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SUPPLEMENTARY MATERIAL TO

Modeling of density and calculations of derived volumetric properties for *n*-hexane, toluene and dichloromethane at pressures 0.1–60 MPa and temperatures 288.15–413.15 K

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TABLE S-I. Calculated derived volumetric properties of *n*-hexane at different temperatures (288.15–413.15 K) and pressures (0.1–60 MPa)

p / MPa	κ_T GPa^{-1}	$\alpha_p\times10^3$ K^{-1}	C_p–C_V kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p\times10^3$ K^{-1}	C_p–C_V kJ kg^{-1} K^{-1}	p_{int} MPa
	288.15 K				293.15 K			
0.1	1.5076	1.2820	0.4731	244.9	1.5748	1.3124	0.4861	244.2
1	1.4865	1.2705	0.4706	245.3	1.5518	1.3000	0.4833	244.6
5	1.4000	1.2234	0.4606	246.8	1.4573	1.2493	0.4725	246.3
10	1.3057	1.1720	0.4502	248.6	1.3550	1.1943	0.4612	248.4
15	1.2238	1.1275	0.4417	250.5	1.2666	1.1470	0.4520	250.5
20	1.1521	1.0885	0.4348	252.3	1.1896	1.1057	0.4445	252.5
25	1.0887	1.0541	0.4292	254.0	1.1219	1.0694	0.4384	254.4
30	1.0322	1.0236	0.4246	255.8	1.0618	1.0372	0.4334	256.4
35	0.9815	0.9962	0.4208	257.5	1.0081	1.0084	0.4293	258.2
40	0.9359	0.9716	0.4179	259.2	0.9598	0.9826	0.4261	260.1
45	0.8945	0.9493	0.4155	260.8	0.9162	0.9592	0.4234	261.9
50	0.8568	0.9291	0.4137	262.5	0.8766	0.9380	0.4214	263.7
55	0.8223	0.9106	0.4123	264.1	0.8404	0.9187	0.4198	265.5
60	0.7906	0.8936	0.4113	265.7	0.8072	0.9010	0.4185	267.2
	298.15 K				303.15 K			
0.1	1.6475	1.3433	0.4985	243.0	1.7259	1.3749	0.5104	241.4
1	1.6221	1.3300	0.4956	243.4	1.6981	1.3605	0.5072	241.9
5	1.5188	1.2754	0.4837	245.4	1.5847	1.3018	0.4943	244.0
10	1.4075	1.2166	0.4715	247.7	1.4636	1.2389	0.4811	246.6
15	1.3121	1.1662	0.4616	250.0	1.3604	1.1852	0.4703	249.1
20	1.2294	1.1225	0.4535	252.2	1.2714	1.1388	0.4615	251.5
25	1.1569	1.0841	0.4468	254.4	1.1939	1.0983	0.4544	253.9

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TABLE S-I. Continued

p / MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa
	298.15 K				303.15 K			
30	1.0930	1.0502	0.4414	256.5	1.1257	1.0626	0.4485	256.1
35	1.0360	1.0200	0.4370	258.5	1.0653	1.0309	0.4436	258.4
40	0.9849	0.9929	0.4333	260.6	1.0112	1.0025	0.4397	260.5
45	0.9389	0.9684	0.4304	262.5	0.9627	0.9769	0.4364	262.6
50	0.8972	0.9463	0.4281	264.4	0.9188	0.9537	0.4338	264.6
55	0.8593	0.9261	0.4262	266.3	0.8790	0.9326	0.4316	266.6
60	0.8245	0.9076	0.4248	268.2	0.8426	0.9133	0.4299	268.6
	308.15 K				313.15 K			
0.1	1.8108	1.4072	0.5217	239.4	1.9028	1.4401	0.5323	236.9
1	1.7801	1.3916	0.5182	239.9	1.8687	1.4232	0.5284	237.5
5	1.6555	1.3283	0.5042	242.2	1.7316	1.3551	0.5132	240.1
10	1.5234	1.2610	0.4898	245.1	1.5873	1.2829	0.4977	243.1
15	1.4117	1.2038	0.4782	247.8	1.4661	1.2221	0.4852	246.0
20	1.3159	1.1547	0.4687	250.4	1.3629	1.1700	0.4750	248.8
25	1.2329	1.1119	0.4610	252.9	1.2740	1.1249	0.4666	251.5
30	1.1602	1.0743	0.4546	255.3	1.1964	1.0854	0.4597	254.1
35	1.0960	1.0410	0.4493	257.7	1.1281	1.0504	0.4540	256.6
40	1.0388	1.0113	0.4450	260.0	1.0676	1.0193	0.4493	259.0
45	0.9876	0.9845	0.4414	262.2	1.0136	0.9913	0.4453	261.3
50	0.9414	0.9603	0.4384	264.3	0.9650	0.9660	0.4420	263.5
55	0.8996	0.9383	0.4360	266.4	0.9211	0.9431	0.4392	265.6
60	0.8615	0.9182	0.4340	268.4	0.8811	0.9221	0.4369	267.7
	318.15 K				323.15 K			
0.1	2.0024	1.4738	0.5422	234.1	2.1105	1.5083	0.5513	230.8
1	1.9646	1.4555	0.5380	234.7	2.0685	1.4885	0.5468	231.5
5	1.8134	1.3820	0.5215	237.5	1.9013	1.4091	0.5289	234.5
10	1.6555	1.3047	0.5047	240.7	1.7282	1.3263	0.5108	238.0
15	1.5239	1.2400	0.4913	243.9	1.5853	1.2574	0.4963	241.3
20	1.4127	1.1848	0.4803	246.8	1.4652	1.1991	0.4846	244.5
25	1.3172	1.1372	0.4713	249.7	1.3627	1.1489	0.4749	247.4
30	1.2344	1.0957	0.4639	252.4	1.2743	1.1052	0.4669	250.3
35	1.1619	1.0590	0.4577	255.0	1.1972	1.0668	0.4602	253.0
40	1.0978	1.0264	0.4525	257.5	1.1293	1.0327	0.4546	255.5
45	1.0407	0.9972	0.4481	259.9	1.0690	1.0022	0.4498	258.0
50	0.9895	0.9708	0.4444	262.1	1.0151	0.9747	0.4457	260.3
55	0.9434	0.9469	0.4413	264.3	0.9667	0.9498	0.4421	262.5
60	0.9016	0.9251	0.4386	266.4	0.9229	0.9271	0.4391	264.6
	328.15 K				333.15 K			
0.1	2.2279	1.5436	0.5597	227.3	2.3555	1.5797	0.5672	223.3
1	2.1811	1.5220	0.5547	228.0	2.3032	1.5563	0.5618	224.1
5	1.9958	1.4363	0.5354	231.2	2.0974	1.4637	0.5410	227.5
10	1.8059	1.3477	0.5160	234.9	1.8887	1.3688	0.5201	231.4
15	1.6504	1.2744	0.5005	238.4	1.7194	1.2909	0.5035	235.1
20	1.5206	1.2126	0.4879	241.7	1.5791	1.2256	0.4901	238.6

TABLE S-I. Continued

p / MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa
	328.15 K				333.15 K			
25	1.4106	1.1598	0.4775	244.8	1.4610	1.1699	0.4791	241.8
30	1.3162	1.1139	0.4689	247.7	1.3600	1.1218	0.4698	244.8
35	1.2341	1.0737	0.4617	250.5	1.2727	1.0798	0.4621	247.6
40	1.1622	1.0381	0.4556	253.1	1.1965	1.0426	0.4555	250.3
45	1.0985	1.0063	0.4503	255.6	1.1293	1.0094	0.4498	252.8
50	1.0418	0.9776	0.4458	257.9	1.0696	0.9796	0.4448	255.1
55	0.9909	0.9517	0.4419	260.2	1.0161	0.9527	0.4404	257.3
60	0.9451	0.9281	0.4384	262.3	0.9681	0.9281	0.4365	259.4
	343.15 K				353.15 K			
0.1	–	–	–	–	–	–	–	–
1	2.5795	1.6270	0.5737	215.4	2.9053	1.7008	0.5824	205.7
5	2.3243	1.5189	0.5496	219.2	2.5865	1.5747	0.5547	210.0
10	2.0712	1.4102	0.5258	223.6	2.2780	1.4504	0.5279	214.8
15	1.8698	1.3223	0.5070	227.7	2.0380	1.3517	0.5069	219.2
20	1.7057	1.2495	0.4918	231.4	1.8457	1.2710	0.4901	223.2
25	1.5692	1.1881	0.4793	234.8	1.6880	1.2035	0.4762	226.8
30	1.4539	1.1353	0.4689	238.0	1.5563	1.1460	0.4646	230.0
35	1.3551	1.0894	0.4600	240.9	1.4445	1.0962	0.4546	233.0
40	1.2695	1.0491	0.4523	243.6	1.3485	1.0526	0.4460	235.7
45	1.1945	1.0132	0.4457	246.0	1.2649	1.0139	0.4383	238.1
50	1.1284	0.9810	0.4397	248.3	1.1917	0.9794	0.4314	240.2
55	1.0695	0.9519	0.4344	250.4	1.1268	0.9482	0.4250	242.2
60	1.0167	0.9255	0.4296	252.4	1.0690	0.9199	0.4191	243.9
	363.15 K				373.15 K			
0.1	–	–	–	–	–	–	–	–
1	3.2895	1.7780	0.5880	195.3	3.7416	1.8588	0.5908	184.4
5	2.8887	1.6312	0.5569	200.1	3.2350	1.6889	0.5567	189.8
10	2.5115	1.4899	0.5272	205.4	2.7730	1.5294	0.5248	195.8
15	2.2250	1.3797	0.5043	210.2	2.4311	1.4075	0.5004	201.0
20	1.9996	1.2908	0.4860	214.4	2.1674	1.3106	0.4810	205.6
25	1.8175	1.2172	0.4709	218.2	1.9576	1.2310	0.4650	209.6
30	1.6672	1.1549	0.4581	221.6	1.7866	1.1641	0.4515	213.1
35	1.5410	1.1013	0.4472	224.5	1.6443	1.1068	0.4397	216.2
40	1.4333	1.0544	0.4376	227.2	1.5240	1.0569	0.4293	218.8
45	1.3405	1.0131	0.4289	229.5	1.4209	1.0129	0.4199	221.0
50	1.2594	0.9761	0.4211	231.5	1.3316	0.9737	0.4112	222.9
55	1.1881	0.9428	0.4139	233.2	1.2534	0.9384	0.4031	224.4
60	1.1249	0.9126	0.4070	234.6	1.1843	0.9064	0.3954	225.6
	393.15 K				413.15 K			
0.1	–	–	–	–	–	–	–	–
1	4.8826	2.0327	0.5933	162.7	6.3497	2.2256	0.6007	143.8
5	4.0695	1.8125	0.5565	170.1	5.0723	1.9659	0.5741	155.1
10	3.3798	1.6174	0.5238	178.1	4.0732	1.7491	0.5529	167.4
15	2.8978	1.4744	0.4995	185.0	3.4155	1.5959	0.5382	178.0

TABLE S-I. Continued

p / MPa	κ_T GPa^{-1}	$\alpha_p\times10^3$ K^{-1}	c_p–c_v kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p\times10^3$ K^{-1}	c_p–c_v kJ kg^{-1} K^{-1}	p_{int} MPa
	393.15 K				413.15 K			
20	2.5412	1.3635	0.4805	190.9	2.9484	1.4795	0.5270	187.3
25	2.2662	1.2740	0.4648	196.0	2.5988	1.3866	0.5177	195.4
30	2.0474	1.1997	0.4514	200.4	2.3269	1.3097	0.5097	202.6
35	1.8690	1.1365	0.4395	204.1	2.1090	1.2445	0.5023	208.8
40	1.7206	1.0816	0.4288	207.2	1.9304	1.1878	0.4953	214.2
45	1.5951	1.0334	0.4189	209.7	1.7811	1.1379	0.4883	219.0
50	1.4876	0.9905	0.4094	211.8	1.6545	1.0933	0.4812	223.0
55	1.3944	0.9518	0.4003	213.3	1.5456	1.0530	0.4738	226.5
60	1.3128	0.9166	0.3914	214.5	1.4509	1.0163	0.4660	229.4

TABLE S-II. Calculated derived volumetric properties of toluene at different temperatures (288.15–413.15 K) and pressures (0.1–60 MPa)

p / MPa	κ_T GPa^{-1}	$\alpha_p\times10^3$ K^{-1}	C_p–C_V kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p\times10^3$ K^{-1}	C_p–C_V kJ kg^{-1} K^{-1}	p_{int} MPa
	288.15 K				293.15 K			
0.1	0.8424	1.0426	0.4267	356.5	0.8715	1.0553	0.4321	354.9
1	0.8359	1.0375	0.4255	356.7	0.8645	1.0499	0.4309	355.0
5	0.8084	1.0161	0.4206	357.2	0.8350	1.0272	0.4256	355.6
10	0.7766	0.9913	0.4151	357.8	0.8010	1.0011	0.4197	356.4
15	0.7473	0.9685	0.4102	358.4	0.7697	0.9771	0.4145	357.1
20	0.7203	0.9474	0.4058	359.0	0.7410	0.9551	0.4098	357.9
25	0.6952	0.9280	0.4019	359.6	0.7144	0.9347	0.4056	358.6
30	0.6719	0.9099	0.3985	360.2	0.6897	0.9158	0.4019	359.3
35	0.6502	0.8931	0.3954	360.8	0.6668	0.8983	0.3986	359.9
40	0.6300	0.8775	0.3927	361.4	0.6454	0.8820	0.3957	360.6
45	0.6110	0.8628	0.3902	361.9	0.6254	0.8667	0.3931	361.3
50	0.5932	0.8491	0.3881	362.5	0.6067	0.8525	0.3908	361.9
55	0.5764	0.8362	0.3863	363.0	0.5891	0.8391	0.3887	362.5
60	0.5606	0.8241	0.3846	363.6	0.5726	0.8265	0.3870	363.1
	298.15 K				303.15 K			
0.1	0.9023	1.0681	0.4373	352.9	0.9349	1.0812	0.4420	350.5
1	0.8948	1.0625	0.4359	353.0	0.9268	1.0752	0.4406	350.7
5	0.8631	1.0385	0.4303	353.7	0.8927	1.0498	0.4346	351.5
10	0.8266	1.0109	0.4240	354.6	0.8537	1.0208	0.4278	352.5
15	0.7933	0.9857	0.4183	355.5	0.8180	0.9943	0.4218	353.5
20	0.7626	0.9626	0.4133	356.3	0.7854	0.9700	0.4164	354.4
25	0.7344	0.9413	0.4089	357.1	0.7554	0.9477	0.4117	355.3
30	0.7083	0.9216	0.4049	357.9	0.7277	0.9271	0.4074	356.2
35	0.6840	0.9033	0.4014	358.7	0.7020	0.9080	0.4037	357.1
40	0.6615	0.8863	0.3982	359.5	0.6782	0.8903	0.4003	358.0
45	0.6405	0.8704	0.3954	360.2	0.6561	0.8738	0.3973	358.8
50	0.6208	0.8556	0.3930	360.9	0.6354	0.8585	0.3947	359.6
55	0.6023	0.8417	0.3908	361.6	0.6160	0.8441	0.3923	360.4
60	0.5850	0.8287	0.3889	362.3	0.5979	0.8305	0.3903	361.1

TABLE S-II. Continued

p / MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa
	308.15 K				313.15 K			
0.1	0.9694	1.0944	0.4464	347.8	1.0060	1.1079	0.4505	344.8
1	0.9607	1.0881	0.4449	348.0	0.9966	1.1012	0.4488	345.0
5	0.9240	1.0613	0.4384	348.9	0.9571	1.0728	0.4419	346.0
10	0.8821	1.0307	0.4312	350.1	0.9120	1.0405	0.4342	347.3
15	0.8440	1.0028	0.4248	351.1	0.8712	1.0112	0.4274	348.5
20	0.8092	0.9773	0.4191	352.2	0.8341	0.9846	0.4214	349.6
25	0.7773	0.9540	0.4141	353.2	0.8002	0.9601	0.4160	350.8
30	0.7479	0.9325	0.4096	354.2	0.7690	0.9377	0.4112	351.8
35	0.7208	0.9126	0.4055	355.2	0.7403	0.9170	0.4070	352.9
40	0.6956	0.8942	0.4020	356.1	0.7137	0.8978	0.4031	353.9
45	0.6723	0.8770	0.3988	357.0	0.6891	0.8800	0.3997	354.9
50	0.6505	0.8611	0.3959	357.9	0.6663	0.8634	0.3967	355.8
55	0.6302	0.8461	0.3934	358.7	0.6449	0.8480	0.3940	356.7
60	0.6112	0.8322	0.3912	359.5	0.6250	0.8335	0.3916	357.6
	318.15 K				323.15 K			
0.1	1.0448	1.1215	0.4541	341.4	1.0859	1.1354	0.4574	337.8
1	1.0347	1.1144	0.4524	341.7	1.0749	1.1279	0.4556	338.1
5	0.9920	1.0845	0.4451	342.8	1.0288	1.0962	0.4478	339.3
10	0.9436	1.0504	0.4369	344.2	0.9767	1.0603	0.4391	340.8
15	0.8999	1.0196	0.4296	345.5	0.9299	1.0280	0.4314	342.2
20	0.8602	0.9917	0.4232	346.8	0.8875	0.9986	0.4247	343.6
25	0.8241	0.9661	0.4175	348.0	0.8490	0.9719	0.4186	344.9
30	0.7910	0.9427	0.4125	349.2	0.8139	0.9475	0.4133	346.2
35	0.7606	0.9211	0.4079	350.3	0.7817	0.9251	0.4085	347.4
40	0.7326	0.9012	0.4039	351.4	0.7521	0.9043	0.4042	348.6
45	0.7066	0.8827	0.4003	352.4	0.7248	0.8852	0.4004	349.7
50	0.6825	0.8655	0.3971	353.4	0.6994	0.8674	0.3970	350.8
55	0.6601	0.8495	0.3942	354.4	0.6759	0.8508	0.3939	351.8
60	0.6392	0.8345	0.3916	355.4	0.6540	0.8353	0.3912	352.8
	328.15 K				333.15 K			
0.1	1.1295	1.1495	0.4604	333.9	1.1757	1.1638	0.4629	329.7
1	1.1176	1.1415	0.4584	334.2	1.1628	1.1554	0.4608	330.0
5	1.0677	1.1080	0.4501	335.5	1.1088	1.1199	0.4521	331.5
10	1.0116	1.0702	0.4409	337.1	1.0483	1.0801	0.4424	333.2
15	0.9614	1.0362	0.4328	338.7	0.9944	1.0444	0.4338	334.9
20	0.9161	1.0055	0.4257	340.2	0.9460	1.0123	0.4263	336.5
25	0.8751	0.9776	0.4193	341.6	0.9023	0.9832	0.4196	338.0
30	0.8378	0.9522	0.4137	342.9	0.8627	0.9566	0.4137	339.4
35	0.8037	0.9288	0.4086	344.2	0.8265	0.9324	0.4084	340.8
40	0.7724	0.9073	0.4041	345.5	0.7934	0.9101	0.4037	342.1
45	0.7435	0.8874	0.4001	346.7	0.7630	0.8895	0.3994	343.4
50	0.7169	0.8690	0.3965	347.8	0.7349	0.8704	0.3956	344.6
55	0.6922	0.8519	0.3932	348.9	0.7090	0.8527	0.3922	345.7
60	0.6692	0.8359	0.3904	349.9	0.6849	0.8362	0.3892	346.8

TABLE S-II. Continued

p / MPa	κ_T GPa^{-1}	$\alpha_p\times10^3$ K^{-1}	c_p–c_v kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p\times10^3$ K^{-1}	c_p–c_v kJ kg^{-1} K^{-1}	p_{int} MPa
	343.15 K				353.15 K			
0.1	1.2766	1.1932	0.4671	320.6	1.3897	1.2235	0.4698	310.8
1	1.2613	1.1837	0.4647	321.0	1.3716	1.2128	0.4672	311.3
5	1.1979	1.1441	0.4549	322.7	1.2969	1.1687	0.4564	313.2
10	1.1275	1.0999	0.4441	324.8	1.2147	1.1199	0.4446	315.6
15	1.0652	1.0607	0.4347	326.7	1.1428	1.0769	0.4344	317.8
20	1.0098	1.0256	0.4265	328.5	1.0793	1.0386	0.4255	319.8
25	0.9601	0.9939	0.4192	330.2	1.0228	1.0043	0.4177	321.8
30	0.9154	0.9652	0.4127	331.8	0.9721	0.9734	0.4107	323.6
35	0.8748	0.9390	0.4070	333.4	0.9265	0.9453	0.4045	325.3
40	0.8378	0.9151	0.4018	334.8	0.8852	0.9197	0.3990	326.9
45	0.8039	0.8931	0.3972	336.2	0.8476	0.8962	0.3940	328.4
50	0.7729	0.8727	0.3930	337.5	0.8132	0.8746	0.3895	329.8
55	0.7442	0.8539	0.3892	338.7	0.7816	0.8547	0.3854	331.2
60	0.7177	0.8363	0.3857	339.9	0.7525	0.8361	0.3816	332.4
	363.15 K				373.15 K			
0.1	1.5165	1.2548	0.4715	300.4	1.6579	1.2871	0.4724	289.6
1	1.4950	1.2429	0.4686	300.9	1.6323	1.2739	0.4691	290.2
5	1.4067	1.1939	0.4569	303.2	1.5278	1.2197	0.4566	292.9
10	1.3106	1.1401	0.4442	305.9	1.4153	1.1608	0.4432	296.1
15	1.2273	1.0931	0.4333	308.4	1.3190	1.1099	0.4317	299.0
20	1.1545	1.0517	0.4238	310.8	1.2355	1.0652	0.4219	301.7
25	1.0902	1.0147	0.4155	313.0	1.1624	1.0257	0.4132	304.2
30	1.0330	0.9816	0.4082	315.1	1.0979	0.9904	0.4057	306.6
35	0.9818	0.9516	0.4016	317.0	1.0405	0.9586	0.3989	308.8
40	0.9357	0.9244	0.3958	318.8	0.9891	0.9299	0.3929	310.8
45	0.8939	0.8995	0.3905	320.4	0.9428	0.9037	0.3875	312.7
50	0.8559	0.8767	0.3857	322.0	0.9008	0.8797	0.3825	314.4
55	0.8211	0.8557	0.3814	323.4	0.8625	0.8577	0.3780	316.0
60	0.7892	0.8362	0.3773	324.8	0.8276	0.8373	0.3738	317.5
	393.15 K				413.15 K			
0.1	–	–	–	–	–	–	–	–
1	1.9514	1.3389	0.4688	268.8	2.3272	1.4084	0.4700	249.0
5	1.8049	1.2743	0.4557	272.6	2.1243	1.3352	0.4587	254.7
10	1.6513	1.2055	0.4419	277.0	1.9175	1.2589	0.4472	261.2
15	1.5229	1.1470	0.4304	281.1	1.7491	1.1954	0.4379	267.4
20	1.4139	1.0965	0.4206	284.9	1.6090	1.1413	0.4303	273.1
25	1.3201	1.0524	0.4122	288.4	1.4907	1.0947	0.4239	278.4
30	1.2385	1.0135	0.4048	291.7	1.3894	1.0538	0.4185	283.3
35	1.1669	0.9788	0.3983	294.8	1.3017	1.0176	0.4138	288.0
40	1.1035	0.9475	0.3926	297.6	1.2248	0.9852	0.4096	292.3
45	1.0470	0.9192	0.3874	300.2	1.1570	0.9560	0.4059	296.4
50	0.9963	0.8935	0.3826	302.6	1.0967	0.9295	0.4025	300.2
55	0.9505	0.8698	0.3783	304.8	1.0426	0.9052	0.3994	303.7
60	0.9089	0.8481	0.3742	306.8	0.9939	0.8829	0.3965	307.0

TABLE S-III. Calculated derived volumetric properties of dichloromethane at different temperatures (288.15–413.15 K) and pressures (0.1–60 MPa)

p / MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	C_p–C_V kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	C_p–C_V kJ kg^{-1} K^{-1}	p_{int} MPa
	288.15 K				293.15 K			
0.1	0.9766	1.3065	0.3774	385.4	1.0154	1.3370	0.3894	385.9
1	0.9690	1.2999	0.3762	385.5	1.0071	1.3298	0.3881	386.1
5	0.9368	1.2717	0.3711	386.2	0.9720	1.2993	0.3824	386.9
10	0.8996	1.2394	0.3654	387.0	0.9316	1.2645	0.3761	387.9
15	0.8654	1.2099	0.3604	387.9	0.8945	1.2329	0.3706	389.0
20	0.8339	1.1830	0.3561	388.8	0.8605	1.2040	0.3659	390.2
25	0.8047	1.1583	0.3523	389.8	0.8291	1.1776	0.3617	391.4
30	0.7776	1.1356	0.3491	390.9	0.8001	1.1534	0.3581	392.6
35	0.7523	1.1147	0.3463	391.9	0.7731	1.1311	0.3550	393.9
40	0.7288	1.0954	0.3439	393.1	0.7480	1.1105	0.3523	395.2
45	0.7068	1.0774	0.3419	394.3	0.7246	1.0914	0.3501	396.6
50	0.6861	1.0608	0.3402	395.5	0.7027	1.0737	0.3482	398.0
55	0.6667	1.0453	0.3389	396.8	0.6821	1.0573	0.3466	399.4
60	0.6484	1.0308	0.3378	398.1	0.6628	1.0420	0.3453	400.9
	298.15 K				303.15 K			
0.1	1.0575	1.3681	0.4010	385.6	1.1033	1.3999	0.4121	384.6
1	1.0485	1.3603	0.3995	385.8	1.0933	1.3914	0.4104	384.8
5	1.0100	1.3273	0.3932	386.8	1.0511	1.3557	0.4035	386.0
10	0.9660	1.2898	0.3863	388.1	1.0031	1.3151	0.3959	387.5
15	0.9258	1.2557	0.3803	389.4	0.9594	1.2785	0.3893	389.0
20	0.8890	1.2248	0.3750	390.7	0.9196	1.2453	0.3835	390.5
25	0.8552	1.1965	0.3704	392.1	0.8832	1.2151	0.3784	392.1
30	0.8241	1.1707	0.3664	393.6	0.8497	1.1875	0.3741	393.7
35	0.7952	1.1469	0.3630	395.0	0.8187	1.1621	0.3702	395.3
40	0.7684	1.1250	0.3600	396.5	0.7901	1.1388	0.3669	396.9
45	0.7435	1.1047	0.3575	398.0	0.7635	1.1173	0.3641	398.6
50	0.7202	1.0860	0.3553	399.6	0.7388	1.0974	0.3616	400.3
55	0.6984	1.0685	0.3535	401.2	0.7157	1.0790	0.3596	402.0
60	0.6780	1.0523	0.3520	402.8	0.6941	1.0618	0.3579	403.8
	308.15 K				313.15 K			
0.1	1.1529	1.4323	0.4226	382.7	1.2069	1.4654	0.4326	380.1
1	1.1419	1.4231	0.4208	383.0	1.1948	1.4553	0.4306	380.4
5	1.0956	1.3843	0.4132	384.4	1.1437	1.4133	0.4222	382.0
10	1.0430	1.3405	0.4049	386.0	1.0861	1.3660	0.4131	383.9
15	0.9955	1.3011	0.3976	387.8	1.0343	1.3236	0.4051	385.8
20	0.9524	1.2655	0.3912	389.5	0.9874	1.2855	0.3981	387.7
25	0.9130	1.2332	0.3857	391.2	0.9449	1.2509	0.3921	389.6
30	0.8770	1.2038	0.3808	393.0	0.9060	1.2194	0.3868	391.5
35	0.8438	1.1768	0.3766	394.8	0.8704	1.1907	0.3822	393.4
40	0.8132	1.1520	0.3730	396.5	0.8377	1.1644	0.3781	395.3
45	0.7848	1.1292	0.3698	398.3	0.8074	1.1402	0.3746	397.2
50	0.7585	1.1081	0.3670	400.2	0.7794	1.1178	0.3715	399.1
55	0.7340	1.0885	0.3647	402.0	0.7534	1.0972	0.3688	401.0

TABLE S-III. Continued

p / MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa
	308.15 K				313.15 K			
60	0.7111	1.0704	0.3627	403.8	0.7291	1.0780	0.3665	403.0
	318.15 K				323.15 K			
0.1	–	–	–	–	–	–	–	–
1	1.2522	1.4882	0.4398	377.1	1.3147	1.5218	0.4482	373.1
5	1.1959	1.4427	0.4306	378.8	1.2523	1.4723	0.4382	374.9
10	1.1325	1.3915	0.4205	380.9	1.1826	1.4171	0.4272	377.2
15	1.0759	1.3459	0.4118	383.0	1.1206	1.3680	0.4177	379.5
20	1.0250	1.3050	0.4042	385.1	1.0652	1.3241	0.4094	381.7
25	0.9789	1.2680	0.3976	387.1	1.0152	1.2846	0.4022	383.9
30	0.9370	1.2345	0.3918	389.2	0.9700	1.2489	0.3959	386.1
35	0.8988	1.2040	0.3868	391.2	0.9288	1.2164	0.3904	388.2
40	0.8637	1.1760	0.3823	393.2	0.8912	1.1868	0.3855	390.3
45	0.8314	1.1503	0.3784	395.2	0.8567	1.1596	0.3812	392.4
50	0.8015	1.1267	0.3750	397.2	0.8249	1.1346	0.3774	394.5
55	0.7739	1.1048	0.3719	399.2	0.7955	1.1115	0.3740	396.5
60	0.7482	1.0845	0.3693	401.2	0.7682	1.0901	0.3710	398.5
	328.15 K				333.15 K			
0.1	–	–	–	–	–	–	–	–
1	1.3827	1.5561	0.4559	368.3	1.4567	1.5910	0.4629	362.9
5	1.3135	1.5023	0.4450	370.3	1.3797	1.5327	0.4510	365.1
10	1.2366	1.4426	0.4330	372.8	1.2948	1.4681	0.4380	367.8
15	1.1687	1.3898	0.4227	375.3	1.2202	1.4114	0.4268	370.4
20	1.1082	1.3428	0.4137	377.6	1.1542	1.3610	0.4171	372.9
25	1.0540	1.3006	0.4059	379.9	1.0953	1.3160	0.4086	375.3
30	1.0051	1.2626	0.3990	382.2	1.0424	1.2756	0.4012	377.7
35	0.9608	1.2281	0.3930	384.5	0.9947	1.2390	0.3947	380.0
40	0.9204	1.1967	0.3877	386.6	0.9513	1.2057	0.3888	382.2
45	0.8835	1.1679	0.3829	388.8	0.9118	1.1753	0.3837	384.4
50	0.8496	1.1415	0.3787	390.9	0.8756	1.1474	0.3791	386.5
55	0.8183	1.1171	0.3750	393.0	0.8424	1.1217	0.3749	388.6
60	0.7894	1.0945	0.3716	395.0	0.8117	1.0979	0.3712	390.6
	343.15 K				353.15 K			
0.1	–	–	–	–	–	–	–	–
1	1.6251	1.6632	0.4746	350.2	1.8248	1.7386	0.4834	335.5
5	1.5292	1.5944	0.4606	352.8	1.7044	1.6576	0.4671	338.4
10	1.4250	1.5191	0.4454	355.8	1.5756	1.5701	0.4497	341.9
15	1.3347	1.4537	0.4325	358.7	1.4657	1.4950	0.4349	345.2
20	1.2557	1.3961	0.4212	361.5	1.3710	1.4295	0.4221	348.2
25	1.1860	1.3450	0.4114	364.2	1.2883	1.3719	0.4110	351.1
30	1.1240	1.2994	0.4028	366.7	1.2155	1.3208	0.4013	353.7
35	1.0685	1.2583	0.3952	369.1	1.1509	1.2750	0.3926	356.2
40	1.0185	1.2212	0.3884	371.4	1.0932	1.2338	0.3849	358.6
45	0.9732	1.1873	0.3823	373.6	1.0413	1.1963	0.3779	360.7
50	0.9320	1.1564	0.3769	375.7	0.9943	1.1622	0.3716	362.8

TABLE S-III. Continued

p / MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa	κ_T GPa^{-1}	$\alpha_p \times 10^3$ K^{-1}	$c_p - c_v$ kJ kg^{-1} K^{-1}	p_{int} MPa
	343.15 K				353.15 K			
55	0.8944	1.1279	0.3719	377.8	0.9517	1.1309	0.3658	364.7
60	0.8598	1.1016	0.3674	379.7	0.9127	1.1021	0.3605	366.4
	363.15 K				373.15 K			
0.1	–	–	–	–	–	–	–	–
1	2.0610	1.8176	0.4894	319.2	2.3389	1.9003	0.4935	302.2
5	1.9088	1.7226	0.4710	322.7	2.1456	1.7899	0.4731	306.3
10	1.7489	1.6216	0.4515	326.7	1.9466	1.6745	0.4518	311.0
15	1.6149	1.5359	0.4350	330.4	1.7830	1.5779	0.4340	315.2
20	1.5009	1.4621	0.4208	333.8	1.6460	1.4956	0.4187	319.1
25	1.4028	1.3977	0.4085	336.8	1.5296	1.4244	0.4055	322.5
30	1.3173	1.3409	0.3977	339.7	1.4293	1.3621	0.3939	325.6
35	1.2421	1.2903	0.3880	342.2	1.3421	1.3069	0.3836	328.4
40	1.1755	1.2449	0.3794	344.6	1.2654	1.2575	0.3743	330.8
45	1.1160	1.2039	0.3716	346.7	1.1974	1.2130	0.3658	333.0
50	1.0626	1.1666	0.3645	348.7	1.1368	1.1726	0.3580	334.9
55	1.0144	1.1325	0.3579	350.4	1.0824	1.1358	0.3508	336.6
60	0.9705	1.1011	0.3519	352.0	1.0332	1.1019	0.3440	338.0
	393.15 K				413.15 K			
0.1	–	–	–	–	–	–	–	–
1	3.0323	2.0785	0.4989	268.5	3.8848	2.2767	0.5141	241.1
5	2.7208	1.9369	0.4776	274.9	3.4026	2.1181	0.5007	252.2
10	2.4148	1.7940	0.4559	282.1	2.9522	1.9630	0.4877	264.7
15	2.1736	1.6778	0.4380	288.5	2.6121	1.8400	0.4774	276.0
20	1.9784	1.5810	0.4229	294.2	2.3458	1.7389	0.4687	286.3
25	1.8170	1.4985	0.4098	299.2	2.1313	1.6536	0.4613	295.6
30	1.6812	1.4271	0.3982	303.7	1.9547	1.5802	0.4545	304.0
35	1.5653	1.3644	0.3878	307.7	1.8066	1.5159	0.4484	311.7
40	1.4652	1.3087	0.3784	311.1	1.6806	1.4588	0.4426	318.6
45	1.3778	1.2587	0.3697	314.2	1.5720	1.4075	0.4370	324.9
50	1.3008	1.2135	0.3615	316.8	1.4773	1.3610	0.4315	330.6
55	1.2324	1.1722	0.3538	318.9	1.3941	1.3185	0.4261	335.7
60	1.1713	1.1344	0.3465	320.8	1.3203	1.2794	0.4205	340.3