ISCEON 39TC

Saturated Properties

(Vapour Composition)

Standard state of liquid at 0°C, Enthalpy = 200 kJ/kg, Entropy = 1.0 kJ/kg.K

Temperature	Bubble Pt. Pressure	Dew Pt. Pressure	Density (kg/m³)		Volume (l/kg)		Enthalpy (kJ/kg)			Entropy (kJ/kg.K)		Temperature
°C	Bar	Bar	Liquid	Vapour	Liquid	Vapour	Liquid	Latent	Vapour	Liquid	Vapour	K
-50	0.280	0.272	1511	1.82	0.000662	0.5501	140.5	194.60	335.10	0.762	1.629	223
-49	0.297	0.288	1508	1.92	0.000663	0.5213	141.6	194.10	335.70	0.767	1.628	224
-48	0.314	0.305	1505	2.02	0.000664	0.4944	142.8	193.50	336.30	0.772	1.627	225
-47	0.332	0.323	1503	2.13	0.000665	0.4691	143.9	193.10	337.00	0.777	1.626	226
-46	0.351	0.341	1500	2.25	0.000667	0.4453	145.1	192.50	337.60	0.782	1.626	227
-45	0.371	0.361	1497	2.36	0.000668	0.4230	146.2	192.00	338.20	0.787	1.625	228
-44	0.391	0.381	1495	2.49	0.000669	0.4020	147.4	191.50	338.90	0.792	1.624	229
-43	0.413	0.402	1492	2.62	0.000670	0.3822	148.6	190.90	339.50	0.797	1.623	230
-42	0.436	0.424	1489	2.75	0.000672	0.3636	149.7	190.40	340.10	0.802	1.622	231
-41	0.459	0.447	1487	2.89	0.000672	0.3460	150.9	189.90	340.80	0.807	1.621	232
-40	0.484	0.471	1484	3.04	0.000674	0.3295	152.0	189.40	341.40	0.812	1.621	233
-39	0.509	0.496	1481	3.19	0.000675	0.3139	153.2	188.90	342.10	0.817	1.620	234
-38	0.536	0.522	1478	3.34	0.000677	0.2992	154.4	188.30	342.70	0.822	1.619	235
-37	0.564	0.549	1476	3.51	0.000678	0.2853	155.5	187.80	343.30	0.827	1.619	236
-36	0.593	0.577	1473	3.68	0.000679	0.2721	156.7	187.30	344.00	0.832	1.618	237
-35	0.623	0.607	1470	3.85	0.000680	0.2597	157.8	186.80	344.60	0.836	1.617	238
-34	0.654	0.637	1468	4.03	0.000681	0.2480	159.0	186.20	345.20	0.841	1.617	239
-33	0.687	0.669	1465	4.22	0.000683	0.2369	160.2	185.70	345.90	0.846	1.616	240
-32	0.721	0.702	1462	4.42	0.000684	0.2264	161.4	185.10	346.50	0.851	1.616	241
-31	0.756	0.737	1459	4.62	0.000685	0.2164	162.5	184.60	347.10	0.856	1.615	242
-30	0.793	0.772	1456	4.83	0.000687	0.2070	163.7	184.10	347.80	0.861	1.615	243
-29	0.831	0.810	1454	5.05	0.000688	0.1980	164.9	183.50	348.40	0.865	1.614	244
-28	0.870	0.848	1451	5.28	0.000689	0.1895	166.1	182.90	349.00	0.870	1.614	245
-27	0.911	0.888	1448	5.51	0.000691	0.1815	167.3	182.40	349.70	0.875	1.613	246
-26	0.954	0.930	1445	5.75	0.000692	0.1739	168.4	181.90	350.30	0.880	1.613	247
-25	0.998	0.973	1442	6.00	0.000693	0.1666	169.6	181.30	350.90	0.885	1.612	248
-24	1.043	1.017	1439	6.26	0.000695	0.1597	170.8	180.80	351.60	0.889	1.612	249
-23	1.090	1.063	1437	6.53	0.000696	0.1531	172.0	180.20	352.20	0.894	1.612	250
-22	1.139	1.111	1434	6.81	0.000697	0.1469	173.2	179.60	352.80	0.899	1.611	251
-21	1.190	1.160	1431	7.09	0.000699	0.1410	174.4	179.10	353.50	0.903	1.611	252
-20	1.242	1.212	1428	7.39	0.000700	0.1353	175.6	178.50	354.10	0.908	1.611	253
-19	1.296	1.265	1425	7.69	0.000702	0.1300	176.8	177.90	354.70	0.913	1.610	254
-18	1.352	1.319	1422	8.01	0.000703	0.1248	178.0	177.30	355.30	0.917	1.610	255
-17	1.410	1.376	1419	8.34	0.000705	0.1200	179.2	176.80	356.00	0.922	1.610	256
-16	1.470	1.435	1416	8.67	0.000706	0.1153	180.4	176.20	356.60	0.927	1.610	257
-15	1.532	1.495	1413	9.02	0.000708	0.1109	181.6	175.60	357.20	0.931	1.609	258
-14	1.596	1.558	1410	9.38	0.000709	0.1067	182.8	175.00	357.80	0.936	1.609	259
-13	1.662	1.622	1407	9.75	0.000711	0.1026	184.0	174.50	358.50	0.941	1.609	260
-12	1.730	1.689	1404	10.13	0.000712	0.0988	185.2	173.90	359.10	0.945	1.609	261
-11	1.800	1.757	1401	10.52	0.000714	0.0951	186.5	173.20	359.70	0.950	1.609	262
-10	1.872	1.828	1398	10.92	0.000715	0.0916	187.7	172.60	360.30	0.955	1.608	263
-9	1.947	1.901	1395	11.34	0.000717	0.0882	188.9	172.00	360.90	0.959	1.608	264
-8	2.024	1.977	1392	11.77	0.000718	0.0850	190.1	171.50	361.60	0.964	1.608	265
-7	2.103	2.054	1389	12.21	0.000720	0.0819	191.3	170.90	362.20	0.968	1.608	266
-6	2.185	2.135	1386	12.66	0.000722	0.0790	192.6	170.20	362.80	0.973	1.608	267
-5	2.269	2.217	1383	13.13	0.000723	0.0761	193.8	169.60	363.40	0.977	1.608	268
-4	2.356	2.302	1380	13.62	0.000725	0.0734	195.0	169.00	364.00	0.982	1.608	269
-3	2.445	2.389	1376	14.11	0.000727	0.0709	196.3	168.30	364.60	0.986	1.608	270
-2	2.536	2.479	1373	14.62	0.000728	0.0684	197.5	167.70	365.20	0.991	1.607	271
-1	2.631	2.572	1370	15.15	0.000730	0.0660	198.8	167.00	365.80	0.996	1.607	272
0	2.728	2.667	1367	15.69	0.000732	0.0637	200.0	166.40	366.40	1.000	1.607	273
1	2.828	2.765	1364	16.25	0.000733	0.0616	201.2	165.80	367.00	1.005	1.607	274
2	2.931	2.866	1360	16.82	0.000735	0.0595	202.5	165.10	367.60	1.009	1.607	275
3	3.036	2.969	1357	17.41	0.000737	0.0575	203.8	164.40	368.20	1.014	1.607	276
4	3.144	3.076	1354	18.01	0.000739	0.0555	205.0	163.80	368.80	1.018	1.607	277
5	3.256	3.185	1351	18.63	0.000740	0.0537	206.3	163.10	369.40	1.022	1.607	278
6	3.370	3.297	1347	19.27	0.000742	0.0519	207.5	162.50	370.00	1.027	1.607	279
7	3.488	3.412	1344	19.93	0.000744	0.0502	208.8	161.80	370.60	1.031	1.607	280
8	3.608	3.531	1341	20.60	0.000746	0.0485	210.1	161.10	371.20	1.036	1.607	281
9	3.732	3.652	1337	21.30	0.000748	0.0470	211.3	160.50	371.80	1.040	1.607	282
10	3.859	3.777	1334	22.01	0.000750	0.0454	212.6	159.80	372.40	1.045	1.607	283

ISCEON 39TC

Saturated Properties

(Vapour Composition)

Standard state of liquid at 0°C, Enthalpy = 200 kJ/kg, Entropy = 1.0 kJ/kg.K

Temperature	Bubble Pt. Pressure	Dew Pt. Pressure	Density (kg/m³)		Volume (l/kg)		Enthalpy (kJ/kg)			Entropy (kJ/kg.K)		Temperature
°C	Bar	Bar	Liquid	Vapour	Liquid	Vapour	Liquid	Latent	Vapour	Liquid	Vapour	K
11	3.989	3.905	1330	22.74	0.000752	0.0440	213.9	159.10	373.00	1.049	1.607	284
12	4.123	4.036	1327	23.49	0.000754	0.0426	215.2	158.30	373.50	1.054	1.607	285
13	4.260	4.171	1323	24.27	0.000756	0.0412	216.4	157.70	374.10	1.058	1.607	286
14	4.401	4.309	1320	25.06	0.000758	0.0399	217.7	157.00	374.70	1.063	1.608	287
15	4.545	4.451	1316	25.87	0.000760	0.0387	219.0	156.30	375.30	1.067	1.608	288
16	4.692	4.596	1313	26.71	0.000762	0.0374	220.3	155.50	375.80	1.071	1.608	289
17	4.844	4.745	1309	27.57	0.000764	0.0363	221.6	154.80	376.40	1.076	1.608	290
18	4.999	4.897	1306	28.45	0.000766	0.0352	222.9	154.10	377.00	1.080	1.608	291
19	5.157	5.053	1302	29.35	0.000768	0.0341	224.2	153.30	377.50	1.085	1.608	292
20	5.320	5.213	1299	30.28	0.000770	0.0330	225.5	152.60	378.10	1.089	1.608	293
21	5.486	5.377	1295	31.23	0.000772	0.0320	226.8	151.90	378.70	1.093	1.608	294
22	5.656	5.544	1291	32.21	0.000775	0.0311	228.1	151.10	379.20	1.098	1.608	295
23	5.831	5.716	1287	33.22	0.000777	0.0301	229.4	150.40	379.80	1.102	1.608	296
24	6.009	5.891	1284	34.25	0.000779	0.0292	230.8	149.50	380.30	1.107	1.608	297
25	6.192	6.071	1280	35.30	0.000781	0.0283	232.1	148.80	380.90	1.111	1.608	298
26	6.378	6.255	1276	36.39	0.000784	0.0275	233.4	148.00	381.40	1.115	1.608	299
27	6.569	6.443	1272	37.50	0.000786	0.0267	234.7	147.20	381.90	1.120	1.609	300
28	6.764	6.635	1268	38.64	0.000789	0.0259	236.1	146.40	382.50	1.124	1.609	301
29	6.964	6.832	1265	39.82	0.000791	0.0251	237.4	145.60	383.00	1.128	1.609	302
30	7.168	7.033	1261	41.02	0.000793	0.0244	238.8	144.70	383.50	1.133	1.609	303
31	7.377	7.238	1257	42.25	0.000796	0.0237	240.1	144.00	384.10	1.137	1.609	304
32	7.590	7.448	1253	43.52	0.000798	0.0230	241.5	143.10	384.60	1.141	1.609	305
33	7.807	7.663	1249	44.82	0.000801	0.0223	242.8	142.30	385.10	1.146	1.609	306
34	8.030	7.882	1245	46.16	0.000803	0.0217	244.2	141.40	385.60	1.150	1.609	307
35	8.257	8.106	1240	47.53	0.000806	0.0210	245.5	140.60	386.10	1.154	1.609	308
36	8.489	8.335	1236	48.93	0.000809	0.0204	246.9	139.70	386.60	1.159	1.609	309
37	8.726	8.569	1232	50.37	0.000812	0.0199	248.3	138.80	387.10	1.163	1.609	310
38	8.967	8.808	1228	51.86	0.000814	0.0193	249.6	138.00	387.60	1.168	1.610	311
39	9.214	9.051	1224	53.38	0.000817	0.0187	251.0	137.10	388.10	1.172	1.610	312
40	9.466	9.300	1219	54.94	0.000820	0.0182	252.4	136.20	388.60	1.176	1.610	313
41	9.723	9.554	1215	56.54	0.000823	0.0177	253.8	135.30	389.10	1.181	1.610	314
42	9.986	9.813	1211	58.18	0.000826	0.0172	255.2	134.30	389.50	1.185	1.610	315
43	10.250	10.080	1206	59.87	0.000829	0.0167	256.6	133.40	390.00	1.189	1.610	316
44	10.530	10.350	1202	61.61	0.000832	0.0162	258.0	132.50	390.50	1.194	1.610	317
45	10.800	10.620	1197	63.39	0.000835	0.0158	259.4	131.50	390.90	1.198	1.610	318
46	11.090	10.900	1193	65.22	0.000838	0.0153	260.8	130.60	391.40	1.202	1.610	319
47	11.380	11.190	1188	67.10	0.000842	0.0149	262.2	129.60	391.80	1.207	1.610	320
48	11.670	11.480	1184	69.04	0.000845	0.0145	263.6	128.60	392.20	1.211	1.610	321
49	11.970	11.780	1179	71.02	0.000848	0.0141	265.1	127.60	392.70	1.215	1.610	322
50	12.280	12.080	1174	73.06	0.000852	0.0137	266.5	126.60	393.10	1.220	1.610	323
51	12.590	12.390	1169	75.16	0.000855	0.0133	267.9	125.60	393.50	1.224	1.610	324
52	12.910	12.710	1164	77.32	0.000859	0.0129	269.4	124.50	393.90	1.228	1.610	325
53	13.240	13.030	1159	79.54	0.000863	0.0126	270.8	123.50	394.30	1.233	1.610	326
54	13.570	13.360	1154	81.83	0.000867	0.0122	272.3	122.40	394.70	1.237	1.610	327
55	13.900	13.690	1149	84.18	0.000870	0.0119	273.8	121.30	395.10	1.241	1.610	328
56	14.250	14.030	1144	86.60	0.000874	0.0116	275.2	120.20	395.40	1.246	1.610	329
57	14.600	14.380	1139	89.09	0.000878	0.0112	276.7	119.10	395.80	1.250	1.610	330
58	14.950	14.730	1134	91.66	0.000882	0.0109	278.2	118.00	396.20	1.254	1.610	331
59	15.310	15.090	1129	94.30	0.000886	0.0106	279.7	116.80	396.50	1.259	1.609	332
60	15.680	15.460	1123	97.03	0.000890	0.0103	281.2	115.60	396.80	1.263	1.609	333
61	16.060	15.830	1118	99.84	0.000894	0.0100	282.7	114.40	397.10	1.268	1.609	334
62	16.440	16.210	1112	102.70	0.000899	0.0097	284.2	113.30	397.50	1.272	1.609	335
63	16.830	16.590	1107	105.70	0.000903	0.0095	285.7	112.00	397.70	1.276	1.609	336
64	17.220	16.990	1101	108.80	0.000908	0.0092	287.2	110.80	398.00	1.281	1.608	337
65	17.630	17.390	1095	112.00	0.000913	0.0089	288.8	109.50	398.30	1.285	1.608	338
66	18.040	17.800	1089	115.30	0.000918	0.0087	290.3	108.30	398.60	1.290	1.608	339
67	18.450	18.210	1083	118.70	0.000923	0.0084	291.9	106.90	398.80	1.294	1.607	340
68	18.880	18.630	1077	122.20	0.000929	0.0082	293.4	105.60	399.00	1.299	1.607	341
69	19.310	19.060	1071	125.90	0.000934	0.0079	295.0	104.20	399.20	1.303	1.607	342
70	19.750	19.500	1065	129.70	0.000939	0.0077	296.6	102.80	399.40	1.307	1.606	343
71	20.190	19.940	1059	133.60	0.000944	0.0075	298.2	101.40	399.60	1.312	1.606	344

ISCEON 39TC

Saturated Properties

(Vapour Composition)

Standard state of liquid at 0°C, Enthalpy = 200 kJ/kg, Entropy = 1.0 kJ/kg.K

Temperature °C	Bubble Pt. Pressure Bar	Dew Pt. Pressure Bar	Density (kg/m³) Liquid	Density (kg/m³) Vapour	Volume (l/kg) Liquid	Volume (l/kg) Vapour	Enthalpy (kJ/kg) Liquid	Enthalpy (kJ/kg) Latent	Enthalpy (kJ/kg) Vapour	Entropy (kJ/kg.K) Liquid	Entropy (kJ/kg.K) Vapour	Temperature K
72	20.650	20.390	1052	137.70	0.000951	0.0073	299.8	99.90	399.70	1.316	1.605	345
73	21.110	20.850	1045	141.90	0.000957	0.0070	301.4	98.50	399.90	1.321	1.605	346
74	21.570	21.320	1039	146.30	0.000962	0.0068	303.0	97.00	400.00	1.326	1.604	347
75	22.050	21.800	1032	150.90	0.000969	0.0066	304.7	95.40	400.10	1.330	1.603	348
76	22.530	22.280	1025	155.70	0.000976	0.0064	306.3	93.80	400.10	1.335	1.602	349
77	23.030	22.770	1018	160.70	0.000982	0.0062	308.0	92.10	400.10	1.339	1.602	350
78	23.530	23.270	1010	165.90	0.000990	0.0060	309.6	90.50	400.10	1.344	1.601	351
79	24.030	23.780	1003	171.40	0.000997	0.0058	311.3	88.80	400.10	1.349	1.600	352
80	24.550	24.300	995	177.20	0.001005	0.0056	313.1	86.90	400.00	1.353	1.599	353
81	25.080	24.820	987	183.20	0.001013	0.0055	314.8	85.10	399.90	1.358	1.598	354
82	25.610	25.360	979	189.60	0.001021	0.0053	316.5	83.30	399.80	1.363	1.596	355
83	26.150	25.900	971	196.30	0.001030	0.0051	318.3	81.30	399.60	1.368	1.595	356
84	26.700	26.450	962	203.50	0.001039	0.0049	320.1	79.20	399.30	1.372	1.593	357
85	27.260	27.010	954	211.10	0.001049	0.0047	321.9	77.10	399.00	1.377	1.592	358
86	27.820	27.580	944	219.30	0.001059	0.0046	323.7	74.90	398.60	1.382	1.590	359
87	28.400	28.160	935	228.00	0.001070	0.0044	325.6	72.50	398.10	1.387	1.588	360
88	28.980	28.750	925	237.60	0.001081	0.0042	327.5	70.10	397.60	1.392	1.586	361
89	29.580	29.350	915	248.10	0.001093	0.0040	329.4	67.50	396.90	1.397	1.583	362
90	30.180	29.960	905	259.70	0.001105	0.0039	331.3	64.70	396.00	1.403	1.580	363

Rhodia

ISCEON 39TC

(Vapour Composition)

Superheated Properties

Standard state of liquid at 0°C, Enthalpy = 200 kJ/kg, Entropy = 1.0 kJ/kg.K

-50ºC (0.272 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
-50	0.5507	335.10	1.6290
-48	0.5562	336.50	1.6360
-46	0.5615	337.90	1.6420
-44	0.5669	339.30	1.6480
-42	0.5721	340.70	1.6540
-40	0.5774	342.20	1.6610
-38	0.5828	343.60	1.6670
-36	0.5879	345.10	1.6730
-34	0.5931	346.50	1.6790
-32	0.5984	348.00	1.6850
-30	0.6035	349.50	1.6910
-28	0.6090	350.90	1.6970
-26	0.6143	352.40	1.7030
-24	0.6192	353.90	1.7090
-22	0.6246	355.40	1.7150
-20	0.6297	356.90	1.7210
-18	0.6349	358.40	1.7270
-16	0.6402	359.90	1.7330
-14	0.6452	361.40	1.7390
-12	0.6506	363.00	1.7450
-10	0.6557	364.50	1.7510
-8	0.6609	366.00	1.7560
-6	0.6662	367.60	1.7620
-4	0.6711	369.10	1.7680
-2	0.6766	370.70	1.7740
0	0.6817	372.30	1.7800
2	0.6868	373.80	1.7850
4	0.6916	375.40	1.7910
6	0.6969	377.00	1.7970
8	0.7022	378.60	1.8020
10	0.7072	380.20	1.8080
12	0.7123	381.80	1.8140
14	0.7179	383.40	1.8190
16	0.7225	385.00	1.8250
18	0.7278	386.70	1.8310
20	0.7331	388.30	1.8360
22	0.7380	389.90	1.8420
24	0.7429	391.60	1.8470
26	0.7485	393.20	1.8530
28	0.7536	394.90	1.8580
30	0.7587	396.50	1.8640
32	0.7639	398.20	1.8690
34	0.7686	399.90	1.8750
36	0.7740	401.60	1.8800
38	0.7788	403.30	1.8860
40	0.7843	405.00	1.8910
42	0.7893	406.70	1.8970
44	0.7943	408.40	1.9020
46	0.7994	410.10	1.9070
48	0.8045	411.80	1.9130
50	0.8097	413.50	1.9180
52	0.8143	415.30	1.9240
54	0.8197	417.00	1.9290
56	0.8251	418.80	1.9340
58	0.8299	420.50	1.9400
60	0.8347	422.30	1.9450
62	0.8403	424.10	1.9500
64	0.8453	425.80	1.9550
66	0.8503	427.60	1.9610
68	0.8554	429.40	1.9660
70	0.8606	431.20	1.9710
72	0.8658	433.00	1.9760
74	0.8703	434.80	1.9820
76	0.8757	436.60	1.9870
78	0.8811	438.40	1.9920
80	0.8857	440.30	1.9970
82	0.8913	442.10	2.0020
84	0.8961	443.90	2.0080
86	0.9009	445.80	2.0130
88	0.9058	447.60	2.0180
90	0.9116	449.50	2.0230
92	0.9166	451.30	2.0280
94	0.9217	453.20	2.0330
96	0.9268	455.10	2.0380
98	0.9311	456.90	2.0430
100	0.9363	458.80	2.0480

-40ºC (0.471 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
-40	0.3293	341.40	1.6210
-38	0.3324	342.90	1.6270
-36	0.3356	344.40	1.6330
-34	0.3388	345.80	1.6390
-32	0.3419	347.30	1.6460
-30	0.3449	348.80	1.6520
-28	0.3481	350.30	1.6580
-26	0.3512	351.80	1.6640
-24	0.3544	353.30	1.6700
-22	0.3574	354.80	1.6760
-20	0.3605	356.30	1.6820
-18	0.3636	357.80	1.6880
-16	0.3667	359.40	1.6940
-14	0.3697	360.90	1.7000
-12	0.3727	362.40	1.7060
-10	0.3758	364.00	1.7120
-8	0.3789	365.50	1.7180
-6	0.3820	367.10	1.7230
-4	0.3849	368.70	1.7290
-2	0.3880	370.20	1.7350
0	0.3911	371.80	1.7410
2	0.3940	373.40	1.7470
4	0.3971	375.00	1.7520
6	0.4002	376.60	1.7580
8	0.4032	378.20	1.7640
10	0.4062	379.80	1.7690
12	0.4092	381.40	1.7750
14	0.4122	383.00	1.7810
16	0.4151	384.70	1.7860
18	0.4182	386.30	1.7920
20	0.4212	387.90	1.7980
22	0.4243	389.60	1.8030
24	0.4272	391.20	1.8090
26	0.4301	392.90	1.8140
28	0.4331	394.50	1.8200
30	0.4361	396.20	1.8260
32	0.4392	397.90	1.8310
34	0.4421	399.60	1.8370
36	0.4450	401.30	1.8420
38	0.4480	403.00	1.8470
40	0.4511	404.70	1.8530
42	0.4539	406.40	1.8580
44	0.4570	408.10	1.8640
46	0.4600	409.80	1.8690
48	0.4630	411.50	1.8750
50	0.4660	413.30	1.8800
52	0.4688	415.00	1.8850
54	0.4719	416.80	1.8910
56	0.4748	418.50	1.8960
58	0.4778	420.30	1.9010
60	0.4808	422.00	1.9070
62	0.4838	423.80	1.9120
64	0.4866	425.60	1.9170
66	0.4897	427.40	1.9230
68	0.4926	429.20	1.9280
70	0.4955	431.00	1.9330
72	0.4985	432.80	1.9380
74	0.5015	434.60	1.9440
76	0.5045	436.40	1.9490
78	0.5074	438.20	1.9540
80	0.5102	440.00	1.9590
82	0.5133	441.90	1.9640
84	0.5163	443.70	1.9700
86	0.5192	445.60	1.9750
88	0.5222	447.40	1.9800
90	0.5252	449.30	1.9850
92	0.5280	451.10	1.9900
94	0.5311	453.00	1.9950
96	0.5339	454.90	2.0000
98	0.5368	456.80	2.0050
100	0.5400	458.70	2.0100
102	0.5429	460.60	2.0160
104	0.5456	462.50	2.0210
106	0.5485	464.40	2.0260
108	0.5516	466.30	2.0310
110	0.5546	468.20	2.0360

-30ºC (0.772 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
-30	0.2071	347.80	1.6150
-28	0.2091	349.30	1.6210
-26	0.2111	350.80	1.6270
-24	0.2130	352.40	1.6330
-22	0.2150	353.90	1.6390
-20	0.2170	355.40	1.6460
-18	0.2189	357.00	1.6520
-16	0.2208	358.50	1.6580
-14	0.2228	360.10	1.6640
-12	0.2247	361.70	1.6700
-10	0.2267	363.20	1.6760
-8	0.2286	364.80	1.6820
-6	0.2305	366.40	1.6880
-4	0.2324	367.90	1.6930
-2	0.2343	369.50	1.6990
0	0.2362	371.10	1.7050
2	0.2381	372.70	1.7110
4	0.2400	374.30	1.7170
6	0.2419	375.90	1.7230
8	0.2438	377.60	1.7280
10	0.2457	379.20	1.7340
12	0.2476	380.80	1.7400
14	0.2494	382.40	1.7460
16	0.2513	384.10	1.7510
18	0.2532	385.70	1.7570
20	0.2551	387.40	1.7630
22	0.2569	389.00	1.7680
24	0.2588	390.70	1.7740
26	0.2607	392.40	1.7790
28	0.2625	394.00	1.7850
30	0.2643	395.70	1.7910
32	0.2662	397.40	1.7960
34	0.2680	399.10	1.8020
36	0.2699	400.80	1.8070
38	0.2717	402.50	1.8130
40	0.2736	404.20	1.8180
42	0.2755	405.90	1.8240
44	0.2773	407.70	1.8290
46	0.2792	409.40	1.8340
48	0.2811	411.10	1.8400
50	0.2828	412.90	1.8450
52	0.2847	414.60	1.8510
54	0.2865	416.40	1.8560
56	0.2883	418.10	1.8610
58	0.2902	419.90	1.8670
60	0.2920	421.70	1.8720
62	0.2939	423.50	1.8770
64	0.2957	425.20	1.8830
66	0.2974	427.00	1.8880
68	0.2993	428.80	1.8930
70	0.3011	430.60	1.8990
72	0.3029	432.40	1.9040
74	0.3048	434.30	1.9090
76	0.3066	436.10	1.9140
78	0.3085	437.90	1.9200
80	0.3103	439.70	1.9250
82	0.3120	441.60	1.9300
84	0.3139	443.40	1.9350
86	0.3157	445.30	1.9400
88	0.3175	447.10	1.9450
90	0.3193	449.00	1.9510
92	0.3211	450.90	1.9560
94	0.3230	452.70	1.9610
96	0.3247	454.60	1.9660
98	0.3266	456.50	1.9710
100	0.3284	458.40	1.9760
102	0.3301	460.30	1.9810
104	0.3320	462.20	1.9860
106	0.3338	464.10	1.9910
108	0.3356	466.00	1.9960
110	0.3374	467.90	2.0010
112	0.3392	469.90	2.0060
114	0.3411	471.80	2.0110
116	0.3428	473.70	2.0160
118	0.3446	475.70	2.0210
120	0.3464	477.60	2.0260

Rhodia

ISCEON 39TC

(Vapour Composition)

Superheated Properties

Standard state of liquid at 0°C, Enthalpy = 200 kJ/kg, Entropy = 1.0 kJ/kg.K

-20°C (1.212 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
-20	0.13532	354.10	1.6110
-18	0.13663	355.70	1.6170
-16	0.13793	357.30	1.6230
-14	0.13924	358.90	1.6290
-12	0.14055	360.40	1.6350
-10	0.14182	362.00	1.6410
-8	0.14312	363.60	1.6470
-6	0.14440	365.30	1.6540
-4	0.14567	366.90	1.6600
-2	0.14695	368.50	1.6660
0	0.14821	370.10	1.6710
2	0.14948	371.70	1.6770
4	0.15074	373.40	1.6830
6	0.15198	375.00	1.6890
8	0.15323	376.60	1.6950
10	0.15449	378.30	1.7010
12	0.15571	379.90	1.7070
14	0.15696	381.60	1.7120
16	0.15820	383.20	1.7180
18	0.15941	384.90	1.7240
20	0.16064	386.60	1.7300
22	0.16186	388.20	1.7350
24	0.16311	389.90	1.7410
26	0.16431	391.60	1.7470
28	0.16554	393.30	1.7520
30	0.16675	395.00	1.7580
32	0.16798	396.70	1.7630
34	0.16918	398.40	1.7690
36	0.17039	400.10	1.7750
38	0.17159	401.80	1.7800
40	0.17280	403.60	1.7860
42	0.17397	405.30	1.7910
44	0.17519	407.00	1.7970
46	0.17637	408.80	1.8020
48	0.17759	410.50	1.8080
50	0.17876	412.30	1.8130
52	0.17999	414.00	1.8180
54	0.18119	415.80	1.8240
56	0.18235	417.60	1.8290
58	0.18355	419.30	1.8350
60	0.18471	421.10	1.8400
62	0.18594	422.90	1.8450
64	0.18709	424.70	1.8510
66	0.18829	426.50	1.8560
68	0.18947	428.30	1.8610
70	0.19066	430.10	1.8670
72	0.19183	431.90	1.8720
74	0.19301	433.80	1.8770
76	0.19417	435.60	1.8820
78	0.19535	437.40	1.8880
80	0.19654	439.30	1.8930
82	0.19771	441.10	1.8980
84	0.19889	443.00	1.9030
86	0.20004	444.80	1.9080
88	0.20125	446.70	1.9140
90	0.20239	448.60	1.9190
92	0.20354	450.40	1.9240
94	0.20471	452.30	1.9290
96	0.20589	454.20	1.9340
98	0.20708	456.10	1.9390
100	0.20820	458.00	1.9440
102	0.20938	459.90	1.9500
104	0.21057	461.80	1.9550
106	0.21173	463.70	1.9600
108	0.21290	465.60	1.9650
110	0.21404	467.60	1.9700
112	0.21524	469.50	1.9750
114	0.21636	471.40	1.9800
116	0.21753	473.40	1.9850
118	0.21872	475.30	1.9900
120	0.21988	477.30	1.9950
122	0.22104	479.20	2.0000
124	0.22217	481.20	2.0050
126	0.22331	483.20	2.0100
128	0.22452	485.20	2.0150
130	0.22563	487.10	2.0200

-10°C (1.828 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
-10	0.09158	360.30	1.608
-8	0.09251	362.00	1.6150
-6	0.09337	363.60	1.6210
-4	0.09434	365.30	1.6270
-2	0.09524	366.90	1.6330
0	0.09606	368.60	1.6390
2	0.09699	370.30	1.6450
4	0.09785	371.90	1.6510
6	0.09872	373.60	1.6570
8	0.09960	375.30	1.6630
10	0.10049	376.90	1.6690
12	0.10136	378.60	1.6750
14	0.10222	380.30	1.6810
16	0.10308	382.00	1.6870
18	0.10394	383.70	1.6930
20	0.10479	385.40	1.6990
22	0.10564	387.10	1.7040
24	0.10648	388.80	1.7100
26	0.10733	390.50	1.7160
28	0.10817	392.20	1.7220
30	0.10900	393.90	1.7270
32	0.10984	395.70	1.7330
34	0.11067	397.40	1.7390
36	0.11150	399.10	1.7440
38	0.11231	400.90	1.7500
40	0.11316	402.60	1.7550
42	0.11397	404.40	1.7610
44	0.11481	406.10	1.7660
46	0.11562	407.90	1.7720
48	0.11644	409.60	1.7780
50	0.11725	411.40	1.7830
52	0.11806	413.20	1.7880
54	0.11888	415.00	1.7940
56	0.11969	416.80	1.7990
58	0.12050	418.60	1.8050
60	0.12129	420.30	1.8100
62	0.12210	422.10	1.8160
64	0.12291	424.00	1.8210
66	0.12370	425.80	1.8260
68	0.12452	427.60	1.8320
70	0.12531	429.40	1.8370
72	0.12612	431.20	1.8420
74	0.12692	433.10	1.8480
76	0.12770	434.90	1.8530
78	0.12852	436.80	1.8580
80	0.12932	438.60	1.8630
82	0.13011	440.50	1.8690
84	0.13089	442.30	1.8740
86	0.13168	444.20	1.8790
88	0.13249	446.10	1.8840
90	0.13326	448.00	1.8890
92	0.13405	449.80	1.8950
94	0.13483	451.70	1.9000
96	0.13563	453.60	1.9050
98	0.13641	455.50	1.9100
100	0.13721	457.40	1.9150
102	0.13799	459.30	1.9200
104	0.13877	461.30	1.9250
106	0.13955	463.20	1.9310
108	0.14033	465.10	1.9360
110	0.14112	467.00	1.9410
112	0.14190	469.00	1.9460
114	0.14269	470.90	1.9510
116	0.14347	472.90	1.9560
118	0.14426	474.80	1.9610
120	0.14503	476.80	1.9660
122	0.14582	478.80	1.9710
124	0.14658	480.70	1.9760
126	0.14736	482.70	1.9810
128	0.14815	484.70	1.9860
130	0.14892	486.70	1.9910
132	0.14970	488.70	1.9960
134	0.15047	490.70	2.0000
136	0.15124	492.70	2.0050
138	0.15202	494.70	2.0100
140	0.15279	496.70	2.0150

0°C (2.667 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
0	0.06373	366.40	1.6070
2	0.06439	368.20	1.6140
4	0.06506	369.90	1.6200
6	0.06570	371.60	1.6260
8	0.06636	373.30	1.6320
10	0.06698	375.10	1.6380
12	0.06766	376.80	1.6440
14	0.06826	378.50	1.6500
16	0.06892	380.30	1.6570
18	0.06954	382.00	1.6620
20	0.07018	383.70	1.6680
22	0.07077	385.50	1.6740
24	0.07138	387.20	1.6800
26	0.07199	389.00	1.6860
28	0.07262	390.70	1.6920
30	0.07321	392.50	1.6980
32	0.07380	394.20	1.7040
34	0.07440	396.00	1.7090
36	0.07502	397.80	1.7150
38	0.07559	399.50	1.7210
40	0.07622	401.30	1.7260
42	0.07680	403.10	1.7320
44	0.07740	404.90	1.7380
46	0.07794	406.60	1.7430
48	0.07855	408.40	1.7490
50	0.07911	410.20	1.7540
52	0.07974	412.00	1.7600
54	0.08032	413.80	1.7660
56	0.08084	415.60	1.7710
58	0.08143	417.40	1.7760
60	0.08203	419.30	1.7820
62	0.08258	421.10	1.7870
64	0.08319	422.90	1.7930
66	0.08375	424.70	1.7980
68	0.08432	426.60	1.8040
70	0.08489	428.40	1.8090
72	0.08540	430.30	1.8140
74	0.08598	432.10	1.8200
76	0.08658	434.00	1.8250
78	0.08711	435.80	1.8300
80	0.08764	437.70	1.8360
82	0.08826	439.60	1.8410
84	0.08881	441.50	1.8460
86	0.08937	443.30	1.8520
88	0.08993	445.20	1.8570
90	0.09050	447.10	1.8620
92	0.09099	449.00	1.8670
94	0.09158	450.90	1.8720
96	0.09217	452.80	1.8780
98	0.09268	454.70	1.8830
100	0.09320	456.70	1.8880
102	0.09381	458.60	1.8930
104	0.09434	460.50	1.8980
106	0.09488	462.40	1.9030
108	0.09542	464.40	1.9080
110	0.09597	466.30	1.9130
112	0.09653	468.30	1.9190
114	0.09709	470.20	1.9240
116	0.09766	472.20	1.9290
118	0.09814	474.10	1.9340
120	0.09872	476.10	1.9390
122	0.09921	478.10	1.9440
124	0.09980	480.10	1.9490
126	0.10033	482.10	1.9540
128	0.10088	484.00	1.9590
130	0.10142	486.00	1.9640
132	0.10196	488.00	1.9690
134	0.10250	490.10	1.9730
136	0.10304	492.10	1.9780
138	0.10358	494.10	1.9830
140	0.10412	496.10	1.9880
142	0.10466	498.10	1.9930
144	0.10520	500.20	1.9980
146	0.10574	502.20	2.0030
148	0.10628	504.20	2.0080
150	0.10681	506.30	2.0130

Rhodia

ISCEON 39TC

(Vapour Composition)

Superheated Properties

Standard state of liquid at 0°C, Enthalpy = 200 kJ/kg, Entropy = 1.0 kJ/kg.K

10ºC (3.777 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
10	0.04543	372.40	1.6070
12	0.04593	374.20	1.6140
14	0.04643	376.00	1.6200
16	0.04693	377.80	1.6260
18	0.04742	379.60	1.6320
20	0.04789	381.40	1.6390
22	0.04836	383.20	1.6450
24	0.04883	385.00	1.6510
26	0.04931	386.80	1.6570
28	0.04978	388.60	1.6630
30	0.05023	390.40	1.6690
32	0.05068	392.20	1.6750
34	0.05115	394.00	1.6810
36	0.05160	395.80	1.6870
38	0.05206	397.70	1.6920
40	0.05249	399.50	1.6980
42	0.05294	401.30	1.7040
44	0.05339	403.10	1.7100
46	0.05382	404.90	1.7150
48	0.05426	406.80	1.7210
50	0.05470	408.60	1.7270
52	0.05513	410.40	1.7330
54	0.05556	412.30	1.7380
56	0.05599	414.10	1.7440
58	0.05640	415.90	1.7490
60	0.05682	417.80	1.7550
62	0.05727	419.60	1.7600
64	0.05767	421.50	1.7660
66	0.05811	423.40	1.7710
68	0.05851	425.20	1.7770
70	0.05896	427.10	1.7820
72	0.05935	429.00	1.7880
74	0.05977	430.80	1.7930
76	0.06017	432.70	1.7990
78	0.06061	434.60	1.8040
80	0.06101	436.50	1.8090
82	0.06143	438.40	1.8150
84	0.06184	440.30	1.8200
86	0.06223	442.20	1.8250
88	0.06266	444.10	1.8310
90	0.06305	446.00	1.8360
92	0.06345	447.90	1.8410
94	0.06386	449.80	1.8460
96	0.06427	451.70	1.8520
98	0.06468	453.70	1.8570
100	0.06506	455.60	1.8620
102	0.06545	457.50	1.8670
104	0.06588	459.50	1.8720
106	0.06627	461.40	1.8780
108	0.06667	463.40	1.8830
110	0.06707	465.40	1.8880
112	0.06748	467.30	1.8930
114	0.06784	469.30	1.8980
116	0.06826	471.30	1.9030
118	0.06863	473.20	1.9080
120	0.06906	475.20	1.9130
122	0.06944	477.20	1.9180
124	0.06983	479.20	1.9230
126	0.07022	481.20	1.9280
128	0.07062	483.20	1.9330
130	0.07102	485.20	1.9380
132	0.07138	487.20	1.9430
134	0.07179	489.20	1.9480
136	0.07215	491.20	1.9530
138	0.07257	493.30	1.9580
140	0.07294	495.30	1.9630
142	0.07331	497.30	1.9680
144	0.07375	499.40	1.9730
146	0.07413	501.40	1.9780
148	0.07452	503.50	1.9830
150	0.07491	505.50	1.9870
152	0.07530	507.60	1.9920
154	0.07564	509.70	1.9970
156	0.07605	511.70	2.0020
158	0.07645	513.80	2.0070
160	0.07680	515.90	2.0120

20ºC (5.213 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
20	0.03303	378.10	1.6080
22	0.03341	380.00	1.6140
24	0.03381	381.90	1.6210
26	0.03419	383.80	1.6270
28	0.03457	385.70	1.6330
30	0.03494	387.60	1.6400
32	0.03530	389.50	1.6460
34	0.03566	391.30	1.6520
36	0.03604	393.20	1.6580
38	0.03639	395.10	1.6640
40	0.03674	397.00	1.6700
42	0.03709	398.90	1.6760
44	0.03744	400.70	1.6820
46	0.03779	402.60	1.6880
48	0.03812	404.50	1.6940
50	0.03848	406.40	1.7000
52	0.03880	408.30	1.7050
54	0.03914	410.10	1.7110
56	0.03948	412.00	1.7170
58	0.03981	413.90	1.7230
60	0.04013	415.80	1.7280
62	0.04047	417.70	1.7340
64	0.04078	419.60	1.7400
66	0.04112	421.50	1.7450
68	0.04144	423.40	1.7510
70	0.04175	425.30	1.7560
72	0.04207	427.20	1.7620
74	0.04239	429.10	1.7670
76	0.04272	431.00	1.7730
78	0.04303	432.90	1.7780
80	0.04333	434.80	1.7840
82	0.04365	436.80	1.7890
84	0.04396	438.70	1.7950
86	0.04427	440.60	1.8000
88	0.04458	442.60	1.8050
90	0.04488	444.50	1.8110
92	0.04519	446.40	1.8160
94	0.04550	448.40	1.8210
96	0.04581	450.30	1.8270
98	0.04610	452.30	1.8320
100	0.04640	454.20	1.8370
102	0.04671	456.20	1.8420
104	0.04701	458.20	1.8480
106	0.04730	460.10	1.8530
108	0.04762	462.10	1.8580
110	0.04792	464.10	1.8630
112	0.04822	466.10	1.8680
114	0.04850	468.00	1.8740
116	0.04880	470.00	1.8790
118	0.04909	472.00	1.8840
120	0.04938	474.00	1.8890
122	0.04968	476.00	1.8940
124	0.04998	478.00	1.8990
126	0.05028	480.10	1.9040
128	0.05056	482.10	1.9090
130	0.05086	484.10	1.9140
132	0.05115	486.10	1.9190
134	0.05144	488.10	1.9240
136	0.05173	490.20	1.9290
138	0.05203	492.20	1.9340
140	0.05230	494.30	1.9390
142	0.05260	496.30	1.9440
144	0.05288	498.40	1.9490
146	0.05319	500.40	1.9540
148	0.05348	502.50	1.9590
150	0.05376	504.60	1.9640
152	0.05405	506.60	1.9690
154	0.05432	508.70	1.9730
156	0.05461	510.80	1.9780
158	0.05491	512.90	1.9830
160	0.05519	515.00	1.9880
162	0.05546	517.10	1.9930
164	0.05574	519.20	1.9980
166	0.05605	521.30	2.0020
168	0.05634	523.40	2.0070
170	0.05663	525.50	2.0120

30ºC (7.033 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
30	0.02438	383.50	1.6090
32	0.02470	385.50	1.6150
34	0.02501	387.50	1.6220
36	0.02532	389.50	1.6280
38	0.02562	391.50	1.6350
40	0.02592	393.50	1.6410
42	0.02621	395.50	1.6470
44	0.02650	397.50	1.6540
46	0.02680	399.40	1.6600
48	0.02708	401.40	1.6660
50	0.02736	403.40	1.6720
52	0.02764	405.30	1.6780
54	0.02791	407.30	1.6840
56	0.02818	409.20	1.6900
58	0.02845	411.20	1.6960
60	0.02872	413.10	1.7020
62	0.02899	415.10	1.7080
64	0.02925	417.00	1.7140
66	0.02951	419.00	1.7190
68	0.02977	420.90	1.7250
70	0.03003	422.90	1.7310
72	0.03028	424.90	1.7360
74	0.03053	426.80	1.7420
76	0.03078	428.80	1.7480
78	0.03104	430.70	1.7530
80	0.03129	432.70	1.7590
82	0.03154	434.70	1.7640
84	0.03178	436.60	1.7700
86	0.03202	438.60	1.7750
88	0.03226	440.60	1.7810
90	0.03250	442.50	1.7860
92	0.03274	444.50	1.7920
94	0.03298	446.50	1.7970
96	0.03322	448.50	1.8030
98	0.03347	450.40	1.8080
100	0.03370	452.40	1.8130
102	0.03393	454.40	1.8190
104	0.03416	456.40	1.8240
106	0.03440	458.40	1.8290
108	0.03464	460.40	1.8340
110	0.03487	462.40	1.8400
112	0.03510	464.40	1.8450
114	0.03532	466.40	1.8500
116	0.03556	468.50	1.8550
118	0.03579	470.50	1.8600
120	0.03601	472.50	1.8660
122	0.03625	474.50	1.8710
124	0.03647	476.50	1.8760
126	0.03670	478.60	1.8810
128	0.03691	480.60	1.8860
130	0.03715	482.70	1.8910
132	0.03737	484.70	1.8960
134	0.03759	486.80	1.9010
136	0.03782	488.80	1.9060
138	0.03804	490.90	1.9110
140	0.03826	492.90	1.9160
142	0.03848	495.00	1.9210
144	0.03870	497.10	1.9260
146	0.03893	499.10	1.9310
148	0.03914	501.20	1.9360
150	0.03937	503.30	1.9410
152	0.03959	505.40	1.9460
154	0.03981	507.50	1.9510
156	0.04002	509.60	1.9560
158	0.04024	511.70	1.9610
160	0.04045	513.80	1.9660
162	0.04068	515.90	1.9700
164	0.04090	518.00	1.9750
166	0.04112	520.10	1.9800
168	0.04132	522.20	1.9850
170	0.04155	524.40	1.9900
172	0.04175	526.50	1.9940
174	0.04198	528.60	1.9990
176	0.04219	530.80	2.0040
178	0.04241	532.90	2.0090
180	0.04263	535.10	2.0140

Rhodia

ISCEON 39TC

(Vapour Composition)

Superheated Properties

Standard state of liquid at 0ºC, Enthalpy = 200 kJ/kg, Entropy = 1.0 kJ/kg.K

40ºC (9.300 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
40	0.01820	388.60	1.6100
42	0.01847	390.70	1.6170
44	0.01873	392.90	1.6230
46	0.01899	395.00	1.6300
48	0.01925	397.10	1.6360
50	0.01949	399.20	1.6430
52	0.01974	401.30	1.6490
54	0.01998	403.30	1.6560
56	0.02021	405.40	1.6620
58	0.02045	407.50	1.6680
60	0.02067	409.50	1.6740
62	0.02090	411.60	1.6810
64	0.02112	413.60	1.6870
66	0.02134	415.60	1.6930
68	0.02156	417.70	1.6990
70	0.02178	419.70	1.7050
72	0.02199	421.70	1.7100
74	0.02220	423.80	1.7160
76	0.02241	425.80	1.7220
78	0.02262	427.80	1.7280
80	0.02282	429.80	1.7340
82	0.02303	431.90	1.7390
84	0.02323	433.90	1.7450
86	0.02343	435.90	1.7510
88	0.02363	437.90	1.7560
90	0.02383	440.00	1.7620
92	0.02403	442.00	1.7670
94	0.02422	444.00	1.7730
96	0.02441	446.00	1.7790
98	0.02461	448.10	1.7840
100	0.02480	450.10	1.7890
102	0.02499	452.10	1.7950
104	0.02518	454.20	1.8000
106	0.02537	456.20	1.8060
108	0.02555	458.20	1.8110
110	0.02574	460.30	1.8160
112	0.02593	462.30	1.8220
114	0.02611	464.40	1.8270
116	0.02630	466.40	1.8320
118	0.02648	468.50	1.8370
120	0.02666	470.50	1.8430
122	0.02684	472.60	1.8480
124	0.02702	474.60	1.8530
126	0.02720	476.70	1.8580
128	0.02738	478.80	1.8630
130	0.02756	480.80	1.8690
132	0.02773	482.90	1.8740
134	0.02791	485.00	1.8790
136	0.02809	487.10	1.8840
138	0.02826	489.10	1.8890
140	0.02844	491.20	1.8940
142	0.02862	493.30	1.8990
144	0.02879	495.40	1.9040
146	0.02897	497.50	1.9090
148	0.02914	499.60	1.9140
150	0.02931	501.70	1.9190
152	0.02948	503.80	1.9240
154	0.02966	505.90	1.9290
156	0.02983	508.00	1.9340
158	0.03000	510.20	1.9390
160	0.03018	512.30	1.9440
162	0.03034	514.40	1.9490
164	0.03052	516.50	1.9540
166	0.03068	518.70	1.9580
168	0.03085	520.80	1.9630
170	0.03102	523.00	1.9680
172	0.03119	525.10	1.9730
174	0.03136	527.30	1.9780
176	0.03153	529.40	1.9830
178	0.03170	531.60	1.9870
180	0.03187	533.70	1.9920
182	0.03203	535.90	1.9970
184	0.03220	538.10	2.0020
186	0.03236	540.20	2.0060
188	0.03253	542.40	2.0110
190	0.03270	544.60	2.0160

50ºC (12.080 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
50	0.01369	393.10	1.6100
52	0.01393	395.40	1.6170
54	0.01416	397.70	1.6240
56	0.01438	400.00	1.6310
58	0.01460	402.20	1.6380
60	0.01481	404.50	1.6450
62	0.01502	406.70	1.6510
64	0.01522	408.90	1.6580
66	0.01542	411.10	1.6640
68	0.01562	413.20	1.6710
70	0.01581	415.40	1.6770
72	0.01600	417.50	1.6830
74	0.01619	419.70	1.6890
76	0.01637	421.80	1.6960
78	0.01655	423.90	1.7020
80	0.01673	426.10	1.7080
82	0.01691	428.20	1.7140
84	0.01708	430.30	1.7190
86	0.01726	432.40	1.7250
88	0.01743	434.50	1.7310
90	0.01760	436.60	1.7370
92	0.01776	438.70	1.7430
94	0.01793	440.80	1.7480
96	0.01809	442.90	1.7540
98	0.01825	445.00	1.7600
100	0.01842	447.10	1.7650
102	0.01857	449.20	1.7710
104	0.01873	451.30	1.7770
106	0.01889	453.40	1.7820
108	0.01905	455.40	1.7880
110	0.01920	457.50	1.7930
112	0.01936	459.60	1.7990
114	0.01951	461.70	1.8040
116	0.01966	463.80	1.8090
118	0.01981	465.90	1.8150
120	0.01996	468.00	1.8200
122	0.02011	470.10	1.8250
124	0.02026	472.20	1.8310
126	0.02041	474.30	1.8360
128	0.02055	476.40	1.8410
130	0.02070	478.50	1.8460
132	0.02085	480.60	1.8520
134	0.02099	482.70	1.8570
136	0.02114	484.90	1.8620
138	0.02128	487.00	1.8670
140	0.02142	489.10	1.8720
142	0.02157	491.20	1.8770
144	0.02171	493.30	1.8830
146	0.02185	495.40	1.8880
148	0.02199	497.60	1.8930
150	0.02213	499.70	1.8980
152	0.02227	501.80	1.9030
154	0.02241	504.00	1.9080
156	0.02255	506.10	1.9130
158	0.02269	508.30	1.9180
160	0.02282	510.40	1.9230
162	0.02296	512.60	1.9280
164	0.02309	514.70	1.9330
166	0.02323	516.90	1.9370
168	0.02337	519.00	1.9420
170	0.02351	521.20	1.9470
172	0.02364	523.40	1.9520
174	0.02378	525.50	1.9570
176	0.02391	527.70	1.9620
178	0.02404	529.90	1.9670
180	0.02418	532.10	1.9720
182	0.02431	534.20	1.9760
184	0.02445	536.40	1.9810
186	0.02458	538.60	1.9860
188	0.02472	540.80	1.9910
190	0.02484	543.00	1.9950
192	0.02498	545.20	2.0000
194	0.02511	547.40	2.0050
196	0.02524	549.60	2.0100
198	0.02537	551.80	2.0140
200	0.02550	554.10	2.0190

60ºC (15.460 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
60	0.01030	396.80	1.6090
62	0.01052	399.40	1.6170
64	0.01073	401.90	1.6240
66	0.01093	404.40	1.6320
68	0.01113	406.80	1.6390
70	0.01132	409.20	1.6460
72	0.01150	411.60	1.6530
74	0.01168	414.00	1.6600
76	0.01186	416.30	1.6660
78	0.01203	418.60	1.6730
80	0.01219	420.90	1.6790
82	0.01236	423.20	1.6860
84	0.01252	425.40	1.6920
86	0.01267	427.70	1.6980
88	0.01283	429.90	1.7040
90	0.01298	432.10	1.7110
92	0.01313	434.30	1.7170
94	0.01328	436.50	1.7230
96	0.01342	438.70	1.7290
98	0.01357	440.90	1.7350
100	0.01371	443.10	1.7400
102	0.01385	445.30	1.7460
104	0.01399	447.50	1.7520
106	0.01412	449.70	1.7580
108	0.01426	451.80	1.7640
110	0.01439	454.00	1.7690
112	0.01453	456.20	1.7750
114	0.01466	458.30	1.7800
116	0.01479	460.50	1.7860
118	0.01492	462.60	1.7920
120	0.01504	464.80	1.7970
122	0.01517	467.00	1.8020
124	0.01530	469.10	1.8080
126	0.01542	471.30	1.8130
128	0.01555	473.40	1.8190
130	0.01567	475.60	1.8240
132	0.01579	477.70	1.8290
134	0.01592	479.90	1.8350
136	0.01604	482.10	1.8400
138	0.01616	484.20	1.8450
140	0.01628	486.40	1.8510
142	0.01640	488.50	1.8560
144	0.01651	490.70	1.8610
146	0.01663	492.90	1.8660
148	0.01675	495.00	1.8710
150	0.01687	497.20	1.8760
152	0.01698	499.40	1.8810
154	0.01710	501.50	1.8870
156	0.01721	503.70	1.8920
158	0.01733	505.90	1.8970
160	0.01744	508.10	1.9020
162	0.01755	510.30	1.9070
164	0.01767	512.40	1.9120
166	0.01778	514.60	1.9170
168	0.01789	516.80	1.9220
170	0.01800	519.00	1.9270
172	0.01812	521.20	1.9320
174	0.01822	523.40	1.9370
176	0.01834	525.60	1.9410
178	0.01845	527.80	1.9460
180	0.01856	530.00	1.9510
182	0.01867	532.20	1.9560
184	0.01878	534.40	1.9610
186	0.01889	536.60	1.9660
188	0.01899	538.80	1.9710
190	0.01910	541.10	1.9750
192	0.01921	543.30	1.9800
194	0.01932	545.50	1.9850
196	0.01943	547.70	1.9900
198	0.01953	550.00	1.9940
200	0.01964	552.20	1.9990
202	0.01975	554.40	2.0040
204	0.01985	556.70	2.0090
206	0.01996	558.90	2.0130
208	0.02006	561.20	2.0180
210	0.02017	563.40	2.0230

Rhodia

ISCEON 39TC

(Vapour Composition)

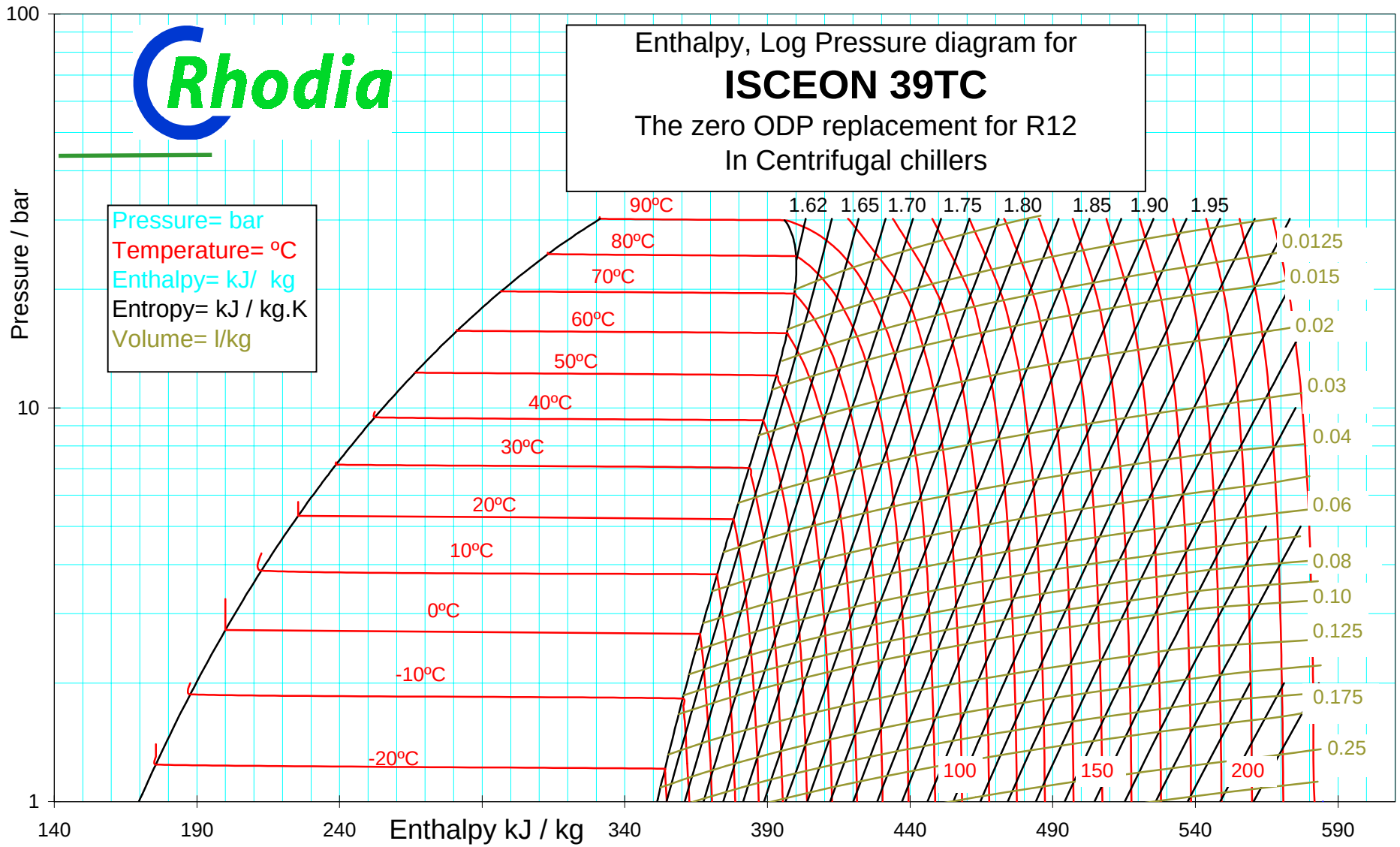
Superheated Properties

Standard state of liquid at 0°C, Enthalpy = 200 kJ/kg, Entropy = 1.0 kJ/kg.K

70°C (19.500 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
70	0.00771	399.40	1.6060
72	0.00793	402.40	1.6150
74	0.00813	405.20	1.6230
76	0.00833	408.00	1.6310
78	0.00851	410.70	1.6390
80	0.00868	413.40	1.6460
82	0.00885	416.00	1.6540
84	0.00902	418.50	1.6610
86	0.00917	421.00	1.6680
88	0.00933	423.50	1.6750
90	0.00948	425.90	1.6810
92	0.00962	428.40	1.6880
94	0.00976	430.80	1.6940
96	0.00990	433.10	1.7010
98	0.01003	435.50	1.7070
100	0.01017	437.80	1.7140
102	0.01030	440.20	1.7200
104	0.01042	442.50	1.7260
106	0.01055	444.80	1.7320
108	0.01067	447.10	1.7380
110	0.01079	449.40	1.7440
112	0.01091	451.70	1.7500
114	0.01103	453.90	1.7560
116	0.01115	456.20	1.7620
118	0.01126	458.40	1.7670
120	0.01138	460.70	1.7730
122	0.01149	462.90	1.7790
124	0.01160	465.20	1.7840
126	0.01171	467.40	1.7900
128	0.01182	469.60	1.7960
130	0.01193	471.90	1.8010
132	0.01203	474.10	1.8070
134	0.01214	476.30	1.8120
136	0.01224	478.50	1.8180
138	0.01235	480.80	1.8230
140	0.01245	483.00	1.8280
142	0.01255	485.20	1.8340
144	0.01266	487.40	1.8390
146	0.01276	489.60	1.8440
148	0.01286	491.90	1.8500
150	0.01296	494.10	1.8550
152	0.01306	496.30	1.8600
154	0.01316	498.50	1.8650
156	0.01325	500.70	1.8710
158	0.01335	503.00	1.8760
160	0.01345	505.20	1.8810
162	0.01354	507.40	1.8860
164	0.01364	509.60	1.8910
166	0.01373	511.90	1.8960
168	0.01383	514.10	1.9010
170	0.01392	516.30	1.9060
172	0.01402	518.50	1.9110
174	0.01411	520.80	1.9160
176	0.01420	523.00	1.9210
178	0.01430	525.20	1.9260
180	0.01439	527.50	1.9310
182	0.01448	529.70	1.9360
184	0.01457	531.90	1.9410
186	0.01466	534.20	1.9460
188	0.01476	536.40	1.9510
190	0.01485	538.70	1.9560
192	0.01494	540.90	1.9600
194	0.01503	543.20	1.9650
196	0.01511	545.40	1.9700
198	0.01520	547.70	1.9750
200	0.01529	550.00	1.9800
202	0.01538	552.20	1.9840
204	0.01547	554.50	1.9890
206	0.01556	556.80	1.9940
208	0.01565	559.00	1.9990
210	0.01574	561.30	2.0030
212	0.01582	563.60	2.0080
214	0.01591	565.90	2.0130
216	0.01600	568.10	2.0170
218	0.01608	570.40	2.0220
220	0.01617	572.70	2.0270

80°C (24.300 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
80	0.00564	400.00	1.5990
82	0.00589	403.80	1.6090
84	0.00611	407.30	1.6190
86	0.00630	410.50	1.6280
88	0.00649	413.70	1.6370
90	0.00666	416.60	1.6450
92	0.00682	419.50	1.6530
94	0.00697	422.40	1.6610
96	0.00712	425.10	1.6680
98	0.00726	427.80	1.6750
100	0.00740	430.50	1.6830
102	0.00752	433.10	1.6900
104	0.00765	435.60	1.6960
106	0.00778	438.20	1.7030
108	0.00790	440.70	1.7100
110	0.00801	443.20	1.7160
112	0.00813	445.60	1.7230
114	0.00824	448.10	1.7290
116	0.00835	450.50	1.7350
118	0.00846	452.90	1.7410
120	0.00857	455.30	1.7470
122	0.00867	457.70	1.7530
124	0.00877	460.10	1.7590
126	0.00887	462.40	1.7650
128	0.00898	464.80	1.7710
130	0.00907	467.10	1.7770
132	0.00917	469.50	1.7830
134	0.00927	471.80	1.7890
136	0.00936	474.10	1.7940
138	0.00945	476.40	1.8000
140	0.00954	478.70	1.8050
142	0.00963	481.00	1.8110
144	0.00973	483.30	1.8160
146	0.00981	485.60	1.8220
148	0.00990	487.90	1.8270
150	0.00999	490.20	1.8330
152	0.01008	492.50	1.8380
154	0.01017	494.80	1.8440
156	0.01025	497.10	1.8490
158	0.01034	499.30	1.8540
160	0.01042	501.60	1.8590
162	0.01051	503.90	1.8650
164	0.01059	506.20	1.8700
166	0.01067	508.40	1.8750
168	0.01075	510.70	1.8800
170	0.01084	513.00	1.8850
172	0.01092	515.30	1.8910
174	0.01100	517.60	1.8960
176	0.01108	519.80	1.9010
178	0.01116	522.10	1.9060
180	0.01124	524.40	1.9110
182	0.01131	526.70	1.9160
184	0.01139	528.90	1.9210
186	0.01147	531.20	1.9260
188	0.01155	533.50	1.9310
190	0.01163	535.80	1.9360
192	0.01170	538.10	1.9410
194	0.01178	540.40	1.9460
196	0.01186	542.70	1.9500
198	0.01193	544.90	1.9550
200	0.01201	547.20	1.9600
202	0.01208	549.50	1.9650
204	0.01216	551.80	1.9700
206	0.01223	554.10	1.9750
208	0.01231	556.40	1.9790
210	0.01238	558.70	1.9840
212	0.01246	561.00	1.9890
214	0.01253	563.30	1.9940
216	0.01260	565.60	1.9980
218	0.01268	568.00	2.0030
220	0.01275	570.30	2.0080
222	0.01282	572.60	2.0120
224	0.01289	574.90	2.0170
226	0.01297	577.20	2.0220
228	0.01304	579.50	2.0260
230	0.01311	581.90	2.0310

90°C (29.960 bar)			
Temperature °C	Volume (m³/kg)	Enthalpy (kJ/kg)	Entropy (kJ/kg.K)
90	0.00385	396.00	1.5800
92	0.00422	402.40	1.5970
94	0.00448	407.20	1.6110
96	0.00471	411.40	1.6220
98	0.00490	415.30	1.6320
100	0.00508	418.80	1.6420
102	0.00524	422.20	1.6510
104	0.00539	425.40	1.6590
106	0.00553	428.50	1.6680
108	0.00566	431.40	1.6750
110	0.00579	434.40	1.6830
112	0.00591	437.20	1.6900
114	0.00603	440.00	1.6980
116	0.00614	442.70	1.7050
118	0.00625	445.40	1.7120
120	0.00636	448.10	1.7180
122	0.00646	450.70	1.7250
124	0.00656	453.30	1.7320
126	0.00666	455.90	1.7380
128	0.00676	458.40	1.7440
130	0.00685	460.90	1.7510
132	0.00694	463.40	1.7570
134	0.00703	465.90	1.7630
136	0.00712	468.40	1.7690
138	0.00721	470.80	1.7750
140	0.00729	473.30	1.7810
142	0.00738	475.70	1.7870
144	0.00746	478.10	1.7920
146	0.00754	480.50	1.7980
148	0.00763	482.90	1.8040
150	0.00770	485.30	1.8100
152	0.00778	487.70	1.8150
154	0.00786	490.10	1.8210
156	0.00794	492.50	1.8260
158	0.00802	494.80	1.8320
160	0.00809	497.20	1.8370
162	0.00817	499.50	1.8430
164	0.00824	501.90	1.8480
166	0.00831	504.20	1.8530
168	0.00839	506.60	1.8590
170	0.00846	508.90	1.8640
172	0.00853	511.30	1.8690
174	0.00861	513.60	1.8750
176	0.00867	516.00	1.8800
178	0.00874	518.30	1.8850
180	0.00881	520.60	1.8900
182	0.00888	523.00	1.8950
184	0.00895	525.30	1.9000
186	0.00902	527.60	1.9050
188	0.00909	530.00	1.9110
190	0.00916	532.30	1.9160
192	0.00923	534.60	1.9210
194	0.00929	537.00	1.9260
196	0.00935	539.30	1.9310
198	0.00943	541.60	1.9360
200	0.00949	544.00	1.9400
202	0.00955	546.30	1.9450
204	0.00962	548.60	1.9500
206	0.00968	551.00	1.9550
208	0.00975	553.30	1.9600
210	0.00981	555.60	1.9650
212	0.00987	558.00	1.9700
214	0.00994	560.30	1.9750
216	0.01000	562.70	1.9790
218	0.01006	565.00	1.9840
220	0.01013	567.30	1.9890
222	0.01019	569.70	1.9940
224	0.01025	572.00	1.9980
226	0.01031	574.40	2.0030
228	0.01037	576.70	2.0080
230	0.01044	579.10	2.0120
232	0.01050	581.50	2.0170
234	0.01056	583.80	2.0220
236	0.01062	586.20	2.0260
238	0.01068	588.50	2.0310
240	0.01074	590.90	2.0360


Enthalpy, Log Pressure diagram for
ISCEON 39TC
The zero ODP replacement for R12
In Centrifugal chillers
Pressure= bar
Temperature= ºC
Enthalpy= kJ/ kg
Entropy= kJ / kg.K
Volume= l/kg
Pressure / bar
100
10
1
Enthalpy kJ / kg
140
190
240
340
390
440
490
540
590
90ºC
80ºC
70ºC
60ºC
50ºC
40ºC
30ºC
20ºC
10ºC
0ºC
-10ºC
-20ºC
1.62
1.65
1.70
1.75
1.80
1.85
1.90
1.95
0.0125
0.015
0.02
0.03
0.04
0.06
0.08
0.10
0.125
0.175
0.25
100
150
200