.609	1.608	1.405	1.649	1.623	1.629
	2.3	1.634	1.655	1.645	1.634	1.619	1.602	1.708	1.655	1.603	1.520	1.561	1.769	1.669	1.562	1.382
	2.4	1.693	1.711	1.707	1.706	1.705	1.688	1.778	1.755	1.750	1.748	1.683	1.855	1.813	1.802	1.800
	2.5	1.751	1.730	1.746	1.758	1.734	1.773	1.666	1.750	1.808	1.687	1.801	1.580	1.755	1.868	1.624
	2.6	1.787	1.801	1.799	1.807	1.812	1.749	1.822	1.810	1.851	1.876	1.700	1.847	1.824	1.903	1.950
	2.7	1.830	1.849	1.825	1.832	1.838	1.770	1.864	1.738	1.779	1.810	1.689	1.882	1.619	1.709	1.774
	2.8	1.907	1.903	1.887	1.901	1.910	1.957	1.938	1.860	1.931	1.972	2.018	1.980	1.825	1.968	2.045
	2.9	1.934	1.938	1.953	1.934	1.954	1.903	1.926	1.998	1.904	2.002	1.864	1.911	2.053	1.866	2.059
	3	1.982	2.009	2.005	2.005	2.004	1.955	2.089	2.068	2.069	2.066	1.921	2.181	2.143	2.144	2.139
	3.1	2.029	2.024	2.038	2.045	2.025	2.009	1.984	2.051	2.088	1.988	1.983	1.930	2.068	2.139	1.939
	3.2	2.091	2.093	2.071	2.088	2.084	2.136	2.145	2.037	2.123	2.101	2.189	2.207	1.993	2.164	2.122
	3.3	2.113	2.136	2.117	2.130	2.130	2.068	2.183	2.088	2.150	2.152	2.008	2.238	2.050	2.176	2.179
	3.4	2.171	2.167	2.174	2.171	2.168	2.181	2.163	2.195	2.183	2.166	2.193	2.158	2.221	2.196	2.164
	3.5	2.214	2.221	2.204	2.199	2.211	2.220	2.257	2.171	2.145	2.210	2.229	2.301	2.129	2.072	2.207
	3.6	2.265	2.245	2.247	2.280	2.260	2.304	2.207	2.216	2.374	2.282	2.352	2.157	2.175	2.481	2.308
	3.7	2.289	2.307	2.300	2.280	2.296	2.258	2.349	2.312	2.207	2.293	2.217	2.398	2.327	2.109	2.288
	3.8	2.343	2.337	2.339	2.321	2.352	2.359	2.332	2.339	2.249	2.406	2.379	2.326	2.340	2.151	2.469
	3.9	2.382	2.382	2.379	2.371	2.400	2.389	2.389	2.376	2.334	2.476	2.399	2.399	2.372	2.285	2.564
	4	2.431	2.420	2.408	2.417	2.401	2.471	2.418	2.355	2.404	2.321	2.519	2.415	2.286	2.387	2.211
	4.1	2.453	2.471	2.463	2.461	2.457	2.425	2.513	2.473	2.462	2.441	2.388	2.563	2.486	2.463	2.422
	4.2	2.483	2.505	2.499	2.496	2.502	2.414	2.527	2.497	2.480	2.511	2.321	2.553	2.493	2.459	2.522
	4.3	2.534	2.563	2.539	2.527	2.537	2.513	2.654	2.536	2.478	2.531	2.487	2.757	2.533	2.414	2.523
	4.4	2.566	2.571	2.570	2.571	2.577	2.516	2.542	2.539	2.542	2.575	2.450	2.505	2.499	2.506	2.573
	4.5	2.620	2.601	2.600	2.624	2.617	2.636	2.537	2.532	2.655	2.623	2.656	2.450	2.440	2.693	2.630
	4.6	2.655	2.637	2.661	2.635	2.674	2.660	2.567	2.688	2.555	2.749	2.667	2.472	2.720	2.445	2.836
	4.7	2.692	2.686	2.685	2.692	2.691	2.694	2.666	2.661	2.696	2.691	2.697	2.641	2.630	2.701	2.691
	4.8	2.728	2.738	2.702	2.728	2.723	2.727	2.776	2.592	2.727	2.702	2.727	2.821	2.434	2.725	2.675
	4.9	2.778	2.757	2.758	2.765	2.763	2.827	2.726	2.728	2.765	2.755	2.885	2.686	2.690	2.764	2.745
	5	2.797	2.796	2.813	2.792	2.786	2.778	2.774	2.860	2.753	2.725	2.755	2.746	2.915	2.702	2.643

Table S.4.8 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E6 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-5 kbar:*

Generator Equation	Error Level	1%					5%					10%				
E6	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.111	0.105	0.094	0.099	0.108	0.159	0.131	0.075	0.101	0.144	0.215	0.161	0.050	0.104	0.188
	0.2	0.200	0.193	0.186	0.208	0.190	0.225	0.187	0.153	0.261	0.175	0.256	0.180	0.110	0.323	0.156
	0.3	0.287	0.285	0.286	0.289	0.277	0.291	0.280	0.287	0.302	0.241	0.296	0.274	0.289	0.318	0.194
	0.4	0.387	0.363	0.352	0.388	0.389	0.436	0.317	0.259	0.443	0.446	0.495	0.256	0.128	0.507	0.513
	0.5	0.462	0.446	0.465	0.467	0.429	0.472	0.391	0.487	0.494	0.295	0.485	0.318	0.514	0.527	0.098
	0.6	0.541	0.556	0.543	0.542	0.561	0.535	0.608	0.547	0.541	0.631	0.528	0.670	0.551	0.541	0.713
	0.7	0.631	0.622	0.628	0.618	0.609	0.665	0.620	0.649	0.600	0.551	0.705	0.618	0.675	0.576	0.475
	0.8	0.695	0.690	0.702	0.695	0.705	0.677	0.650	0.708	0.677	0.724	0.654	0.598	0.716	0.653	0.748
	0.9	0.777	0.783	0.768	0.770	0.751	0.783	0.813	0.737	0.750	0.645	0.790	0.849	0.698	0.724	0.496
	1	0.839	0.849	0.844	0.841	0.860	0.799	0.853	0.826	0.810	0.905	0.748	0.858	0.803	0.770	0.958
	1.1	0.930	0.931	0.916	0.926	0.923	0.972	0.978	0.905	0.955	0.935	1.022	1.033	0.889	0.989	0.951
	1.2	0.985	0.971	0.985	0.970	1.005	0.974	0.899	0.969	0.895	1.069	0.959	0.800	0.949	0.793	1.143
	1.3	1.035	1.058	1.067	1.053	1.052	0.945	1.068	1.112	1.042	1.037	0.822	1.080	1.166	1.029	1.017
	1.4	1.142	1.142	1.148	1.116	1.113	1.220	1.219	1.250	1.097	1.082	1.310	1.309	1.363	1.072	1.042
	1.5	1.186	1.178	1.199	1.187	1.183	1.190	1.151	1.253	1.197	1.173	1.196	1.116	1.316	1.209	1.161
	1.6	1.260	1.252	1.245	1.257	1.249	1.312	1.270	1.236	1.294	1.256	1.373	1.292	1.224	1.339	1.265
	1.7	1.322	1.341	1.313	1.321	1.325	1.378	1.463	1.332	1.372	1.391	1.444	1.597	1.355	1.432	1.468
	1.8	1.359	1.377	1.364	1.374	1.362	1.325	1.415	1.351	1.400	1.339	1.281	1.460	1.333	1.431	1.310
	1.9	1.437	1.443	1.439	1.427	1.430	1.483	1.513	1.494	1.434	1.451	1.538	1.594	1.558	1.442	1.476
	2	1.478	1.484	1.469	1.485	1.473	1.461	1.491	1.413	1.498	1.439	1.439	1.501	1.340	1.515	1.394
	2.1	1.551	1.556	1.542	1.540	1.542	1.605	1.628	1.561	1.551	1.562	1.668	1.710	1.584	1.564	1.587
	2.2	1.593	1.575	1.598	1.595	1.596	1.601	1.504	1.622	1.609	1.612	1.611	1.407	1.651	1.626	1.632
	2.3	1.637	1.658	1.647	1.637	1.621	1.605	1.710	1.658	1.605	1.523	1.564	1.772	1.671	1.564	1.384
	2.4	1.695	1.714	1.709	1.708	1.708	1.691	1.780	1.758	1.752	1.751	1.685	1.857	1.815	1.805	1.802
	2.5	1.753	1.732	1.748	1.760	1.736	1.776	1.668	1.752	1.811	1.689	1.803	1.582	1.757	1.870	1.626
	2.6	1.788	1.803	1.800	1.809	1.814	1.751	1.824	1.812	1.852	1.878	1.702	1.849	1.826	1.905	1.952
	2.7	1.832	1.850	1.826	1.834	1.840	1.771	1.865	1.740	1.780	1.812	1.690	1.883	1.620	1.710	1.776
	2.8	1.908	1.903	1.888	1.902	1.911	1.958	1.939	1.861	1.932	1.973	2.018	1.981	1.826	1.969	2.046
	2.9	1.934	1.938	1.953	1.934	1.954	1.904	1.926	1.999	1.904	2.002	1.864	1.911	2.053	1.866	2.059
	3	1.981	2.009	2.004	2.005	2.004	1.955	2.089	2.068	2.069	2.066	1.921	2.181	2.142	2.144	2.139
	3.1	2.028	2.023	2.037	2.044	2.024	2.008	1.983	2.050	2.087	1.987	1.982	1.929	2.067	2.138	1.938
	3.2	2.089	2.091	2.070	2.087	2.082	2.134	2.144	2.036	2.121	2.099	2.187	2.205	1.991	2.162	2.120
	3.3	2.111	2.134	2.114	2.127	2.127	2.065	2.180	2.085	2.148	2.149	2.006	2.235	2.047	2.173	2.176
	3.4	2.167	2.164	2.170	2.168	2.164	2.177	2.159	2.191	2.179	2.162	2.189	2.154	2.217	2.193	2.160
	3.5	2.209	2.216	2.199	2.194	2.207	2.216	2.253	2.167	2.140	2.205	2.224	2.296	2.124	2.068	2.203
	3.6	2.259	2.239	2.241	2.274	2.254	2.299	2.201	2.210	2.368	2.276	2.346	2.151	2.169	2.475	2.302
	3.7	2.282	2.300	2.293	2.272	2.289	2.250	2.342	2.305	2.200	2.286	2.209	2.391	2.320	2.101	2.281
	3.8	2.334	2.329	2.330	2.313	2.344	2.351	2.324	2.331	2.241	2.398	2.370	2.318	2.332	2.143	2.461
	3.9	2.372	2.372	2.369	2.361	2.390	2.380	2.379	2.366	2.324	2.466	2.389	2.389	2.362	2.275	2.555
	4	2.419	2.408	2.396	2.406	2.390	2.460	2.406	2.344	2.392	2.310	2.508	2.404	2.275	2.375	2.200
	4.1	2.440	2.458	2.450	2.448	2.444	2.412	2.500	2.461	2.449	2.428	2.375	2.551	2.473	2.451	2.409
	4.2	2.469	2.491	2.485	2.481	2.488	2.400	2.512	2.482	2.465	2.496	2.306	2.538	2.479	2.444	2.507
	4.3	2.518	2.547	2.522	2.511	2.521	2.497	2.638	2.520	2.462	2.515	2.470	2.741	2.517	2.398	2.506
	4.4	2.547	2.552	2.552	2.552	2.559	2.497	2.524	2.521	2.524	2.557	2.431	2.486	2.481	2.487	2.554
	4.5	2.600	2.580	2.580	2.604	2.597	2.616	2.516	2.512	2.635	2.603	2.635	2.430	2.420	2.673	2.610
	4.6	2.633	2.615	2.638	2.613	2.651	2.638	2.545	2.665	2.533	2.727	2.644	2.450	2.698	2.423	2.814
	4.7	2.667	2.662	2.661	2.668	2.667	2.669	2.642	2.637	2.672	2.666	2.672	2.616	2.606	2.677	2.666
	4.8	2.701	2.711	2.676	2.701	2.696	2.701	2.749	2.565	2.700	2.675	2.700	2.794	2.408	2.698	2.649
	4.9	2.749	2.728	2.729	2.736	2.734	2.798	2.697	2.699	2.735	2.726	2.856	2.657	2.661	2.735	2.716
	5	2.765	2.764	2.782	2.760	2.755	2.747	2.742	2.828	2.721	2.694	2.724	2.714	2.883	2.670	2.611

Table S.4.9 Simulated kinetic data, $\ln(k/k_0)$, generated using equation **E7** with parameters $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-5 kbar:

Generator Equation	Error Level	1%					5%					10%				
E7	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.111	0.105	0.094	0.099	0.108	0.159	0.131	0.075	0.101	0.144	0.215	0.161	0.050	0.104	0.188
	0.2	0.200	0.193	0.186	0.208	0.190	0.225	0.187	0.153	0.260	0.175	0.256	0.180	0.110	0.323	0.156
	0.3	0.287	0.284	0.286	0.289	0.277	0.291	0.280	0.287	0.302	0.241	0.296	0.274	0.289	0.318	0.194
	0.4	0.387	0.363	0.352	0.388	0.389	0.436	0.317	0.258	0.443	0.446	0.494	0.256	0.128	0.507	0.513
	0.5	0.462	0.446	0.465	0.466	0.428	0.472	0.391	0.487	0.493	0.295	0.484	0.318	0.513	0.526	0.097
	0.6	0.540	0.555	0.543	0.542	0.560	0.535	0.608	0.546	0.541	0.631	0.528	0.670	0.551	0.540	0.712
	0.7	0.630	0.621	0.627	0.617	0.608	0.664	0.619	0.648	0.599	0.550	0.705	0.617	0.675	0.575	0.474
	0.8	0.694	0.689	0.700	0.694	0.704	0.676	0.649	0.707	0.675	0.723	0.653	0.597	0.715	0.652	0.747
	0.9	0.775	0.781	0.766	0.769	0.749	0.781	0.811	0.736	0.749	0.644	0.788	0.848	0.696	0.723	0.494
	1	0.837	0.847	0.842	0.839	0.858	0.797	0.851	0.824	0.808	0.903	0.746	0.856	0.801	0.768	0.956
	1.1	0.927	0.929	0.914	0.924	0.920	0.969	0.975	0.902	0.952	0.933	1.019	1.030	0.887	0.986	0.949
	1.2	0.982	0.968	0.981	0.967	1.002	0.971	0.896	0.966	0.892	1.066	0.956	0.797	0.946	0.790	1.140
	1.3	1.031	1.054	1.063	1.049	1.048	0.942	1.064	1.108	1.039	1.033	0.818	1.076	1.162	1.025	1.014
	1.4	1.137	1.137	1.143	1.112	1.109	1.215	1.215	1.245	1.092	1.078	1.305	1.304	1.359	1.067	1.037
	1.5	1.180	1.173	1.193	1.182	1.177	1.185	1.145	1.247	1.191	1.168	1.190	1.110	1.311	1.203	1.156
	1.6	1.254	1.245	1.238	1.250	1.242	1.305	1.263	1.229	1.287	1.249	1.366	1.285	1.217	1.332	1.258
	1.7	1.315	1.333	1.305	1.313	1.318	1.370	1.455	1.324	1.364	1.383	1.436	1.590	1.347	1.424	1.460
	1.8	1.350	1.368	1.355	1.365	1.353	1.316	1.406	1.342	1.391	1.330	1.272	1.452	1.325	1.423	1.301
	1.9	1.427	1.434	1.429	1.417	1.421	1.473	1.503	1.484	1.424	1.441	1.528	1.584	1.548	1.432	1.466
	2	1.467	1.473	1.457	1.474	1.462	1.449	1.480	1.402	1.487	1.428	1.428	1.490	1.329	1.504	1.383
	2.1	1.539	1.544	1.530	1.528	1.530	1.592	1.615	1.549	1.538	1.550	1.655	1.698	1.572	1.552	1.574
	2.2	1.580	1.561	1.584	1.581	1.582	1.587	1.490	1.608	1.595	1.598	1.597	1.393	1.638	1.612	1.618
	2.3	1.622	1.643	1.632	1.622	1.606	1.590	1.695	1.643	1.590	1.508	1.548	1.757	1.656	1.549	1.369
	2.4	1.679	1.697	1.692	1.691	1.691	1.674	1.763	1.741	1.735	1.734	1.668	1.840	1.798	1.788	1.786
	2.5	1.735	1.714	1.730	1.742	1.718	1.757	1.650	1.734	1.792	1.670	1.784	1.564	1.738	1.851	1.608
	2.6	1.768	1.783	1.780	1.789	1.794	1.731	1.804	1.792	1.832	1.858	1.682	1.829	1.806	1.884	1.932
	2.7	1.810	1.828	1.804	1.812	1.818	1.750	1.843	1.718	1.759	1.790	1.668	1.861	1.599	1.688	1.754
	2.8	1.884	1.880	1.864	1.879	1.887	1.935	1.915	1.837	1.909	1.950	1.995	1.958	1.803	1.945	2.023
	2.9	1.909	1.913	1.928	1.909	1.929	1.878	1.901	1.973	1.879	1.977	1.839	1.886	2.028	1.841	2.034
	3	1.954	1.982	1.977	1.977	1.977	1.927	2.062	2.041	2.042	2.039	1.893	2.154	2.115	2.117	2.111
	3.1	1.999	1.994	2.007	2.015	1.995	1.979	1.953	2.021	2.058	1.958	1.952	1.900	2.038	2.109	1.909
	3.2	2.058	2.060	2.038	2.055	2.051	2.103	2.112	2.004	2.090	2.068	2.156	2.174	1.960	2.131	2.089
	3.3	2.077	2.100	2.081	2.094	2.094	2.032	2.147	2.052	2.114	2.116	1.972	2.202	2.014	2.140	2.143
	3.4	2.132	2.128	2.135	2.132	2.129	2.142	2.124	2.156	2.143	2.127	2.154	2.119	2.182	2.157	2.124
	3.5	2.171	2.179	2.161	2.156	2.169	2.178	2.215	2.129	2.102	2.167	2.186	2.259	2.087	2.030	2.165
	3.6	2.219	2.199	2.201	2.234	2.214	2.259	2.161	2.170	2.328	2.236	2.306	2.111	2.129	2.435	2.262
	3.7	2.240	2.258	2.251	2.230	2.247	2.208	2.299	2.263	2.158	2.243	2.167	2.349	2.278	2.059	2.239
	3.8	2.290	2.284	2.286	2.268	2.299	2.306	2.279	2.286	2.196	2.353	2.326	2.273	2.287	2.098	2.416
	3.9	2.325	2.325	2.322	2.314	2.343	2.332	2.332	2.319	2.277	2.419	2.342	2.342	2.315	2.228	2.508
	4	2.370	2.359	2.347	2.356	2.340	2.410	2.357	2.295	2.343	2.260	2.458	2.354	2.225	2.326	2.151
	4.1	2.388	2.406	2.398	2.396	2.392	2.360	2.448	2.409	2.397	2.376	2.323	2.498	2.421	2.399	2.357
	4.2	2.414	2.436	2.430	2.427	2.433	2.345	2.457	2.427	2.410	2.442	2.252	2.483	2.424	2.390	2.453
	4.3	2.460	2.490	2.465	2.454	2.464	2.440	2.581	2.463	2.405	2.457	2.413	2.684	2.460	2.340	2.449
	4.4	2.488	2.493	2.492	2.493	2.499	2.438	2.464	2.461	2.464	2.497	2.371	2.427	2.421	2.427	2.494
	4.5	2.537	2.518	2.517	2.541	2.535	2.553	2.454	2.449	2.573	2.540	2.573	2.368	2.358	2.611	2.547
	4.6	2.568	2.550	2.573	2.547	2.586	2.573	2.480	2.600	2.467	2.662	2.579	2.385	2.633	2.358	2.749
	4.7	2.599	2.594	2.593	2.600	2.599	2.601	2.574	2.569	2.604	2.598	2.604	2.548	2.538	2.609	2.598
	4.8	2.631	2.640	2.605	2.630	2.626	2.630	2.678	2.494	2.629	2.605	2.629	2.723	2.337	2.627	2.578
	4.9	2.675	2.655	2.655	2.662	2.660	2.724	2.623	2.626	2.662	2.652	2.782	2.583	2.588	2.661	2.642
	5	2.689	2.688	2.705	2.684	2.678	2.670	2.666	2.752	2.644	2.617	2.647	2.638	2.807	2.593	2.534

Table S.4.10 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E8 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-5 kbar:*

Generator Equation	Error Level	1%					5%					10%				
E8	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.111	0.105	0.094	0.099	0.108	0.159	0.131	0.075	0.101	0.145	0.215	0.162	0.050	0.104	0.188
	0.2	0.201	0.193	0.186	0.208	0.191	0.226	0.188	0.153	0.261	0.176	0.256	0.181	0.110	0.323	0.156
	0.3	0.288	0.286	0.287	0.290	0.278	0.292	0.281	0.288	0.303	0.242	0.297	0.275	0.290	0.319	0.195
	0.4	0.389	0.365	0.354	0.390	0.391	0.438	0.319	0.260	0.445	0.448	0.496	0.258	0.129	0.509	0.515
	0.5	0.465	0.449	0.468	0.469	0.431	0.475	0.394	0.489	0.496	0.297	0.487	0.320	0.516	0.529	0.100
	0.6	0.544	0.559	0.546	0.545	0.564	0.539	0.612	0.550	0.545	0.634	0.532	0.673	0.555	0.544	0.716
	0.7	0.635	0.626	0.632	0.622	0.612	0.669	0.624	0.653	0.604	0.555	0.709	0.622	0.679	0.580	0.478
	0.8	0.700	0.695	0.706	0.700	0.710	0.682	0.655	0.713	0.681	0.729	0.659	0.603	0.720	0.657	0.753
	0.9	0.782	0.788	0.773	0.776	0.756	0.788	0.818	0.743	0.756	0.651	0.795	0.855	0.703	0.730	0.501
	1	0.845	0.855	0.850	0.847	0.866	0.805	0.859	0.832	0.816	0.911	0.754	0.865	0.809	0.776	0.964
	1.1	0.937	0.938	0.923	0.933	0.929	0.979	0.984	0.911	0.961	0.942	1.029	1.039	0.896	0.996	0.958
	1.2	0.993	0.978	0.992	0.978	1.012	0.981	0.906	0.976	0.902	1.076	0.966	0.808	0.957	0.800	1.150
	1.3	1.042	1.066	1.075	1.060	1.059	0.953	1.076	1.120	1.050	1.044	0.829	1.088	1.173	1.037	1.025
	1.4	1.149	1.149	1.156	1.124	1.121	1.228	1.227	1.257	1.104	1.090	1.318	1.316	1.371	1.079	1.050
	1.5	1.194	1.186	1.206	1.195	1.190	1.198	1.158	1.260	1.204	1.181	1.204	1.123	1.324	1.216	1.169
	1.6	1.268	1.259	1.252	1.264	1.256	1.319	1.277	1.243	1.301	1.263	1.380	1.299	1.231	1.346	1.272
	1.7	1.329	1.348	1.320	1.328	1.332	1.385	1.470	1.339	1.379	1.398	1.450	1.604	1.362	1.439	1.475
	1.8	1.365	1.383	1.370	1.380	1.368	1.331	1.421	1.357	1.406	1.345	1.287	1.467	1.340	1.438	1.316
	1.9	1.443	1.449	1.445	1.432	1.436	1.489	1.519	1.500	1.439	1.456	1.544	1.599	1.564	1.448	1.481
	2	1.482	1.488	1.473	1.490	1.478	1.465	1.496	1.418	1.503	1.443	1.443	1.505	1.344	1.519	1.398
	2.1	1.554	1.559	1.545	1.543	1.546	1.608	1.631	1.564	1.554	1.566	1.671	1.714	1.588	1.567	1.590
	2.2	1.595	1.576	1.599	1.597	1.597	1.603	1.505	1.624	1.611	1.614	1.613	1.409	1.653	1.628	1.634
	2.3	1.637	1.658	1.647	1.637	1.621	1.605	1.710	1.658	1.605	1.523	1.564	1.772	1.671	1.564	1.384
	2.4	1.693	1.712	1.707	1.706	1.706	1.689	1.778	1.756	1.750	1.749	1.683	1.855	1.813	1.803	1.800
	2.5	1.749	1.728	1.744	1.756	1.732	1.771	1.664	1.748	1.806	1.685	1.799	1.578	1.753	1.866	1.622
	2.6	1.782	1.796	1.794	1.802	1.807	1.744	1.817	1.805	1.846	1.871	1.696	1.842	1.819	1.898	1.945
	2.7	1.822	1.841	1.816	1.824	1.830	1.762	1.856	1.730	1.771	1.802	1.681	1.874	1.611	1.701	1.766
	2.8	1.895	1.891	1.875	1.890	1.898	1.946	1.926	1.848	1.920	1.961	2.006	1.969	1.814	1.956	2.034
	2.9	1.918	1.923	1.937	1.918	1.938	1.888	1.911	1.983	1.889	1.986	1.849	1.895	2.037	1.850	2.043
	3	1.962	1.989	1.985	1.985	1.985	1.935	2.070	2.049	2.050	2.047	1.901	2.162	2.123	2.125	2.119
	3.1	2.005	2.000	2.013												

Table S.4.11 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E4 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-10 kbar:*

Generator Equation	Error Level	1% Error					5% Error					10% Error				
E4	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.2	0.186	0.181	0.191	0.204	0.186	0.154	0.128	0.181	0.242	0.155	0.113	0.057	0.168	0.288	0.115
	0.4	0.368	0.365	0.381	0.394	0.390	0.344	0.331	0.413	0.473	0.454	0.315	0.287	0.451	0.564	0.528
	0.6	0.534	0.537	0.535	0.542	0.557	0.510	0.525	0.516	0.550	0.619	0.479	0.510	0.491	0.560	0.693
	0.8	0.688	0.700	0.708	0.694	0.698	0.655	0.720	0.754	0.687	0.707	0.613	0.744	0.810	0.679	0.719
	1.0	0.846	0.849	0.821	0.840	0.843	0.869	0.880	0.740	0.839	0.854	0.897	0.919	0.629	0.838	0.868
	1.2	0.977	0.996	0.981	0.966	0.965	0.981	1.075	0.999	0.927	0.919	0.986	1.164	1.022	0.875	0.859
	1.4	1.109	1.083	1.118	1.112	1.096	1.131	0.998	1.177	1.148	1.065	1.159	0.880	1.246	1.191	1.026
	1.6	1.232	1.218	1.213	1.198	1.217	1.269	1.198	1.174	1.094	1.195	1.314	1.174	1.124	0.947	1.167
	1.8	1.331	1.332	1.341	1.332	1.326	1.318	1.323	1.364	1.323	1.292	1.301	1.311	1.392	1.312	1.247
	2.0	1.431	1.437	1.434	1.433	1.434	1.391	1.423	1.405	1.399	1.410	1.338	1.405	1.367	1.356	1.377
	2.2	1.551	1.538	1.542	1.538	1.539	1.594	1.527	1.545	1.527	1.534	1.644	1.513	1.550	1.514	1.526
	2.4	1.620	1.643	1.615	1.633	1.629	1.555	1.675	1.531	1.624	1.603	1.468	1.713	1.415	1.612	1.570
	2.6	1.726	1.725	1.735	1.722	1.713	1.728	1.727	1.775	1.711	1.662	1.731	1.728	1.822	1.697	1.595
	2.8	1.814	1.816	1.800	1.804	1.806	1.830	1.841	1.759	1.781	1.791	1.850	1.872	1.704	1.751	1.771
	3.0	1.876	1.891	1.898	1.892	1.896	1.815	1.891	1.928	1.898	1.916	1.734	1.891	1.963	1.905	1.941
	3.2	1.974	1.951	1.973	1.976	1.969	1.998	1.880	1.996	2.008	1.973	2.027	1.785	2.024	2.046	1.978
	3.4	2.041	2.045	2.034	2.037	2.045	2.040	2.063	2.003	2.019	2.060	2.038	2.085	1.965	1.998	2.079
	3.6	2.104	2.111	2.122	2.079	2.114	2.078	2.112	2.164	1.939	2.129	2.044	2.113	2.215	1.733	2.146
	3.8	2.180	2.187	2.185	2.187	2.181	2.190	2.225	2.214	2.224	2.195	2.203	2.270	2.249	2.269	2.212
	4.0	2.246	2.248	2.213	2.249	2.238	2.265	2.276	2.094	2.280	2.226	2.288	2.309	1.920	2.318	2.211
	4.2	2.299	2.292	2.324	2.279	2.303	2.288	2.251	2.406	2.183	2.309	2.274	2.197	2.500	2.049	2.315
	4.4	2.342	2.368	2.369	2.353	2.362	2.266	2.399	2.404	2.324	2.369	2.161	2.437	2.445	2.287	2.378
	4.6	2.414	2.420	2.428	2.412	2.421	2.408	2.437	2.474	2.394	2.440	2.399	2.457	2.528	2.372	2.463
	4.8	2.482	2.483	2.452	2.466	2.486	2.532	2.533	2.378	2.452	2.548	2.590	2.592	2.276	2.434	2.621
	5.0	2.505	2.514	2.524	2.512	2.525	2.437	2.485	2.536	2.473	2.538	2.345	2.447	2.550	2.422	2.555
	5.2	2.580	2.580	2.570	2.559	2.585	2.618	2.619	2.568	2.513	2.640	2.662	2.665	2.565	2.453	2.704
	5.4	2.620	2.628	2.629	2.617	2.616	2.628	2.668	2.671	2.613	2.610	2.637	2.715	2.720	2.608	2.601
	5.6	2.656	2.662	2.660	2.674	2.670	2.623	2.654	2.645	2.712	2.694	2.580	2.644	2.625	2.759	2.723
	5.8	2.718	2.710	2.715	2.714	2.709	2.759	2.720	2.742	2.737	2.712	2.807	2.732	2.775	2.765	2.716
	6.0	2.746	2.739	2.743	2.746	2.759	2.731	2.694	2.714	2.729	2.792	2.711	2.634	2.677	2.708	2.832
	6.2	2.808	2.808	2.817	2.812	2.777	2.872	2.875	2.913	2.893	2.719	2.946	2.952	3.021	2.985	2.642
	6.4	2.825	2.818	2.824	2.829	2.829	2.804	2.766	2.794	2.823	2.822	2.777	2.696	2.757	2.816	2.813
	6.6	2.883	2.877	2.866	2.861	2.871	2.937	2.910	2.855	2.827	2.878	3.001	2.950	2.842	2.783	2.886
	6.8	2.895	2.901	2.921	2.896	2.902	2.850	2.884	2.981	2.855	2.887	2.791	2.862	3.051	2.802	2.867
	7.0	2.942	2.951	2.938	2.960	2.935	2.945	2.988	2.923	3.032	2.910	2.948	3.033	2.904	3.115	2.877
	7.2	2.989	2.970	2.979	2.965	2.976	3.040	2.945	2.990	2.923	2.977	3.101	2.914	3.005	2.868	2.979
	7.4	3.013	3.003	3.021	3.003	3.005	3.026	2.977	3.066	2.978	2.990	3.044	2.944	3.119	2.947	2.971
	7.6	3.050	3.025	3.035	3.045	3.046	3.082	2.957	3.009	3.059	3.065	3.122	2.864	2.975	3.077	3.088

Table S.4.12 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E5 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-10 kbar:*

Generator Equation	Error Level	1% Error					5% Error					10% Error				
E5	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.2	0.186	0.181	0.191	0.204	0.186	0.155	0.128	0.181	0.242	0.155	0.113	0.057	0.168	0.288	0.115
	0.4	0.368	0.366	0.382	0.395	0.391	0.345	0.332	0.413	0.474	0.454	0.315	0.288	0.451	0.564	0.528
	0.6	0.536	0.539	0.537	0.544	0.558	0.512	0.527	0.518	0.552	0.621	0.481	0.512	0.493	0.561	0.695
	0.8	0.691	0.704	0.711	0.698	0.702	0.659	0.724	0.758	0.691	0.711	0.617	0.748	0.813	0.683	0.723
	1.0	0.853	0.855	0.828	0.847	0.850	0.876	0.887	0.747	0.846	0.861	0.904	0.926	0.636	0.845	0.874
	1.2	0.988	1.007	0.991	0.977	0.976	0.992	1.085	1.010	0.937	0.930	0.997	1.175	1.033	0.886	0.870
	1.4	1.125	1.099	1.134	1.128	1.112	1.147	1.014	1.193	1.164	1.081	1.175	0.896	1.262	1.207	1.042
	1.6	1.254	1.240	1.235	1.220	1.239	1.291	1.221	1.197	1.116	1.218	1.336	1.196	1.146	0.969	1.190
	1.8	1.361	1.362	1.370	1.362	1.356	1.348	1.353	1.393	1.353	1.322	1.331	1.341	1.421	1.342	1.277
	2.0	1.469	1.475	1.472	1.471	1.473	1.429	1.461	1.443	1.438	1.448	1.377	1.443	1.406	1.395	1.416
	2.2	1.600	1.586	1.590	1.586	1.587	1.642	1.575	1.593	1.575	1.582	1.692	1.561	1.598	1.562	1.575
	2.4	1.679	1.702	1.674	1.692	1.688	1.614	1.734	1.590	1.682	1.662	1.527	1.772	1.474	1.671	1.628
	2.6	1.796	1.796	1.806	1.793	1.783	1.799	1.797	1.845	1.782	1.733	1.801	1.799	1.893	1.768	1.665
	2.8	1.898	1.900	1.883	1.888	1.890	1.914	1.925	1.842	1.864	1.874	1.934	1.955	1.788	1.834	1.854
	3.0	1.973	1.988	1.996	1.989	1.993	1.913	1.988	2.025	1.995	2.013	1.831	1.988	2.060	2.002	2.038
	3.2	2.086	2.063	2.085	2.088	2.081	2.110	1.992	2.108	2.120	2.085	2.139	1.896	2.136	2.158	2.090
	3.4	2.168	2.173	2.161	2.164	2.172	2.167	2.191	2.131	2.147	2.188	2.166	2.213	2.092	2.125	2.207
	3.6	2.248	2.255	2.266	2.223	2.258	2.222	2.256	2.308	2.083	2.273	2.188	2.257	2.359	1.877	2.290
	3.8	2.341	2.348	2.346	2.348	2.342	2.351	2.386	2.375	2.386	2.356	2.364	2.432	2.410	2.431	2.373
	4.0	2.425	2.427	2.392	2.428	2.417	2.444	2.455	2.273	2.460	2.405	2.467	2.489	2.100	2.497	2.390
	4.2	2.497	2.490	2.522	2.477	2.501	2.486	2.449	2.604	2.382	2.507	2.472	2.395	2.698	2.247	2.513
	4.4	2.560	2.586	2.587	2.571	2.580	2.483	2.617	2.621	2.542	2.587	2.379	2.655	2.663	2.504	2.596
	4.6	2.652	2.658	2.666	2.650	2.659	2.645	2.674	2.712	2.632	2.678	2.637	2.694	2.766	2.610	2.701
	4.8	2.741	2.741	2.711	2.725	2.744	2.790	2.791	2.636	2.710	2.807	2.849	2.851	2.535	2.692	2.879
	5.0	2.785	2.794	2.804	2.792	2.805	2.717	2.765	2.816	2.753	2.818	2.625	2.727	2.830	2.702	2.835
	5.2	2.882	2.883	2.872	2.862	2.887	2.920	2.921	2.870	2.816	2.942	2.965	2.968	2.867	2.755	3.006
	5.4	2.945	2.953	2.954	2.942	2.941	2.953	2.993	2.995	2.938	2.934	2.962	3.040	3.045	2.933	2.926
	5.6	3.004	3.010	3.008	3.022	3.018	2.971	3.002	2.993	3.060	3.042	2.928	2.992	2.973	3.107	3.071
	5.8	3.090	3.082	3.087	3.086	3.080	3.130	3.092	3.114	3.109	3.084	3.179	3.104	3.147	3.137	3.088
	6.0	3.142	3.135	3.139	3.142	3.155	3.127	3.090	3.110	3.125	3.188	3.107	3.030	3.073	3.104	3.228
	6.2	3.229	3.229													

Table S.4.13 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E6 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-10 kbar:*

Generator Equation	Error Level	1% Error					5% Error					10% Error				
E6	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.2	0.186	0.181	0.191	0.204	0.186	0.155	0.128	0.181	0.242	0.155	0.114	0.057	0.168	0.288	0.115
	0.4	0.368	0.366	0.382	0.395	0.391	0.345	0.332	0.414	0.474	0.454	0.315	0.288	0.451	0.565	0.528
	0.6	0.536	0.539	0.537	0.544	0.559	0.512	0.527	0.518	0.552	0.622	0.481	0.512	0.493	0.562	0.695
	0.8	0.692	0.705	0.712	0.698	0.702	0.660	0.724	0.759	0.692	0.712	0.618	0.748	0.814	0.684	0.724
	1.0	0.854	0.856	0.829	0.848	0.851	0.877	0.888	0.748	0.847	0.862	0.905	0.927	0.637	0.846	0.876
	1.2	0.989	1.009	0.993	0.979	0.977	0.993	1.087	1.012	0.939	0.932	0.998	1.177	1.034	0.887	0.872
	1.4	1.127	1.101	1.136	1.130	1.114	1.149	1.016	1.195	1.166	1.083	1.177	0.899	1.264	1.210	1.044
	1.6	1.257	1.242	1.238	1.223	1.242	1.294	1.223	1.199	1.119	1.220	1.339	1.199	1.149	0.972	1.192
	1.8	1.364	1.365	1.373	1.365	1.359	1.351	1.356	1.396	1.356	1.324	1.334	1.344	1.424	1.345	1.279
	2.0	1.472	1.478	1.475	1.474	1.476	1.432	1.464	1.446	1.441	1.451	1.379	1.446	1.409	1.398	1.419
	2.2	1.602	1.589	1.592	1.589	1.590	1.644	1.578	1.596	1.578	1.584	1.695	1.564	1.600	1.565	1.577
	2.4	1.681	1.705	1.677	1.694	1.690	1.616	1.736	1.592	1.685	1.664	1.529	1.774	1.476	1.673	1.631
	2.6	1.798	1.798	1.808	1.795	1.785	1.800	1.799	1.847	1.784	1.734	1.803	1.801	1.895	1.770	1.667
	2.8	1.898	1.901	1.884	1.889	1.891	1.915	1.926	1.843	1.865	1.875	1.934	1.956	1.789	1.835	1.855
	3.0	1.973	1.988	1.995	1.989	1.993	1.912	1.988	2.024	1.995	2.013	1.831	1.988	2.060	2.002	2.038
	3.2	2.084	2.061	2.084	2.086	2.079	2.108	1.990	2.106	2.118	2.083	2.137	1.895	2.134	2.156	2.088
	3.4	2.164	2.169	2.157	2.161	2.169	2.163	2.187	2.127	2.143	2.184	2.162	2.209	2.089	2.121	2.203
	3.6	2.242	2.249	2.260	2.217	2.252	2.216	2.250	2.302	2.078	2.267	2.182	2.251	2.353	1.871	2.285
	3.8	2.333	2.340	2.338	2.340	2.334	2.343	2.378	2.366	2.377	2.348	2.356	2.423	2.402	2.422	2.365
	4.0	2.414	2.416	2.381	2.417	2.406	2.433	2.444	2.261	2.448	2.394	2.456	2.477	2.088	2.486	2.379
	4.2	2.483	2.475	2.507	2.463	2.487	2.471	2.434	2.589	2.367	2.492	2.457	2.380	2.684	2.233	2.499
	4.4	2.541	2.567	2.568	2.552	2.561	2.465	2.599	2.603	2.524	2.569	2.360	2.636	2.645	2.486	2.578
	4.6	2.630	2.636	2.643	2.627	2.636	2.623	2.652	2.689	2.610	2.655	2.614	2.672	2.744	2.588	2.679
	4.8	2.714	2.715	2.684	2.698	2.718	2.764	2.765	2.610	2.684	2.780	2.822	2.824	2.508	2.666	2.853
	5.0	2.753	2.763	2.773	2.760	2.773	2.685	2.733	2.784	2.721	2.787	2.593	2.695	2.798	2.671	2.803
	5.2	2.846	2.846	2.835	2.825	2.850	2.883	2.885	2.833	2.779	2.905	2.928	2.931	2.830	2.718	2.970
	5.4	2.903	2.911	2.911	2.900	2.899	2.910	2.951	2.953	2.896	2.892	2.920	2.998	3.003	2.891	2.884
	5.6	2.956	2.962	2.960	2.974	2.970	2.923	2.954	2.944	3.012	2.994	2.880	2.944	2.925	3.059	3.023
	5.8	3.036	3.028	3.032	3.031	3.026	3.076	3.037	3.059	3.054	3.029	3.124	3.049	3.093	3.083	3.033
	6.0	3.081	3.074	3.078	3.081	3.094	3.066	3.029	3.049	3.064	3.127	3.046	2.969	3.012	3.043	3.167
	6.2	3.161	3.161	3.169	3.165	3.130	3.224	3.227	3.265	3.246	3.072	3.299	3.305	3.374	3.338	2.994
	6.4	3.196	3.189	3.194	3.200	3.199	3.175	3.136	3.165	3.194	3.193	3.148	3.067	3.127	3.187	3.184
	6.6	3.271	3.266	3.255	3.249	3.259	3.326	3.298	3.244	3.215	3.266	3.390	3.338	3.230	3.172	3.275
	6.8	3.301	3.308	3.328	3.302	3.308	3.256	3.291	3.387	3.261	3.293	3.197	3.269	3.458	3.208	3.273
	7.0	3.366	3.375	3.362	3.384	3.359	3.369	3.413	3.347	3.456	3.334	3.372	3.458	3.329	3.539	3.302
	7.2	3.431	3.412	3.421	3.408	3.419	3.483	3.388	3.433	3.366	3.420	3.543	3.356	3.447	3.311	3.421
	7.4	3.473	3.463	3.481	3.464	3.466	3.487	3.438	3.526	3.439	3.451	3.504	3.405	3.580	3.407	3.431
	7.6	3.528	3.504	3.514	3.524	3.525	3.561	3.435	3.487</							

Table S.4.14 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E7 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-10 kbar:*

Generator Equation	Error Level	1% Error					5% Error					10% Error				
E7	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.2	0.186	0.181	0.191	0.204	0.186	0.155	0.128	0.181	0.242	0.155	0.113	0.057	0.168	0.288	0.115
	0.4	0.368	0.366	0.382	0.395	0.391	0.345	0.332	0.413	0.474	0.454	0.315	0.288	0.451	0.564	0.528
	0.6	0.536	0.539	0.537	0.544	0.558	0.512	0.527	0.517	0.552	0.621	0.481	0.511	0.492	0.561	0.694
	0.8	0.691	0.704	0.711	0.697	0.701	0.658	0.723	0.758	0.691	0.711	0.616	0.747	0.813	0.683	0.722
	1.0	0.852	0.854	0.827	0.846	0.849	0.875	0.886	0.746	0.845	0.860	0.903	0.925	0.635	0.844	0.874
	1.2	0.986	1.006	0.990	0.975	0.974	0.990	1.084	1.008	0.936	0.928	0.995	1.174	1.031	0.884	0.868
	1.4	1.122	1.096	1.132	1.126	1.109	1.145	1.011	1.190	1.162	1.079	1.172	0.894	1.259	1.205	1.039
	1.6	1.250	1.236	1.231	1.216	1.235	1.287	1.217	1.193	1.112	1.214	1.332	1.192	1.142	0.965	1.186
	1.8	1.355	1.356	1.364	1.356	1.350	1.342	1.347	1.387	1.347	1.316	1.325	1.335	1.415	1.336	1.271
	2.0	1.461	1.467	1.464	1.463	1.465	1.421	1.453	1.435	1.430	1.440	1.368	1.435	1.398	1.387	1.408
	2.2	1.589	1.575	1.579	1.575	1.576	1.631	1.564	1.582	1.564	1.571	1.681	1.550	1.587	1.551	1.564
	2.4	1.664	1.688	1.660	1.677	1.673	1.600	1.719	1.576	1.668	1.647	1.512	1.758	1.459	1.656	1.614
	2.6	1.778	1.778	1.788	1.775	1.765	1.780	1.779	1.827	1.764	1.714	1.783	1.781	1.875	1.750	1.647
	2.8	1.875	1.877	1.861	1.865	1.867	1.891	1.902	1.819	1.842	1.851	1.911	1.932	1.765	1.812	1.832
	3.0	1.946	1.960	1.968	1.962	1.966	1.885	1.961	1.997	1.967	1.986	1.804	1.961	2.033	1.974	2.011
	3.2	2.053	2.030	2.052	2.055	2.048	2.076	1.959	2.075	2.086	2.051	2.105	1.863	2.103	2.125	2.056
	3.4	2.129	2.134	2.122	2.125	2.133	2.128	2.152	2.092	2.108	2.149	2.126	2.174	2.053	2.086	2.168
	3.6	2.202	2.209	2.220	2.177	2.212	2.176	2.210	2.262	2.038	2.227	2.142	2.211	2.313	1.831	2.245
	3.8	2.288	2.295	2.293	2.295	2.289	2.298	2.333	2.322	2.333	2.303	2.311	2.379	2.357	2.378	2.320
	4.0	2.364	2.366	2.332	2.367	2.356	2.383	2.394	2.212	2.399	2.344	2.407	2.428	2.039	2.437	2.329
	4.2	2.428	2.421	2.452	2.408	2.432	2.417	2.379	2.535	2.312	2.437	2.403	2.325	2.629	2.178	2.444
	4.4	2.481	2.508	2.509	2.493	2.501	2.405	2.539	2.543	2.464	2.509	2.301	2.577	2.585	2.426	2.518
	4.6	2.565	2.570	2.578	2.562	2.571	2.558	2.587	2.624	2.545	2.590	2.549	2.607	2.679	2.522	2.614
	4.8	2.643	2.644	2.613	2.627	2.647	2.693	2.694	2.539	2.613	2.709	2.751	2.753	2.437	2.595	2.782
	5.0	2.677	2.686	2.696	2.684	2.696	2.609	2.657	2.708	2.645	2.710	2.517	2.619	2.722	2.594	2.727
	5.2	2.763	2.763	2.753	2.742	2.768	2.801	2.802	2.751	2.696	2.823	2.845	2.848	2.748	2.636	2.887
	5.4	2.814	2.822	2.823	2.811	2.810	2.822	2.862	2.865	2.807	2.804	2.831	2.909	2.915	2.802	2.795
	5.6	2.861	2.867	2.865	2.879	2.875	2.828	2.859	2.850	2.917	2.899	2.785	2.849	2.830	2.964	2.928
	5.8	2.934	2.926	2.931	2.930	2.925	2.975	2.936	2.958	2.953	2.928	3.023	2.948	2.991	2.982	2.932
	6.0	2.974	2.967	2.970	2.973	2.986	2.958	2.921	2.942	2.956	3.019	2.938	2.862	2.904	2.935	3.059
	6.2	3.046	3.047													

Table S.4.15 *Simulated kinetic data, $\ln(k/k_0)$, generated using equation E8 with parameters $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ for different levels of errors and the pressure range of 0-10 kbar:*

Generator Equation	Error Level	1% Error					5% Error					10% Error				
E8	P (kbar)	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
	0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.2	0.187	0.182	0.192	0.204	0.187	0.155	0.128	0.181	0.243	0.156	0.114	0.057	0.168	0.289	0.116
	0.4	0.370	0.368	0.384	0.397	0.392	0.347	0.334	0.415	0.476	0.456	0.317	0.290	0.453	0.566	0.530
	0.6	0.540	0.543	0.541	0.547	0.562	0.516	0.530	0.521	0.555	0.625	0.485	0.515	0.496	0.565	0.698
	0.8	0.697	0.710	0.717	0.703	0.707	0.664	0.729	0.763	0.697	0.717	0.622	0.753	0.819	0.689	0.728
	1.0	0.860	0.863	0.835	0.854	0.857	0.883	0.895	0.754	0.853	0.868	0.911	0.933	0.643	0.852	0.882
	1.2	0.997	1.016	1.000	0.986	0.984	1.001	1.094	1.019	0.946	0.939	1.006	1.184	1.041	0.894	0.879
	1.4	1.134	1.109	1.144	1.138	1.121	1.157	1.024	1.203	1.174	1.091	1.185	0.906	1.271	1.217	1.052
	1.6	1.264	1.250	1.245	1.230	1.249	1.301	1.231	1.207	1.126	1.227	1.346	1.206	1.156	0.979	1.200
	1.8	1.370	1.371	1.379	1.371	1.365	1.357	1.362	1.402	1.362	1.331	1.340	1.350	1.431	1.351	1.286
	2.0	1.477	1.483	1.479	1.478	1.480	1.437	1.469	1.451	1.445	1.455	1.384	1.450	1.413	1.402	1.423
	2.2	1.604	1.591	1.594	1.591	1.592	1.646	1.580	1.598	1.580	1.586	1.697	1.566	1.602	1.566	1.579
	2.4	1.679	1.703	1.675	1.692	1.688	1.614	1.734	1.590	1.683	1.662	1.527	1.773	1.474	1.671	1.629
	2.6	1.791	1.791	1.801	1.788	1.778	1.794	1.792	1.841	1.777	1.728	1.797	1.794	1.888	1.763	1.661
	2.8	1.886	1.888	1.872	1.876	1.878	1.902	1.913	1.830	1.853	1.863	1.922	1.943	1.776	1.823	1.843
	3.0	1.954	1.968	1.976	1.970	1.974	1.893	1.968	2.005	1.975	1.994	1.811	1.969	2.041	1.982	2.019
	3.2	2.057	2.034	2.056	2.059	2.051	2.080	1.963	2.079	2.090	2.055	2.109	1.867	2.107	2.129	2.060
	3.4	2.128	2.133	2.121	2.124	2.132	2.127	2.151	2.091	2.107	2.148	2.126	2.173	2.052	2.085	2.167
	3.6	2.196	2.202	2.213	2.170	2.206	2.169	2.203	2.255	2.031	2.220	2.135	2.204	2.306	1.824	2.238
	3.8	2.275	2.282	2.279	2.282	2.276	2.285	2.320	2.308	2.319	2.289	2.297	2.365	2.343	2.364	2.307
	4.0	2.343	2.345	2.310	2.346	2.335	2.362	2.373	2.191	2.378	2.323	2.385	2.407	2.018	2.415	2.308
	4.2	2.398	2.391	2.423	2.378	2.402	2.387	2.350	2.505	2.283	2.408	2.373	2.296	2.599	2.148	2.414
	4.4	2.442	2.468	2.469	2.453	2.462	2.366	2.499	2.504	2.424	2.469	2.261	2.537	2.545	2.387	2.478
	4.6	2.515	2.520	2.528	2.512	2.521	2.508	2.537	2.574	2.495	2.540	2.499	2.557	2.629	2.472	2.564
	4.8	2.582	2.582	2.551	2.566	2.585	2.631	2.632	2.477	2.551	2.648	2.690	2.692	2.376	2.533	2.720
	5.0	2.603	2.612	2.622	2.609	2.622	2.535	2.582	2.633	2.571	2.636	2.442	2.545	2.648	2.520	2.653
	5.2	2.675	2.676	2.665	2.655	2.680	2.713	2.714	2.663	2.609	2.735	2.758	2.761	2.660	2.548	2.800
	5.4	2.712	2.720	2.721	2.709	2.708	2.720	2.760	2.762	2.705	2.701	2.729	2.807	2.812	2.700	2.693
	5.6	2.743	2.749	2.747	2.761	2.757	2.710	2.741	2.732	2.800	2.781	2.668	2.731	2.712	2.846	2.811
	5.8	2.800	2.792	2.797	2.796	2.791	2.841	2.802	2.824	2.819	2.794	2.889	2.814	2.857	2.848	2.798
	6.0	2.822	2.815	2.819	2.822	2.834	2.806	2.770	2.790	2.805	2.868	2.786	2.710	2.753	2.783	2.907
	6.2	2.876	2.877	2.88												

S.5 Activation volumes (cm³/mol) obtained by fitting equations E1-E11 to kinetic data in Tables S.4.1-S.4.15.

Table S.5.1 Activation volumes (cm³/mol) obtained by fitting equations E1-E11 to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25\text{ cm}^3\text{mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{mol}^{-1}\text{kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{mol}^{-1}\text{kbar}^{-2}$ over ² over pressure range of 0-1 kbar with 1% error.

	Fitted Equation														
	E1					E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.4	-24.6	-24.3	-24.2	-24.7	-23.0	-22.9	-22.8	-22.7	-23.1	-24.2	-25.2	-23.7	-24.2	-25.4
E5	-24.4	-24.5	-24.2	-24.1	-24.6	-23.0	-22.9	-22.9	-22.7	-23.2	-24.2	-25.2	-23.7	-24.2	-25.4
E6	-24.4	-24.6	-24.3	-24.2	-24.6	-23.1	-23.1	-23.0	-22.9	-23.3	-24.2	-25.2	-23.7	-24.2	-25.4
E7	-24.4	-24.6	-24.2	-24.1	-24.6	-23.0	-22.9	-22.9	-22.8	-23.2	-24.2	-25.2	-23.7	-24.2	-25.4
E8	-24.5	-24.6	-24.3	-24.2	-24.7	-23.1	-23.1	-23.0	-22.9	-23.3	-24.2	-25.2	-23.7	-24.2	-25.4
	E4					E5					E6				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.8	-25.1	-24.6	-24.6	-25.1	-24.4	-25.4	-24.3	-24.2	-25.3	-25.0	-25.3	-24.8	-24.7	-25.2
E5	-24.7	-25.0	-24.5	-24.5	-25.0	-24.4	-25.4	-24.2	-24.3	-25.2	-24.8	-25.2	-24.6	-24.6	-25.1
E6	-24.7	-25.0	-24.5	-24.5	-25.0	-24.4	-25.4	-24.3	-24.2	-25.2	-24.8	-25.1	-24.6	-24.6	-25.1
E7	-24.7	-25.0	-24.5	-24.5	-25.0	-24.4	-25.4	-24.2	-24.2	-25.2	-24.8	-25.2	-24.7	-24.6	-25.1
E8	-24.8	-25.1	-24.6	-24.5	-25.0	-24.5	-25.4	-24.3	-24.2	-25.2	-24.9	-25.2	-24.7	-24.6	-25.1
	E7					E8					E9				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.4	-25.4	-24.3	-24.2	-25.3	-24.4	-25.5	-24.3	-24.2	-25.2	-24.4	-25.6	-24.3	-24.3	-25.2
E5	-24.4	-25.5	-24.2	-24.3	-25.2	-24.4	-25.7	-24.2	-24.3	-25.2	-24.4	-25.8	-24.2	-24.3	-25.2
E6	-24.4	-25.5	-24.3	-24.2	-25.2	-24.4	-25.6	-24.3	-24.2	-25.2	-24.4	-25.8	-24.3	-24.2	-25.2
E7	-24.4	-25.5	-24.2	-24.2	-25.2	-24.4	-25.6	-24.2	-24.3	-25.2	-24.4	-25.7	-24.2	-24.3	-25.2
E8	-24.5	-25.4	-24.3	-24.2	-25.2	-24.5	-25.5	-24.3	-24.2	-25.2	-24.5	-25.6	-24.3	-24.2	-25.2
	E10					E11									
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-24.2	-25.6	-23.7	-24.3	-25.4	-26.9	-27.5	-26.7	-26.7	-27.2					
E5	-24.2	-25.8	-23.7	-24.3	-25.4	-26.7	-27.3	-26.5	-26.5	-27.0					
E6	-24.2	-25.8	-23.7	-24.2	-25.4	-26.6	-27.2	-26.4	-26.4	-26.9					
E7	-24.2	-25.7	-23.7	-24.3	-25.4	-26.7	-27.3	-26.5	-26.5	-27.0					
E8	-24.2	-25.6	-23.7	-24.2	-25.4	-26.7	-27.3	-26.5	-26.5	-27.0					

Table S.5.2 Activation volumes (cm^3/mol) obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25\text{ cm}^3\text{mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{mol}^{-1}\text{kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{mol}^{-1}\text{kbar}^{-2}$ over ² over pressure range of 0-1 kbar with 5% error.

	Fitted Equation														
	E1					E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.0	-24.8	-23.2	-22.9	-25.1	-23.0	-22.7	-22.3	-21.8	-23.8	-21.0	-26.2	-18.7	-21.5	-27.0
E5	-23.9	-24.7	-23.2	-22.8	-25.0	-23.0	-22.7	-22.3	-21.8	-23.8	-20.9	-26.2	-18.7	-21.4	-27.0
E6	-24.0	-24.8	-23.2	-22.8	-25.0	-23.1	-22.8	-22.5	-21.9	-23.9	-20.9	-26.2	-18.7	-21.4	-27.0
E7	-24.0	-24.7	-23.2	-22.8	-25.0	-23.0	-22.7	-22.3	-21.8	-23.8	-20.9	-26.2	-18.7	-21.4	-27.0
E8	-24.0	-24.8	-23.3	-22.9	-25.1	-23.1	-22.8	-22.5	-21.9	-23.9	-20.9	-26.2	-18.7	-21.4	-27.0
	E4					E5					E6				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.1	-25.7	-23.3	-23.0	-25.4	-24.0	-44.3	-23.2	-60.6	-25.8	-24.2	-26.1	-23.3	-23.1	-25.5
E5	-24.0	-25.5	-23.2	-22.9	-25.2	-23.9	-46.4	-23.2	-62.4	-25.8	-24.1	-25.9	-23.2	-23.0	-25.3
E6	-24.1	-25.5	-23.2	-22.9	-25.3	-24.0	-47.6	-23.2	-63.6	-25.7	-24.1	-25.8	-23.2	-23.0	-25.3
E7	-24.1	-25.6	-23.2	-23.0	-25.3	-24.0	-46.0	-23.2	-62.1	-25.8	-24.1	-25.9	-23.3	-23.0	-25.4
E8	-24.1	-25.6	-23.3	-23.0	-25.3	-24.0	-46.6	-23.3	-62.7	-25.8	-24.1	-25.9	-23.3	-23.1	-25.4
	E7					E8					E9				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-21.2	-48.4	-23.2	-69.4	-25.8	-21.2	-95.7	-23.2	-61.9	-25.7	-21.2	-91.8	-23.2	-59.7	-25.7
E5	-21.4	-50.2	-23.2	-73.2	-25.7	-21.4	-92.6	-23.2	-58.8	-25.6	-21.4	-88.9	-23.2	-56.8	-25.6
E6	-21.6	-51.1	-20.9	-76.2	-25.7	-21.6	-90.0	-23.2	-56.2	-25.6	-21.6	-86.4	-23.2	-54.3	-25.6
E7	-21.4	-49.9	-23.2	-72.5	-25.7	-21.4	-93.1	-23.2	-59.3	-25.6	-21.4	-89.3	-23.2	-57.3	-25.6
E8	-21.5	-50.3	-23.3	-74.0	-25.7	-21.5	-91.5	-23.3	-57.7	-25.7	-21.5	-87.8	-23.3	-55.8	-25.6
	E10					E11									
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-21.2	-56.6	-18.3	-20.1	-22.2	-25.8	-28.5	-24.8	-24.8	-27.1					
E5	-21.4	-57.2	-18.3	-20.3	-22.3	-25.5	-28.2	-24.6	-24.6	-26.9					
E6	-21.6	-57.5	-18.3	-20.5	-22.6	-25.4	-28.1	-24.5	-24.5	-26.8					
E7	-21.4	-57.1	-18.3	-20.3	-22.3	-25.6	-28.3	-24.6	-24.6	-26.9					
E8	-21.5	-57.2	-18.3	-20.5	-22.5	-25.6	-28.2	-24.6	-24.6	-26.9					

Table S.5.3 Activation volumes (cm^3/mol) obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25\text{ cm}^3\text{mol}^{-l}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{mol}^{-l}\text{kbar}^{-l}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{mol}^{-l}\text{kbar}^{-2}$ over ² over pressure range of 0-1 kbar with 10% error.

Fitted Equation															
E1						E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-23.5	-24.9	-22.0	-21.3	-25.4	-23.0	-22.3	-21.7	-20.7	-24.5	-16.6	-27.4	-12.0	-18.3	-29.0
E5	-23.4	-24.8	-21.9	-21.2	-25.3	-23.1	-22.3	-21.7	-20.7	-24.5	-16.6	-27.4	-12.0	-18.3	-29.0
E6	-23.5	-24.9	-21.9	-21.3	-25.4	-23.2	-22.5	-21.9	-20.8	-24.7	-16.6	-27.4	-12.0	-18.3	-29.0
E7	-23.4	-24.8	-21.9	-21.2	-25.4	-23.1	-22.3	-21.7	-20.7	-24.5	-16.6	-27.4	-12.0	-18.3	-29.0
E8	-23.5	-24.9	-22.0	-21.3	-25.4	-23.2	-22.5	-21.9	-20.8	-24.7	-16.6	-27.4	-12.0	-18.3	-29.0
E4						E5					E6				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-23.5	-26.4	-21.9	-21.3	-25.6	-23.5	-84.4	-22.0	-112.7	-26.1	-23.4	-27.1	-21.9	-21.4	-25.6
E5	-23.4	-26.2	-21.8	-21.2	-25.5	-23.4	-85.8	-20.5	-114.4	-25.9	-23.4	-26.8	-21.8	-21.3	-25.5
E6	-23.4	-26.1	-21.9	-21.3	-25.5	-23.5	-86.7	-20.0	-115.5	-25.9	-23.4	-26.7	-21.8	-21.3	-25.5
E7	-23.4	-26.2	-21.8	-21.3	-25.5	-23.4	-85.6	-20.6	-114.1	-26.0	-23.4	-26.9	-21.8	-21.3	-25.5
E8	-23.5	-26.2	-21.9	-21.3	-25.5	-23.5	-86.0	-20.3	-114.7	-26.0	-23.4	-26.8	-21.9	-21.3	-25.6
E7						E8					E9				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-21.7	-91.5	-20.3	-213.1	-26.0	-21.7	-114.0	-20.3	-51.3	-25.9	-21.7	-109.1	-20.3	-49.7	-25.9
E5	-21.8	-93.3	-20.5	-240.2	-25.9	-21.8	-110.9	-20.5	-48.2	-25.8	-21.8	-106.2	-20.5	-46.8	-23.8
E6	-22.1	-94.4	-20.7	-270.8	-24.0	-22.1	-108.3	-20.7	-45.6	-24.0	-22.1	-103.7	-20.7	-44.3	-24.0
E7	-21.8	-93.0	-20.4	-235.6	-25.9	-21.8	-111.4	-20.4	-48.7	-25.8	-21.8	-106.7	-20.4	-47.2	-23.7
E8	-22.0	-93.4	-20.6	-251.5	-23.9	-22.0	-109.8	-20.6	-47.1	-23.9	-22.0	-105.2	-20.6	-45.7	-23.9
E10						E11									
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-21.7	-91.7	-11.0	-19.5	-23.6	-24.3	-29.4	-22.5	-22.7	-26.7					
E5	-21.8	-92.1	-11.0	-19.6	-23.8	-24.1	-29.2	-22.2	-22.4	-26.5					
E6	-22.1	-92.3	-11.0	-19.9	-24.0	-24.0	-29.1	-22.1	-22.3	-26.4					
E7	-21.8	-92.0	-11.0	-19.6	-23.7	-24.1	-29.2	-22.3	-22.5	-26.5					
E8	-22.0	-92.1	-11.0	-19.8	-23.9	-24.1	-29.2	-22.3	-22.5	-26.5					

Table S.5.4 Activation volumes (cm^3/mol) obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25\text{ cm}^3\text{mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{mol}^{-1}\text{kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{mol}^{-1}\text{kbar}^{-2}$ over ² over pressure range of 0-5 kbar with 1% error.

	Fitted Equation														
	E1					E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-20.1	-20.4	-20.9	-20.2	-20.3	-16.6	-16.7	-16.9	-16.7	-16.7	-23.5	-23.7	-25.5	-23.5	-23.4
E5	-20.0	-20.3	-20.2	-20.1	-20.2	-17.1	-17.3	-17.2	-17.2	-17.2	-23.3	-23.5	-23.7	-23.2	-23.1
E6	-20.5	-20.8	-20.8	-20.7	-20.7	-17.5	-17.7	-17.7	-17.6	-17.7	-23.5	-23.7	-23.9	-23.4	-23.3
E7	-20.2	-20.5	-20.5	-20.4	-20.4	-17.0	-17.2	-17.2	-17.1	-17.2	-23.4	-23.6	-23.8	-23.3	-23.2
E8	-21.0	-21.2	-21.2	-21.1	-21.1	-17.3	-17.5	-17.4	-17.4	-17.5	-23.6	-23.8	-24.0	-23.6	-23.5
	E4					E5					E6				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.9	-25.5	-27.2	-25.1	-25.1	-25.0	-25.0	-27.3	-24.6	-24.7	-27.5	-28.3	-30.8	-27.8	-27.8
E5	-22.8	-23.3	-23.2	-23.0	-23.1	-25.0	-25.0	-25.5	-24.6	-24.6	-24.2	-24.8	-24.8	-24.5	-24.5
E6	-23.4	-23.9	-23.9	-23.7	-23.7	-24.7	-24.8	-25.2	-24.4	-24.4	-24.9	-25.5	-25.4	-25.1	-25.1
E7	-23.8	-24.3	-24.3	-24.1	-24.1	-24.7	-24.8	-25.2	-24.4	-24.4	-25.7	-26.3	-26.3	-25.9	-25.9
E8	-25.6	-26.2	-26.1	-25.9	-25.9	-24.5	-24.6	-25.0	-24.2	-24.2	-28.1	-28.8	-28.8	-28.4	-28.4
	E7					E8					E9				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-25.2	-25.3	-27.6	-24.8	-24.9	-26.0	-25.8	-28.2	-25.4	-25.4	-26.3	-26.1	-28.5	-25.7	-25.7
E5	-25.3	-25.3	-25.8	-24.8	-24.9	-26.4	-26.0	-26.8	-25.6	-25.6	-26.9	-26.4	-27.3	-26.0	-26.0
E6	-25.0	-25.0	-25.5	-24.6	-24.6	-25.6	-25.5	-26.1	-25.1	-25.1	-26.0	-25.7	-26.5	-25.3	-25.3
E7	-25.0	-25.0	-25.5	-24.6	-24.6	-25.7	-25.5	-26.2	-25.1	-25.1	-26.0	-25.8	-26.5	-25.4	-25.4
E8	-24.6	-24.7	-25.1	-24.3	-24.3	-25.0	-25.0	-25.5	-24.6	-24.6	-25.2	-25.1	-25.7	-24.7	-24.7
	E10					E11									
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-24.6	-24.8	-25.6	-24.0	-24.8	-26.1	-26.5	-27.6	-26.3	-26.3					
E5	-24.6	-24.7	-24.9	-23.9	-24.8	-24.9	-25.4	-25.3	-25.1	-25.2					
E6	-24.6	-24.7	-24.9	-23.9	-24.7	-25.6	-26.1	-26.0	-25.9	-25.9					
E7	-24.6	-24.7	-24.9	-23.9	-24.7	-25.7	-26.1	-26.1	-25.9	-25.9					
E8	-24.6	-24.7	-24.9	-23.9	-24.7	-27.1	-27.6	-27.5	-27.3	-27.4					

Table S.5.5 Activation volumes (cm^3/mol) obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-5 kbar with 5% error.

	Fitted Equation														
	E1					E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-19.8	-21.2	-20.9	-20.5	-20.8	-16.3	-17.2	-16.9	-16.8	-17.0	-23.4	-24.4	-25.5	-23.3	-22.9
E5	-19.7	-21.1	-20.8	-20.4	-20.6	-16.8	-17.8	-17.5	-17.3	-17.6	-23.2	-24.1	-25.2	-23.0	-22.6
E6	-20.2	-21.7	-21.3	-20.9	-21.2	-17.3	-18.2	-17.9	-17.7	-18.0	-23.4	-24.3	-25.4	-23.2	-22.8
E7	-19.9	-21.4	-21.0	-20.6	-20.9	-16.8	-17.7	-17.4	-17.2	-17.5	-23.3	-24.2	-25.3	-23.1	-22.7
E8	-20.6	-22.1	-21.8	-21.3	-21.6	-17.1	-18.0	-17.7	-17.5	-17.8	-23.6	-24.5	-25.6	-23.4	-23.0
	E4					E5					E6				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.4	-27.3	-27.2	-25.6	-25.7	-24.9	-25.3	-27.3	-23.6	-23.4	-26.9	-30.6	-30.8	-28.4	-28.4
E5	-22.4	-24.9	-24.7	-23.5	-23.6	-24.8	-25.1	-27.3	-23.3	-23.2	-23.7	-26.7	-26.7	-25.0	-25.1
E6	-23.0	-25.5	-25.3	-24.1	-24.3	-24.6	-25.1	-27.1	-23.4	-23.2	-24.3	-27.4	-27.3	-25.6	-25.8
E7	-23.4	-26.0	-25.9	-24.5	-24.7	-24.6	-25.0	-27.1	-23.3	-23.2	-25.1	-28.4	-28.4	-26.5	-26.5
E8	-25.2	-27.9	-27.9	-26.4	-26.5	-24.4	-25.0	-26.8	-23.5	-23.2	-27.5	-31.1	-31.2	-29.0	-29.0
	E7					E8					E9				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-25.1	-25.4	-27.6	-23.6	-23.5	-25.8	-25.6	-28.2	-23.8	-23.7	-26.3	-25.7	-28.5	-23.9	-23.8
E5	-25.2	-25.2	-27.6	-23.4	-23.3	-26.3	-25.5	-28.2	-23.6	-23.5	-27.0	-25.6	-28.7	-23.7	-23.6
E6	-24.8	-25.1	-27.3	-23.4	-23.3	-25.5	-25.3	-27.8	-23.5	-23.4	-25.9	-25.4	-28.1	-23.6	-23.5
E7	-24.8	-25.1	-27.3	-23.4	-23.3	-25.6	-25.3	-27.9	-23.5	-23.4	-26.0	-25.4	-28.2	-23.6	-23.5
E8	-24.5	-25.1	-27.0	-23.5	-23.3	-24.8	-25.2	-27.3	-23.5	-23.3	-25.0	-25.2	-27.6	-23.5	-23.4
	E10					E11									
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-23.5	-24.7	-25.6	-23.3	-23.7	-25.6	-28.0	-27.6	-26.8	-27.0					
E5	-23.3	-24.5	-25.5	-23.0	-23.5	-24.4	-26.8	-26.4	-25.6	-25.9					
E6	-23.4	-24.6	-25.5	-23.2	-20.7	-25.1	-27.5	-27.1	-26.3	-26.6					
E7	-23.4	-24.5	-25.5	-23.1	-20.6	-25.2	-27.6	-27.2	-26.4	-26.6					
E8	-23.6	-16.0	-25.6	-22.6	-21.8	-26.6	-29.0	-28.6	-27.8	-28.1					

Table S.5.6 Activation volumes (cm^3/mol) obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ over ² over pressure range of 0-5 kbar with 10% error.

	Fitted Equation														
	E1					E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-19.3	-22.2	-21.6	-20.8	-21.4	-16.0	-17.8	-17.3	-16.9	-17.5	-23.3	-25.1	-27.3	-23.0	-22.2
E5	-19.2	-22.1	-21.5	-20.7	-21.3	-16.5	-18.3	-17.8	-17.4	-18.0	-23.0	-24.8	-27.0	-22.8	-21.9
E6	-19.8	-22.7	-22.1	-21.2	-21.8	-16.9	-18.8	-18.3	-17.8	-18.5	-23.2	-25.0	-27.2	-23.0	-22.1
E7	-19.5	-22.4	-21.8	-20.9	-21.5	-16.4	-18.3	-17.7	-17.3	-18.0	-23.1	-24.9	-27.1	-22.9	-22.0
E8	-20.2	-23.1	-22.5	-21.6	-22.2	-16.7	-18.6	-18.0	-17.6	-18.3	-23.4	-25.2	-27.4	-23.2	-22.3
	E4					E5					E6				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-23.7	-29.4	-29.6	-26.2	-26.4	-24.6	-25.6	-29.4	-22.8	-22.3	-26.1	-33.3	-34.3	-29.1	-29.1
E5	-21.7	-26.8	-26.6	-24.0	-24.4	-24.5	-25.3	-29.3	-22.5	-22.0	-23.0	-29.1	-29.4	-25.6	-25.8
E6	-22.4	-27.4	-27.3	-24.7	-25.0	-24.3	-25.4	-29.1	-22.7	-22.2	-23.6	-29.7	-30.0	-26.3	-26.5
E7	-22.7	-28.0	-28.0	-25.1	-25.4	-24.3	-25.4	-29.1	-22.6	-22.1	-24.3	-30.9	-31.4	-27.1	-27.3
E8	-24.5	-30.1	-30.2	-26.9	-27.2	-24.1	-25.5	-28.9	-22.9	-22.3	-26.7	-33.7	-34.6	-29.6	-29.7
	E7					E8					E9				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.8	-25.6	-29.6	-22.8	-22.3	-25.5	-25.7	-29.9	-22.8	-22.3	-26.0	-25.7	-30.3	-22.8	-22.3
E5	-24.8	-25.4	-29.5	-22.5	-22.0	-26.2	-25.4	-29.8	-22.5	-22.1	-27.4	-25.5	-30.3	-22.5	-22.1
E6	-24.5	-25.4	-29.3	-22.7	-22.2	-25.2	-25.4	-29.6	-22.7	-22.2	-25.7	-25.5	-29.9	-22.6	-22.2
E7	-24.5	-25.4	-29.3	-22.6	-22.1	-25.2	-25.4	-29.6	-22.6	-22.1	-25.8	-25.5	-30.0	-22.6	-22.1
E8	-24.2	-25.5	-29.1	-22.9	-22.3	-24.5	-25.5	-29.3	-22.9	-22.3	-24.7	-25.5	-29.5	-22.9	-22.3
	E10					E11									
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-23.3	-25.1	-27.3	-20.8	-14.6	-25.0	-29.7	-29.0	-27.3	-27.9					
E5	-23.0	-24.9	-27.1	-20.9	-14.7	-23.8	-28.5	-27.8	-26.2	-26.7					
E6	-23.2	-7.7	-27.3	-20.5	-15.1	-24.5	-29.2	-28.5	-26.9	-27.5					
E7	-23.1	-7.6	-27.2	-20.6	-15.0	-24.5	-29.3	-28.6	-26.9	-27.5					
E8	-23.4	-8.1	-27.5	-20.0	-16.0	-26.0	-30.7	-30.0	-28.4	-28.9					

Table S.5.7 Activation volumes (cm^3/mol) obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ over ² over pressure range of 0-10 kbar with 1% error.

	Fitted Equation														
	E1					E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-15.5	-15.5	-15.6	-15.4	-15.5	-12.0	-12.0	-12.1	-11.9	-11.9	-20.6	-20.7	-20.4	-20.4	-20.6
E5	-16.0	-16.0	-16.0	-15.9	-16.0	-13.3	-13.3	-13.3	-13.3	-13.3	-20.3	-20.4	-20.3	-20.1	-20.3
E6	-16.8	-16.8	-16.8	-16.7	-16.8	-13.7	-13.7	-13.7	-13.6	-13.7	-20.9	-21.0	-20.9	-20.7	-20.9
E7	-16.3	-16.3	-16.3	-16.2	-16.2	-12.9	-12.9	-12.9	-12.9	-12.9	-20.7	-20.8	-20.6	-20.4	-20.7
E8	-17.3	-17.3	-17.3	-17.2	-17.3	-12.8	-12.8	-12.8	-12.8	-12.8	-21.4	-21.5	-21.4	-21.2	-21.4
	E4					E5					E6				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-25.0	-25.2	-25.1	-24.7	-25.0	-25.0	-25.1	-24.0	-24.5	-24.7	-32.4	-32.7	-32.3	-31.8	-32.3
E5	-19.7	-19.8	-19.7	-19.5	-19.7	-25.0	-25.1	-24.8	-24.4	-24.7	-21.8	-22.0	-21.9	-21.6	-21.8
E6	-21.9	-22.0	-21.9	-21.7	-21.9	-24.3	-24.4	-24.1	-23.7	-24.0	-25.0	-25.2	-25.0	-24.7	-25.0
E7	-23.0	-23.1	-23.0	-22.7	-23.0	-24.2	-24.3	-24.0	-23.7	-24.0	-27.6	-27.8	-27.6	-27.2	-27.5
E8	-32.5	-32.7	-32.5	-32.1	-32.4	-23.5	-23.6	-23.3	-23.1	-23.3	-45.5	-45.9	-45.5	-44.8	-45.4
	E7					E8					E9				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-26.0	-26.1	-24.8	-25.4	-25.7	-30.8	-30.9	-28.9	-30.2	-30.5	-33.1	-33.2	-30.4	-32.3	-32.7
E5	-26.2	-26.3	-25.9	-25.5	-25.8	-33.5	-33.4	-33.4	-34.2	-33.8	-39.8	-39.6	-39.4	-41.0	-40.0
E6	-25.0	-25.1	-24.8	-24.4	-24.7	-28.4	-28.5	-28.0	-27.6	-27.9	-29.7	-29.9	-29.3	-28.8	-29.2
E7	-25.0	-25.1	-24.8	-24.4	-24.7	-28.6	-28.8	-28.3	-27.9	-28.2	-30.1	-30.2	-29.7	-29.2	-29.6
E8	-23.8	-24.0	-23.7	-23.4	-23.7	-25.0	-25.1	-24.8	-24.4	-24.7	-25.5	-25.6	-25.2	-24.8	-25.2
	E10					E11									
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-25.5	-25.3	-25.0	-24.9	-24.4	-14.9	-15.0	-15.2	-14.7	-14.9					
E5	-25.6	-25.3	-25.2	-25.0	-24.5	-20.6	-20.7	-20.6	-20.5	-20.6					
E6	-25.4	-25.2	-25.0	-24.8	-24.3	-22.1	-22.2	-22.2	-22.0	-22.1					
E7	-25.4	-25.2	-25.0	-24.8	-24.3	-21.9	-22.0	-22.0	-21.8	-21.9					
E8	-24.8	-25.2	-25.1	-24.8	-24.3	-24.9	-25.0	-25.0	-24.8	-24.9					

Table S.5.8 Activation volumes (cm^3/mol) obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ over ² over pressure range of 0-10 kbar with 5% error.

	Fitted Equation														
	E1					E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-15.6	-15.7	-15.6	-15.2	-15.5	-12.1	-12.1	-12.1	-11.8	-12.0	-20.5	-21.0	-20.4	-19.4	-20.6
E5	-16.1	-16.2	-16.1	-15.7	-16.0	-13.4	-13.4	-13.4	-13.2	-13.3	-20.2	-20.8	-20.1	-19.1	-20.3
E6	-16.9	-17.0	-16.9	-16.5	-16.8	-13.8	-13.8	-13.8	-13.6	-13.7	-20.8	-21.4	-20.7	-19.7	-20.9
E7	-16.3	-16.5	-16.4	-16.0	-16.3	-13.0	-13.0	-13.0	-12.8	-12.9	-20.5	-21.1	-20.4	-19.4	-20.6
E8	-17.4	-17.6	-17.4	-17.0	-17.3	-12.9	-13.0	-12.9	-12.7	-12.8	-21.3	-21.9	-21.2	-20.2	-21.4
	E4					E5					E6				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-25.0	-25.9	-25.1	-23.5	-24.8	-25.0	-25.5	-24.0	-22.4	-23.7	-32.3	-34.0	-32.3	-29.7	-31.9
E5	-19.7	-20.3	-19.8	-18.9	-19.7	-25.1	-25.5	-23.9	-22.2	-23.4	-21.9	-22.7	-22.0	-20.6	-21.7
E6	-21.9	-22.5	-22.0	-20.9	-21.8	-24.3	-24.8	-23.3	-21.8	-23.1	-25.0	-26.0	-25.1	-23.5	-24.8
E7	-23.0	-23.8	-23.1	-21.8	-22.9	-24.2	-24.7	-23.3	-21.7	-23.0	-27.6	-28.8	-27.6	-25.6	-27.3
E8	-32.5	-33.6	-32.4	-30.6	-32.1	-23.3	-24.0	-22.8	-21.4	-22.8	-45.4	-47.6	-45.3	-41.9	-44.9
	E7					E8					E9				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-26.1	-26.6	-24.8	-23.1	-24.4	-30.7	-31.2	-28.9	-26.7	-28.6	-32.8	-33.3	-30.4	-28.1	-30.3
E5	-26.4	-26.7	-24.8	-22.9	-24.3	-32.2	-32.3	-31.3	-109.1	-32.8	-36.9	-36.5	-34.3	-104.5	-35.9
E6	-25.0	-25.5	-23.9	-22.2	-23.6	-28.5	-28.9	-26.5	-24.1	-26.0	-29.6	-30.2	-27.4	-24.9	-27.0
E7	-25.1	-25.6	-23.9	-22.2	-23.6	-28.7	-29.2	-26.7	-24.4	-26.2	-30.0	-30.6	-27.7	-25.3	-27.4
E8	-23.7	-24.4	-23.1	-21.6	-23.0	-25.0	-25.6	-23.9	-22.2	-23.7	-25.5	-26.1	-24.3	-22.5	-24.1
	E10					E11									
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-27.1	-25.8	-25.0	-28.1	-21.3	-15.2	-15.6	-15.2	-14.0	-14.9					
E5	-27.2	-26.0	-25.4	>1·105	-21.0	-20.7	-21.0	-20.8	-20.1	-20.6					
E6	-26.9	-25.8	-25.3	-24.9	-21.1	-22.2	-22.6	-22.3	-21.6	-22.2					
E7	-27.0	-25.8	-25.3	-25.3	-21.0	-22.0	-22.4	-22.1	-21.4	-22.0					
E8	-25.5	-15.9	-24.3	-22.5	-21.4	-25.0	-25.4	-25.1	-24.4	-25.0					

Table S.5.9 Activation volumes (cm^3/mol) obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25\text{ cm}^3\text{ mol}^{-1}$, $\Delta\beta_0^\ddagger = 10.\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-1}$, $\Delta\xi_0^\ddagger = -7.5\text{ cm}^3\text{ mol}^{-1}\text{ kbar}^{-2}$ over ² over pressure range of 0-10 kbar with 10% error.

	Fitted Equation														
	E1					E2					E3				
Generator Equation	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-15.7	-16.0	-15.8	-15.0	-15.6	-12.2	-12.2	-12.2	-11.7	-12.0	-20.3	-21.4	-20.1	-18.1	-20.6
E5	-16.2	-16.5	-16.3	-15.5	-16.1	-13.5	-13.6	-13.5	-13.1	-13.3	-20.0	-21.2	-19.8	-17.8	-20.3
E6	-17.0	-17.3	-17.1	-16.3	-16.9	-13.9	-14.0	-13.9	-13.5	-13.7	-20.6	-21.8	-20.4	-18.4	-20.9
E7	-16.5	-16.8	-16.5	-15.7	-16.3	-13.1	-13.2	-13.1	-12.7	-12.9	-20.4	-21.5	-20.1	-18.1	-20.7
E8	-17.5	-17.8	-17.6	-16.8	-17.4	-13.0	-13.1	-13.0	-12.6	-12.8	-21.1	-22.3	-20.9	-18.9	-21.4
	E4					E5					E6				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-24.9	-26.9	-25.0	-22.1	-24.7	-25.0	-26.0	-23.0	-19.8	-22.6	-32.2	-35.7	-32.0	-27.1	-31.5
E5	-19.8	-20.9	-19.9	-18.1	-19.7	-25.2	-26.0	-22.7	-19.4	-22.2	-21.9	-23.6	-22.0	-19.5	-21.7
E6	-21.9	-23.2	-22.1	-20.0	-21.9	-24.2	-25.3	-22.3	-19.4	-22.2	-25.0	-27.0	-25.1	-22.1	-24.7
E7	-23.0	-24.6	-23.1	-20.7	-22.9	-24.2	-25.2	-22.3	-19.3	-22.1	-27.5	-30.1	-27.5	-23.8	-27.1
E8	-32.4	-34.7	-32.2	-28.7	-31.9	-23.2	-24.4	-22.1	-19.5	-22.2	-45.1	-49.7	-44.8	-38.3	-44.3
	E7					E8					E9				
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5
E4	-26.2	-27.1	-23.6	-20.2	-23.1	-30.7	-31.4	-26.6	-21.8	-25.8	-32.4	-33.3	-27.7	-22.5	-27.2
E5	-26.6	-27.3	-23.4	-19.8	-22.8	-31.3	-31.8	-28.2	-103.2	-29.7	-34.9	-34.8	-29.5	-23.8	-30.4
E6	-25.1	-26.1	-22.8	-19.6	-22.5	-28.5	-29.4	-24.5	-20.2	-23.7	-29.5	-30.5	-25.1	-20.5	-24.5
E7	-25.1	-26.1	-22.8	-19.5	-22.5	-28.8	-29.7	-24.7	-20.3	-23.9	-29.8	-30.9	-25.4	-20.7	-24.8
E8	-23.6	-24.9	-22.3	-19.6	-22.4	-25.0	-26.2	-22.9	-19.8	-22.7	-25.4	-26.7	-23.1	-19.9	-23.0
	E10					E11									
	Set1	Set2	Set3	Set4	Set5	Set1	Set2	Set3	Set4	Set5					
E4	-28.5	-26.4	-26.2	-22.5	-20.6	-15.4	-16.4	-15.4	-13.1	-15.0					
E5	-28.5	-26.6	-28.2	-23.8	-20.4	-20.8	-21.5	-21.0	-19.6	-20.7					
E6	-27.9	-26.5	-25.1	-20.5	-21.0	-22.3	-23.0	-22.5	-21.1	-22.2					
E7	-28.0	-26.5	-25.4	-20.7	-20.7	-22.1	-22.8	-22.3	-20.9	-22.0					
E8	-25.4	99.4	-23.1	-19.9	-21.5	-25.2	-25.8	-25.3	-23.9	-25.0					

S.6 Optimized values of fitting parameters ai obtained by fitting equations E1-E11 to kinetic data in Tables S.4.1-S.4.15

Table S.6.1 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-1 kbar with 1% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-1.45E-01	9.86E-01	-1.45E-01	4.82E-03	9.27E-01	-9.41E-02	6.71E-04	9.75E-01	-1.18E-01	-1.78E-02	-1.23E-03	1.00E+00	1.86E-01	-1.67E-04	-5.74E+03	5.74E+03	2.52E-05	-1.58E-03	2.47E+00	4.07E-01
	2	-1.62E-01	9.93E-01	-1.62E-01	1.13E-02	9.25E-01	-1.04E-01	3.46E-03	1.02E+00	-2.24E-01	4.10E-02	3.76E-03	1.01E+00	2.17E-01	3.05E-03	2.59E-01	7.65E-01	3.29E-01	3.21E-03	2.13E+00	4.81E-01
	3	9.94E-01	8.67E-03	9.94E-01	0.00E+00	9.23E-03	0.00E+00	0.00E+00	8.76E-03	9.97E-01	-1.65E-01	1.97E-01	0.00E+00	1.01E+00	5.31E-02	8.67E-03	0.00E+00	3.13E+00	4.28E-01	0.00E+00	0.00E+00
	4	1.00E+00	9.73E-03	1.00E+00	0.00E+00	1.06E-02	0.00E+00	0.00E+00	9.74E-03	1.02E+00	-2.31E-01	2.09E-01	0.00E+00	1.01E+00	5.40E-01	9.60E-03	0.00E+00	5.50E-01	4.56E-01	0.00E+00	0.00E+00
	5	9.81E-01	9.83E-03	9.81E-01	0.00E+00	1.02E-02	0.00E+00	0.00E+00	9.93E-03	9.80E-01	-1.32E-01	1.67E-01	0.00E+00	9.90E-01	4.50E-06	9.83E-03	0.00E+00	2.98E+04	3.58E-01	0.00E+00	0.00E+00
E5	1	-1.35E-01	9.83E-01	-1.35E-01	4.73E-03	9.27E-01	-8.79E-02	6.99E-04	9.75E-01	-1.15E-01	-1.37E-02	-8.81E-04	9.96E-01	1.72E-01	5.51E-05	-4.75E+03	4.75E+03	2.85E-05	-1.19E-03	2.68E+00	3.73E-01
	2	-1.53E-01	9.90E-01	-1.53E-01	1.12E-02	9.25E-01	-9.77E-02	3.49E-03	1.02E+00	-2.21E-01	4.51E-02	4.14E-03	1.01E+00	2.01E-01	2.96E-03	3.83E-01	6.43E-01	4.01E-01	3.64E-03	2.29E+00	4.44E-01
	3	-1.34E-01	9.77E-01	-1.34E-01	8.28E-03	9.22E-01	-8.79E-02	5.32E-03	9.57E-01	-8.42E-02	-3.34E-02	2.90E-03	9.89E-01	1.71E-01	3.75E-03	-5.05E+04	5.05E+04	2.66E-06	2.62E-03	2.68E+00	3.71E-01
	4	-1.34E-01	9.73E-01	-1.34E-01	1.08E-02	9.18E-01	-8.66E-02	5.79E-03	9.77E-01	-1.43E-01	6.09E-03	5.07E-03	9.87E-01	1.73E-01	5.68E-03	-1.29E+00	2.27E+00	6.50E-02	4.72E-03	2.64E+00	3.76E-01
	5	-1.37E-01	9.92E-01	-1.37E-01	1.71E-03	9.34E-01	-8.69E-02	-5.87E-03	1.02E+00	-2.16E-01	5.28E-02	-4.55E-03	1.01E+00	1.74E-01	-5.36E-03	3.68E-01	6.51E-01	3.24E-01	-4.92E-03	2.67E+00	3.78E-01
E6	1	-1.27E-01	9.85E-01	-1.27E-01	4.27E-03	9.32E-01	-8.29E-02	6.96E-04	9.74E-01	-1.02E-01	-1.70E-02	-9.14E-04	9.96E-01	1.59E-01	-1.06E-04	-5.69E+03	5.69E+03	2.24E-05	-1.18E-03	2.91E+00	3.43E-01
	2	-1.45E-01	9.91E-01	-1.45E-01	1.08E-02	9.30E-01	-9.27E-02	3.48E-03	1.02E+00	-2.08E-01	4.17E-02	4.14E-03	1.01E+00	1.88E-01	2.98E-03	4.09E-01	6.16E-01	3.94E-01	3.71E-03	2.47E+00	4.11E-01
	3	-1.26E-01	9.78E-01	-1.26E-01	7.82E-03	9.27E-01	-8.29E-02	5.31E-03	9.56E-01	-7.12E-02	-3.68E-02	2.86E-03	9.89E-01	1.58E-01	3.58E-03	-4.87E+04	4.87E+04	2.59E-06	2.62E-03	2.91E+00	3.41E-01
	4	-1.26E-01	9.75E-01	-1.26E-01	1.04E-02	9.23E-01	-8.15E-02	5.79E-03	9.76E-01	-1.30E-01	2.74E-03	5.04E-03	9.87E-01	1.60E-01	5.74E-03	-3.28E+00	4.26E+00	3.10E-02	4.74E-03	2.87E+00	3.45E-01
	5	-1.29E-01	9.94E-01	-1.29E-01	1.25E-03	9.39E-01	-8.18E-02	-5.88E-03	1.02E+00	-2.03E-01	4.95E-02</										

Table S.6.2 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-1 kbar with 5% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-1.13E-01	9.69E-01	-1.13E-01	-4.49E-03	9.27E-01	-7.89E-02	2.50E-03	8.45E-01	1.99E-01	-2.08E-01	-7.36E-03	9.74E-01	1.36E-01	-7.26E-03	-4.24E+04	4.24E+04	2.66E-06	-7.39E-03	3.40E+00	2.87E-01
	2	-1.99E-01	1.00E+00	-1.99E-01	2.85E-02	9.16E-01	-1.26E-01	1.64E-02	1.06E+00	-3.43E-01	9.59E-02	1.81E-02	1.04E+00	2.85E-01	-8.03E-03	7.10E-01	1.08E+00	7.02E+00	1.70E-02	1.60E+00	6.58E-01
	3	-1.09E-01	9.38E-01	-1.09E-01	1.33E-02	9.01E-01	-7.95E-02	2.58E-02	7.54E-01	3.55E-01	-3.09E-01	1.15E-02	9.40E-01	1.33E-01	1.13E-02	-4.08E+04	4.08E+04	2.68E-06	1.16E-02	3.37E+00	2.79E-01
	4	-1.09E-01	9.22E-01	-1.09E-01	2.61E-02	8.79E-01	-7.35E-02	2.73E-02	8.66E-01	3.28E-02	-9.47E-02	2.24E-02	9.29E-01	1.42E-01	-8.24E-03	7.80E-01	1.66E+00	2.16E+01	2.22E-02	3.08E+00	3.03E-01
	5	-1.17E-01	1.01E+00	-1.17E-01	-1.91E-02	9.60E-01	-7.16E-02	-3.03E-02	1.09E+00	-3.17E-01	1.34E-01	-2.50E-02	1.02E+00	1.41E-01	-2.63E-02	5.66E-01	4.77E-01	4.30E-01	-2.53E-02	3.39E+00	3.03E-01
E5	1	-1.03E-01	9.66E-01	-1.03E-01	-4.57E-03	9.28E-01	-7.27E-02	2.53E-03	8.45E-01	2.02E-01	-2.03E-01	-7.09E-03	9.70E-01	1.23E-01	-7.04E-03	-3.87E+04	3.87E+04	2.66E-06	-7.11E-03	3.76E+00	2.58E-01
	2	-1.90E-01	9.97E-01	-1.90E-01	2.84E-02	9.16E-01	-1.20E-01	1.64E-02	1.06E+00	-3.39E-01	1.00E-01	1.85E-02	1.03E+00	2.68E-01	-9.16E-03	7.26E-01	1.15E+00	8.06E+00	1.75E-02	1.70E+00	6.14E-01
	3	-9.97E-02	9.35E-01	-9.97E-02	1.32E-02	9.01E-01	-7.33E-02	2.58E-02	7.53E-01	3.58E-01	-3.05E-01	1.17E-02	9.37E-01	1.20E-01	1.15E-02	-3.73E+04	3.73E+04	2.67E-06	1.18E-02	3.74E+00	2.51E-01
	4	-9.98E-02	9.19E-01	-9.98E-02	2.60E-02	8.80E-01	-6.73E-02	2.73E-02	8.65E-01	3.60E-02	-9.06E-02	2.27E-02	9.25E-01	1.28E-01	-8.11E-03	7.89E-01	1.73E+00	2.37E+01	2.25E-02	3.42E+00	2.71E-01
	5	-1.07E-01	1.01E+00	-1.07E-01	-1.92E-02	9.61E-01	-6.54E-02	-3.02E-02	1.09E+00	-3.14E-01	1.38E-01	-2.47E-02	1.02E+00	1.28E-01	-2.61E-02	6.15E-01	4.24E-01	4.61E-01	-2.49E-02	3.73E+00	2.74E-01
E6	1	-9.52E-02	9.67E-01	-9.52E-02	-5.03E-03	9.33E-01	-6.76E-02	2.52E-03	8.44E-01	2.15E-01	-2.07E-01	-7.20E-03	9.70E-01	1.12E-01	-7.20E-03	-3.58E+04	3.58E+04	2.66E-06	-7.20E-03	4.17E+00	2.33E-01
	2	-1.82E-01	9.99E-01	-1.82E-01	2.79E-02	9.21E-01	-1.15E-01	1.64E-02	1.06E+00	-3.26E-01	9.66E-02	1.86E-02	1.03E+00	2.52E-01	-9.70E-03	7.41E-01	1.18E+00	8.78E+00	1.77E-02	1.82E+00	5.73E-01
	3	-9.17E-02	9.36E-01	-9.17E-02	1.28E-02	9.06E-01	-6.83E-02	2.58E-02	7.53E-01	3.71E-01	-3.09E-01	1.16E-02	9.37E-01	1.09E-01	1.13E-02	-3.43E+04	3.43E+04	2.67E-06	1.17E-02	4.15E+00	2.26E-01
	4	-9.19E-02	9.21E-01	-9.19E-02	2.56E-02	8.85E-01	-6.22E-02	2.73E-02	8.65E-01	4.90E-02	-9.39E-02	2.26E-02	9.25E-01	1.16E-01	-7.90E-03	8.01E-01	1.77E+00	2.56E+01	2.25E-02	3.81E+00	2.44E-01
	5	-9.92E-02	1.01E+00	-9.92E-02	-1.97E-02	9.66E-01	-6.03E-02	-3.02E-02	1.09E+00	-3.01E-01	1.34E-01	-2.47E-02	1.02E+00	1.17E-01	-2.61E-02	6.45E-01	3.93E-01	4.60E-01	-2.49E-02	4.12E+00	2.48E-01
E7	1	-1.05E-01	9.66E-01	-1.05E-01	-4.59E-03	9.28E-01	-7.36E-02	2.53E-03	8.45E-01	2.02E-01	-2.05E-01	-7.15E-03	9.70E-01	1.25E-01	-7.10E-03	-3.93E+04	3.93E+04	2.66E-06	-7.17E-03	3.70E+00	2.62E-01
	2	-1.91E-01	9.98E-01	-1.91E-01	2.84E-02	9.17E-01	-1.21E-01	1.64E-02	1.06E+00	-3.39E-01	9.87E-02	1.84E-02	1.03E+00	2.71E-01	-8.99E-03	7.24E-01	1.13E+00	7.90E+00	1.74E-02	1.69E+00	6.20E-01
	3	-1.01E-01	9.35E-01	-1.01E-01	1.32E-02	9.01E-01	-7.43E-02	2.58E-02	7.53E-01	3.59E-01	-3.07E-01	1.17E-02	9.37E-01	1.22E-01	1.14E-02	-3.78E+04	3.78E+04	2.67E-06	1.18E-02	3.68E+00	2.55E-01
	4	-1.01E-01	9.20E-01	-1.01E-01	2.60E-02	8.80E-01	-6.82E-02	2.73E-02	8.65E-01	3.66E-02	-9.19E-02	2.26E-02	9.26E-01	1.30E-01	-8.13E-03	7.88E-01	1.72E+00	2.34E+01	2.25E-02	3.37E+00	2.76E-01
	5	-1.09E-01	1.01E+00	-1.09E-01	-1.92E-02	9.61E-01	-6.64E-02	-3.02E-02	1.09E+00	-3.13E-01	1.36E-01	-2.47E-02	1.02E+00	1.30E-01	-2.61E-02	6.07E-01	4.33E-01	4.54E-01	-2.50E-02	3.68E+00	2.78E-01
E8	1	-9.98E-02	9.69E-01	-9.98E-02	-5.03E-03	9.33E-01	-7.07E-02	2.52E-03	8.44E-01	2.15E-01	-2.10E-01	-7.35E-03	9.73E-01	1.18E-01	-7.34E-03	-3.75E+04	3.75E+04	2.66E-06	-7.36E-03	3.95E+00	2.47E-01
	2	-1.86E-01	1.00E+00	-1.86E-01	2.79E-02	9.21E-01	-1.18E-01	1.64E-02	1.06E+00	-3.27E-01	9.38E-02	1.84E-02	1.03E+00	2.60E-01	-9.25E-03	7.35E-01	1.14E+00	8.25E+00	1.74E-02	1.76E+00	5.93E-01
	3	-9.63E-02	9.38E-01	-9.63E-02	1.28E-02	9.06E-01	-7.13E-02	2.58E-02	7.53E-01	3.71E-01	-3.11E-01	1.14E-02	9.40E-01	1.15E-01	1.12E-02	-3.61E+04	3.61E+04	2.67E-06	1.15E-02	3.93E+00	2.39E-01
	4	-9.65E-02	9.22E-01	-9.65E-02	2.56E-02	8.85E-01	-6.53E-02	2.73E-02	8.65E-01	4.87E-02	-9.68E-02	2.24E-02	9.28E-01	1.22E-01	-7.99E-03	7.97E-01	1.73E+00	2.44E+01	2.23E-02	3.60E+00	2.58E-01
	5	-1.04E-01	1.01E+00	-1.04E-01	-1.97E-02	9.66E-01	-6.34E-02	-3.02E-02	1.09E+00	-3.01E-01	1.32E-01	-2.49E-02	1.02E+00	1.23E-01	-2.62E-02	6.20E-01	4.20E-01	4.41E-01	-2.51E-02	3.91E+00	2.62E-01
		E7			E8			E9			E10			E11							
Generator Eq		a0	a1	a2	a4	a0	a1	a3	a4	a0	a1	a2	a4	a0	a1	a2	a3	a4	a0	a1	a2
E4	1	1.11E-02	8.56E-01	0.00E+00	0.00E+00	1.11E-02	8.56E-01	0.00E+00	0.00E+00	1.11E-02	8.56E-01	0.00E+00	0.00E+00	1.11E-02	8.56E-01	0.00E+00	0.00E+00	0.00E+00	-9.38E-03	1.04E+00	#####
	2	-8.65E-03	6.58E-01	5.94E-02	2.18E+01	2.93E-03	3.86E+00	-1.56E-01	2.68E+08	2.93E-03	3.86E+00	-5.82E-10	2.68E+08	#####	1.17E+00	1.71E-02	#####	6.55E+01	1.47E-02	1.15E+00	#####
	3	1.13E-02	#####	1.06E+08	4.54E-05	1.13E-02	9.38E-01	-1.94E+05	5.62E-07	1.13E-02	2.22E+03	-2.26E+07	9.83E-05	2.65E-02	1.53E+02	-8.67E+02	#####	1.76E-01	9.73E-03	1.00E+00	#####
	4	-5.25E-03	7.51E-01	2.14E-02	9.56E+01	1.29E-02	2.50E+00	-8.60E-02	2.68E+08	1.29E-02	2.50E+00	-3.21E-10	2.68E+08	4.07E-02	8.13E-01	0.00E+00	0.00E+00	0.00E+00	1.97E-02	1.00E+00	#####
	5	-2.62E-02	4.20E-01	9.62E-01	6.45E-01	#####	1.04E+00	-2.29E-01	8.33E-01	-2.58E-02	1.33E+00	-2.30E-01	1.28E+00	#####	8.95E-01	0.00E+00	0.00E+00	0.00E+00	-2.71E-02	1.09E+00	#####
E5	1	9.81E-03	8.62E-01	0.00E+00	0.00E+00	9.81E-03	8.62E-01	0.00E+00	0.00E+00	9.											

Table S.6.3 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-1 kbar with 10% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-7.30E-02	9.48E-01	-7.30E-02	-1.84E-02	9.29E-01	-6.07E-02	3.56E-03	6.71E-01	6.24E-01	-4.65E-01	-1.78E-02	9.46E-01	8.12E-02	-1.83E-02	-2.39E+04	2.39E+04	3.05E-06	-1.76E-02	5.72E+00	1.65E-01
	2	-2.40E-01	1.00E+00	-2.40E-01	4.88E-02	9.01E-01	-1.50E-01	3.13E-02	1.11E+00	-4.97E-01	1.71E-01	3.45E-02	1.06E+00	3.79E-01	-2.21E-02	6.80E-01	2.73E+00	1.55E+01	3.24E-02	1.18E+00	9.23E-01
	3	-6.74E-02	8.87E-01	-6.74E-02	1.75E-02	8.76E-01	-6.32E-02	5.09E-02	4.84E-01	9.49E-01	-6.78E-01	1.99E-02	8.83E-01	7.69E-02	1.90E-02	-2.55E+04	2.55E+04	2.64E-06	2.01E-02	5.72E+00	1.54E-01
	4	-7.38E-02	8.59E-01	-7.38E-02	4.33E-02	8.34E-01	-5.35E-02	5.13E-02	7.40E-01	2.28E-01	-2.01E-01	4.19E-02	8.61E-01	9.54E-02	-1.15E-02	7.57E-01	3.79E+00	4.30E+01	4.19E-02	4.35E+00	1.98E-01
	5	-7.34E-02	1.03E+00	-7.34E-02	-4.66E-02	9.89E-01	-4.05E-02	-6.20E-02	1.17E+00	-4.39E-01	2.44E-01	-5.12E-02	1.03E+00	8.26E-02	-5.27E-02	7.68E-01	2.83E-01	5.16E-01	-5.14E-02	5.96E+00	1.73E-01
E5	1	-6.36E-02	9.44E-01	-6.36E-02	-1.85E-02	9.30E-01	-5.44E-02	3.59E-03	6.71E-01	6.28E-01	-4.61E-01	-1.76E-02	9.43E-01	6.99E-02	-1.81E-02	-2.42E+04	2.42E+04	2.63E-06	-1.75E-02	6.66E+00	1.42E-01
	2	-2.30E-01	1.00E+00	-2.30E-01	4.87E-02	9.01E-01	-1.44E-01	3.14E-02	1.11E+00	-4.93E-01	1.76E-01	3.50E-02	1.06E+00	3.58E-01	-2.21E-02	6.90E-01	2.77E+00	1.62E+01	3.31E-02	1.25E+00	8.65E-01
	3	-5.80E-02	8.84E-01	-5.80E-02	1.74E-02	8.77E-01	-5.69E-02	5.09E-02	4.83E-01	9.53E-01	-6.74E-01	2.00E-02	8.80E-01	6.54E-02	2.85E-02	8.25E-01	2.30E-03	5.00E+00	2.02E-02	6.74E+00	1.30E-01
	4	-6.43E-02	8.56E-01	-6.43E-02	4.32E-02	8.35E-01	-4.73E-02	5.14E-02	7.39E-01	2.31E-01	-1.97E-01	4.22E-02	8.57E-01	8.20E-02	-1.10E-02	7.65E-01	3.85E+00	4.53E+01	4.22E-02	5.06E+00	1.69E-01
	5	-6.40E-02	1.02E+00	-6.40E-02	-4.67E-02	9.89E-01	-3.43E-02	-6.20E-02	1.17E+00	-4.36E-01	2.48E-01	-5.09E-02	1.03E+00	7.12E-02	-5.24E-02	8.02E-01	2.44E-01	5.39E-01	-5.10E-02	6.91E+00	1.49E-01
E6	1	-5.56E-02	9.46E-01	-5.56E-02	-1.89E-02	9.35E-01	-4.94E-02	3.58E-03	6.70E-01	6.41E-01	-4.64E-01	-1.78E-02	9.44E-01	6.02E-02	-1.83E-02	-2.10E+04	2.10E+04	2.64E-06	-1.77E-02	7.78E+00	1.21E-01
	2	-2.22E-01	1.00E+00	-2.22E-01	4.83E-02	9.06E-01	-1.39E-01	3.14E-02	1.11E+00	-4.80E-01	1.72E-01	3.52E-02	1.05E+00	3.39E-01	-2.20E-02	7.03E-01	2.79E+00	1.68E+01	3.35E-02	1.33E+00	8.11E-01
	3	-5.00E-02	8.85E-01	-5.00E-02	1.70E-02	8.82E-01	-5.19E-02	5.09E-02	4.83E-01	9.66E-01	-6.77E-01	1.97E-02	8.82E-01	5.55E-02	2.93E-02	8.39E-01	-3.34E-02	5.80E+00	1.99E-02	7.98E+00	1.10E-01
	4	-5.64E-02	8.58E-01	-5.64E-02	4.28E-02	8.40E-01	-4.22E-02	5.14E-02	7.39E-01	2.44E-01	-2.00E-01	4.20E-02	8.58E-01	7.06E-02	-1.05E-02	7.76E-01	3.88E+00	4.75E+01	4.21E-02	5.92E+00	1.45E-01
	5	-5.60E-02	1.02E+00	-5.60E-02	-4.71E-02	9.94E-01	-2.92E-02	-6.20E-02	1.17E+00	-4.23E-01	2.45E-01	-5.10E-02	1.03E+00	6.14E-02	-5.24E-02	8.31E-01	2.15E-01	5.39E-01	-5.11E-02	8.05E+00	1.28E-01
E7	1	-6.50E-02	9.45E-01	-6.50E-02	-1.85E-02	9.30E-01	-5.54E-02	3.59E-03	6.71E-01	6.28E-01	-4.62E-01	-1.77E-02	9.44E-01	7.15E-02	-1.81E-02	-2.47E+04	2.47E+04	2.63E-06	-1.75E-02	6.51E+00	1.45E-01
	2	-2.32E-01	1.00E+00	-2.32E-01	4.87E-02	9.02E-01	-1.45E-01	3.14E-02	1.11E+00	-4.93E-01	1.74E-01	3.49E-02	1.06E+00	3.61E-01	-2.21E-02	6.88E-01	2.76E+00	1.61E+01	3.30E-02	1.24E+00	8.73E-01
	3	-5.94E-02	8.84E-01	-5.94E-02	1.74E-02	8.77E-01	-5.79E-02	5.09E-02	4.83E-01	9.53E-01	-6.75E-01	2.00E-02	8.80E-01	6.71E-02	2.84E-02	8.24E-01	7.12E-03	5.00E+00	2.02E-02	6.57E+00	1.34E-01
	4	-6.57E-02	8.57E-01	-6.57E-02	4.32E-02	8.35E-01	-4.83E-02	5.14E-02	7.39E-01	2.31E-01	-1.98E-01	4.21E-02	8.58E-01	8.40E-02	-1.10E-02	7.64E-01	3.84E+00	4.50E+01	4.21E-02	4.94E+00	1.74E-01
	5	-6.54E-02	1.02E+00	-6.54E-02	-4.67E-02	9.89E-01	-3.52E-02	-6.20E-02	1.17E+00	-4.36E-01	2.47E-01	-5.10E-02	1.03E+00	7.29E-02	-5.25E-02	7.97E-01	2.50E-01	5.33E-01	-5.11E-02	6.76E+00	1.52E-01
E8	1	-6.02E-02	9.48E-01	-6.02E-02	-1.89E-02	9.35E-01	-5.24E-02	3.58E-03	6.70E-01	6.40E-01	-4.67E-01	-1.79E-02	9.46E-01	6.55E-02	-1.84E-02	-2.30E+04	2.30E+04	2.62E-06	-1.78E-02	7.14E+00	1.32E-01
	2	-2.27E-01	1.00E+00	-2.27E-01	4.83E-02	9.06E-01	-1.42E-01	3.14E-02	1.11E+00	-4.81E-01	1.69E-01	3.49E-02	1.06E+00	3.48E-01	-2.20E-02	6.98E-01	2.77E+00	1.64E+01	3.31E-02	1.29E+00	8.37E-01
	3	-5.47E-02	8.87E-01	-5.47E-02	1.70E-02	8.82E-01	-5.50E-02	5.09E-02	4.83E-01	9.65E-01	-6.80E-01	1.97E-02	8.83E-01	6.10E-02	2.88E-02	8.34E-01	-1.62E-02	5.92E+00	1.99E-02	7.26E+00	1.21E-01
	4	-6.10E-02	8.59E-01	-6.10E-02	4.28E-02	8.40E-01	-4.53E-02	5.14E-02	7.39E-01	2.44E-01	-2.03E-01	4.19E-02	8.60E-01	7.69E-02	-1.07E-02	7.73E-01	3.85E+00	4.63E+01	4.19E-02	5.44E+00	1.58E-01
	5	-6.06E-02	1.03E+00	-6.06E-02	-4.71E-02	9.94E-01	-3.23E-02	-6.20E-02	1.17E+00	-4.23E-01	2.42E-01	-5.11E-02	1.03E+00	6.68E-02	-5.26E-02	8.14E-01	2.34E-01	5.25E-01	-5.13E-02	7.40E+00	1.39E-01
		E7			E8				E9				E10				E11				
Generator Eq		a0	a1	a2	a4	a0	a1	a3	a4	a0	a1	a2	a4	a0	a1	a2	a3	a4	a0	a1	a2
E4	1	-6.39E-03	8.75E-01	0.00E+00	0.00E+00	-6.39E-03	8.75E-01	0.00E+00	0.00E+00	-6.39E-03	8.75E-01	0.00E+00	0.00E+00	-6.39E-03	8.75E-01	0.00E+00	0.00E+00	0.00E+00	-1.83E-02	9.81E-01	-1.03E-01
	2	-1.67E-02	6.11E-01	5.60E-02	5.50E+01	1.52E-02	4.60E+00	-1.96E-01	2.68E+08	1.52E-02	4.60E+00	-7.30E-10	2.68E+08	-1.66E-02	6.22E-01	5.52E-02	-2.12E-03	5.57E+01	3.13E-02	1.19E+00	-4.12E-01
	3	3.00E-02	8.19E-01	0.00E+00	0.00E+00	3.00E-02	8.19E-01	0.00E+00	0.00E+00	3.00E-02	8.19E-01	0.00E+00	0.00E+00	5.26E-02	2.51E+02	-1.23E+03	-1.20E+02	2.04E-01	2.03E-02	9.06E-01	-8.48E-02
	4	-3.24E-03	7.34E-01	1.60E-02	4.91E+02	3.27E-02	2.07E+00	-6.56E-02	2.68E+08	3.27E-02	2.07E+00	-2.44E-10	2.68E+08	5.39E-02	7.85E-01	0.00E+00	0.00E+00	0.00E+00	3.95E-02	9.14E-01	-1.26E-01
	5	-5.25E-02	6.82E-01	4.80E-01	7.64E-01	-5.22E-02	1.05E+00	-1.36E-01	9.52E-01	-5.21E-02	1.22E+00	-1.19E-01	1.46E+00	-3.86E-02	9.52E-01	0.00E+00	0.00E+00	0.00E+00	-5.25E-02	1.08E+00	-1.21E-01
E5	1	-7.70E-03	8.81E-01	0.00E+00																	

Table S.6.5 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-5 kbar with 1% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-6.59E-02	8.10E-01	-6.59E-02	1.36E-01	6.68E-01	-8.26E-03	1.63E-02	9.49E-01	-1.36E-01	9.31E-03	5.72E-03	1.00E+00	1.99E-01	4.76E-03	8.21E-03	1.00E+00	2.04E-01	-1.49E-02	1.83E+00	6.07E-01
	2	-6.81E-02	8.22E-01	-6.81E-02	1.28E-01	6.76E-01	-8.56E-03	8.66E-03	9.57E-01	-1.36E-01	9.05E-03	-6.05E-03	1.03E+00	2.07E-01	-1.99E-03	-3.65E-02	1.05E+00	1.88E-01	-2.70E-02	1.79E+00	6.36E-01
	3	8.68E-01	3.47E-02	8.68E-01	0.00E+00	7.00E-02	0.00E+00	0.00E+00	1.02E-02	9.71E-01	-1.44E-01	2.03E-01	0.00E+00	1.01E+00	1.96E-01	9.74E-03	0.00E+00	1.03E+00	5.86E-01	0.00E+00	0.00E+00
	4	8.69E-01	3.37E-02	8.69E-01	0.00E+00	6.90E-02	0.00E+00	0.00E+00	1.03E-02	9.68E-01	-1.42E-01	2.03E-01	0.00E+00	1.01E+00	1.90E-01	9.45E-03	0.00E+00	1.04E+00	5.85E-01	0.00E+00	0.00E+00
	5	8.67E-01	3.32E-02	8.67E-01	0.00E+00	6.76E-02	0.00E+00	0.00E+00	1.30E-02	9.62E-01	-1.38E-01	2.00E-01	0.00E+00	1.01E+00	1.82E-01	1.17E-02	0.00E+00	1.04E+00	5.74E-01	0.00E+00	0.00E+00
E5	1	-5.37E-02	8.06E-01	-5.37E-02	1.24E-01	6.89E-01	-6.70E-03	1.81E-02	9.38E-01	-1.20E-01	8.87E-03	2.77E-02	9.20E-01	1.34E-01	4.86E-03	2.07E-01	8.00E-01	2.55E-01	1.32E-02	2.68E+00	3.64E-01
	2	-5.59E-02	8.18E-01	-5.59E-02	1.16E-01	6.97E-01	-6.99E-03	1.05E-02	9.46E-01	-1.21E-01	8.61E-03	1.62E-02	9.40E-01	1.40E-01	-1.61E-03	1.71E-01	8.38E-01	2.31E-01	1.24E-03	2.60E+00	3.85E-01
	3	-5.55E-02	8.15E-01	-5.55E-02	1.16E-01	6.94E-01	-6.91E-03	5.97E-03	9.54E-01	-1.26E-01	9.37E-03	1.54E-02	9.38E-01	1.40E-01	-7.81E-03	2.01E-01	8.27E-01	2.60E-01	-5.62E-05	2.60E+00	3.85E-01
	4	-5.49E-02	8.12E-01	-5.49E-02	1.20E-01	6.93E-01	-6.87E-03	1.66E-02	9.36E-01	-1.17E-01	8.34E-03	2.26E-02	9.29E-01	1.37E-01	6.17E-03	1.65E-01	8.26E-01	2.21E-01	8.23E-03	2.64E+00	3.74E-01
	5	-5.49E-02	8.14E-01	-5.49E-02	1.15E-01	6.95E-01	-6.88E-03	1.42E-02	9.33E-01	-1.15E-01	8.01E-03	1.87E-02	9.30E-01	1.36E-01	2.15E-03	1.67E-01	8.26E-01	2.21E-01	4.31E-03	2.66E+00	3.72E-01
E6	1	-5.60E-02	8.28E-01	-5.60E-02	1.18E-01	7.07E-01	-7.02E-03	1.63E-02	9.46E-01	-1.16E-01	7.94E-03	2.01E-02	9.46E-01	1.36E-01	6.07E-03	1.50E-01	8.48E-01	2.06E-01	5.80E-03	2.70E+00	3.71E-01
	2	-5.82E-02	8.40E-01	-5.82E-02	1.10E-01	7.15E-01	-7.32E-03	8.66E-03	9.54E-01	-1.16E-01	7.68E-03	8.68E-03	9.66E-01	1.42E-01	-6.53E-04	1.05E-01	8.95E-01	1.87E-01	-6.11E-03	2.62E+00	3.92E-01
	3	-5.78E-02	8.37E-01	-5.78E-02	1.11E-01	7.12E-01	-7.24E-03	4.18E-03	9.62E-01	-1.21E-01	8.44E-03	7.81E-03	9.63E-01	1.42E-01	-6.66E-03	1.47E-01	8.72E-01	2.13E-01	-7.42E-03	2.62E+00	3.91E-01
	4	-5.72E-02	8.34E-01	-5.72E-02	1.14E-01	7.11E-01	-7.20E-03	1.48E-02	9.44E-01	-1.13E-01	7.40E-03	1.50E-02	9.55E-01	1.39E-01	7.05E-03	9.53E-02	8.89E-01	1.78E-01	8.46E-04	2.66E+00	3.81E-01
	5	-5.73E-02	8.36E-01	-5.73E-02	1.09E-01	7.13E-01	-7.21E-03	1.24E-02	9.41E-01	-1.10E-01	7.08E-03	1.11E-02	9.56E-01	1.39E-01	3.22E-03	9.47E-02	8.90E-01	1.77E-01	-3.08E-03	2.68E+00	3.79E-01
E7	1	-5.98E-02	8.16E-01	-5.98E-02	1.26E-01	6.87E-01	-7.50E-03	1.72E-02	9.42E-01	-1.23E-01	8.48E-03	1.57E-02	9.61E-01	1.60E-01	6.16E-03	9.21E-02	9.06E-01	2.07E-01	-1.10E-03	2.28E+00	4.55E-01
	2	-6.20E-02	8.28E-01	-6.20E-02	1.18E-01	6.94E-01	-7.80E-03	9.52E-03	9.50E-01	-1.24E-01	8.22E-03	4.14E-03	9.82E-01	1.67E-01	-5.49E-04	4.76E-02	9.53E-01	1.89E-01	-1.31E-02	2.22E+00	4.79E-01
	3	-6.16E-02	8.25E-01	-6.16E-02	1.18E-01	6.92E-01	-7.72E-03	5.04E-03	9.58E-01	-1.29E-01	8.97E-03	3.12E-03	9.80E-01	1.66E-01	-6.57E-03	8.88E-02	9.29E-01	2.13E-01	-1.47E-02	2.22E+00	4.79E-01
	4	-6.11E-02	8.22E-01	-6.11E-02	1.22E-01	6.91E-01	-7.68E-03	1.56E-02	9.40E-01	-1.21E-01	7.94E-03	1.07E-02	9.70E-01	1.63E-01	7.16E-03	3.77E-02	9.46E-01	1.80E-01	-5.94E-03	2.25E+00	4.66E-01
	5	-6.11E-02	8.24E-01	-6.11E-02	1.17E-01	6.93E-01	-7.69E-03	1.32E-02	9.37E-01	-1.18E-01	7.62E-03	6.78E-03	9.71E-01	1.62E-01	3.32E-03	3.73E-02	9.47E-01	1.79E-01	-9.83E-03	2.26E+00	4.63E-01
E8	1	-6.85E-02	8.45E-01	-6.85E-02	1.23E-01	6.99E-01	-8.66E-03	1.48E-02	9.54E-01	-1.23E-01	7.30E-03	-4.14E-03	1.03E+00	1.94E-01	7.61E-03	-1.39E-01	1.13E+00	1.42E-01	-2.31E-02	1.95E+00	5.81E-01
	2	-7.08E-02	8.57E-01	-7.08E-02	1.16E-01	7.06E-01	-8.96E-03	7.12E-03	9.62E-01	-1.24E-01	7.04E-03	-1.58E-02	1.06E+00	2.01E-01	5.63E-04	-2.05E-01	1.20E+00	1.30E-01	-3.50E-02	1.91E+00	6.08E-01
	3	-7.03E-02	8.54E-01	-7.03E-02	1.16E-01	7.04E-01	-8.88E-03	2.64E-03	9.70E-01	-1.29E-01	7.80E-03	-1.70E-02	1.05E+00	2.01E-01	-5.12E-03	-1.33E-01	1.14E+00	1.49E-01	-3.69E-02	1.91E+00	6.09E-01
	4	-6.98E-02	8.51E-01	-6.98E-02	1.19E-01	7.02E-01	-8.84E-03	1.32E-02	9.51E-01	-1.20E-01	6.76E-03	-9.03E-03	1.04E+00	1.97E-01	8.03E-03	-2.28E-01	1.21E+00	1.23E-01	-2.77E-02	1.93E+00	5.93E-01
	5	-6.98E-02	8.53E-01	-6.98E-02	1.15E-01	7.05E-01	-8.85E-03	1.08E-02	9.49E-01	-1.18E-01	6.44E-03	-1.29E-02	1.04E+00	1.96E-01	4.53E-03	-2.36E-01	1.21E+00	1.21E-01	-3.15E-02	1.95E+00	5.89E-01
		E7				E8				E9				E10				E11			
Generator Eq		a0	a1	a2	a4	a0	a1	a3	a4	a0	a1	a2	a4	a0	a1	a2	a3	a4	a0	a1	a2
E4	1	3.41E-03	-1.58E-01	3.12E+00	3.77E-01	4.44E-04	1.05E+00	-3.21E-01	8.91E-01	-7.63E-04	1.41E+00	-1.88E-01	1.87E+00	6.97E-03	-3.62E+00	2.50E+01	1.31E+00	1.84E-01	2.11E-02	1.05E+00	-2.40E-01
	2	-3.13E-03	-2.19E-01	3.62E+00	3.42E-01	-5.39E-03	1.04E+00	-3.46E-01	7.50E-01	-6.33E-03	1.44E+00	-2.53E-01	1.52E+00	-1.77E-04	-3.63E+00	2.62E+01	1.29E+00	1.77E-01	1.06E-02	1.07E+00	-2.47E-01
	3	3.53E-01	9.91E-03	-1.97E-01	0.00E+00	7.48E-01	1.04E-02	0.00E+00	-3.41E-01	1.48E+00	1.06E-02	1.42E+00	0.00E+00	1.22E-01	9.62E-03	-8.97E+00	8.15E+01	3.56E+00	0.00E+00	1.49E-02	1.08E+00
	4	3.42E-01	9.49E-03	-2.11E-01	0.00E+00	7.34E-01	9.68E-03	0.00E+00	-3.43E-01	1.46E+00	9.74E-03	1.42E+00	0.00E+00	1.96E-01	9.52E-03	-2.89E+00	1.99E+01	9.99E-01	0.00E+00	1.34E-02	1.08E+00
	5	3.26E-01	1.17E-02	-2.28E-01	0.00E+00	6.79E-01	1.18E-02	0.00E+00	-3.49E-01	1.33E+00	1.19E-02	1.42E+00	0.00E+00	3.17E-01	1.18E-02	-3.12E-01	4.15E+00	2.84E-02	0.00E+00	1.45E-02	1.08E+00
E5	1	3.30E-03	8.89E-02	1.90E+00	4.92E-01																

Table S.6.6 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-5 kbar with 5% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-6.41E-02	7.97E-01	-6.41E-02	1.56E-01	6.58E-01	-8.01E-03	3.35E-02	9.46E-01	-1.39E-01	1.00E-02	2.83E-02	9.85E-01	1.96E-01	2.39E-02	3.64E-02	9.66E-01	2.18E-01	8.31E-03	1.83E+00	5.93E-01
	2	-7.52E-02	8.56E-01	-7.52E-02	1.19E-01	6.95E-01	-9.49E-03	-4.26E-03	9.85E-01	-1.40E-01	8.65E-03	-3.00E-02	1.10E+00	2.33E-01	-1.07E-02	-2.03E-01	1.22E+00	1.48E-01	-5.09E-02	1.67E+00	7.39E-01
	3	-7.31E-02	8.43E-01	-7.31E-02	1.19E-01	6.83E-01	-9.11E-03	-2.72E-02	1.03E+00	-1.66E-01	1.24E-02	-3.82E-02	1.10E+00	2.35E-01	-3.93E-02	7.35E-03	1.09E+00	2.40E-01	-6.27E-02	1.64E+00	7.56E-01
	4	-7.04E-02	8.26E-01	-7.04E-02	1.37E-01	6.76E-01	-8.90E-03	2.51E-02	9.38E-01	-1.27E-01	7.52E-03	3.91E-03	1.03E+00	2.15E-01	2.48E-02	-2.78E-01	1.23E+00	1.20E-01	-1.46E-02	1.74E+00	6.60E-01
	5	-7.05E-02	8.37E-01	-7.05E-02	1.12E-01	6.88E-01	-8.97E-03	1.21E-02	9.22E-01	-1.14E-01	5.74E-03	-1.72E-02	1.04E+00	2.08E-01	6.63E-03	-3.56E-01	1.30E+00	1.05E-01	-3.54E-02	1.81E+00	6.34E-01
E5	1	-5.19E-02	7.93E-01	-5.19E-02	1.44E-01	6.79E-01	-6.45E-03	3.53E-02	9.35E-01	-1.24E-01	9.59E-03	5.02E-02	9.02E-01	1.30E-01	2.44E-02	2.26E-01	7.75E-01	2.72E-01	3.62E-02	2.70E+00	3.53E-01
	2	-6.30E-02	8.52E-01	-6.30E-02	1.07E-01	7.16E-01	-7.92E-03	-2.46E-03	9.74E-01	-1.25E-01	8.21E-03	-6.89E-03	1.00E+00	1.62E-01	-9.39E-03	2.82E-02	9.84E-01	1.73E-01	-2.31E-02	2.35E+00	4.58E-01
	3	-6.09E-02	8.39E-01	-6.09E-02	1.07E-01	7.05E-01	-7.54E-03	-2.54E-02	1.02E+00	-1.51E-01	1.20E-02	-1.27E-02	9.95E-01	1.61E-01	-3.85E-02	1.88E-01	9.12E-01	2.90E-01	-3.16E-02	2.33E+00	4.62E-01
	4	-5.82E-02	8.22E-01	-5.82E-02	1.25E-01	6.97E-01	-7.33E-03	2.69E-02	9.27E-01	-1.11E-01	7.08E-03	2.48E-02	9.47E-01	1.47E-01	2.65E-02	-2.49E-02	9.66E-01	1.38E-01	1.15E-02	2.50E+00	4.03E-01
	5	-5.83E-02	8.33E-01	-5.83E-02	1.00E-01	7.09E-01	-7.40E-03	1.39E-02	9.12E-01	-9.81E-02	5.30E-03	3.35E-03	9.53E-01	1.43E-01	7.84E-03	-7.36E-02	1.01E+00	1.22E-01	-9.88E-03	2.59E+00	3.90E-01
E6	1	-5.42E-02	8.15E-01	-5.42E-02	1.38E-01	6.97E-01	-6.77E-03	3.35E-02	9.43E-01	-1.19E-01	8.66E-03	4.25E-02	9.28E-01	1.33E-01	2.52E-02	1.77E-01	8.15E-01	2.23E-01	2.87E-02	2.72E+00	3.61E-01
	2	-6.53E-02	8.74E-01	-6.53E-02	1.01E-01	7.34E-01	-8.25E-03	-4.26E-03	9.82E-01	-1.20E-01	7.28E-03	-1.43E-02	1.03E+00	1.63E-01	-9.45E-03	-6.42E-02	1.07E+00	1.42E-01	-3.02E-02	2.39E+00	4.63E-01
	3	-6.32E-02	8.61E-01	-6.32E-02	1.01E-01	7.23E-01	-7.87E-03	-2.72E-02	1.02E+00	-1.46E-01	1.11E-02	-2.02E-02	1.02E+00	1.63E-01	-3.79E-02	1.47E-01	9.45E-01	2.47E-01	-3.87E-02	2.36E+00	4.67E-01
	4	-6.05E-02	8.44E-01	-6.05E-02	1.19E-01	7.15E-01	-7.66E-03	2.51E-02	9.36E-01	-1.07E-01	6.15E-03	1.74E-02	9.73E-01	1.49E-01	2.57E-02	-1.49E-01	1.09E+00	1.10E-01	4.26E-03	2.53E+00	4.10E-01
	5	-6.06E-02	8.55E-01	-6.06E-02	9.41E-02	7.27E-01	-7.73E-03	1.21E-02	9.20E-01	-9.34E-02	4.37E-03	-4.13E-03	9.79E-01	1.45E-01	7.94E-03	-2.54E-01	1.19E+00	9.17E-02	-1.71E-02	2.62E+00	3.97E-01
E7	1	-5.80E-02	8.03E-01	-5.80E-02	1.46E-01	6.77E-01	-7.25E-03	3.44E-02	9.39E-01	-1.27E-01	9.20E-03	3.82E-02	9.42E-01	1.56E-01	2.53E-02	1.20E-01	8.73E-01	2.22E-01	2.20E-02	2.29E+00	4.43E-01
	2	-6.91E-02	8.62E-01	-6.91E-02	1.09E-01	7.14E-01	-8.73E-03	-3.40E-03	9.78E-01	-1.28E-01	7.81E-03	-1.93E-02	1.05E+00	1.90E-01	-9.24E-03	-1.20E-01	1.13E+00	1.45E-01	-3.73E-02	2.04E+00	5.62E-01
	3	-6.70E-02	8.49E-01	-6.70E-02	1.09E-01	7.02E-01	-8.35E-03	-2.63E-02	1.02E+00	-1.54E-01	1.16E-02	-2.61E-02	1.04E+00	1.90E-01	-3.78E-02	8.94E-02	1.00E+00	2.45E-01	-4.72E-02	2.01E+00	5.70E-01
	4	-6.43E-02	8.32E-01	-6.43E-02	1.27E-01	6.95E-01	-8.13E-03	2.59E-02	9.31E-01	-1.14E-01	6.69E-03	1.33E-02	9.89E-01	1.74E-01	2.61E-02	-2.01E-01	1.14E+00	1.15E-01	-1.97E-03	2.14E+00	4.99E-01
	5	-6.45E-02	8.43E-01	-6.45E-02	1.02E-01	7.06E-01	-8.21E-03	1.29E-02	9.16E-01	-1.01E-01	4.90E-03	-8.03E-03	9.95E-01	1.69E-01	8.16E-03	-2.91E-01	1.23E+00	9.78E-02	-2.31E-02	2.22E+00	4.82E-01
E8	1	-6.67E-02	8.32E-01	-6.67E-02	1.44E-01	6.88E-01	-8.41E-03	3.20E-02	9.51E-01	-1.27E-01	8.02E-03	1.84E-02	1.01E+00	1.91E-01	2.62E-02	-8.75E-02	1.07E+00	1.55E-01	1.25E-05	1.96E+00	5.68E-01
	2	-7.78E-02	8.91E-01	-7.78E-02	1.06E-01	7.26E-01	-9.89E-03	-5.79E-03	9.89E-01	-1.28E-01	6.64E-03	-3.92E-02	1.13E+00	2.26E-01	-9.51E-03	-4.37E-01	1.45E+00	1.03E-01	-5.84E-02	1.79E+00	7.02E-01
	3	-7.57E-02	8.77E-01	-7.57E-02	1.07E-01	7.14E-01	-9.51E-03	-2.87E-02	1.03E+00	-1.54E-01	1.04E-02	-4.71E-02	1.12E+00	2.27E-01	-3.71E-02	-8.94E-02	1.17E+00	1.83E-01	-6.98E-02	1.76E+00	7.17E-01
	4	-7.30E-02	8.61E-01	-7.30E-02	1.24E-01	7.07E-01	-9.30E-03	2.35E-02	9.43E-01	-1.14E-01	5.51E-03	-5.78E-03	1.06E+00	2.08E-01	2.45E-02	-6.05E-01	1.55E+00	7.88E-02	-2.27E-02	1.86E+00	6.30E-01
	5	-7.32E-02	8.72E-01	-7.32E-02	9.94E-02	7.18E-01	-9.37E-03	1.05E-02	9.27E-01	-1.01E-01	3.73E-03	-2.70E-02	1.07E+00	2.03E-01	7.94E-03	-8.76E-01	1.81E+00	6.07E-02	-4.37E-02	1.93E+00	6.07E-01
		E7				E8				E9				E10					E11		
Generator Eq		a0	a1	a2	a4	a0	a1	a3	a4	a0	a1	a2	a4	a0	a1	a2	a3	a4	a0	a1	a2
E4	1	2.28E-02	#####	2.81E+00	4.04E-01	2.06E-02	1.04E+00	-3.07E-01	9.71E-01	1.90E-02	1.39E+00	-1.58E-01	2.11E+00	3.32E-02	-5.84E+03	1.28E+06	2.89E+03	4.57E-03	4.34E-02	1.03E+00	#####
	2	-1.11E-02	#####	5.73E+00	2.57E-01	#####	1.03E+00	-4.40E-01	4.72E-01	-1.16E-02	1.54E+00	-5.79E-01	8.73E-01	#####	-7.25E+01	1.89E+03	3.29E+01	3.88E-02	-8.75E-03	1.13E+00	#####
	3	-4.00E-02	#####	2.87E+00	4.47E-01	#####	1.14E+00	-3.46E-01	1.05E+00	-4.03E-02	1.53E+00	-1.70E-01	2.22E+00	#####	-6.82E+02	4.51E+04	3.30E+02	1.51E-02	-1.05E-02	1.11E+00	#####
	4	2.46E-02	#####	7.41E+00	2.02E-01	2.44E-02	9.58E-01	-4.65E-01	3.47E-01	2.39E-02	1.51E+00	-8.64E-01	6.27E-01	2.50E-02	-1.88E+04	8.59E+06	9.36E+03	2.19E-03	1.81E-02	1.08E+00	#####
	5	6.06E-03	#####	8.98E+00	1.77E-01	4.98E-03	9.56E-01	-4.95E-01	3.04E-01	4.57E-03	1.54E+00	-1.08E+00	5.38E-01	5.03E-03	8.94E-01	2.09E-01	#####	2.94E-01	-4.86E-03	1.09E+00	#####
E5	1	2.31E-02	1.14E-01	1.71E+00	5.28E-01	1.99E-02	1.06E+00	-2.29E-01	1.64E+00	1.77E-02	1.33E+00	-5.84E-02	4.12E+00	3.38							

Table S.6.7 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-5 kbar with 10% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-6.17E-02	7.79E-01	-6.17E-02	1.80E-01	6.45E-01	-7.68E-03	5.46E-02	9.39E-01	-1.43E-01	1.08E-02	5.60E-02	9.57E-01	1.90E-01	4.80E-02	6.41E-02	9.26E-01	2.31E-01	3.69E-02	1.84E+00	5.71E-01
	2	-8.36E-02	8.96E-01	-8.36E-02	1.05E-01	7.18E-01	-1.06E-02	-1.99E-02	1.01E+00	-1.42E-01	7.83E-03	-5.92E-02	1.19E+00	2.64E-01	-2.27E-02	-4.78E-01	1.51E+00	1.10E-01	-7.87E-02	1.56E+00	8.62E-01
	3	-8.01E-02	8.73E-01	-8.01E-02	1.05E-01	6.97E-01	-9.93E-03	-6.72E-02	1.10E+00	-1.96E-01	1.54E-02	-8.04E-02	1.20E+00	2.73E-01	-7.81E-02	-1.38E-02	1.20E+00	2.62E-01	-1.07E-01	1.49E+00	9.25E-01
	4	-7.43E-02	8.38E-01	-7.43E-02	1.42E-01	6.80E-01	-9.44E-03	3.62E-02	9.29E-01	-1.21E-01	6.18E-03	7.73E-03	1.06E+00	2.29E-01	4.17E-02	-6.96E-01	1.62E+00	7.55E-02	-8.40E-03	1.65E+00	7.10E-01
	5	-7.49E-02	8.62E-01	-7.49E-02	8.72E-02	7.06E-01	-9.64E-03	6.77E-03	8.95E-01	-9.15E-02	2.21E-03	-3.96E-02	1.07E+00	2.16E-01	5.56E-03	-1.93E+00	2.83E+00	3.35E-02	-5.45E-02	1.79E+00	6.54E-01
E5	1	-4.95E-02	7.75E-01	-4.95E-02	1.68E-01	6.66E-01	-6.11E-03	5.64E-02	9.29E-01	-1.27E-01	1.03E-02	7.75E-02	8.77E-01	1.25E-01	4.90E-02	2.46E-01	7.42E-01	2.89E-01	6.43E-02	2.76E+00	3.36E-01
	2	-7.14E-02	8.92E-01	-7.14E-02	9.34E-02	7.40E-01	-9.04E-03	-1.81E-02	1.00E+00	-1.27E-01	7.39E-03	-3.59E-02	1.08E+00	1.87E-01	-2.10E-02	-2.11E-01	1.23E+00	1.24E-01	-5.25E-02	2.14E+00	5.49E-01
	3	-6.79E-02	8.69E-01	-6.79E-02	9.30E-02	7.18E-01	-8.37E-03	-6.54E-02	1.09E+00	-1.80E-01	1.50E-02	-5.20E-02	1.07E+00	1.90E-01	-7.65E-02	1.57E-01	1.02E+00	3.08E-01	-7.48E-02	2.07E+00	5.74E-01
	4	-6.21E-02	8.34E-01	-6.21E-02	1.30E-01	7.02E-01	-7.87E-03	3.80E-02	9.19E-01	-1.05E-01	5.74E-03	2.75E-02	9.69E-01	1.59E-01	4.39E-02	-3.84E-01	1.29E+00	8.19E-02	1.56E-02	2.35E+00	4.40E-01
	5	-6.27E-02	8.58E-01	-6.27E-02	7.54E-02	7.27E-01	-8.07E-03	8.57E-03	8.84E-01	-7.60E-02	1.77E-03	-2.08E-02	9.84E-01	1.51E-01	7.39E-03	-1.53E+00	2.42E+00	3.26E-02	-3.22E-02	2.53E+00	4.12E-01
E6	1	-5.18E-02	7.97E-01	-5.18E-02	1.62E-01	6.84E-01	-6.44E-03	5.46E-02	9.37E-01	-1.22E-01	9.41E-03	6.98E-02	9.03E-01	1.28E-01	4.94E-02	2.04E-01	7.77E-01	2.39E-01	5.68E-02	2.77E+00	3.44E-01
	2	-7.37E-02	9.14E-01	-7.37E-02	8.75E-02	7.57E-01	-9.36E-03	-1.99E-02	1.01E+00	-1.22E-01	6.46E-03	-4.31E-02	1.11E+00	1.89E-01	-2.18E-02	-3.57E-01	1.38E+00	1.01E-01	-5.92E-02	2.17E+00	5.52E-01
	3	-7.02E-02	8.91E-01	-7.02E-02	8.71E-02	7.36E-01	-8.69E-03	-6.72E-02	1.10E+00	-1.76E-01	1.40E-02	-5.91E-02	1.10E+00	1.91E-01	-7.65E-02	1.23E-01	1.05E+00	2.72E-01	-8.15E-02	2.10E+00	5.76E-01
	4	-6.44E-02	8.56E-01	-6.44E-02	1.24E-01	7.19E-01	-8.20E-03	3.62E-02	9.27E-01	-1.00E-01	4.80E-03	2.01E-02	9.95E-01	1.61E-01	4.16E-02	-6.28E-01	1.54E+00	6.40E-02	8.56E-03	2.38E+00	4.45E-01
	5	-6.50E-02	8.80E-01	-6.50E-02	6.95E-02	7.45E-01	-8.40E-03	6.77E-03	8.92E-01	-7.13E-02	8.41E-04	-2.81E-02	1.01E+00	1.53E-01	6.36E-03	-4.17E+00	5.06E+00	1.43E-02	-3.92E-02	2.56E+00	4.18E-01
E7	1	-5.56E-02	7.85E-01	-5.56E-02	1.70E-01	6.63E-01	-6.92E-03	5.55E-02	9.33E-01	-1.30E-01	9.95E-03	6.57E-02	9.17E-01	1.51E-01	4.94E-02	1.46E-01	8.34E-01	2.37E-01	5.02E-02	2.32E+00	4.24E-01
	2	-7.76E-02	9.02E-01	-7.76E-02	9.53E-02	7.37E-01	-9.84E-03	-1.90E-02	1.01E+00	-1.30E-01	7.00E-03	-4.84E-02	1.13E+00	2.17E-01	-2.14E-02	-4.05E-01	1.43E+00	1.05E-01	-6.61E-02	1.88E+00	6.65E-01
	3	-7.41E-02	8.78E-01	-7.41E-02	9.49E-02	7.16E-01	-9.17E-03	-6.63E-02	1.10E+00	-1.83E-01	1.46E-02	-6.65E-02	1.13E+00	2.22E-01	-7.66E-02	6.64E-02	1.11E+00	2.69E-01	-9.10E-02	1.81E+00	7.02E-01
	4	-6.82E-02	8.44E-01	-6.82E-02	1.32E-01	6.99E-01	-8.68E-03	3.71E-02	9.23E-01	-1.08E-01	5.34E-03	1.64E-02	1.01E+00	1.86E-01	4.24E-02	-6.50E-01	1.56E+00	6.90E-02	3.04E-03	2.03E+00	5.40E-01
	5	-6.88E-02	8.68E-01	-6.88E-02	7.72E-02	7.25E-01	-8.88E-03	7.63E-03	8.88E-01	-7.92E-02	1.38E-03	-3.15E-02	1.02E+00	1.77E-01	6.89E-03	-2.71E+00	3.61E+00	2.24E-02	-4.42E-02	2.19E+00	5.03E-01
E8	1	-6.43E-02	8.14E-01	-6.43E-02	1.67E-01	6.75E-01	-8.08E-03	5.31E-02	9.44E-01	-1.30E-01	8.77E-03	4.59E-02	9.88E-01	1.85E-01	4.96E-02	-3.97E-02	1.01E+00	1.68E-01	2.84E-02	1.97E+00	5.48E-01
	2	-8.63E-02	9.31E-01	-8.63E-02	9.28E-02	7.49E-01	-1.10E-02	-2.14E-02	1.02E+00	-1.30E-01	5.82E-03	-6.80E-02	1.21E+00	2.55E-01	-2.27E-02	-8.50E-01	1.88E+00	7.55E-02	-8.59E-02	1.67E+00	8.16E-01
	3	-8.28E-02	9.07E-01	-8.28E-02	9.24E-02	7.28E-01	-1.03E-02	-6.87E-02	1.11E+00	-1.83E-01	1.34E-02	-8.84E-02	1.22E+00	2.62E-01	-7.66E-02	-8.74E-02	1.25E+00	2.11E-01	-1.14E-01	1.60E+00	8.70E-01
	4	-7.69E-02	8.73E-01	-7.69E-02	1.30E-01	7.11E-01	-9.84E-03	3.47E-02	9.34E-01	-1.08E-01	4.16E-03	-1.85E-03	1.09E+00	2.22E-01	3.90E-02	-1.35E+00	2.28E+00	4.65E-02	-1.65E-02	1.77E+00	6.76E-01
	5	-7.76E-02	8.97E-01	-7.76E-02	7.47E-02	7.36E-01	-1.00E-02	5.24E-03	9.00E-01	-7.91E-02	2.01E-04	-4.94E-02	1.10E+00	2.10E-01	5.17E-03	-2.80E+01	2.89E+01	2.74E-03	-6.31E-02	1.91E+00	6.26E-01
		E7				E8				E9				E10				E11			
Generator Eq		a0	a1	a2	a4	a0	a1	a3	a4	a0	a1	a2	a4	a0	a1	a2	a3	a4	a0	a1	a2
E4	1	4.73E-02	-8.55E-02	2.52E+00	4.30E-01	4.57E-02	1.03E+00	-2.91E-01	1.06E+00	4.35E-02	1.36E+00	-1.31E-01	2.39E+00	5.45E-02	-2.71E+04	1.24E+07	1.35E+04	2.19E-03	7.03E-02	1.01E+00	-2.25E-01
	2	-2.27E-02	-8.21E-01	1.01E+01	1.83E-01	-2.21E-02	1.04E+00	-5.91E-01	3.00E-01	-2.19E-02	1.74E+00	-1.37E+00	5.16E-01	-2.00E-02	-1.96E+04	8.96E+06	9.75E+03	2.19E-03	-3.38E-02	1.20E+00	-3.02E-01
	3	-7.79E-02	-2.03E-01	2.86E+00	4.89E-01	-7.38E-02	1.21E+00	-3.76E-01	1.11E+00	-7.43E-02	1.63E+00	-1.74E-01	2.36E+00	-6.74E-02	-3.88E+04	1.77E+07	1.93E+04	2.19E-03	-3.92E-02	1.17E+00	-2.93E-01
	4	4.22E-02	-1.13E+00	1.71E+01	1.20E-01	4.32E-02	9.19E-01	-6.99E-01	1.76E-01	4.34E-02	1.78E+00	-3.00E+00	2.88E-01	5.63E-02	2.26E+00	-1.21E+00	-6.85E-01	1.18E+00	2.03E-02	1.10E+00	-2.67E-01
	5	5.43E-03	-2.73E+00	6.90E+01	5.26E-02	5.21E-03	9.01E-01	-1.27E+00	7.60E-02	5.10E-03	2.50E+00	-1.33E+01	1.21E-01	3.31E-02	2.47E+00	-6.53E-01	-5.93E-01	2.88E+00	-3.13E-02	1.13E+00	-2.68E-01
E5	1	4.80E-02	1.41E-01	1.52E+00																	

Table S.6.9 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-10 kbar with 1% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-3.24E-02	6.25E-01	-3.24E-02	3.59E-01	4.82E-01	-2.00E-03	6.32E-02	8.30E-01	-8.41E-02	3.45E-03	-2.89E-03	1.01E+00	1.99E-01	-2.97E-03	1.34E-04	1.01E+00	2.00E-01	-7.15E-02	1.56E+00	8.40E-01
	2	-3.26E-02	6.26E-01	-3.26E-02	3.60E-01	4.83E-01	-2.01E-03	6.06E-02	8.35E-01	-8.51E-02	3.50E-03	-5.84E-03	1.02E+00	2.02E-01	-4.70E-03	-1.99E-03	1.01E+00	2.00E-01	-7.47E-02	1.54E+00	8.54E-01
	3	7.16E-01	1.09E-01	7.16E-01	0.00E+00	1.83E-01	0.00E+00	0.00E+00	2.92E-02	8.78E-01	-9.36E-02	2.00E-01	0.00E+00	1.01E+00	1.96E-01	1.09E-02	0.00E+00	1.01E+00	7.45E-01	0.00E+00	0.00E+00
	4	7.14E-01	1.09E-01	7.14E-01	0.00E+00	1.82E-01	0.00E+00	0.00E+00	3.02E-02	8.76E-01	-9.32E-02	1.99E-01	0.00E+00	1.00E+00	1.98E-01	1.05E-02	0.00E+00	1.00E+00	7.40E-01	0.00E+00	0.00E+00
	5	7.15E-01	1.09E-01	7.15E-01	0.00E+00	1.83E-01	0.00E+00	0.00E+00	2.66E-02	8.79E-01	-9.41E-02	2.00E-01	0.00E+00	1.01E+00	1.97E-01	8.32E-03	0.00E+00	1.01E+00	7.46E-01	0.00E+00	0.00E+00
E5	1	-2.44E-02	6.46E-01	-2.44E-02	3.05E-01	5.37E-01	-1.50E-03	6.42E-02	8.20E-01	-6.84E-02	2.93E-03	9.02E-02	7.94E-01	9.03E-02	-3.26E-03	2.02E-01	8.07E-01	2.50E-01	4.84E-02	3.20E+00	2.75E-01
	2	-2.46E-02	6.47E-01	-2.46E-02	3.06E-01	5.37E-01	-1.50E-03	6.16E-02	8.24E-01	-6.94E-02	2.99E-03	8.81E-02	7.98E-01	9.15E-02	-4.76E-03	2.00E-01	8.13E-01	2.50E-01	4.57E-02	3.17E+00	2.80E-01
	3	-2.45E-02	6.46E-01	-2.45E-02	3.07E-01	5.37E-01	-1.50E-03	6.66E-02	8.20E-01	-6.83E-02	2.92E-03	9.19E-02	7.95E-01	9.07E-02	2.73E-03	1.98E-01	8.02E-01	2.42E-01	5.05E-02	3.19E+00	2.76E-01
	4	-2.42E-02	6.43E-01	-2.42E-02	3.08E-01	5.35E-01	-1.48E-03	7.37E-02	8.11E-01	-6.68E-02	2.84E-03	9.87E-02	7.87E-01	8.90E-02	1.14E-02	1.98E-01	7.87E-01	2.38E-01	5.86E-02	3.23E+00	2.69E-01
	5	-2.44E-02	6.45E-01	-2.44E-02	3.08E-01	5.36E-01	-1.49E-03	6.62E-02	8.21E-01	-6.88E-02	2.96E-03	9.36E-02	7.94E-01	9.05E-02	5.55E-03	1.97E-01	7.98E-01	2.40E-01	5.25E-02	3.19E+00	2.75E-01
E6	1	-2.87E-02	6.78E-01	-2.87E-02	3.04E-01	5.52E-01	-1.78E-03	5.53E-02	8.44E-01	-7.07E-02	2.79E-03	4.56E-02	8.83E-01	1.14E-01	3.49E-03	1.04E-01	8.74E-01	1.77E-01	-3.07E-03	2.70E+00	3.73E-01
	2	-2.89E-02	6.79E-01	-2.89E-02	3.05E-01	5.52E-01	-1.79E-03	5.27E-02	8.49E-01	-7.17E-02	2.85E-03	4.33E-02	8.88E-01	1.15E-01	1.64E-03	1.03E-01	8.80E-01	1.78E-01	-5.89E-03	2.68E+00	3.79E-01
	3	-2.88E-02	6.79E-01	-2.88E-02	3.06E-01	5.52E-01	-1.79E-03	5.78E-02	8.44E-01	-7.05E-02	2.78E-03	4.75E-02	8.84E-01	1.14E-01	8.91E-03	9.79E-02	8.73E-01	1.72E-01	-6.95E-04	2.70E+00	3.74E-01
	4	-2.85E-02	6.75E-01	-2.85E-02	3.07E-01	5.50E-01	-1.77E-03	6.49E-02	8.36E-01	-6.90E-02	2.70E-03	5.46E-02	8.74E-01	1.13E-01	1.75E-02	9.67E-02	8.61E-01	1.68E-01	7.72E-03	2.72E+00	3.66E-01
	5	-2.87E-02	6.77E-01	-2.87E-02	3.07E-01	5.51E-01	-1.78E-03	5.74E-02	8.45E-01	-7.10E-02	2.82E-03	4.92E-02	8.82E-01	1.14E-01	1.12E-02	9.71E-02	8.71E-01	1.71E-01	1.44E-03	2.70E+00	3.73E-01
E7	1	-3.07E-02	6.56E-01	-3.07E-02	3.25E-01	5.21E-01	-1.90E-03	5.93E-02	8.33E-01	-7.55E-02	2.99E-03	2.41E-02	9.28E-01	1.46E-01	3.93E-03	4.40E-02	9.33E-01	1.78E-01	-3.36E-02	2.10E+00	5.31E-01
	2	-3.08E-02	6.57E-01	-3.08E-02	3.26E-01	5.21E-01	-1.91E-03	5.67E-02	8.37E-01	-7.65E-02	3.04E-03	2.15E-02	9.33E-01	1.48E-01	2.08E-03	4.21E-02	9.39E-01	1.78E-01	-3.67E-02	2.08E+00	5.39E-01
	3	-3.07E-02	6.56E-01	-3.07E-02	3.27E-01	5.21E-01	-1.90E-03	6.18E-02	8.33E-01	-7.53E-02	2.97E-03	2.62E-02	9.28E-01	1.47E-01	9.35E-03	3.75E-02	9.32E-01	1.73E-01	-3.09E-02	2.09E+00	5.32E-01
	4	-3.04E-02	6.53E-01	-3.04E-02	3.28E-01	5.19E-01	-1.89E-03	6.89E-02	8.24E-01	-7.38E-02	2.89E-03	3.39E-02	9.18E-01	1.45E-01	1.80E-02	3.64E-02	9.20E-01	1.69E-01	-2.19E-02	2.11E+00	5.20E-01
	5	-3.07E-02	6.55E-01	-3.07E-02	3.28E-01	5.20E-01	-1.90E-03	6.14E-02	8.34E-01	-7.58E-02	3.01E-03	2.80E-02	9.26E-01	1.47E-01	1.17E-02	3.68E-02	9.29E-01	1.72E-01	-2.86E-02	2.09E+00	5.30E-01
E8	1	-4.21E-02	6.99E-01	-4.21E-02	3.43E-01	5.17E-01	-2.64E-03	4.82E-02	8.64E-01	-8.39E-02	2.79E-03	-1.11E-01	1.31E+00	2.93E-01	1.33E-02	-3.32E-01	1.28E+00	1.00E-01	-1.69E-01	1.26E+00	1.45E+00
	2	-4.22E-02	7.00E-01	-4.22E-02	3.44E-01	5.18E-01	-2.65E-03	4.56E-02	8.69E-01	-8.49E-02	2.85E-03	-1.13E-01	1.32E+00	2.96E-01	1.09E-02	-3.31E-01	1.28E+00	1.01E-01	-1.72E-01	1.26E+00	1.47E+00
	3	-4.21E-02	6.99E-01	-4.21E-02	3.45E-01	5.17E-01	-2.65E-03	5.06E-02	8.64E-01	-8.38E-02	2.78E-03	-1.08E-01	1.31E+00	2.94E-01	1.77E-02	-3.43E-01	1.28E+00	9.81E-02	-1.66E-01	1.26E+00	1.45E+00
	4	-4.18E-02	6.96E-01	-4.18E-02	3.47E-01	5.16E-01	-2.63E-03	5.77E-02	8.56E-01	-8.23E-02	2.70E-03	-9.91E-02	1.29E+00	2.90E-01	2.60E-02	-3.51E-01	1.28E+00	9.55E-02	-1.57E-01	1.27E+00	1.43E+00
	5	-4.21E-02	6.98E-01	-4.21E-02	3.47E-01	5.17E-01	-2.64E-03	5.02E-02	8.65E-01	-8.43E-02	2.82E-03	-1.05E-01	1.31E+00	2.93E-01	1.91E-02	-3.42E-01	1.28E+00	9.82E-02	-1.64E-01	1.26E+00	1.45E+00
		E7				E8				E9				E10				E11			
Generator Eq		a0	a1	a2	a4	a0	a1	a3	a4	a0	a1	a2	a4	a0	a1	a2	a3	a4	a0	a1	a2
E4	1	-1.08E-02	-1.12E-01	2.69E+00	4.32E-01	-2.30E-02	1.24E+00	-2.61E-01	3.11E+00	-2.80E-02	1.60E+00	-2.38E-02	1.11E+01	-7.06E-03	-4.14E-01	4.02E+00	9.09E-02	3.60E-01	2.06E-01	6.03E-01	-1.29E-01
	2	-1.24E-02	-1.15E-01	2.70E+00	4.32E-01	-2.45E-02	1.25E+00	-2.63E-01	3.10E+00	-2.95E-02	1.61E+00	-2.40E-02	1.11E+01	-5.75E-03	-7.03E-01	5.50E+00	1.83E-01	3.13E-01	2.06E-01	6.06E-01	-1.30E-01
	3	4.10E-01	1.11E-02	-1.23E-01	0.00E+00	2.13E+00	1.62E-02	0.00E+00	-2.64E-01	6.12E+00	1.69E-02	1.47E+00	0.00E+00	3.21E-01	1.10E-02	-5.95E-01	5.01E+00	1.47E-01	0.00E+00	9.31E-02	7.30E-01
	4	4.16E-01	1.03E-02	-1.17E-01	0.00E+00	2.32E+00	1.47E-02	0.00E+00	-2.61E-01	6.80E+00	1.52E-02	1.48E+00	0.00E+00	3.74E-01	1.04E-02	-3.01E-01	3.54E+00	5.51E-02	0.00E+00	9.33E-02	7.25E-01
	5	4.11E-01	8.93E-03	-1.22E-01	0.00E+00	2.19E+00	1.49E-02	0.00E+00	-2.64E-01	6.33E+00	1.56E-02	1.48E+00	0.00E+00	2.81E-01	8.27E-03	-9.26E-01	6.87E+00	2.57E-01	0.00E+00	9.29E-02	7.29E-01
E5	1	-1.11E-02	1.25E-01	1.61E+00	5.7.																

Table S.6.10 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-10 kbar with 5% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-3.25E-02	6.29E-01	-3.25E-02	3.45E-01	4.86E-01	-2.01E-03	5.61E-02	8.25E-01	-8.21E-02	3.30E-03	-1.45E-02	1.01E+00	1.97E-01	-1.50E-02	9.32E-04	1.01E+00	1.98E-01	-8.42E-02	1.58E+00	8.28E-01
	2	-3.34E-02	6.35E-01	-3.34E-02	3.49E-01	4.87E-01	-2.06E-03	4.24E-02	8.48E-01	-8.71E-02	3.58E-03	-3.02E-02	1.05E+00	2.09E-01	-2.43E-02	-1.03E-02	1.04E+00	1.99E-01	-1.01E-01	1.52E+00	9.02E-01
	3	-3.29E-02	6.31E-01	-3.29E-02	3.54E-01	4.86E-01	-2.04E-03	6.84E-02	8.22E-01	-8.12E-02	3.22E-03	-2.63E-03	1.01E+00	2.00E-01	1.30E-02	-3.04E-02	9.99E-01	1.74E-01	-6.87E-02	1.56E+00	8.35E-01
	4	-3.14E-02	6.15E-01	-3.14E-02	3.62E-01	4.77E-01	-1.95E-03	1.04E-01	7.82E-01	-7.36E-02	2.81E-03	3.80E-02	9.48E-01	1.85E-01	5.55E-02	-3.80E-02	9.41E-01	1.56E-01	-2.24E-02	1.61E+00	7.43E-01
	5	-3.26E-02	6.26E-01	-3.26E-02	3.61E-01	4.82E-01	-2.01E-03	6.53E-02	8.30E-01	-8.41E-02	3.44E-03	6.36E-03	1.00E+00	1.99E-01	2.32E-02	-3.40E-02	9.90E-01	1.70E-01	-5.77E-02	1.56E+00	8.27E-01
E5	1	-2.45E-02	6.50E-01	-2.45E-02	2.90E-01	5.41E-01	-1.51E-03	5.71E-02	8.15E-01	-6.63E-02	2.79E-03	7.80E-02	7.96E-01	8.96E-02	-1.65E-02	2.05E-01	8.09E-01	2.50E-01	3.62E-02	3.24E+00	2.73E-01
	2	-2.54E-02	6.55E-01	-2.54E-02	2.94E-01	5.42E-01	-1.56E-03	4.34E-02	8.38E-01	-7.14E-02	3.07E-03	6.64E-02	8.18E-01	9.56E-02	-2.45E-02	1.92E-01	8.38E-01	2.47E-01	2.16E-02	3.08E+00	2.97E-01
	3	-2.49E-02	6.51E-01	-2.49E-02	3.00E-01	5.41E-01	-1.53E-03	6.94E-02	8.12E-01	-6.55E-02	2.71E-03	8.67E-02	8.00E-01	9.13E-02	1.38E-02	1.79E-01	7.84E-01	2.11E-01	4.67E-02	3.19E+00	2.78E-01
	4	-2.34E-02	6.35E-01	-2.34E-02	3.08E-01	5.32E-01	-1.45E-03	1.05E-01	7.71E-01	-5.79E-02	2.30E-03	1.19E-01	7.61E-01	8.34E-02	5.68E-02	1.76E-01	7.18E-01	1.88E-01	8.51E-02	3.39E+00	2.45E-01
	5	-2.46E-02	6.46E-01	-2.46E-02	3.07E-01	5.37E-01	-1.51E-03	6.63E-02	8.20E-01	-6.84E-02	2.92E-03	9.39E-02	7.94E-01	9.08E-02	2.56E-02	1.74E-01	7.71E-01	2.04E-01	5.54E-02	3.20E+00	2.74E-01
E6	1	-2.88E-02	6.82E-01	-2.88E-02	2.89E-01	5.56E-01	-1.79E-03	4.83E-02	8.39E-01	-6.86E-02	2.65E-03	3.36E-02	8.84E-01	1.13E-01	-7.88E-03	1.04E-01	8.74E-01	1.75E-01	-1.54E-02	2.73E+00	3.69E-01
	2	-2.97E-02	6.88E-01	-2.97E-02	2.94E-01	5.57E-01	-1.84E-03	3.45E-02	8.62E-01	-7.37E-02	2.93E-03	2.11E-02	9.09E-01	1.20E-01	-1.79E-02	9.40E-02	9.05E-01	1.77E-01	-3.05E-02	2.62E+00	4.00E-01
	3	-2.92E-02	6.83E-01	-2.92E-02	2.99E-01	5.56E-01	-1.82E-03	6.06E-02	8.36E-01	-6.78E-02	2.57E-03	4.31E-02	8.88E-01	1.15E-01	1.92E-02	6.75E-02	8.73E-01	1.50E-01	-3.47E-03	2.70E+00	3.75E-01
	4	-2.77E-02	6.67E-01	-2.77E-02	3.07E-01	5.47E-01	-1.73E-03	9.57E-02	7.96E-01	-6.01E-02	2.16E-03	7.73E-02	8.44E-01	1.06E-01	6.16E-02	5.23E-02	8.25E-01	1.29E-01	3.69E-02	2.84E+00	3.34E-01
	5	-2.89E-02	6.79E-01	-2.89E-02	3.06E-01	5.52E-01	-1.79E-03	5.75E-02	8.44E-01	-7.07E-02	2.78E-03	5.05E-02	8.81E-01	1.14E-01	2.82E-02	6.51E-02	8.66E-01	1.47E-01	5.90E-03	2.70E+00	3.71E-01
E7	1	-3.08E-02	6.59E-01	-3.08E-02	3.10E-01	5.25E-01	-1.91E-03	5.23E-02	8.28E-01	-7.34E-02	2.84E-03	1.24E-02	9.28E-01	1.45E-01	-7.46E-03	4.35E-02	9.33E-01	1.75E-01	-4.61E-02	2.12E+00	5.24E-01
	2	-3.17E-02	6.65E-01	-3.17E-02	3.14E-01	5.26E-01	-1.96E-03	3.85E-02	8.51E-01	-7.85E-02	3.12E-03	-1.61E-03	9.58E-01	1.54E-01	-1.74E-02	3.36E-02	9.64E-01	1.78E-01	-6.23E-02	2.04E+00	5.69E-01
	3	-3.11E-02	6.61E-01	-3.11E-02	3.20E-01	5.25E-01	-1.94E-03	6.46E-02	8.25E-01	-7.26E-02	2.76E-03	2.27E-02	9.32E-01	1.47E-01	1.97E-02	7.51E-03	9.31E-01	1.52E-01	-3.25E-02	2.10E+00	5.30E-01
	4	-2.96E-02	6.45E-01	-2.96E-02	3.28E-01	5.16E-01	-1.85E-03	9.97E-02	7.84E-01	-6.49E-02	2.35E-03	5.97E-02	8.81E-01	1.36E-01	6.21E-02	-6.65E-03	8.82E-01	1.32E-01	1.08E-02	2.19E+00	4.72E-01
	5	-3.08E-02	6.56E-01	-3.08E-02	3.27E-01	5.21E-01	-1.91E-03	6.15E-02	8.33E-01	-7.55E-02	2.97E-03	3.08E-02	9.24E-01	1.46E-01	2.88E-02	5.02E-03	9.24E-01	1.49E-01	-2.23E-02	2.10E+00	5.24E-01
E8	1	-4.22E-02	7.02E-01	-4.22E-02	3.29E-01	5.21E-01	-2.65E-03	4.11E-02	8.60E-01	-8.19E-02	2.65E-03	-1.23E-01	1.31E+00	2.90E-01	4.36E-03	-3.46E-01	1.29E+00	9.68E-02	-1.83E-01	1.28E+00	1.43E+00
	2	-4.31E-02	7.08E-01	-4.31E-02	3.33E-01	5.22E-01	-2.70E-03	2.74E-02	8.82E-01	-8.69E-02	2.93E-03	-1.38E-01	1.36E+00	3.05E-01	-8.29E-03	-3.38E-01	1.30E+00	1.02E-01	-1.97E-01	1.25E+00	1.54E+00
	3	-4.25E-02	7.04E-01	-4.25E-02	3.38E-01	5.21E-01	-2.68E-03	5.34E-02	8.56E-01	-8.10E-02	2.57E-03	-1.08E-01	1.31E+00	2.92E-01	2.63E-02	-4.09E-01	1.33E+00	8.64E-02	-1.65E-01	1.27E+00	1.44E+00
	4	-4.10E-02	6.88E-01	-4.10E-02	3.47E-01	5.12E-01	-2.59E-03	8.86E-02	8.16E-01	-7.34E-02	2.16E-03	-6.62E-02	1.23E+00	2.75E-01	6.69E-02	-4.73E-01	1.34E+00	7.32E-02	-1.22E-01	1.29E+00	1.31E+00
	5	-4.22E-02	6.99E-01	-4.22E-02	3.45E-01	5.17E-01	-2.66E-03	5.03E-02	8.64E-01	-8.39E-02	2.78E-03	-9.80E-02	1.30E+00	2.91E-01	3.10E-02	-3.97E-01	1.32E+00	8.80E-02	-1.55E-01	1.26E+00	1.43E+00
		E7				E8				E9				E10				E11			
Generator Eq		a0	a1	a2	a4	a0	a1	a3	a4	a0	a1	a2	a4	a0	a1	a2	a3	a4	a0	a1	a2
E4	1	-2.38E-02	#####	2.70E+00	4.31E-01	#####	1.24E+00	-2.62E-01	3.00E+00	-3.94E-02	1.59E+00	-2.62E-02	1.02E+01	#####	3.16E-01	1.26E+00	#####	6.15E-01	1.81E-01	6.12E-01	#####
	2	-3.25E-02	#####	2.78E+00	4.31E-01	#####	1.26E+00	-2.70E-01	2.93E+00	-4.73E-02	1.62E+00	-2.78E-02	9.91E+00	#####	-6.09E-01	5.01E+00	1.48E-01	3.29E-01	1.75E-01	6.31E-01	#####
	3	5.61E-03	#####	3.16E+00	3.65E-01	#####	1.16E+00	-2.68E-01	2.10E+00	-1.71E-02	1.50E+00	-4.31E-02	6.39E+00	4.23E-03	-4.13E-02	2.68E+00	#####	3.91E-01	2.01E-01	6.12E-01	#####
	4	4.88E-02	#####	3.40E+00	3.20E-01	2.49E-02	1.08E+00	-2.58E-01	1.70E+00	2.02E-02	1.40E+00	-5.27E-02	5.05E+00	2.02E-02	1.40E+00	-5.27E-02	#####	5.05E+00	2.40E-01	5.66E-01	#####
	5	1.70E-02	#####	3.23E+00	3.53E-01	#####	1.15E+00	-2.66E-01	2.08E+00	-9.46E-03	1.49E+00	-4.20E-02	6.50E+00	5.22E-02	-4.24E+01	1.24E+03	1.88E+01	3.48E-02	2.14E-01	6.01E-01	#####
E5	1	-2.52E-02	1.28E-01	1.60E+00	5.83E-01	#####	1.30E+00	-1.96E-01	8.25E+00	-2.83E-02	1.68E+00	-3.35E-03	5.84E+01	#####	3.56E-01	9.67E-01	#####	7.66E-			

Table S.6.11 Fitting parameters, a_i , obtained by fitting equations **E1-E11** to kinetic data generated using equations **E4-E8** with $\Delta V_0^\ddagger = -25 \text{ cm}^3 \text{ mol}^{-1}$, $\Delta \beta_0^\ddagger = 10. \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-1}$, $\Delta \xi_0^\ddagger = -7.5 \text{ cm}^3 \text{ mol}^{-1} \text{ kbar}^{-2}$ over ² over pressure range of 0-10 kbar with 10% error.

	Fitted Equation	E1			E2			E3				E4			E5				E6		
Generator Eq	data set	a0	a1	a2	a0	a1	a3	a0	a1	a2	a3	a0	a3	a4	a0	a1	a3	a4	a0	a2	a4
E4	1	-3.26E-02	6.33E-01	-3.26E-02	3.26E-01	4.90E-01	-2.02E-03	4.70E-02	8.18E-01	-7.93E-02	3.11E-03	-2.90E-02	1.01E+00	1.94E-01	-3.04E-02	2.48E-03	1.01E+00	1.96E-01	-1.00E-01	1.60E+00	8.11E-01
	2	-3.45E-02	6.46E-01	-3.45E-02	3.33E-01	4.93E-01	-2.13E-03	1.72E-02	8.64E-01	-8.97E-02	3.68E-03	-6.31E-02	1.08E+00	2.18E-01	-5.06E-02	-2.14E-02	1.07E+00	1.97E-01	-1.36E-01	1.50E+00	9.62E-01
	3	-3.33E-02	6.36E-01	-3.33E-02	3.43E-01	4.91E-01	-2.07E-03	7.17E-02	8.10E-01	-7.72E-02	2.92E-03	-5.29E-03	1.01E+00	1.98E-01	2.61E-02	-6.92E-02	9.95E-01	1.48E-01	-6.85E-02	1.58E+00	8.19E-01
	4	-3.04E-02	6.04E-01	-3.04E-02	3.59E-01	4.73E-01	-1.91E-03	1.42E-01	7.29E-01	-6.17E-02	2.09E-03	7.25E-02	8.90E-01	1.70E-01	1.10E-01	-1.11E-01	9.12E-01	1.10E-01	2.08E-02	1.68E+00	6.48E-01
	5	-3.29E-02	6.28E-01	-3.29E-02	3.58E-01	4.83E-01	-2.03E-03	6.25E-02	8.31E-01	-8.40E-02	3.41E-03	9.63E-03	9.96E-01	1.98E-01	4.07E-02	-7.24E-02	9.86E-01	1.46E-01	-5.01E-02	1.56E+00	8.14E-01
E5	1	-2.46E-02	6.54E-01	-2.46E-02	2.72E-01	5.45E-01	-1.52E-03	4.80E-02	8.08E-01	-6.36E-02	2.60E-03	6.27E-02	7.98E-01	8.85E-02	-3.36E-02	2.08E-01	8.10E-01	2.51E-01	2.10E-02	3.29E+00	2.68E-01
	2	-2.64E-02	6.66E-01	-2.64E-02	2.78E-01	5.48E-01	-1.62E-03	1.82E-02	8.54E-01	-7.40E-02	3.17E-03	3.68E-02	8.43E-01	1.01E-01	-5.08E-02	1.82E-01	8.67E-01	2.43E-01	-1.12E-02	2.98E+00	3.20E-01
	3	-2.53E-02	6.56E-01	-2.53E-02	2.89E-01	5.45E-01	-1.57E-03	7.27E-02	7.99E-01	-6.15E-02	2.41E-03	7.97E-02	8.03E-01	9.16E-02	2.79E-02	1.48E-01	7.67E-01	1.73E-01	4.18E-02	3.21E+00	2.77E-01
	4	-2.24E-02	6.25E-01	-2.24E-02	3.04E-01	5.28E-01	-1.40E-03	1.43E-01	7.18E-01	-4.60E-02	1.58E-03	1.41E-01	7.30E-01	7.65E-02	1.14E-01	1.17E-01	6.66E-01	1.21E-01	1.14E-01	3.63E+00	2.16E-01
	5	-2.49E-02	6.48E-01	-2.49E-02	3.04E-01	5.38E-01	-1.53E-03	6.35E-02	8.20E-01	-6.83E-02	2.90E-03	9.18E-02	7.95E-01	9.14E-02	4.51E-02	1.41E-01	7.55E-01	1.67E-01	5.64E-02	3.19E+00	2.74E-01
E6	1	-2.89E-02	6.86E-01	-2.89E-02	2.71E-01	5.60E-01	-1.80E-03	3.92E-02	8.32E-01	-6.58E-02	2.46E-03	1.86E-02	8.85E-01	1.12E-01	-2.23E-02	1.03E-01	8.73E-01	1.71E-01	-3.07E-02	2.78E+00	3.64E-01
	2	-3.08E-02	6.98E-01	-3.08E-02	2.77E-01	5.63E-01	-1.91E-03	9.39E-03	8.78E-01	-7.62E-02	3.03E-03	-9.21E-03	9.37E-01	1.26E-01	-4.41E-02	8.25E-02	9.36E-01	1.76E-01	-6.38E-02	2.55E+00	4.28E-01
	3	-2.96E-02	6.89E-01	-2.96E-02	2.88E-01	5.60E-01	-1.85E-03	6.38E-02	8.24E-01	-6.37E-02	2.27E-03	3.71E-02	8.90E-01	1.15E-01	3.20E-02	1.73E-02	8.84E-01	1.22E-01	-6.95E-03	2.72E+00	3.72E-01
	4	-2.67E-02	6.57E-01	-2.67E-02	3.03E-01	5.43E-01	-1.69E-03	1.34E-01	7.42E-01	-4.82E-02	1.44E-03	1.02E-01	8.07E-01	9.80E-02	1.15E-01	-6.67E-02	8.49E-01	7.99E-02	6.98E-02	3.00E+00	2.97E-01
	5	-2.92E-02	6.81E-01	-2.92E-02	3.03E-01	5.53E-01	-1.81E-03	5.47E-02	8.45E-01	-7.05E-02	2.76E-03	4.97E-02	8.82E-01	1.15E-01	4.36E-02	2.08E-02	8.74E-01	1.24E-01	8.76E-03	2.70E+00	3.69E-01
E7	1	-3.09E-02	6.64E-01	-3.09E-02	2.92E-01	5.29E-01	-1.92E-03	4.32E-02	8.21E-01	-7.07E-02	2.65E-03	-2.35E-03	9.28E-01	1.43E-01	-2.19E-02	4.32E-02	9.32E-01	1.72E-01	-6.16E-02	2.16E+00	5.15E-01
	2	-3.27E-02	6.76E-01	-3.27E-02	2.98E-01	5.32E-01	-2.02E-03	1.34E-02	8.67E-01	-8.10E-02	3.22E-03	-3.31E-02	9.91E-01	1.61E-01	-4.37E-02	2.22E-02	9.95E-01	1.77E-01	-9.67E-02	1.99E+00	6.08E-01
	3	-3.16E-02	6.66E-01	-3.16E-02	3.09E-01	5.29E-01	-1.97E-03	6.78E-02	8.12E-01	-6.85E-02	2.46E-03	1.81E-02	9.32E-01	1.46E-01	3.25E-02	-4.11E-02	9.40E-01	1.26E-01	-3.43E-02	2.12E+00	5.24E-01
	4	-2.86E-02	6.35E-01	-2.86E-02	3.24E-01	5.12E-01	-1.81E-03	1.38E-01	7.31E-01	-5.30E-02	1.63E-03	8.87E-02	8.36E-01	1.25E-01	1.16E-01	-1.15E-01	8.94E-01	8.60E-02	4.85E-02	2.30E+00	4.16E-01
	5	-3.11E-02	6.58E-01	-3.11E-02	3.24E-01	5.22E-01	-1.93E-03	5.87E-02	8.33E-01	-7.53E-02	2.95E-03	3.15E-02	9.23E-01	1.46E-01	4.46E-02	-3.88E-02	9.31E-01	1.27E-01	-1.72E-02	2.10E+00	5.19E-01
E8	1	-4.23E-02	7.07E-01	-4.23E-02	3.10E-01	5.26E-01	-2.67E-03	3.20E-02	8.53E-01	-7.91E-02	2.46E-03	-1.38E-01	1.31E+00	2.86E-01	-6.78E-03	-3.66E-01	1.30E+00	9.22E-02	-1.99E-01	1.30E+00	1.40E+00
	2	-4.41E-02	7.19E-01	-4.41E-02	3.17E-01	5.29E-01	-2.77E-03	2.23E-03	8.98E-01	-8.95E-02	3.02E-03	-1.71E-01	1.40E+00	3.15E-01	-3.45E-02	-3.49E-01	1.34E+00	1.03E-01	-2.30E-01	1.24E+00	1.62E+00
	3	-4.30E-02	7.09E-01	-4.30E-02	3.27E-01	5.26E-01	-2.72E-03	5.67E-02	8.44E-01	-7.70E-02	2.27E-03	-1.09E-01	1.30E+00	2.89E-01	3.64E-02	-5.17E-01	1.41E+00	7.19E-02	-1.64E-01	1.28E+00	1.41E+00
	4	-4.00E-02	6.78E-01	-4.00E-02	3.43E-01	5.08E-01	-2.55E-03	1.27E-01	7.63E-01	-6.15E-02	1.43E-03	-2.77E-02	1.16E+00	2.56E-01	1.16E-01	-7.86E-01	1.57E+00	4.58E-02	-7.88E-02	1.32E+00	1.17E+00
	5	-4.25E-02	7.01E-01	-4.25E-02	3.42E-01	5.18E-01	-2.67E-03	4.75E-02	8.65E-01	-8.38E-02	2.75E-03	-9.14E-02	1.29E+00	2.89E-01	4.09E-02	-4.68E-01	1.36E+00	7.78E-02	-1.47E-01	1.26E+00	1.41E+00
		E7				E8				E9				E10				E11			
Generator Eq		a0	a1	a2	a4	a0	a1	a3	a4	a0	a1	a2	a4	a0	a1	a2	a3	a4	a0	a1	a2
E4	1	-4.06E-02	-1.08E-01	2.70E+00	4.31E-01	-5.17E-02	1.24E+00	-2.63E-01	2.91E+00	-5.44E-02	1.58E+00	-2.87E-02	9.34E+00	-5.47E-02	6.62E-01	5.18E-01	-1.88E-01	9.42E-01	1.48E-01	6.22E-01	-1.32E-01
	2	-5.93E-02	-1.41E-01	2.88E+00	4.28E-01	-6.85E-02	1.27E+00	-2.79E-01	2.70E+00	-7.16E-02	1.63E+00	-3.32E-02	8.60E+00	-5.39E-02	-5.75E-01	4.88E+00	1.33E-01	3.37E-01	1.31E-01	6.62E-01	-1.46E-01
	3	1.93E-02	-2.00E-01	3.85E+00	3.00E-01	-1.58E-03	1.07E+00	-2.79E-01	1.33E+00	-5.19E-03	1.41E+00	-8.17E-02	3.55E+00	5.43E-04	9.62E-01	9.01E-02	-2.68E-01	1.03E+00	1.85E-01	6.21E-01	-1.34E-01
	4	1.05E-01	-2.50E-01	5.04E+00	2.11E-01	8.81E-02	8.80E-01	-2.74E-01	6.59E-01	8.28E-02	1.20E+00	-1.83E-01	1.59E+00	8.28E-02	1.20E+00	-1.83E-01	-2.91E-01	1.59E+00	2.61E-01	5.30E-01	-1.08E-01
	5	3.65E-02	-2.08E-01	3.94E+00	2.90E-01	1.86E-02	1.04E+00	-2.78E-01	1.18E+00	1.08E-02	1.39E+00	-8.43E-02	3.42E+00	6.22E-02	-3.43E+04	3.13E+07	1.71E+04	1.10E-03	2.10E-01	6.04E-01	-1.30E-01
E5	1	-4.34E-02	1.32E-01	1.59E+00	5.90E-01	-3.6															

S.6 Explicit expressions for E4-E9 in their El’yanov-Gonikberg format

For consistency with eqs (3) function $\Phi(P)$ of eq (12) has to be presentable as

$$\Phi(P) = b_1P + b_2f(P) + b_3Pf(P) \tag{S.1}$$

where $f(P)$ is described by eq (4) with nonlinear parameter a_4 . Linear coefficients b_i of eq (S.1) can be obtained from the corresponding coefficients a_i of eq (3) by scaling:

$b_i = -a_iRT/\Delta V_0^\ddagger$. Condition $d\Phi/dP=1$ at $P=0$ translates into a constraint on b_i , specific forms of which for equations **E4-E8** are listed in Table together with their explicit expressions for these equations in El’yanov-Gonikberg format.

Table S.6 *Constraints on parameters b_i of function $\Phi(P)$ stipulated by the condition $d\Phi/dP=1$ at $P=0$ for empirical equations **E4-E8** and their explicit expressions in El’yanov-Gonikberg form (eqs. 12 and S.1).*

	Constraints	Equations
E4	$b_3 = 1$	$\ln k / k_0 = \left(-\frac{\Delta V_0^\ddagger}{RT}\right)P/(1+a_4P)$
E5	$b_1 = 1-b_3$	$\ln k / k_0 = \left(-\frac{\Delta V_0^\ddagger}{RT}\right)((1-b_3)+b_3P/(1+a_4P))$
E6	$b_2 = 1/a_4$	$\ln k / k_0 = \left(-\frac{\Delta V_0^\ddagger}{RT}\right)\left(\frac{\ln(1+a_4P)}{a_4}\right)$
E7	$b_1 = 1-b_2a_4$	$\ln k / k_0 = \left(-\frac{\Delta V_0^\ddagger}{RT}\right)((1-b_2a_4)P+b_2\ln(1+a_4P))$
E8	$b_1 = 1$	$\ln k / k_0 = \left(-\frac{\Delta V_0^\ddagger}{RT}\right)(P+b_3P\ln(1+a_4P))$