

Table SI. Experimental values of pressure  $p/\text{MPa}$ , density  $\rho/\text{kg}\cdot\text{m}^{-3}$ , temperature  $T/\text{K}$ , calculated values of isothermal compressibility  $k_T\cdot 10^6/\text{MPa}^{-1}$ , isobaric thermal expansibility  $\alpha_p\cdot 10^6/\text{K}^{-1}$ , difference in isobaric and isochoric heat capacities  $(c_p-c_v)/\text{Jkg}^{-1}\text{K}^{-1}$ , thermal pressure coefficient  $\gamma/\text{MPaK}^{-1}$  and internal pressure  $p_{\text{int}}/\text{MPa}$  of Standard Seawater.

$p/\text{MPa}$	$\rho/\text{kg}\cdot\text{m}^{-3}$	$T/\text{K}$	$k_T\cdot 10^6/\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/\text{K}^{-1}$	$(c_p-c_v)/\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/\text{MPaK}^{-1}$	$p_{\text{int}}/\text{MPa}$
0.705	1028.45	273.18	455.3	83.8	4.1	0.1842	49.6
4.987	1030.56	273.16	449.5	91.7	5.0	0.2040	50.7
9.776	1032.78	273.16	443.5	100.2	6.0	0.2260	51.9
19.991	1037.48	273.16	431.3	118.4	8.6	0.2745	55.0
30.000	1041.97	273.16	420.4	136.0	11.5	0.3236	58.4
40.000	1046.35	273.17	410.3	153.6	15.0	0.3744	62.3
49.958	1050.61	273.18	401.0	171.0	19.0	0.4264	66.5
59.987	1054.82	273.19	392.3	188.5	23.5	0.4805	71.3
69.961	1058.95	273.19	384.3	206.0	28.5	0.5360	76.5
79.983	1063.02	273.19	376.9	223.6	34.1	0.5934	82.1
89.998	1067.00	273.19	369.9	241.3	40.3	0.6523	88.2
99.910	1070.80	273.20	363.7	258.7	46.9	0.7112	94.4
109.904	1074.80	273.15	357.6	277.1	54.6	0.7750	101.8
119.964	1078.62	273.13	352.1	295.5	62.8	0.8393	109.3
129.856	1082.15	273.14	347.2	313.1	71.3	0.9018	116.5
138.814	1085.31	273.14	343.1	329.3	79.5	0.9597	123.3
1.288	1028.38	278.18	445.7	135.2	11.1	0.3033	83.1
5.121	1030.09	278.18	440.9	140.8	12.1	0.3193	83.7
10.118	1032.37	278.17	434.7	148.2	13.6	0.3410	84.7
20.149	1036.85	278.15	423.1	163.0	16.8	0.3853	87.0
30.001	1041.10	278.15	412.6	177.4	20.4	0.4300	89.6
40.036	1045.42	278.14	402.5	192.1	24.4	0.4774	92.8
50.001	1049.53	278.15	393.3	206.6	28.8	0.5252	96.1
59.916	1053.60	278.15	384.7	221.1	33.5	0.5746	99.9
70.004	1057.67	278.15	376.6	235.9	38.8	0.6262	104.2
80.021	1061.68	278.14	369.0	250.7	44.6	0.6792	108.9
90.003	1065.57	278.14	362.1	265.4	50.8	0.7332	113.9
99.836	1069.33	278.14	355.6	280.1	57.4	0.7875	119.2
110.101	1073.18	278.14	349.4	295.4	64.7	0.8455	125.1
119.839	1076.77	278.14	343.9	310.2	72.3	0.9019	131.0
130.002	1080.44	278.14	338.6	325.6	80.6	0.9618	137.5
138.240	1083.36	278.14	334.5	338.2	87.8	1.0111	143.0
0.465	1027.46	283.15	439.2	180.0	20.3	0.4098	115.6
5.119	1029.43	283.17	433.6	185.6	21.9	0.4282	116.1
10.561	1031.82	283.17	427.0	192.3	23.8	0.4504	117.0
20.084	1035.94	283.17	416.2	204.0	27.3	0.4902	118.7
30.003	1040.16	283.17	405.6	216.1	31.3	0.5327	120.8
40.058	1044.35	283.17	395.7	228.3	35.7	0.5769	123.3
50.004	1048.44	283.17	386.5	240.3	40.4	0.6219	126.1
60.170	1052.53	283.17	377.7	252.7	45.5	0.6689	129.3

Table S1 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
69.997	1056.38	283.18	369.8	264.5	50.7	0.7153	132.6
80.116	1060.31	283.18	362.2	276.8	56.5	0.7643	136.3
90.002	1064.08	283.18	355.3	288.9	62.5	0.8133	140.3
99.985	1067.83	283.18	348.7	301.2	69.0	0.8639	144.6
110.000	1071.53	283.18	342.5	313.6	75.9	0.9157	149.3
119.787	1075.07	283.18	336.8	325.8	83.0	0.9672	154.1
130.003	1078.70	283.18	331.3	338.6	90.8	1.0220	159.4
139.712	1082.04	283.19	326.5	350.7	98.6	1.0743	164.5
1.001	1026.52	288.18	433.1	222.5	32.1	0.5137	147.0
5.000	1028.38	288.15	427.9	226.5	33.6	0.5294	147.5
10.062	1030.61	288.14	421.8	231.6	35.6	0.5492	148.2
20.031	1034.89	288.13	410.4	241.6	39.6	0.5886	149.6
30.002	1038.97	288.15	400.1	251.4	43.8	0.6285	151.1
39.986	1043.03	288.16	390.3	261.3	48.3	0.6695	152.9
50.000	1047.09	288.16	381.0	271.3	53.1	0.7119	155.2
59.919	1050.99	288.17	372.5	281.1	58.1	0.7545	157.5
69.997	1054.93	288.17	364.3	291.1	63.5	0.7990	160.3
79.920	1058.70	288.18	356.9	301.0	69.1	0.8434	163.1
89.996	1062.51	288.18	349.7	311.1	75.1	0.8897	166.4
99.628	1066.04	288.19	343.3	320.7	81.0	0.9342	169.6
110.000	1069.99	288.15	336.6	331.5	87.9	0.9850	173.8
119.786	1073.31	288.12	331.2	340.9	94.2	1.0293	176.8
129.997	1077.05	288.15	325.3	351.9	101.9	1.0820	181.8
140.004	1080.36	288.18	320.3	362.0	109.1	1.1302	185.7
0.951	1025.37	293.17	428.3	261.7	45.7	0.6110	178.2
5.096	1027.08	293.18	423.4	265.0	47.3	0.6258	178.4
9.989	1029.12	293.18	417.7	268.8	49.3	0.6434	178.6
20.061	1033.24	293.19	406.6	276.6	53.4	0.6802	179.4
30.024	1037.47	293.15	395.9	284.4	57.7	0.7183	180.6
40.008	1041.53	293.14	386.0	292.2	62.3	0.7570	181.9
50.035	1045.45	293.15	376.9	300.0	67.0	0.7960	183.3
60.062	1049.49	293.12	368.0	308.0	72.0	0.8370	185.3
70.012	1053.16	293.15	360.3	315.8	77.0	0.8766	187.0
79.993	1057.05	293.12	352.5	323.8	82.5	0.9187	189.3
89.987	1060.62	293.15	345.6	331.7	88.0	0.9598	191.4
99.919	1064.38	293.12	338.7	339.9	93.9	1.0034	194.2
109.791	1067.88	293.13	332.5	347.8	99.9	1.0460	196.8
117.401	1070.56	293.13	328.0	354.0	104.6	1.0793	199.0
129.490	1074.75	293.13	321.2	363.9	112.5	1.1330	202.6
139.074	1078.03	293.13	316.2	371.9	119.0	1.1764	205.8
1.003	1023.80	298.19	425.1	298.4	61.0	0.7018	208.3
4.994	1025.52	298.18	420.2	300.7	62.6	0.7157	208.4
9.818	1027.68	298.15	414.2	303.6	64.6	0.7331	208.7
20.060	1031.86	298.16	402.8	309.7	68.8	0.7689	209.2
30.002	1035.90	298.16	392.4	315.7	73.1	0.8045	209.9

Table S1 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
40.049	1039.96	298.15	382.4	321.8	77.6	0.8413	210.8
50.046	1043.90	298.15	373.2	327.8	82.3	0.8784	211.9
60.170	1047.68	298.18	364.7	334.0	87.0	0.9157	212.9
70.100	1051.48	298.18	356.6	340.1	92.0	0.9537	214.3
79.984	1055.12	298.19	349.2	346.2	97.0	0.9914	215.6
89.997	1058.82	298.19	341.9	352.4	102.3	1.0307	217.3
99.946	1062.36	298.20	335.3	358.6	107.7	1.0695	219.0
109.984	1065.98	298.19	328.8	365.0	113.3	1.1100	221.0
120.229	1069.51	298.20	322.8	371.5	119.2	1.1509	223.0
128.749	1072.51	298.18	317.9	377.0	124.3	1.1861	224.9
137.307	1075.36	298.19	313.3	382.5	129.5	1.2208	226.7
0.818	1022.24	303.17	422.4	333.0	77.9	0.7884	238.2
5.046	1023.96	303.18	417.4	334.8	79.5	0.8022	238.1
9.779	1026.01	303.16	411.6	336.8	81.4	0.8182	238.3
20.052	1030.14	303.18	400.3	341.2	85.6	0.8523	238.4
30.000	1034.16	303.18	389.8	345.5	89.8	0.8862	238.7
39.944	1038.07	303.19	380.1	349.8	94.0	0.9203	239.1
50.000	1042.10	303.17	370.6	354.3	98.5	0.9559	239.8
60.098	1045.99	303.17	361.8	358.8	103.1	0.9916	240.5
70.000	1049.74	303.17	353.8	363.3	107.8	1.0270	241.4
79.948	1053.40	303.18	346.2	367.9	112.5	1.0626	242.2
90.001	1057.07	303.18	338.9	372.5	117.4	1.0991	243.2
99.904	1060.63	303.18	332.2	377.2	122.4	1.1354	244.3
109.882	1064.20	303.17	325.7	382.0	127.6	1.1725	245.6
120.259	1067.70	303.19	319.6	386.9	133.0	1.2103	246.7
129.394	1070.75	303.20	314.5	391.3	137.8	1.2439	247.8
137.031	1073.27	303.21	310.5	395.0	142.0	1.2722	248.7
0.519	1020.32	308.15	421.1	365.8	96.0	0.8686	267.2
4.907	1022.14	308.15	415.7	366.9	97.6	0.8825	267.0
10.033	1024.31	308.15	409.6	368.3	99.6	0.8992	267.1
20.118	1028.29	308.16	398.6	371.0	103.5	0.9307	266.7
30.102	1032.24	308.18	388.2	373.8	107.5	0.9629	266.6
40.133	1036.24	308.17	378.2	376.6	111.5	0.9958	266.7
50.098	1040.11	308.17	369.0	379.5	115.7	1.0285	266.9
59.902	1043.86	308.17	360.4	382.4	119.8	1.0611	267.1
70.100	1047.74	308.16	352.0	385.5	124.2	1.0954	267.5
79.801	1051.28	308.17	344.6	388.6	128.5	1.1277	267.7
89.998	1054.98	308.17	337.1	391.8	133.0	1.1621	268.1
99.784	1058.41	308.18	330.6	395.0	137.4	1.1949	268.5
109.742	1061.90	308.18	324.1	398.3	142.0	1.2287	268.9
119.968	1065.57	308.15	317.7	401.8	146.9	1.2647	269.7
129.494	1068.74	308.16	312.3	405.0	151.5	1.2969	270.2
137.225	1071.30	308.16	308.1	407.7	155.2	1.3232	270.5
1.002	1018.34	313.14	420.3	397.2	115.5	0.9452	295.0
5.055	1020.13	313.13	415.0	397.6	117.0	0.9582	295.0

Table S1 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
10.031	1022.28	313.12	408.8	398.2	118.8	0.9740	294.9
20.030	1026.37	313.19	397.4	399.8	122.7	1.0061	295.1
30.015	1030.39	313.17	386.8	401.0	126.4	1.0368	294.7
40.098	1034.37	313.15	376.8	402.4	130.1	1.0678	294.3
49.997	1038.19	313.15	367.6	403.9	133.8	1.0986	294.0
59.967	1041.93	313.12	359.0	405.3	137.5	1.1289	293.5
69.955	1045.61	313.12	350.9	407.0	141.3	1.1597	293.2
79.899	1049.23	313.12	343.3	408.8	145.2	1.1907	292.9
90.055	1052.83	313.13	336.0	410.7	149.3	1.2222	292.7
99.928	1056.32	313.13	329.2	412.6	153.3	1.2532	292.5
109.996	1059.92	313.12	322.5	414.6	157.5	1.2856	292.5
120.069	1063.26	313.12	316.6	416.7	161.5	1.3163	292.1
130.914	1066.85	313.18	310.4	419.2	166.2	1.3507	292.1
138.640	1069.38	313.21	306.2	421.0	169.6	1.3751	292.1
0.511	1008.96	333.17	424.1	512.6	204.6	1.2087	402.2
5.072	1011.12	333.15	417.5	510.3	205.5	1.2223	402.1
10.077	1013.01	333.13	411.9	508.4	206.3	1.2342	401.1
20.019	1017.12	333.17	400.1	504.7	208.6	1.2615	400.3
30.046	1021.18	333.15	389.0	500.9	210.5	1.2879	399.0
40.026	1025.10	333.14	378.7	497.6	212.4	1.3137	397.6
50.052	1028.91	333.14	369.2	494.4	214.4	1.3391	396.1
60.042	1032.68	333.13	360.3	491.5	216.3	1.3642	394.4
70.076	1036.36	333.13	351.9	488.8	218.2	1.3891	392.7
80.085	1039.96	333.13	344.0	486.2	220.1	1.4135	390.8
90.066	1043.54	333.15	336.4	483.9	222.1	1.4381	389.0
100.075	1047.01	333.16	329.4	481.6	224.1	1.4620	387.0
110.072	1050.42	333.15	322.9	479.5	225.9	1.4852	384.7
120.347	1053.88	333.12	316.5	477.4	227.7	1.5086	382.2
130.476	1057.20	333.14	310.5	475.6	229.6	1.5317	379.8
139.378	1060.06	333.16	305.6	474.1	231.2	1.5516	377.6
1.815	998.37	353.17	435.1	613.7	306.2	1.4105	496.3
5.213	999.82	353.15	430.5	610.7	306.0	1.4186	495.8
10.132	1001.81	353.18	424.3	606.8	306.0	1.4303	495.0
20.103	1006.00	353.16	411.7	598.6	305.5	1.4540	493.4
30.002	1010.13	353.16	399.9	590.8	305.2	1.4776	491.8
40.055	1014.16	353.16	388.9	583.5	304.9	1.5005	489.9
50.004	1018.05	353.16	378.7	576.7	304.6	1.5225	487.7
59.964	1021.83	353.18	369.3	570.3	304.3	1.5440	485.4
70.004	1025.59	353.16	360.4	564.0	303.9	1.5649	482.6
79.932	1029.22	353.16	352.1	558.1	303.6	1.5850	479.8
89.997	1032.76	353.16	344.4	552.6	303.2	1.6045	476.6
99.801	1036.25	353.16	337.1	547.3	302.8	1.6235	473.5
110.000	1039.81	353.16	329.9	541.9	302.3	1.6426	470.1
119.985	1043.27	353.15	323.3	536.9	301.8	1.6609	466.5
130.005	1046.63	353.15	317.0	532.1	301.3	1.6784	462.7

Table S1 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
138.574	1049.32	353.18	312.2	528.4	301.0	1.6925	459.2
1.436	984.97	373.12	458.4	708.3	414.6	1.5451	575.1
5.112	986.58	373.17	452.9	703.7	413.6	1.5539	574.7
9.877	988.70	373.15	445.8	697.5	411.8	1.5645	573.9
20.027	993.10	373.13	431.7	685.0	408.4	1.5867	572.0
30.086	997.35	373.12	418.8	673.4	405.1	1.6080	569.9
39.904	1001.40	373.10	407.1	662.7	401.9	1.6279	567.5
50.000	1005.42	373.15	395.9	652.5	399.1	1.6481	565.0
60.089	1009.38	373.15	385.5	642.7	396.1	1.6672	562.0
70.013	1013.17	373.17	376.0	633.7	393.4	1.6854	558.9
79.913	1016.91	373.15	367.0	624.9	390.4	1.7027	555.5
90.063	1020.66	373.14	358.4	616.3	387.5	1.7198	551.7
99.897	1024.22	373.13	350.5	608.4	384.7	1.7357	547.7
109.980	1027.79	373.15	343.0	600.7	382.0	1.7514	543.6
120.485	1031.46	373.14	335.6	592.9	379.0	1.7669	538.8
126.734	1033.61	373.15	331.4	588.5	377.3	1.7759	535.9
138.941	1037.74	373.16	323.6	580.1	373.9	1.7925	530.0
1.383	970.16	393.15	490.6	798.8	527.1	1.6283	638.8
5.108	971.89	393.16	484.1	792.1	524.3	1.6362	638.2
9.823	974.05	393.18	476.2	783.9	520.9	1.6460	637.4
20.111	978.71	393.18	460.0	766.7	513.4	1.6668	635.2
30.036	983.11	393.17	445.4	751.1	506.4	1.6861	632.9
39.977	987.42	393.17	432.0	736.3	499.8	1.7047	630.2
50.017	991.67	393.17	419.3	722.3	493.3	1.7226	627.3
59.942	995.79	393.18	407.7	709.2	487.2	1.7397	624.1
70.028	999.87	393.16	396.7	696.7	481.1	1.7561	620.4
79.802	1003.73	393.17	386.8	685.1	475.4	1.7713	616.6
90.042	1007.69	393.17	377.1	673.7	469.6	1.7865	612.3
99.916	1011.40	393.17	368.4	663.2	464.1	1.8002	607.9
109.989	1015.09	393.17	360.2	653.1	458.7	1.8133	602.9
119.939	1018.65	393.17	352.5	643.6	453.5	1.8255	597.8
130.913	1022.46	393.17	344.7	633.6	447.8	1.8380	591.7
138.973	1025.28	393.17	339.2	626.4	443.7	1.8469	587.2
1.702	954.10	413.15	533.5	890.0	643.0	1.6684	687.6
5.013	955.74	413.15	526.6	881.9	638.5	1.6747	686.9
10.074	958.23	413.15	516.5	869.9	631.7	1.6842	685.8
19.883	962.97	413.14	498.1	847.8	619.0	1.7020	683.3
30.085	967.89	413.12	480.2	825.9	606.3	1.7200	680.5
39.956	972.35	413.12	464.8	806.9	595.1	1.7360	677.2
50.004	976.87	413.15	450.0	788.4	584.1	1.7519	673.8
60.098	981.31	413.15	436.3	770.9	573.5	1.7670	669.9
70.005	985.55	413.15	423.9	754.9	563.6	1.7809	665.8
80.032	989.63	413.15	412.5	740.0	554.2	1.7939	661.1
89.997	993.68	413.15	401.7	725.6	544.9	1.8062	656.2
99.881	997.59	413.11	391.9	712.2	536.1	1.8176	651.0

Table S1 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
109.803	1001.41	413.15	382.6	699.6	527.7	1.8284	645.6
119.755	1005.23	413.13	373.8	687.2	519.3	1.8385	639.8
127.670	1008.10	413.15	367.4	678.2	513.0	1.8457	634.9
139.149	1012.26	413.14	358.6	665.4	504.0	1.8556	627.5
2.522	936.69	433.23	591.3	991.8	769.4	1.6773	724.1
5.100	938.09	433.26	584.6	983.1	763.5	1.6816	723.5
9.817	940.61	433.20	572.9	967.6	752.7	1.6889	721.8
20.112	946.12	433.18	548.5	935.2	730.1	1.7050	718.4
30.025	951.20	433.18	527.5	906.9	710.1	1.7193	714.8
39.950	956.05	433.20	508.6	881.1	691.8	1.7326	710.6
49.927	960.90	433.18	490.8	856.6	674.0	1.7454	706.1
59.856	965.60	433.18	474.5	833.8	657.3	1.7572	701.3
69.926	970.13	433.17	459.7	812.8	641.7	1.7681	696.0
80.011	974.53	433.16	446.1	793.2	626.9	1.7782	690.2
89.963	978.85	433.17	433.3	774.6	612.8	1.7876	684.4
99.898	983.02	433.20	421.7	757.4	599.5	1.7961	678.2
110.198	987.31	433.13	410.3	740.3	586.0	1.8043	671.3
120.699	991.54	433.10	399.7	724.1	573.0	1.8118	664.0
130.771	995.36	433.17	390.5	709.8	561.5	1.8178	656.7
138.275	998.23	433.16	383.8	699.4	553.0	1.8221	651.0
3.031	917.53	453.17	673.2	1122.4	924.2	1.6672	752.5
5.096	918.76	453.20	666.2	1112.4	916.3	1.6698	751.6
10.052	921.79	453.15	649.5	1088.6	896.8	1.6759	749.4
19.918	927.50	453.14	619.7	1045.6	861.8	1.6871	744.6
30.086	933.32	453.13	591.5	1004.4	827.9	1.6979	739.3
39.960	938.62	453.13	567.6	968.9	798.5	1.7071	733.6
49.958	943.83	453.14	545.5	935.8	770.8	1.7156	727.4
59.855	948.93	453.15	525.2	905.0	744.8	1.7232	721.0
69.958	953.88	453.17	506.7	876.6	720.4	1.7300	714.0
79.981	958.73	453.15	489.6	850.0	697.4	1.7360	706.7
89.953	963.30	453.19	474.4	825.9	676.5	1.7410	699.1
99.866	967.78	453.18	460.3	803.3	656.6	1.7454	691.1
110.492	972.51	453.14	446.2	780.5	636.2	1.7494	682.2
120.342	976.65	453.15	434.5	761.3	618.9	1.7522	673.7
129.607	980.50	453.15	424.1	744.0	603.2	1.7543	665.4
137.685	983.75	453.15	415.7	729.8	590.2	1.7557	657.9
2.850	901.37	468.03	761.5	1260.9	1084.0	1.6557	772.1
5.105	902.88	468.06	751.4	1245.8	1070.6	1.6578	770.9
9.886	906.18	468.02	730.2	1213.7	1041.9	1.6621	768.0
20.044	912.70	468.02	690.8	1153.6	988.0	1.6701	761.6
30.087	918.90	468.03	656.2	1100.3	939.7	1.6767	754.7
39.929	924.65	468.03	626.5	1053.9	897.3	1.6821	747.3
50.086	930.38	468.03	599.0	1010.3	857.2	1.6867	739.3
59.833	935.74	468.04	574.9	971.7	821.4	1.6901	731.2
70.053	941.12	468.03	552.3	935.0	787.1	1.6929	722.3

Table S1 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
80.041	946.19	468.03	532.3	902.1	756.2	1.6947	713.1
90.053	951.15	468.03	513.9	871.4	727.1	1.6957	703.6
99.902	955.91	468.03	497.2	843.2	700.2	1.6960	693.9
109.800	960.57	468.03	481.7	816.8	674.9	1.6956	683.8
119.911	965.20	467.98	467.2	791.8	650.6	1.6947	673.2
129.218	969.34	468.05	454.9	770.1	629.4	1.6928	663.1
139.062	973.67	468.06	442.7	748.3	608.0	1.6904	652.1

Table S2. Experimental values of pressure  $p/\text{MPa}$ , density  $\rho/\text{kg}\cdot\text{m}^{-3}$ , temperature  $T/\text{K}$ , calculated values of isothermal compressibility  $k_T\cdot 10^6/\text{MPa}^{-1}$ , isobaric thermal expansibility  $\alpha_p\cdot 10^6/\text{K}^{-1}$ , difference in isobaric and isochoric heat capacities  $(c_p-c_v)/\text{Jkg}^{-1}\text{K}^{-1}$ , thermal pressure coefficient  $\gamma/\text{MPaK}^{-1}$  and internal pressure  $p_{\text{int}}/\text{MPa}$  of Pure Water.

$p/\text{MPa}$	$\rho/\text{kg}\cdot\text{m}^{-3}$	$T/\text{K}$	$k_T\cdot 10^6/\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/\text{K}^{-1}$	$(c_p-c_v)/\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/\text{MPaK}^{-1}$	$p_{\text{int}}/\text{MPa}$
1.009	1000.43	278.15	480.3	77.3	3.5	0.1610	43.8
5.071	1002.56	278.14	474.1	83.9	4.1	0.1770	44.2
10.012	1004.92	278.15	467.4	91.6	5.0	0.1960	44.5
20.043	1009.63	278.14	454.8	106.9	6.9	0.2351	45.4
29.987	1014.22	278.14	443.2	122.4	9.3	0.2763	46.9
40.004	1018.75	278.15	432.4	138.4	12.1	0.3201	49.0
49.993	1023.19	278.15	422.5	154.5	15.4	0.3656	51.7
59.952	1027.52	278.16	413.4	170.8	19.1	0.4132	55.0
69.988	1031.71	278.16	405.2	187.1	23.3	0.4619	58.5
79.915	1035.76	278.18	397.6	203.7	28.0	0.5122	62.6
89.965	1039.87	278.18	390.5	221.0	33.4	0.5658	67.4
99.856	1044.03	278.18	383.8	239.2	39.7	0.6232	73.5
109.704	1047.89	278.17	377.9	256.7	46.3	0.6793	79.3
120.685	1052.09	278.12	372.1	276.5	54.3	0.7429	85.9
129.997	1055.67	278.13	367.4	294.4	62.1	0.8012	92.8
137.358	1058.46	278.13	364.0	308.8	68.8	0.8484	98.6
1.034	1000.32	283.14	472.1	132.0	10.4	0.2795	78.1
5.129	1002.26	283.12	466.4	137.1	11.4	0.2939	78.1
9.992	1004.54	283.19	459.8	144.1	12.7	0.3135	78.8
20.079	1009.17	283.18	447.1	157.2	15.5	0.3515	79.5
29.997	1013.62	283.17	435.6	170.1	18.6	0.3906	80.6
40.099	1018.04	283.17	424.8	183.6	22.1	0.4321	82.2
50.001	1022.27	283.15	415.2	196.7	25.8	0.4738	84.1
60.018	1026.47	283.14	406.1	210.3	30.0	0.5179	86.6
70.000	1030.57	283.14	397.7	224.2	34.7	0.5637	89.6
79.972	1034.60	283.13	389.9	238.3	39.8	0.6111	93.0
90.001	1038.58	283.13	382.7	252.8	45.5	0.6607	97.0
99.703	1042.38	283.13	376.1	267.2	51.6	0.7105	101.5
110.112	1046.40	283.13	369.6	283.1	58.7	0.7659	106.7
119.172	1049.86	283.15	364.3	297.5	65.5	0.8165	112.0
128.862	1053.54	283.15	359.0	313.2	73.4	0.8723	118.1
139.190	1057.43	283.15	353.8	330.5	82.7	0.9341	125.3
1.033	998.61	293.16	461.1	227.8	33.0	0.4941	143.8

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
4.875	1000.35	293.16	455.8	231.1	34.3	0.5070	143.8
9.815	1002.67	293.15	448.9	235.4	36.1	0.5245	143.9
20.041	1007.18	293.17	436.1	244.5	39.9	0.5608	144.4
30.001	1011.49	293.17	424.5	253.4	43.9	0.5970	145.0
40.048	1015.74	293.18	413.6	262.6	48.1	0.6349	146.1
50.001	1019.86	293.17	403.7	271.8	52.6	0.6732	147.3
60.071	1024.05	293.17	394.1	281.5	57.6	0.7143	149.3
70.002	1028.02	293.17	385.5	291.1	62.7	0.7552	151.4
80.073	1031.96	293.17	377.4	301.1	68.2	0.7978	153.8
90.002	1035.78	293.18	369.9	311.2	74.1	0.8413	156.6
100.012	1039.57	293.19	362.8	321.6	80.4	0.8863	159.9
110.055	1043.31	293.15	356.3	332.0	86.9	0.9319	163.1
120.064	1046.98	293.15	350.1	342.9	94.0	0.9793	167.0
128.865	1050.17	293.17	345.0	352.8	100.7	1.0227	171.0
138.159	1053.49	293.19	339.9	363.5	108.2	1.0695	175.4
0.580	997.16	298.11	458.0	270.1	47.6	0.5896	175.2
5.044	999.17	298.13	451.8	273.2	49.3	0.6047	175.2
9.992	1001.37	298.14	445.1	276.6	51.2	0.6214	175.3
20.041	1005.77	298.16	432.4	283.6	55.2	0.6560	175.6
30.018	1010.05	298.15	420.6	290.6	59.3	0.6908	175.9
40.044	1014.26	298.11	409.8	297.5	63.5	0.7261	176.4
49.999	1018.36	298.14	399.6	305.1	68.2	0.7636	177.7
59.938	1022.38	298.16	390.1	312.9	73.2	0.8019	179.2
69.973	1026.36	298.18	381.3	320.9	78.4	0.8416	181.0
79.862	1030.21	298.16	373.1	328.7	83.8	0.8808	182.8
90.072	1034.11	298.13	365.3	336.9	89.6	0.9222	184.9
100.011	1037.84	298.13	358.1	345.3	95.6	0.9641	187.4
109.776	1041.44	298.13	351.6	353.8	101.9	1.0062	190.2
119.815	1045.09	298.19	345.1	363.0	108.9	1.0518	193.8
129.951	1048.71	298.17	339.1	372.1	116.1	1.0973	197.2
139.744	1052.16	298.14	333.7	381.2	123.4	1.1422	200.8
0.828	995.81	303.16	454.8	311.1	64.8	0.6841	206.6
5.051	997.69	303.16	448.9	313.1	66.4	0.6976	206.4
10.015	999.87	303.19	442.2	315.8	68.4	0.7142	206.5
20.088	1004.23	303.15	429.4	320.5	72.2	0.7465	206.2
30.065	1008.46	303.17	417.6	325.9	76.5	0.7804	206.5
40.017	1012.60	303.18	406.6	331.4	80.9	0.8150	207.1

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
49.927	1016.64	303.19	396.4	337.1	85.5	0.8502	207.9
59.959	1020.65	303.18	386.8	342.9	90.3	0.8863	208.7
69.915	1024.55	303.17	378.0	348.8	95.3	0.9229	209.9
79.987	1028.43	303.19	369.5	355.2	100.7	0.9614	211.5
90.066	1032.24	303.19	361.6	361.7	106.3	1.0003	213.2
99.972	1035.92	303.20	354.4	368.4	112.1	1.0396	215.2
109.813	1039.51	303.20	347.6	375.1	118.1	1.0792	217.4
119.871	1043.13	303.20	341.1	382.3	124.5	1.1207	219.9
129.931	1046.68	303.20	335.0	389.6	131.2	1.1629	222.7
139.957	1050.18	303.20	329.3	397.1	138.3	1.2061	225.7
0.700	992.33	313.13	451.8	385.7	103.9	0.8535	266.6
5.199	994.25	313.16	445.6	386.5	105.6	0.8673	266.4
10.171	996.46	313.17	438.6	387.3	107.5	0.8829	266.3
20.310	1000.90	313.16	425.2	389.0	111.3	0.9148	266.2
29.917	1004.86	313.16	413.9	390.9	115.0	0.9445	265.9
40.077	1008.98	313.17	402.6	393.2	119.2	0.9766	265.8
49.993	1012.93	313.15	392.3	395.5	123.3	1.0081	265.7
60.360	1016.99	313.16	382.2	398.3	127.8	1.0421	266.0
69.991	1020.70	313.16	373.5	401.2	132.2	1.0741	266.4
80.093	1024.52	313.17	364.8	404.4	137.0	1.1084	267.0
89.976	1028.19	313.16	356.9	407.6	141.8	1.1421	267.7
100.030	1031.86	313.17	349.3	411.2	146.9	1.1772	268.6
109.933	1035.40	313.16	342.3	414.9	152.1	1.2119	269.6
119.548	1038.77	313.18	335.9	418.7	157.3	1.2464	270.8
129.934	1042.35	313.16	329.5	422.9	163.1	1.2836	272.0
140.021	1045.75	313.16	323.6	427.2	168.9	1.3202	273.4
0.500	988.11	323.11	452.4	453.9	148.9	1.0034	323.7
5.016	990.05	323.16	445.9	453.4	150.5	1.0170	323.6
10.010	992.18	323.21	438.9	453.0	152.3	1.0321	323.6
19.996	996.37	323.16	425.9	451.4	155.2	1.0599	322.5
29.990	1000.48	323.13	413.7	450.2	158.3	1.0883	321.7
40.036	1004.64	323.13	402.0	449.6	161.7	1.1185	321.4
49.949	1008.68	323.12	391.1	449.2	165.3	1.1485	321.2
59.955	1012.58	323.12	381.1	449.2	168.9	1.1785	320.9
69.906	1016.38	323.10	371.9	449.3	172.6	1.2083	320.5
79.990	1020.07	323.14	363.2	449.9	176.6	1.2389	320.3
89.933	1023.74	323.14	355.0	450.6	180.6	1.2695	320.3

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
99.947	1027.37	323.15	347.2	451.6	184.7	1.3007	320.4
109.958	1030.93	323.15	339.8	452.7	189.0	1.3320	320.5
119.801	1034.34	323.13	333.1	453.9	193.2	1.3624	320.4
129.762	1037.71	323.14	326.8	455.4	197.6	1.3936	320.6
139.906	1041.14	323.13	320.5	457.1	202.3	1.4259	320.9
0.661	983.38	333.17	455.5	517.8	199.5	1.1369	378.1
5.115	985.29	333.14	448.9	515.6	200.2	1.1485	377.5
10.015	987.47	333.12	441.7	513.3	201.2	1.1621	377.1
20.077	991.88	333.14	427.5	509.2	203.7	1.1912	376.7
30.001	995.95	333.15	415.1	505.8	206.1	1.2184	375.9
40.073	1000.00	333.15	403.3	502.6	208.6	1.2460	375.0
50.001	1003.91	333.16	392.5	499.8	211.2	1.2734	374.2
59.935	1007.75	333.18	382.3	497.4	214.0	1.3010	373.5
70.002	1011.57	333.17	372.7	495.2	216.7	1.3286	372.7
79.863	1015.25	333.17	363.8	493.3	219.5	1.3559	371.9
90.000	1018.98	333.15	355.2	491.6	222.4	1.3839	371.0
99.541	1022.43	333.14	347.6	490.2	225.3	1.4103	370.3
109.830	1026.11	333.13	339.8	489.0	228.4	1.4391	369.6
120.118	1029.73	333.14	332.4	488.0	231.8	1.4683	369.0
130.066	1033.19	333.15	325.6	487.3	235.2	1.4967	368.6
138.776	1036.01	333.16	320.3	486.9	238.1	1.5203	367.7
0.307	977.86	343.18	462.2	578.2	253.8	1.2509	429.0
5.010	979.88	343.19	455.0	574.9	254.4	1.2633	428.6
9.981	982.09	343.22	447.4	571.4	255.1	1.2773	428.4
19.977	986.37	343.16	433.3	564.5	255.9	1.3030	427.2
29.939	990.57	343.20	420.0	558.6	257.4	1.3300	426.5
40.003	994.64	343.23	407.7	553.1	258.9	1.3565	425.6
49.901	998.57	343.16	396.6	547.8	260.0	1.3812	424.1
60.019	1002.51	343.15	385.9	543.0	261.5	1.4071	422.8
69.969	1006.32	343.16	375.9	538.6	263.2	1.4328	421.7
79.917	1010.06	343.23	366.5	534.9	265.2	1.4592	420.9
90.014	1013.79	343.15	357.7	530.8	266.6	1.4839	419.2
99.938	1017.39	343.17	349.5	527.5	268.5	1.5093	418.0
109.843	1020.91	343.17	341.8	524.4	270.4	1.5342	416.7
120.002	1024.45	343.20	334.3	521.5	272.6	1.5600	415.4
129.745	1027.79	343.15	327.6	518.8	274.3	1.5836	413.7
139.844	1031.18	343.12	321.0	516.3	276.3	1.6081	411.9

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
1.242	972.32	353.16	469.8	634.8	311.6	1.3512	475.9
5.051	973.99	353.16	463.7	631.1	311.4	1.3609	475.6
9.764	976.04	353.17	456.4	626.7	311.4	1.3731	475.2
20.034	980.45	353.18	441.2	617.4	311.2	1.3994	474.2
29.997	984.64	353.16	427.6	609.0	311.1	1.4243	473.0
39.986	988.76	353.16	414.8	601.2	311.2	1.4493	471.8
49.964	992.80	353.16	402.9	593.8	311.4	1.4740	470.6
60.019	996.78	353.18	391.6	587.0	311.8	1.4989	469.4
69.993	1000.64	353.18	381.3	580.6	312.1	1.5230	467.9
79.854	1004.39	353.18	371.6	574.7	312.5	1.5465	466.3
89.976	1008.14	353.18	362.4	569.1	313.0	1.5703	464.6
99.909	1011.75	353.19	353.9	563.9	313.6	1.5934	462.9
110.138	1015.38	353.15	345.7	558.7	314.1	1.6162	460.6
122.909	1019.89	353.14	336.0	552.8	314.9	1.6452	458.1
129.933	1022.25	353.15	331.1	549.8	315.4	1.6606	456.5
139.985	1025.67	353.15	324.3	545.7	316.2	1.6829	454.3
0.862	965.65	363.16	482.4	691.0	372.3	1.4324	519.3
5.097	967.57	363.15	475.1	685.7	371.4	1.4431	519.0
10.039	969.79	363.15	466.9	679.7	370.5	1.4557	518.6
19.967	974.18	363.12	451.3	668.1	368.7	1.4804	517.6
29.993	978.51	363.11	436.7	657.2	367.1	1.5051	516.5
39.989	982.73	363.12	423.1	647.2	365.8	1.5296	515.4
49.997	986.86	363.10	410.5	637.7	364.4	1.5533	514.0
60.268	991.00	363.16	398.5	628.8	363.6	1.5780	512.8
70.076	994.86	363.16	387.8	620.7	362.6	1.6005	511.2
79.987	998.68	363.14	377.7	612.9	361.6	1.6226	509.3
89.945	1002.43	363.14	368.2	605.5	360.8	1.6446	507.3
100.032	1006.15	363.18	359.2	598.6	360.2	1.6668	505.3
109.678	1009.63	363.19	351.1	592.3	359.5	1.6872	503.1
119.846	1013.22	363.17	343.1	586.0	358.7	1.7080	500.5
129.981	1016.72	363.14	335.6	580.0	358.0	1.7281	497.6
139.910	1020.07	363.15	328.7	574.5	357.4	1.7477	494.8
1.779	959.26	373.14	494.8	743.6	434.8	1.5030	559.0
5.676	961.02	373.17	487.8	738.0	433.5	1.5129	558.9
10.266	963.17	373.18	479.5	731.1	431.9	1.5248	558.7
20.025	967.67	373.17	462.9	717.1	428.5	1.5493	558.1
29.997	971.98	373.17	447.8	704.3	425.4	1.5730	557.0

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
40.167	976.29	373.18	433.4	692.1	422.5	1.5968	555.7
49.993	980.37	373.17	420.6	680.9	419.7	1.6192	554.2
60.222	984.53	373.16	408.0	670.0	417.0	1.6419	552.5
69.989	988.42	373.17	396.9	660.2	414.6	1.6634	550.7
79.958	992.31	373.17	386.2	650.7	412.2	1.6846	548.7
89.995	996.14	373.16	376.2	641.6	409.9	1.7054	546.4
99.912	999.84	373.14	367.0	633.1	407.6	1.7252	543.8
109.945	1003.49	373.16	358.2	625.1	405.6	1.7450	541.2
120.166	1007.13	373.18	349.8	617.3	403.6	1.7646	538.3
129.930	1010.53	373.16	342.3	610.2	401.6	1.7824	535.2
139.411	1013.75	373.16	335.5	603.6	399.8	1.7992	532.0
1.892	952.04	383.14	511.3	796.4	499.3	1.5578	595.0
6.072	954.00	383.16	503.2	789.1	497.1	1.5684	594.9
9.950	955.80	383.18	495.9	782.5	495.1	1.5780	594.7
19.998	960.40	383.18	478.1	766.1	489.8	1.6024	594.0
29.944	964.85	383.17	461.8	750.8	484.8	1.6258	593.0
39.919	969.21	383.16	446.7	736.5	480.0	1.6486	591.8
50.064	973.55	383.17	432.5	722.8	475.5	1.6714	590.4
59.935	977.67	383.20	419.6	710.4	471.4	1.6931	588.9
70.037	981.79	383.21	407.3	698.3	467.3	1.7145	587.0
80.052	985.77	383.18	396.0	687.0	463.3	1.7347	584.7
89.940	989.61	383.13	385.7	676.5	459.3	1.7539	582.0
99.948	993.39	383.13	375.9	666.4	455.7	1.7729	579.3
109.946	997.08	383.11	366.8	656.9	452.1	1.7911	576.2
119.895	1000.65	383.12	358.3	648.0	448.7	1.8086	573.0
130.043	1004.19	383.21	350.2	639.5	445.7	1.8263	569.8
139.928	1007.55	383.14	342.9	631.5	442.3	1.8418	565.7
1.156	943.75	393.20	533.3	851.8	566.8	1.5971	626.8
5.036	945.60	393.13	525.3	843.7	563.3	1.6060	626.3
10.041	947.96	393.12	515.3	833.8	559.5	1.6180	626.0
19.967	952.78	393.13	495.7	814.3	551.9	1.6426	625.8
29.993	957.45	393.15	477.8	796.3	544.9	1.6664	625.2
39.915	961.89	393.14	461.8	779.8	538.2	1.6887	624.0
49.997	966.30	393.14	446.6	764.1	531.8	1.7108	622.6
59.941	970.57	393.12	432.8	749.5	525.7	1.7318	620.9
69.988	974.68	393.15	420.0	735.9	520.1	1.7521	618.9
79.959	978.67	393.15	408.3	723.2	514.6	1.7714	616.5

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
89.993	982.59	393.15	397.2	711.1	509.3	1.7901	613.8
100.058	986.54	393.15	386.6	699.3	504.0	1.8087	611.0
109.973	990.33	393.20	376.9	688.3	499.2	1.8265	608.2
122.645	995.04	393.28	365.3	675.2	493.2	1.8482	604.2
129.934	997.69	393.28	359.1	667.9	489.7	1.8598	601.5
138.333	1000.68	393.29	352.3	659.9	485.7	1.8728	598.2
1.066	935.42	403.10	557.3	905.9	634.5	1.6255	654.2
5.033	937.41	403.24	547.9	896.5	631.0	1.6363	654.8
10.037	940.01	403.16	536.4	884.2	625.2	1.6486	654.6
19.955	944.93	403.14	515.4	862.0	615.1	1.6725	654.3
30.043	949.73	403.15	496.1	841.3	605.7	1.6960	653.7
39.899	954.29	403.14	478.8	822.5	596.9	1.7179	652.6
49.912	958.80	403.14	462.6	804.6	588.5	1.7394	651.3
59.980	963.22	403.15	447.6	787.8	580.4	1.7602	649.7
69.907	967.47	403.15	433.9	772.2	572.8	1.7799	647.7
79.902	971.63	403.14	421.1	757.5	565.4	1.7989	645.3
89.932	975.69	403.13	409.3	743.6	558.3	1.8170	642.6
99.994	979.66	403.15	398.2	730.5	551.5	1.8345	639.6
109.920	983.47	403.15	388.1	718.2	544.9	1.8508	636.2
119.825	987.17	403.16	378.6	706.7	538.7	1.8664	632.6
129.800	990.80	403.14	369.8	695.6	532.4	1.8811	628.5
139.922	994.38	403.13	361.5	685.0	526.3	1.8952	624.1
1.528	926.94	413.18	583.3	960.1	704.5	1.6461	678.6
5.088	928.80	413.18	574.2	950.2	699.5	1.6549	678.7
10.061	931.48	413.11	561.5	936.2	692.2	1.6672	678.7
20.085	936.57	413.13	538.5	910.7	679.4	1.6912	678.6
29.987	941.57	413.12	517.3	886.9	667.1	1.7144	678.3
40.035	946.31	413.14	498.3	865.3	655.9	1.7363	677.3
49.993	950.87	413.14	481.1	845.4	645.4	1.7570	675.9
59.976	955.41	413.16	464.9	826.4	635.2	1.7774	674.4
69.986	959.84	413.16	450.0	808.5	625.3	1.7968	672.4
79.977	964.14	413.16	436.2	791.8	615.9	1.8153	670.0
89.979	968.31	413.15	423.5	776.2	607.0	1.8328	667.2
99.851	972.31	413.18	411.9	761.7	598.5	1.8493	664.2
109.712	976.18	413.18	401.2	748.0	590.4	1.8647	660.7
121.953	980.83	413.19	388.9	732.2	580.7	1.8827	655.9
129.993	983.78	413.15	381.5	722.4	574.5	1.8935	652.3

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
137.898	986.81	413.13	374.2	712.6	568.1	1.9044	648.9
1.446	917.61	423.25	615.6	1018.9	777.9	1.6552	699.1
5.056	919.68	423.24	604.8	1006.6	771.1	1.6645	699.4
9.927	922.45	423.18	590.8	990.6	762.0	1.6767	699.6
19.973	927.78	423.15	565.2	961.1	745.4	1.7005	699.6
29.853	932.87	423.16	542.2	934.3	730.3	1.7231	699.3
39.891	937.88	423.14	521.1	909.2	715.8	1.7449	698.5
49.895	942.72	423.15	501.8	886.0	702.3	1.7658	697.3
60.115	947.52	423.14	483.8	864.0	689.1	1.7860	695.6
69.930	951.99	423.14	468.0	844.4	677.2	1.8044	693.6
79.855	956.37	423.17	453.2	825.8	665.8	1.8222	691.2
90.088	960.76	423.18	439.2	807.9	654.6	1.8394	688.3
99.946	964.88	423.17	426.7	791.7	644.1	1.8551	685.1
109.866	968.90	423.14	415.2	776.3	633.9	1.8699	681.3
119.793	972.82	423.13	404.4	761.8	624.2	1.8838	677.3
129.895	976.71	423.15	394.1	747.8	614.6	1.8972	672.9
139.944	980.48	423.17	384.7	734.6	605.4	1.9096	668.1
2.177	908.52	433.18	649.4	1077.1	851.8	1.6586	716.3
5.145	910.33	433.18	639.2	1065.3	844.7	1.6664	716.7
10.161	913.29	433.15	623.2	1046.4	833.3	1.6790	717.1
20.058	918.77	433.13	595.0	1012.9	812.9	1.7023	717.3
30.001	924.09	433.15	569.5	982.2	794.0	1.7247	717.0
40.012	929.27	433.15	546.2	953.7	776.2	1.7461	716.3
49.834	934.18	433.16	525.5	928.0	759.9	1.7660	715.1
59.996	939.10	433.16	506.0	903.4	744.0	1.7855	713.4
70.007	943.78	433.17	488.5	881.0	729.2	1.8036	711.2
79.947	948.29	433.19	472.5	860.2	715.4	1.8206	708.7
89.992	952.71	433.15	457.7	840.6	701.9	1.8366	705.5
99.955	956.97	433.12	444.2	822.4	689.2	1.8516	702.0
109.790	961.06	433.18	431.7	805.4	677.3	1.8656	698.3
119.928	965.17	433.15	419.9	789.0	665.3	1.8790	693.9
131.134	969.70	433.12	407.5	771.4	652.3	1.8930	688.8
138.821	972.57	433.19	400.0	760.6	644.2	1.9016	684.9
2.226	898.47	443.14	691.7	1143.7	932.7	1.6534	730.5
4.995	900.18	443.12	681.4	1131.3	924.6	1.6603	730.7
10.091	903.18	443.19	663.6	1110.0	911.1	1.6727	731.3
19.979	909.11	443.15	630.7	1069.9	884.8	1.6964	731.8

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
29.968	914.68	443.15	602.0	1034.4	861.2	1.7184	731.5
39.939	920.03	443.12	576.3	1002.2	839.4	1.7390	730.7
50.062	925.35	443.18	552.3	971.6	818.7	1.7593	729.6
59.998	930.38	443.13	531.1	944.2	799.5	1.7778	727.8
69.962	935.26	443.16	511.7	918.7	781.5	1.7953	725.7
80.133	940.07	443.19	493.7	894.6	764.3	1.8121	723.0
90.049	944.61	443.22	477.6	872.8	748.4	1.8274	719.9
99.897	948.99	443.14	463.0	852.6	733.1	1.8414	716.1
109.992	953.36	443.22	449.1	833.1	718.4	1.8550	712.2
119.863	957.53	443.15	436.5	815.1	704.4	1.8673	707.6
129.808	961.63	443.21	424.7	798.0	691.0	1.8788	702.9
139.941	965.73	443.14	413.5	781.4	677.5	1.8896	697.4
1.825	887.65	453.10	743.2	1220.3	1022.7	1.6419	742.1
5.082	889.84	453.13	728.6	1202.5	1010.6	1.6504	742.7
9.969	893.07	453.14	708.0	1177.1	993.1	1.6627	743.5
20.023	899.15	453.19	671.3	1131.5	961.4	1.6856	743.9
30.001	905.16	453.15	637.9	1089.3	931.3	1.7077	743.8
40.001	910.79	453.11	608.9	1052.1	904.4	1.7278	742.9
50.007	916.17	453.15	583.0	1018.3	879.8	1.7468	741.5
60.026	921.51	453.17	558.9	986.4	856.2	1.7650	739.8
69.996	926.62	453.15	537.3	957.4	834.3	1.7818	737.4
79.935	931.53	453.13	517.9	930.8	813.8	1.7974	734.5
89.999	936.15	453.15	500.6	906.8	795.1	1.8115	730.9
99.832	940.83	453.17	484.0	883.3	776.6	1.8252	727.3
110.040	945.47	453.17	468.5	861.0	758.5	1.8380	722.9
120.185	949.81	453.19	454.7	840.9	742.0	1.8494	717.9
129.721	953.93	453.15	442.3	822.4	726.5	1.8595	712.9
138.787	957.84	453.15	431.0	805.4	712.0	1.8685	707.9
2.034	871.44	467.77	831.4	1347.4	1172.3	1.6208	756.1
5.234	873.77	467.78	813.6	1325.1	1155.5	1.6288	756.7
10.111	877.24	467.78	788.1	1293.0	1131.2	1.6407	757.4
20.056	884.05	467.79	741.4	1233.4	1085.8	1.6636	758.2
30.032	890.46	467.83	701.1	1181.1	1045.4	1.6846	758.1
40.135	896.35	467.85	667.0	1136.1	1010.1	1.7033	756.8
50.004	902.35	467.85	634.8	1092.9	975.6	1.7218	755.5
59.940	907.95	467.86	606.8	1054.8	944.8	1.7383	753.4
69.997	913.43	467.85	581.3	1019.5	915.8	1.7539	750.5

Table S2 - continue

$p/$ MPa	$\rho/$ $\text{kg}\cdot\text{m}^{-3}$	$T/$ K	$k_T\cdot 10^6/$ $\text{MPa}^{-1}$	$\alpha_p\cdot 10^6/$ $\text{K}^{-1}$	$(c_p-c_v)/$ $\text{Jkg}^{-1}\text{K}^{-1}$	$\gamma/$ $\text{MPaK}^{-1}$	$p_{\text{int}}/$ MPa
79.980	918.65	467.85	558.5	987.4	889.1	1.7680	747.2
89.995	923.41	467.84	539.0	959.5	865.4	1.7802	742.9
99.915	928.26	467.84	520.2	932.2	842.0	1.7920	738.5
109.910	933.01	467.86	502.8	906.6	819.6	1.8028	733.6
120.130	937.75	467.86	486.5	882.0	797.7	1.8129	728.0
129.234	941.60	467.87	473.9	862.7	780.3	1.8204	722.5
139.546	946.23	467.89	459.5	840.2	759.7	1.8287	716.1

Table S3. Calculated values of secant bulk modulus  $K/\text{MPa}$  of standard seawater at the experimental pressures  $p/\text{MPa}$  and temperatures  $T/\text{K}$ .

$p/\text{MPa}$	$T/\text{K}$	$K/\text{MPa}$	$p/\text{MPa}$	$T/\text{K}$	$K/\text{MPa}$	$p/\text{MPa}$	$T/\text{K}$	$K/\text{MPa}$
19.991	273.16	2254.376	60.062	293.12	2568.642	109.996	313.12	2787.828
30.000	273.16	2283.353	70.012	293.15	2613.748	120.069	313.12	2826.939
40.000	273.17	2316.215	79.993	293.12	2634.162	130.914	313.18	2864.935
49.958	273.18	2350.487	89.987	293.15	2675.694	138.640	313.21	2891.163
59.987	273.19	2384.156	99.919	293.12	2697.230	30.046	333.15	2504.684
69.961	273.19	2415.559	109.791	293.13	2731.042	40.026	333.14	2537.455
79.983	273.19	2447.425	117.401	293.13	2755.642	50.052	333.14	2577.528
89.998	273.19	2480.059	129.490	293.13	2794.566	60.042	333.13	2610.702
99.910	273.20	2516.078	139.074	293.13	2824.528	70.076	333.13	2647.611
109.904	273.15	2539.227	30.002	298.16	2510.426	80.085	333.13	2684.022
119.964	273.13	2570.432	40.049	298.15	2533.416	90.066	333.15	2715.616
129.856	273.14	2608.570	50.046	298.15	2563.446	100.075	333.16	2751.563
138.814	273.14	2641.701	60.170	298.18	2609.226	110.072	333.15	2786.740
20.149	278.15	2326.447	70.100	298.18	2636.221	120.347	333.12	2821.608
30.001	278.15	2360.850	79.984	298.19	2670.656	130.476	333.14	2857.660
40.036	278.14	2384.868	89.997	298.19	2699.451	139.378	333.16	2889.674
50.001	278.15	2422.786	99.946	298.20	2733.744	30.002	353.16	2428.359
59.916	278.15	2453.459	109.984	298.19	2761.205	40.055	353.16	2460.459
70.004	278.15	2484.602	120.229	298.20	2795.958	50.004	353.16	2495.420
80.021	278.14	2512.768	128.749	298.18	2818.628	59.964	353.18	2534.037
90.003	278.14	2543.886	137.307	298.19	2848.273	70.004	353.16	2569.628
99.836	278.14	2574.955	30.000	303.18	2530.571	79.932	353.16	2605.879
110.101	278.14	2607.773	39.944	303.19	2564.296	89.997	353.16	2647.260
119.839	278.14	2638.835	50.000	303.17	2579.455	99.801	353.16	2679.243
130.002	278.14	2671.854	60.098	303.17	2609.461	110.000	353.16	2712.977
138.240	278.14	2698.931	70.000	303.17	2639.432	119.985	353.15	2743.901
30.003	283.17	2421.095	79.948	303.18	2673.563	130.005	353.15	2778.014
40.058	283.17	2449.331	90.001	303.18	2705.071	138.574	353.18	2814.176
50.004	283.17	2476.438	99.904	303.18	2735.894	20.027	373.13	2299.285
60.170	283.17	2507.155	109.882	303.17	2764.454	30.086	373.12	2326.068
69.997	283.18	2540.138	120.259	303.19	2803.505	39.904	373.10	2357.514
80.116	283.18	2571.059	129.394	303.20	2836.205	50.000	373.15	2397.282
90.002	283.18	2601.720	137.031	303.21	2862.980	60.089	373.15	2432.918
99.985	283.18	2632.322	30.102	308.18	2572.226	70.013	373.17	2469.884
110.000	283.18	2663.089	40.133	308.17	2586.282	79.913	373.15	2503.522
119.787	283.18	2694.130	50.098	308.17	2611.901	90.063	373.14	2538.627
130.003	283.18	2726.701	59.902	308.17	2638.367	99.897	373.13	2572.706
139.712	283.19	2760.160	70.100	308.16	2663.037	109.980	373.15	2608.130
30.002	288.15	2454.423	79.801	308.17	2695.797	120.485	373.14	2643.596
39.986	288.16	2488.460	89.998	308.17	2726.769	126.734	373.15	2664.636
50.000	288.16	2514.625	99.784	308.18	2761.108	138.941	373.16	2705.660
59.919	288.17	2547.503	109.742	308.18	2791.927	20.111	393.18	2165.329
69.997	288.17	2576.481	119.968	308.15	2815.113	30.036	393.17	2188.932
79.920	288.18	2609.044	129.494	308.16	2848.815	39.977	393.17	2217.645
89.996	288.18	2638.566	137.225	308.16	2874.641	50.017	393.17	2249.449
99.628	288.19	2670.541	30.015	313.17	2516.449	59.942	393.18	2280.842
110.000	288.15	2692.107	40.098	313.15	2549.242	70.028	393.16	2314.674
119.786	288.12	2733.153	49.997	313.15	2583.693	79.802	393.17	2348.275
129.997	288.15	2757.252	59.967	313.12	2621.965	90.042	393.17	2383.358
140.004	288.18	2796.353	69.955	313.12	2658.875	99.916	393.17	2418.742
30.024	293.15	2487.939	79.899	313.12	2692.979	109.989	393.17	2455.437
40.008	293.14	2513.241	90.055	313.13	2729.992	119.939	393.17	2491.859
50.035	293.15	2551.663	99.928	313.13	2761.799	130.913	393.17	2533.181

Table S3 - continue

<i>p</i> / MPa	<i>T</i> / K	<i>K</i> / MPa	<i>p</i> / MPa	<i>T</i> / K	<i>K</i> / MPa	<i>p</i> / MPa	<i>T</i> / K	<i>K</i> / MPa
138.973	393.17	2559.940	59.856	433.18	1936.246	110.492	453.14	1911.663
19.883	413.14	2017.569	69.926	433.17	1973.162	120.342	453.15	1947.506
30.085	413.12	2020.747	80.011	433.16	2010.653	129.607	453.15	1979.434
39.956	413.12	2058.888	89.963	433.17	2043.162	137.685	453.15	2008.119
50.004	413.15	2088.389	99.898	433.20	2077.464	20.044	468.02	1489.752
60.098	413.15	2119.108	110.198	433.13	2110.155	30.087	468.03	1496.047
70.005	413.15	2151.339	120.699	433.10	2145.149	39.929	468.03	1523.745
80.032	413.15	2190.929	130.771	433.17	2183.597	50.086	468.03	1555.374
89.997	413.15	2224.583	138.275	433.16	2209.191	59.833	468.04	1585.168
99.881	413.11	2258.905	19.918	453.14	1649.459	70.053	468.03	1619.859
109.803	413.15	2294.134	30.086	453.13	1649.816	80.041	468.03	1654.664
119.755	413.13	2326.209	39.960	453.13	1680.433	90.053	468.03	1688.427
127.670	413.15	2356.355	49.958	453.14	1712.745	99.902	468.03	1720.983
139.149	413.14	2396.308	59.855	453.15	1740.674	109.800	468.03	1753.459
20.112	433.18	1834.944	69.958	453.17	1775.719	119.911	467.98	1786.633
30.025	433.18	1848.529	79.981	453.15	1807.216	129.218	468.05	1817.414
39.950	433.20	1881.488	89.953	453.19	1843.654	139.062	468.06	1848.471
49.927	433.18	1907.549	99.866	453.18	1877.395			