

temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [J/kg*K]	
		liquid	vapour	liquid	vapour	liquid	vapour
-40,0	0,497	755,72	1,208	-33,81	448,40	-0,1402	1,9281
-39,0	0,522	754,39	1,266	-31,60	449,51	-0,1307	1,9240
-38,0	0,549	753,06	1,326	-29,40	450,62	-0,1214	1,9200
-37,0	0,577	751,72	1,388	-27,19	451,73	-0,1120	1,9160
-36,0	0,605	750,39	1,453	-24,98	452,84	-0,1027	1,9122
-35,0	0,635	749,05	1,519	-22,76	453,95	-0,0934	1,9083
-34,0	0,666	747,70	1,588	-20,55	455,05	-0,0841	1,9046
-33,0	0,699	746,36	1,660	-18,33	456,15	-0,0749	1,9009
-32,0	0,732	745,01	1,734	-16,11	457,26	-0,0657	1,8973
-31,0	0,767	743,66	1,810	-13,89	458,36	-0,0565	1,8937
-30,0	0,803	742,30	1,889	-11,66	459,46	-0,0473	1,8902
-29,0	0,840	740,95	1,971	-9,430	460,55	-0,0382	1,8868
-28,0	0,879	739,58	2,056	-7,199	461,65	-0,0291	1,8834
-27,0	0,919	738,22	2,143	-4,965	462,74	-0,0200	1,8801
-26,0	0,961	736,85	2,234	-2,728	463,84	-0,0110	1,8768
-25,0	1,004	735,48	2,327	-0,488	464,93	-0,0020	1,8736
-24,0	1,048	734,11	2,423	1,754	466,02	0,0070	1,8704
-23,0	1,094	732,73	2,522	4,000	467,11	0,0160	1,8673
-22,0	1,142	731,35	2,625	6,248	468,19	0,0249	1,8643
-21,0	1,191	729,96	2,730	8,499	469,28	0,0339	1,8613
-20,0	1,242	728,58	2,839	10,75	470,36	0,0428	1,8583
-19,0	1,295	727,18	2,951	13,01	471,44	0,0516	1,8554
-18,0	1,349	725,79	3,067	15,27	472,52	0,0605	1,8525
-17,0	1,405	724,39	3,186	17,54	473,59	0,0693	1,8497
-16,0	1,463	722,99	3,309	19,80	474,67	0,0781	1,8470
-15,0	1,523	721,58	3,435	22,07	475,74	0,0869	1,8443
-14,0	1,584	720,17	3,565	24,35	476,81	0,0956	1,8416
-13,0	1,648	718,76	3,699	26,62	477,88	0,1044	1,8390
-12,0	1,713	717,34	3,837	28,90	478,94	0,1131	1,8364
-11,0	1,781	715,91	3,978	31,19	480,01	0,1218	1,8338
-10,0	1,850	714,49	4,124	33,47	481,07	0,1305	1,8314
-9,0	1,922	713,06	4,273	35,76	482,13	0,1391	1,8289
-8,0	1,996	711,62	4,427	38,06	483,18	0,1477	1,8265
-7,0	2,072	710,18	4,585	40,35	484,24	0,1563	1,8241
-6,0	2,150	708,74	4,748	42,65	485,29	0,1649	1,8218
-5,0	2,230	707,29	4,915	44,96	486,34	0,1735	1,8195
-4,0	2,313	705,84	5,086	47,27	487,38	0,1820	1,8172
-3,0	2,397	704,38	5,262	49,58	488,43	0,1906	1,8150
-2,0	2,485	702,92	5,442	51,90	489,47	0,1991	1,8129
-1,0	2,575	701,45	5,628	54,22	490,51	0,2076	1,8107
0,0	2,667	699,98	5,818	56,54	491,55	0,2160	1,8086

temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [J/kg*K]	
		liquid	vapour	liquid	vapour	liquid	vapour
1,0	2,761	698,51	6,013	58,87	492,58	0,2245	1,8065
2,0	2,859	697,03	6,213	61,20	493,61	0,2329	1,8045
3,0	2,958	695,54	6,419	63,53	494,64	0,2414	1,8025
4,0	3,061	694,05	6,629	65,87	495,67	0,2498	1,8005
5,0	3,166	692,55	6,845	68,22	496,69	0,2582	1,7986
6,0	3,274	691,05	7,066	70,57	497,71	0,2665	1,7967
7,0	3,385	689,55	7,293	72,92	498,72	0,2749	1,7948
8,0	3,498	688,03	7,525	75,28	499,74	0,2832	1,7930
9,0	3,614	686,52	7,763	77,64	500,75	0,2915	1,7911
10,0	3,734	684,99	8,007	80,00	501,75	0,2999	1,7893
11,0	3,856	683,47	8,257	82,37	502,76	0,3081	1,7876
12,0	3,981	681,93	8,513	84,75	503,76	0,3164	1,7859
13,0	4,109	680,39	8,775	87,13	504,75	0,3247	1,7842
14,0	4,240	678,85	9,043	89,51	505,75	0,3329	1,7825
15,0	4,375	677,30	9,318	91,90	506,74	0,3412	1,7808
16,0	4,512	675,74	9,599	94,29	507,72	0,3494	1,7792
17,0	4,653	674,17	9,887	96,69	508,71	0,3576	1,7776
18,0	4,797	672,60	10,18	99,09	509,68	0,3658	1,7760
19,0	4,945	671,03	10,48	101,50	510,66	0,3740	1,7745
20,0	5,096	669,45	10,79	103,91	511,63	0,3821	1,7729
21,0	5,250	667,86	11,11	106,33	512,60	0,3903	1,7714
22,0	5,408	666,26	11,43	108,75	513,56	0,3984	1,7700
23,0	5,569	664,66	11,76	111,18	514,52	0,4066	1,7685
24,0	5,734	663,05	12,10	113,62	515,47	0,4147	1,7671
25,0	5,902	661,43	12,44	116,05	516,42	0,4228	1,7656
26,0	6,074	659,81	12,79	118,50	517,37	0,4309	1,7642
27,0	6,250	658,18	13,16	120,95	518,31	0,4390	1,7628
28,0	6,430	656,54	13,52	123,40	519,24	0,4471	1,7615
29,0	6,613	654,89	13,90	125,86	520,17	0,4551	1,7601
30,0	6,800	653,24	14,29	128,33	521,10	0,4632	1,7588
31,0	6,992	651,58	14,68	130,80	522,02	0,4712	1,7575
32,0	7,187	649,91	15,08	133,28	522,94	0,4793	1,7562
33,0	7,386	648,23	15,50	135,77	523,85	0,4873	1,7549
34,0	7,589	646,55	15,92	138,26	524,76	0,4953	1,7536
35,0	7,797	644,85	16,35	140,75	525,66	0,5033	1,7524
36,0	8,008	643,15	16,79	143,26	526,55	0,5113	1,7511
37,0	8,224	641,44	17,23	145,76	527,44	0,5193	1,7499
38,0	8,444	639,72	17,69	148,28	528,32	0,5273	1,7487
39,0	8,669	637,99	18,16	150,80	529,20	0,5353	1,7475
40,0	8,897	636,25	18,64	153,33	530,07	0,5432	1,7463

temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [J/kg*K]	
		liquid	vapour	liquid	vapour	liquid	vapour
41,0	9,131	634,50	19,13	155,87	530,94	0,5512	1,7451
42,0	9,368	632,74	19,63	158,41	531,80	0,5592	1,7440
43,0	9,611	630,97	20,14	160,96	532,65	0,5671	1,7428
44,0	9,858	629,20	20,66	163,51	533,49	0,5751	1,7417
45,0	10,11	627,41	21,19	166,07	534,33	0,5830	1,7405
46,0	10,37	625,61	21,74	168,64	535,16	0,5910	1,7394
47,0	10,63	623,80	22,29	171,22	535,99	0,5989	1,7382
48,0	10,89	621,98	22,86	173,81	536,80	0,6068	1,7371
49,0	11,16	620,15	23,44	176,40	537,61	0,6147	1,7360
50,0	11,44	618,30	24,03	179,00	538,41	0,6227	1,7349
51,0	11,72	616,45	24,64	181,61	539,21	0,6306	1,7338
52,0	12,01	614,58	25,26	184,22	539,99	0,6385	1,7327
53,0	12,30	612,70	25,89	186,85	540,77	0,6464	1,7316
54,0	12,59	610,81	26,53	189,48	541,54	0,6543	1,7304
55,0	12,89	608,90	27,19	192,12	542,30	0,6622	1,7293
56,0	13,20	606,99	27,87	194,77	543,05	0,6701	1,7282
57,0	13,51	605,05	28,56	197,43	543,79	0,6780	1,7271
58,0	13,83	603,11	29,26	200,09	544,52	0,6859	1,7260
59,0	14,15	601,15	29,98	202,77	545,24	0,6938	1,7249
60,0	14,48	599,17	30,71	205,45	545,95	0,7018	1,7238
61,0	14,81	597,18	31,46	208,15	546,66	0,7097	1,7227
62,0	15,15	595,18	32,23	210,85	547,35	0,7176	1,7216
63,0	15,50	593,16	33,01	213,56	548,03	0,7255	1,7205
64,0	15,85	591,12	33,82	216,29	548,69	0,7334	1,7193
65,0	16,20	589,06	34,64	219,02	549,35	0,7413	1,7182
66,0	16,57	586,99	35,47	221,77	549,99	0,7492	1,7170
67,0	16,93	584,90	36,33	224,52	550,63	0,7572	1,7159
68,0	17,31	582,79	37,21	227,29	551,25	0,7651	1,7147
69,0	17,69	580,66	38,10	230,06	551,85	0,7730	1,7135
70,0	18,08	578,52	39,02	232,85	552,45	0,7810	1,7123
71,0	18,47	576,35	39,96	235,65	553,02	0,7889	1,7111
72,0	18,87	574,16	40,92	238,46	553,59	0,7969	1,7099
73,0	19,27	571,95	41,90	241,29	554,14	0,8048	1,7086
74,0	19,69	569,72	42,90	244,12	554,67	0,8128	1,7074
75,0	20,10	567,46	43,93	246,97	555,19	0,8208	1,7061
76,0	20,53	565,18	44,98	249,84	555,69	0,8288	1,7048
77,0	20,96	562,88	46,06	252,71	556,18	0,8368	1,7035
78,0	21,40	560,55	47,17	255,60	556,64	0,8448	1,7021
79,0	21,84	558,20	48,30	258,51	557,09	0,8529	1,7007
80,0	22,29	555,81	49,46	261,43	557,52	0,8609	1,6993

temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [J/kg*K]	
		liquid	vapour	liquid	vapour	liquid	vapour
81,0	22,75	553,40	50,65	264,36	557,93	0,8690	1,6979
82,0	23,22	550,96	51,87	267,31	558,32	0,8771	1,6964
83,0	23,69	548,49	53,12	270,28	558,69	0,8852	1,6949
84,0	24,17	545,99	54,40	273,26	559,03	0,8933	1,6934
85,0	24,66	543,45	55,72	276,27	559,36	0,9014	1,6918
86,0	25,15	540,88	57,07	279,29	559,66	0,9096	1,6902
87,0	25,65	538,27	58,46	282,32	559,93	0,9178	1,6886
88,0	26,16	535,62	59,89	285,38	560,18	0,9260	1,6869
89,0	26,68	532,94	61,36	288,46	560,40	0,9342	1,6851
90,0	27,21	530,21	62,87	291,55	560,59	0,9425	1,6833
91,0	27,74	527,44	64,42	294,67	560,75	0,9508	1,6815
92,0	28,28	524,63	66,02	297,81	560,88	0,9591	1,6796
93,0	28,83	521,76	67,66	300,98	560,98	0,9675	1,6776
94,0	29,38	518,85	69,36	304,17	561,05	0,9759	1,6756
95,0	29,95	515,88	71,11	307,38	561,08	0,9844	1,6734
96,0	30,52	512,86	72,91	310,63	561,07	0,9928	1,6713
97,0	31,10	509,78	74,78	313,90	561,02	1,0014	1,6690
98,0	31,69	506,63	76,70	317,19	560,93	1,0100	1,6667
99,0	32,29	503,42	78,69	320,52	560,79	1,0186	1,6642
100,0	32,89	500,14	80,75	323,89	560,61	1,0273	1,6617
101,0	33,51	496,78	82,89	327,28	560,37	1,0361	1,6591
102,0	34,13	493,34	85,10	330,72	560,09	1,0449	1,6563
103,0	34,77	489,82	87,40	334,19	559,74	1,0538	1,6534
104,0	35,41	486,21	89,79	337,71	559,34	1,0628	1,6504
105,0	36,06	482,50	92,27	341,26	558,87	1,0718	1,6473
106,0	36,72	478,68	94,86	344,87	558,33	1,0810	1,6440
107,0	37,39	474,75	97,56	348,52	557,72	1,0903	1,6406
108,0	38,07	470,69	100,4	352,24	557,03	1,0996	1,6369
109,0	38,76	466,50	103,4	356,01	556,25	1,1091	1,6331
110,0	39,46	462,16	106,5	359,84	555,37	1,1187	1,6291
111,0	40,18	457,66	109,7	363,74	554,39	1,1285	1,6248
112,0	40,90	452,97	113,2	367,72	553,30	1,1385	1,6203
113,0	41,63	448,10	116,8	371,79	552,07	1,1486	1,6155
114,0	42,37	442,99	120,7	375,95	550,71	1,1589	1,6103
115,0	43,13	437,64	124,8	380,21	549,20	1,1695	1,6048
116,0	43,89	432,01	129,2	384,60	547,50	1,1803	1,5989
117,0	44,67	426,05	133,9	389,12	545,61	1,1914	1,5925
118,0	45,46	419,72	139,0	393,80	543,48	1,2029	1,5856
119,0	46,26	412,94	144,5	398,67	541,09	1,2149	1,5780
120,0	47,07	405,62	150,6	403,76	538,37	1,2273	1,5697

Saturated Pressure Table

temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [J/kg*K]	
		liquid	vapour	liquid	vapour	liquid	vapour
121,0	47,90	397,66	157,3	409,12	535,26	1,2404	1,5605
122,0	48,74	388,86	164,9	414,84	531,67	1,2544	1,5500
123,0	49,59	378,95	173,6	421,01	527,44	1,2694	1,5381
124,0	50,46	367,50	183,8	427,86	522,34	1,2861	1,5240
125,0	51,34	353,62	196,5	435,74	515,88	1,3053	1,5066
126,0	52,24	335,17	213,7	445,64	506,95	1,3295	1,4831
127,0	53,16	301,79	245,8	462,40	490,27	1,3707	1,4404

Calculated by Refprop version 10.0

A guarantee, warranty or liability for the accuracy, completeness and timeliness of the content and information provided cannot be assumed.

revised 10.01.2020

TEGA – Technische Gase und Gasetechnik GmbH  
Werner-von-Siemens-Straße 18  
97076 Würzburg | Germany  
www.tega.de

Telefon +49 931 2093-0  
Telefax +49 931 2093-101  
Email: info@tega.de

Geschäftsführer: Dr. Jürgen Zöller  
Sitz: Würzburg - Registergericht: Würzburg, HRB 21  
USt-IdNr.: DE 811145437

Deutsche Bank Würzburg

IBAN: DE707907001600202804 00  
BIC: DEUTDEMM790