



CARE 40 / R290

A Member of The Linde Group

Temperature (°C)	Pressure (bar)	Liquid Density (kg/m ³)	Vapor Density (kg/m ³)	Liquid Enthalpy (kJ/kg)	Vapor Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg-K)	Vapor Entropy (kJ/kg-K)
-100	0.028881	644.13	0.088709	-23.59	456.9	-0.0078785	2.7671
-99	0.031433	643.1	0.096012	-21.547	458.05	0.003885	2.7578
-98	0.034174	642.07	0.10381	-19.501	459.22	0.015595	2.7488
-97	0.037112	641.04	0.11212	-17.453	460.38	0.027252	2.7399
-96	0.040261	640.01	0.12097	-15.402	461.54	0.038857	2.7312
-95	0.043631	638.97	0.13039	-13.349	462.71	0.050411	2.7227
-94	0.047235	637.94	0.1404	-11.294	463.88	0.061915	2.7143
-93	0.051085	636.9	0.15104	-9.2353	465.05	0.073369	2.7061
-92	0.055194	635.86	0.16233	-7.1743	466.22	0.084774	2.6981
-91	0.059576	634.82	0.1743	-5.1107	467.39	0.096131	2.6902
-90	0.064245	633.78	0.18699	-3.0442	468.57	0.10744	2.6825
-89	0.069214	632.74	0.20042	-0.97505	469.75	0.1187	2.6749
-88	0.074499	631.69	0.21462	1.097	470.93	0.12992	2.6675
-87	0.080115	630.64	0.22963	3.1719	472.11	0.14109	2.6602
-86	0.086078	629.6	0.24549	5.2497	473.29	0.15222	2.6531
-85	0.092404	628.55	0.26222	7.3304	474.47	0.1633	2.6461
-84	0.09911	627.5	0.27986	9.4141	475.65	0.17434	2.6393
-83	0.10621	626.44	0.29845	11.501	476.84	0.18534	2.6326
-82	0.11373	625.39	0.31803	13.591	478.03	0.19629	2.626
-81	0.12168	624.33	0.33863	15.684	479.22	0.20721	2.6195
-80	0.13008	623.28	0.36029	17.78	480.4	0.21808	2.6132
-79	0.13896	622.22	0.38304	19.879	481.59	0.22892	2.6071
-78	0.14832	621.16	0.40694	21.982	482.79	0.23971	2.601
-77	0.15819	620.09	0.43202	24.088	483.98	0.25046	2.5951
-76	0.1686	619.03	0.45832	26.197	485.17	0.26118	2.5892
-75	0.17956	617.96	0.48589	28.309	486.37	0.27186	2.5835
-74	0.19109	616.89	0.51476	30.425	487.56	0.2825	2.5779
-73	0.20322	615.82	0.54499	32.545	488.76	0.29311	2.5725
-72	0.21596	614.74	0.57661	34.668	489.95	0.30368	2.5671
-71	0.22935	613.67	0.60967	36.794	491.15	0.31421	2.5618
-70	0.2434	612.59	0.64422	38.924	492.35	0.32471	2.5567
-69	0.25815	611.51	0.68031	41.058	493.55	0.33518	2.5516
-68	0.2736	610.43	0.71797	43.196	494.75	0.34561	2.5467
-67	0.2898	609.34	0.75727	45.337	495.95	0.35601	2.5418
-66	0.30676	608.26	0.79825	47.482	497.15	0.36638	2.5371
-65	0.32451	607.17	0.84095	49.631	498.35	0.37671	2.5325
-64	0.34308	606.07	0.88544	51.783	499.55	0.38701	2.5279
-63	0.36249	604.98	0.93175	53.94	500.75	0.39729	2.5234
-62	0.38277	603.88	0.97995	56.101	501.95	0.40753	2.5191
-61	0.40395	602.78	1.0301	58.265	503.15	0.41774	2.5148
-60	0.42605	601.68	1.0822	60.434	504.36	0.42792	2.5106
-59	0.44911	600.57	1.1364	62.607	505.56	0.43807	2.5065
-58	0.47316	599.47	1.1926	64.784	506.76	0.44819	2.5025
-57	0.49822	598.36	1.2511	66.965	507.96	0.45829	2.4985
-56	0.52433	597.24	1.3117	69.15	509.16	0.46836	2.4947
-55	0.55151	596.13	1.3746	71.34	510.36	0.4784	2.4909
-54	0.57979	595.01	1.4398	73.534	511.57	0.48841	2.4872
-53	0.60922	593.89	1.5074	75.733	512.77	0.4984	2.4836
-52	0.63981	592.76	1.5775	77.936	513.97	0.50836	2.48
-51	0.6716	591.63	1.65	80.144	515.17	0.51829	2.4765



CARE 40 / R290

A Member of The Linde Group

Temperature (°C)	Pressure (bar)	Liquid Density (kg/m ³)	Vapor Density (kg/m ³)	Liquid Enthalpy (kJ/kg)	Vapor Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg-K)	Vapor Entropy (kJ/kg-K)
-50	0.70462	590.5	1.7252	82.356	516.37	0.5282	2.4731
-49	0.73891	589.37	1.8029	84.572	517.57	0.53809	2.4698
-48	0.7745	588.23	1.8834	86.794	518.77	0.54795	2.4666
-47	0.81143	587.09	1.9666	89.02	519.97	0.55779	2.4634
-46	0.84971	585.95	2.0526	91.251	521.17	0.5676	2.4603
-45	0.88941	584.8	2.1415	93.487	522.36	0.57739	2.4572
-44	0.93053	583.65	2.2333	95.727	523.56	0.58716	2.4542
-43	0.97313	582.49	2.3282	97.973	524.76	0.59691	2.4513
-42	1.0172	581.34	2.4261	100.22	525.95	0.60663	2.4484
-41	1.0629	580.17	2.5272	102.48	527.15	0.61634	2.4456
-40	1.1101	579.01	2.6315	104.74	528.34	0.62602	2.4429
-39	1.159	577.84	2.7391	107.01	529.54	0.63568	2.4402
-38	1.2095	576.67	2.85	109.28	530.73	0.64532	2.4376
-37	1.2616	575.49	2.9644	111.55	531.92	0.65494	2.435
-36	1.3155	574.31	3.0823	113.83	533.11	0.66454	2.4325
-35	1.3712	573.13	3.2037	116.12	534.3	0.67413	2.4301
-34	1.4287	571.94	3.3289	118.41	535.48	0.68369	2.4277
-33	1.488	570.75	3.4577	120.71	536.67	0.69323	2.4253
-32	1.5492	569.55	3.5903	123.01	537.85	0.70276	2.423
-31	1.6123	568.35	3.7268	125.32	539.04	0.71227	2.4208
-30	1.6774	567.15	3.8673	127.64	540.22	0.72176	2.4186
-29	1.7445	565.94	4.0118	129.96	541.4	0.73124	2.4164
-28	1.8136	564.73	4.1605	132.28	542.58	0.74069	2.4143
-27	1.8848	563.51	4.3133	134.62	543.75	0.75013	2.4123
-26	1.9581	562.29	4.4704	136.95	544.93	0.75956	2.4103
-25	2.0336	561.06	4.6319	139.3	546.1	0.76897	2.4083
-24	2.1113	559.83	4.7978	141.65	547.28	0.77836	2.4064
-23	2.1912	558.6	4.9683	144	548.45	0.78774	2.4045
-22	2.2734	557.36	5.1434	146.36	549.61	0.7971	2.4027
-21	2.3579	556.11	5.3232	148.73	550.78	0.80645	2.4009
-20	2.4448	554.86	5.5078	151.11	551.94	0.81579	2.3992
-19	2.5341	553.61	5.6973	153.49	553.1	0.82511	2.3975
-18	2.6258	552.35	5.8918	155.87	554.26	0.83442	2.3958
-17	2.7201	551.08	6.0914	158.27	555.42	0.84371	2.3942
-16	2.8168	549.81	6.2962	160.67	556.58	0.853	2.3926
-15	2.9162	548.54	6.5062	163.07	557.73	0.86227	2.391
-14	3.0182	547.26	6.7216	165.49	558.88	0.87152	2.3895
-13	3.1228	545.97	6.9426	167.91	560.03	0.88077	2.3881
-12	3.2302	544.68	7.169	170.33	561.17	0.89	2.3866
-11	3.3403	543.38	7.4012	172.77	562.31	0.89922	2.3852
-10	3.4532	542.08	7.6392	175.21	563.45	0.90843	2.3838
-9	3.5689	540.77	7.8831	177.65	564.59	0.91763	2.3825
-8	3.6876	539.45	8.133	180.11	565.72	0.92682	2.3812
-7	3.8091	538.13	8.389	182.57	566.85	0.936	2.3799
-6	3.9337	536.81	8.6513	185.04	567.98	0.94517	2.3786
-5	4.0612	535.47	8.9199	187.51	569.1	0.95433	2.3774
-4	4.1919	534.13	9.195	189.99	570.22	0.96348	2.3762
-3	4.3256	532.79	9.4768	192.48	571.34	0.97263	2.375
-2	4.4625	531.44	9.7652	194.98	572.46	0.98176	2.3739
-1	4.6026	530.08	10.061	197.49	573.57	0.99088	2.3728



CARE 40 / R290

A Member of The Linde Group

Temperature (°C)	Pressure (bar)	Liquid Density (kg/m ³)	Vapor Density (kg/m ³)	Liquid Enthalpy (kJ/kg)	Vapor Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg-K)	Vapor Entropy (kJ/kg-K)
0	4.7459	528.71	10.363	200	574.67	1	2.3717
1	4.8926	527.34	10.672	202.52	575.78	1.0091	2.3706
2	5.0426	525.97	10.989	205.05	576.87	1.0182	2.3696
3	5.1959	524.58	11.313	207.58	577.97	1.0273	2.3685
4	5.3527	523.19	11.645	210.13	579.06	1.0364	2.3676
5	5.513	521.79	11.984	212.68	580.15	1.0455	2.3666
6	5.6768	520.38	12.331	215.24	581.23	1.0545	2.3656
7	5.8442	518.97	12.686	217.81	582.31	1.0636	2.3647
8	6.0152	517.55	13.049	220.38	583.38	1.0727	2.3638
9	6.1899	516.12	13.421	222.97	584.45	1.0817	2.3629
10	6.3683	514.68	13.801	225.56	585.51	1.0908	2.362
11	6.5505	513.23	14.19	228.16	586.57	1.0998	2.3612
12	6.7365	511.78	14.587	230.77	587.62	1.1089	2.3603
13	6.9263	510.32	14.994	233.39	588.67	1.1179	2.3595
14	7.1201	508.85	15.409	236.02	589.71	1.1269	2.3587
15	7.3178	507.37	15.834	238.66	590.75	1.136	2.3579
16	7.5195	505.88	16.269	241.3	591.78	1.145	2.3571
17	7.7253	504.39	16.713	243.96	592.81	1.154	2.3563
18	7.9352	502.88	17.167	246.62	593.83	1.163	2.3556
19	8.1492	501.37	17.632	249.29	594.84	1.1721	2.3548
20	8.3675	499.85	18.107	251.98	595.85	1.1811	2.3541
21	8.59	498.31	18.592	254.67	596.85	1.1901	2.3534
22	8.8168	496.77	19.089	257.37	597.85	1.1991	2.3527
23	9.048	495.22	19.596	260.08	598.83	1.2081	2.352
24	9.2836	493.65	20.115	262.8	599.81	1.2171	2.3513
25	9.5237	492.08	20.646	265.53	600.78	1.2262	2.3506
26	9.7683	490.5	21.188	268.28	601.75	1.2352	2.3499
27	10.017	488.9	21.742	271.03	602.71	1.2442	2.3492
28	10.271	487.3	22.309	273.79	603.66	1.2532	2.3486
29	10.53	485.68	22.889	276.56	604.6	1.2622	2.3479
30	10.793	484.05	23.482	279.35	605.53	1.2712	2.3472
31	11.061	482.41	24.088	282.14	606.45	1.2803	2.3465
32	11.333	480.76	24.707	284.95	607.37	1.2893	2.3459
33	11.611	479.1	25.341	287.77	608.28	1.2983	2.3452
34	11.894	477.42	25.989	290.59	609.17	1.3073	2.3445
35	12.181	475.73	26.652	293.43	610.06	1.3164	2.3439
36	12.474	474.03	27.33	296.29	610.93	1.3254	2.3432
37	12.772	472.31	28.024	299.15	611.8	1.3345	2.3425
38	13.075	470.58	28.733	302.03	612.65	1.3435	2.3418
39	13.383	468.83	29.459	304.92	613.5	1.3526	2.3411
40	13.696	467.07	30.202	307.82	614.33	1.3616	2.3404
41	14.015	465.3	30.962	310.73	615.15	1.3707	2.3397
42	14.339	463.5	31.74	313.66	615.96	1.3798	2.339
43	14.669	461.69	32.536	316.6	616.75	1.3889	2.3383
44	15.004	459.87	33.352	319.56	617.54	1.398	2.3375
45	15.344	458.03	34.186	322.52	618.3	1.4071	2.3368
46	15.691	456.17	35.041	325.51	619.06	1.4162	2.336
47	16.043	454.29	35.917	328.51	619.8	1.4254	2.3352
48	16.4	452.39	36.814	331.52	620.52	1.4345	2.3344
49	16.764	450.47	37.733	334.55	621.23	1.4437	2.3336



CARE 40 / R290

A Member of The Linde Group

Temperature (°C)	Pressure (bar)	Liquid Density (kg/m ³)	Vapor Density (kg/m ³)	Liquid Enthalpy (kJ/kg)	Vapor Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg-K)	Vapor Entropy (kJ/kg-K)
50	17.133	448.53	38.674	337.59	621.92	1.4529	2.3327
51	17.509	446.57	39.64	340.65	622.6	1.4621	2.3319
52	17.89	444.59	40.63	343.73	623.26	1.4713	2.331
53	18.278	442.58	41.645	346.83	623.9	1.4805	2.33
54	18.671	440.55	42.686	349.94	624.52	1.4898	2.3291
55	19.071	438.5	43.755	353.07	625.12	1.499	2.3281
56	19.477	436.42	44.852	356.22	625.7	1.5083	2.3271
57	19.89	434.31	45.978	359.39	626.26	1.5177	2.326
58	20.308	432.17	47.135	362.58	626.8	1.527	2.3249
59	20.734	430.01	48.323	365.79	627.31	1.5364	2.3238
60	21.166	427.81	49.545	369.02	627.8	1.5458	2.3226
61	21.604	425.58	50.801	372.27	628.26	1.5553	2.3214
62	22.05	423.31	52.094	375.55	628.7	1.5647	2.3201
63	22.502	421.01	53.424	378.85	629.11	1.5742	2.3187
64	22.961	418.67	54.794	382.17	629.49	1.5838	2.3174
65	23.427	416.3	56.206	385.52	629.84	1.5934	2.3159
66	23.9	413.87	57.661	388.9	630.15	1.603	2.3144
67	24.38	411.41	59.161	392.3	630.44	1.6127	2.3128
68	24.867	408.89	60.711	395.74	630.68	1.6224	2.3111
69	25.362	406.33	62.311	399.21	630.89	1.6322	2.3094
70	25.864	403.71	63.966	402.71	631.06	1.6421	2.3076
71	26.374	401.04	65.677	406.24	631.19	1.652	2.3056
72	26.891	398.3	67.45	409.81	631.27	1.662	2.3036
73	27.416	395.5	69.287	413.42	631.3	1.672	2.3015
74	27.948	392.63	71.193	417.07	631.28	1.6822	2.2992
75	28.489	389.69	73.174	420.76	631.2	1.6924	2.2969
76	29.038	386.66	75.234	424.49	631.07	1.7027	2.2944
77	29.594	383.55	77.379	428.28	630.87	1.7131	2.2917
78	30.159	380.34	79.618	432.12	630.6	1.7237	2.2889
79	30.733	377.03	81.957	436.02	630.26	1.7343	2.2859
80	31.315	373.61	84.406	439.98	629.84	1.7451	2.2827
81	31.905	370.06	86.976	444	629.33	1.756	2.2793
82	32.505	366.37	89.679	448.1	628.71	1.7671	2.2757
83	33.113	362.54	92.53	452.28	627.99	1.7784	2.2718
84	33.731	358.53	95.546	456.55	627.15	1.7899	2.2676
85	34.357	354.32	98.749	460.92	626.17	1.8016	2.263
86	34.994	349.9	102.17	465.41	625.03	1.8136	2.2581
87	35.64	345.22	105.83	470.03	623.71	1.826	2.2527
88	36.297	340.24	109.78	474.8	622.18	1.8387	2.2467
89	36.963	334.9	114.08	479.76	620.4	1.8518	2.2402
90	37.64	329.11	118.8	484.94	618.31	1.8656	2.2328