

Table Thermodynamique R 417A

	Liquide	Vapeur	Liquide	Vapeur	Liquide	Vapeur	Liquide	Vapeur
Temperature	Pression	Pression	Densité	Densité	Enthalpie	Enthalpie	Entropie	Entropie
(°C)	(bar abs)	(bar abs)	(Kg/M ³)	(Kg/M ³)	(KJ/Kg)	(KJ/Kg)	(KJ/Kg-K)	(KJ/Kg-K)
-60	0.34225	0.24365	1444.1	1.4906	124.09	334.15	0.68814	1.6868
-59	0.36251	0.25946	1441.1	1.5811	125.3	334.79	0.69382	1.685
-58	0.38372	0.2761	1438.2	1.676	126.52	335.42	0.69947	1.6832
-57	0.40592	0.29361	1435.2	1.7753	127.73	336.05	0.70509	1.6814
-56	0.42915	0.312	1432.2	1.8794	128.95	336.69	0.7107	1.6797
-55	0.45344	0.33132	1429.2	1.9882	130.17	337.32	0.71629	1.678
-54	0.47883	0.3516	1426.2	2.1021	131.39	337.96	0.72186	1.6764
-53	0.50534	0.37287	1423.2	2.221	132.61	338.59	0.72741	1.6748
-52	0.53302	0.39518	1420.2	2.3453	133.83	339.22	0.73293	1.6732
-51	0.5619	0.41855	1417.2	2.4751	135.05	339.86	0.73844	1.6717
-50	0.59202	0.44302	1414.2	2.6106	136.28	340.49	0.74393	1.6702
-49	0.62342	0.46863	1411.1	2.7519	137.5	341.12	0.7494	1.6688
-48	0.65614	0.49541	1408.1	2.8992	138.73	341.75	0.75486	1.6674
-47	0.69021	0.52342	1405.1	3.0527	139.96	342.39	0.76029	1.666
-46	0.72567	0.55268	1402	3.2125	141.19	343.02	0.76571	1.6647
-45	0.76257	0.58323	1399	3.379	142.42	343.65	0.77111	1.6634
-44	0.80094	0.61512	1395.9	3.5522	143.65	344.28	0.77649	1.6621
-43	0.84083	0.64839	1392.8	3.7323	144.89	344.91	0.78186	1.6609
-42	0.88228	0.68308	1389.8	3.9197	146.13	345.54	0.78721	1.6597
-41	0.92532	0.71923	1386.7	4.1143	147.37	346.17	0.79254	1.6585
-40	0.97001	0.75689	1383.6	4.3166	148.61	346.8	0.79786	1.6574
-39	1.0164	0.7961	1380.5	4.5266	149.85	347.43	0.80316	1.6563
-38	1.0645	0.8369	1377.4	4.7445	151.09	348.06	0.80844	1.6552
-37	1.1144	0.87935	1374.3	4.9707	152.34	348.68	0.81371	1.6541
-36	1.1661	0.92347	1371.1	5.2053	153.58	349.31	0.81897	1.6531
-35	1.2196	0.96933	1368	5.4486	154.83	349.94	0.82421	1.6521
-34	1.2751	1.017	1364.8	5.7007	156.08	350.56	0.82943	1.6511
-33	1.3326	1.0664	1361.7	5.9619	157.34	351.18	0.83465	1.6502
-32	1.392	1.1178	1358.5	6.2324	158.59	351.81	0.83984	1.6493
-31	1.4535	1.171	1355.3	6.5125	159.85	352.43	0.84503	1.6484
-30	1.5171	1.2263	1352.2	6.8024	161.11	353.05	0.8502	1.6475
-29	1.5828	1.2835	1349	7.1024	162.37	353.67	0.85535	1.6467
-28	1.6508	1.3429	1345.7	7.4127	163.63	354.29	0.8605	1.6459
-27	1.7209	1.4043	1342.5	7.7336	164.9	354.9	0.86563	1.6451
-26	1.7934	1.468	1339.3	8.0652	166.17	355.52	0.87074	1.6443
-25	1.8682	1.5338	1336.1	8.408	167.44	356.13	0.87585	1.6436
-24	1.9455	1.602	1332.8	8.7622	168.71	356.75	0.88094	1.6429
-23	2.0251	1.6724	1329.5	9.1279	169.98	357.36	0.88602	1.6421
-22	2.1073	1.7453	1326.3	9.5056	171.26	357.97	0.89109	1.6415
-21	2.192	1.8206	1323	9.8955	172.54	358.58	0.89614	1.6408
-20	2.2794	1.8984	1319.7	10.298	173.82	359.18	0.90119	1.6401
-19	2.3694	1.9787	1316.3	10.713	175.1	359.79	0.90622	1.6395
-18	2.4621	2.0617	1313	11.141	176.39	360.39	0.91125	1.6389
-17	2.5575	2.1473	1309.7	11.583	177.68	360.99	0.91626	1.6383
-16	2.6558	2.2357	1306.3	12.038	178.97	361.59	0.92126	1.6377

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(°C)	(bar abs)	(bar abs)	(Kg/M ³)	(Kg/M ³)	(KJ/Kg)	(KJ/Kg)	(KJ/Kg-K)	(KJ/Kg-K)
-15	2.757	2.3268	1302.9	12.508	180.26	362.19	0.92625	1.6372
-14	2.8611	2.4208	1299.5	12.991	181.56	362.79	0.93123	1.6366
-13	2.9681	2.5176	1296.1	13.49	182.86	363.39	0.9362	1.6361
-12	3.0782	2.6174	1292.7	14.003	184.16	363.98	0.94116	1.6356
-11	3.1915	2.7202	1289.3	14.532	185.46	364.57	0.94611	1.6351
-10	3.3078	2.8261	1285.8	15.076	186.77	365.16	0.95106	1.6346
-9	3.4274	2.9351	1282.3	15.637	188.08	365.75	0.95599	1.6342
-8	3.5502	3.0473	1278.9	16.214	189.39	366.33	0.96091	1.6337
-7	3.6764	3.1628	1275.4	16.807	190.71	366.91	0.96583	1.6333
-6	3.8059	3.2816	1271.8	17.418	192.03	367.49	0.97073	1.6328
-5	3.9389	3.4037	1268.3	18.047	193.35	368.07	0.97563	1.6324
-4	4.0754	3.5293	1264.7	18.694	194.67	368.65	0.98052	1.632
-3	4.2154	3.6584	1261.2	19.359	196	369.22	0.9854	1.6316
-2	4.3591	3.791	1257.6	20.043	197.33	369.79	0.99027	1.6312
-1	4.5065	3.9273	1254	20.746	198.66	370.36	0.99514	1.6309
0	4.6575	4.0673	1250.3	21.469	200	370.92	1	1.6305
1	4.8124	4.211	1246.7	22.212	201.34	371.48	1.0049	1.6302
2	4.9712	4.3586	1243	22.976	202.68	372.04	1.0097	1.6298
3	5.1339	4.51	1239.3	23.761	204.03	372.6	1.0145	1.6295
4	5.3005	4.6654	1235.6	24.567	205.38	373.15	1.0194	1.6292
5	5.4712	4.8248	1231.8	25.396	206.73	373.7	1.0242	1.6289
6	5.646	4.9884	1228.1	26.247	208.09	374.25	1.029	1.6285
7	5.825	5.156	1224.3	27.122	209.45	374.8	1.0338	1.6282
8	6.0083	5.3279	1220.5	28.02	210.82	375.34	1.0386	1.6279
9	6.1958	5.5041	1216.6	28.943	212.18	375.87	1.0434	1.6277
10	6.3877	5.6846	1212.8	29.891	213.56	376.41	1.0482	1.6274
11	6.584	5.8696	1208.9	30.864	214.93	376.94	1.053	1.6271
12	6.7849	6.0591	1204.9	31.863	216.31	377.46	1.0578	1.6268
13	6.9903	6.2531	1201	32.889	217.69	377.99	1.0626	1.6266
14	7.2003	6.4518	1197	33.943	219.08	378.5	1.0674	1.6263
15	7.415	6.6552	1193	35.025	220.47	379.02	1.0722	1.626
16	7.6345	6.8634	1189	36.136	221.87	379.53	1.0769	1.6258
17	7.8588	7.0765	1184.9	37.277	223.27	380.03	1.0817	1.6255
18	8.088	7.2944	1180.8	38.448	224.67	380.53	1.0865	1.6252
19	8.3222	7.5174	1176.7	39.65	226.08	381.03	1.0912	1.625
20	8.5614	7.7455	1172.6	40.884	227.5	381.52	1.096	1.6247
21	8.8057	7.9788	1168.4	42.151	228.91	382.01	1.1007	1.6245
22	9.0551	8.2172	1164.2	43.452	230.34	382.49	1.1055	1.6242
23	9.3099	8.461	1159.9	44.788	231.77	382.97	1.1103	1.624
24	9.5699	8.7102	1155.6	46.159	233.2	383.44	1.115	1.6237
25	9.8353	8.9648	1151.3	47.567	234.64	383.91	1.1198	1.6234
26	10.106	9.225	1146.9	49.013	236.08	384.37	1.1245	1.6232
27	10.383	9.4908	1142.5	50.497	237.53	384.82	1.1293	1.6229
28	10.665	9.7623	1138	52.022	238.98	385.27	1.134	1.6226
29	10.952	10.04	1133.5	53.587	240.44	385.71	1.1388	1.6224

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30	11.246	10.323	1129	55.195	241.9	386.15	1.1435	1.6221
31	11.545	10.612	1124.4	56.847	243.37	386.58	1.1483	1.6218
32	11.85	10.907	1119.8	58.544	244.85	387	1.153	1.6215
33	12.161	11.208	1115.1	60.286	246.33	387.41	1.1578	1.6212
34	12.478	11.516	1110.4	62.077	247.82	387.82	1.1625	1.6209
35	12.802	11.83	1105.6	63.917	249.31	388.22	1.1673	1.6206
36	13.131	12.15	1100.8	65.809	250.81	388.62	1.1721	1.6203
37	13.467	12.476	1095.9	67.753	252.32	389	1.1768	1.6199
38	13.809	12.81	1090.9	69.751	253.83	389.38	1.1816	1.6196
39	14.158	13.149	1085.9	71.806	255.36	389.75	1.1864	1.6192
40	14.513	13.496	1080.9	73.92	256.88	390.11	1.1912	1.6189
41	14.874	13.849	1075.7	76.094	258.42	390.46	1.196	1.6185
42	15.243	14.21	1070.6	78.331	259.96	390.8	1.2008	1.6181
43	15.618	14.577	1065.3	80.633	261.52	391.13	1.2056	1.6177
44	16	14.952	1060	83.002	263.07	391.45	1.2104	1.6172
45	16.389	15.333	1054.6	85.442	264.64	391.76	1.2152	1.6168
46	16.785	15.722	1049.1	87.956	266.22	392.06	1.22	1.6163
47	17.188	16.119	1043.6	90.545	267.81	392.35	1.2249	1.6158
48	17.598	16.523	1037.9	93.214	269.4	392.63	1.2297	1.6153
49	18.016	16.935	1032.2	95.966	271.01	392.89	1.2346	1.6148
50	18.441	17.354	1026.4	98.805	272.62	393.14	1.2395	1.6142
51	18.873	17.781	1020.5	101.73	274.25	393.38	1.2444	1.6136
52	19.313	18.217	1014.5	104.76	275.88	393.6	1.2493	1.613
53	19.761	18.66	1008.4	107.88	277.53	393.81	1.2542	1.6124
54	20.216	19.112	1002.2	111.11	279.19	394.01	1.2591	1.6117
55	20.679	19.572	995.82	114.45	280.86	394.18	1.2641	1.611
56	21.15	20.041	989.37	117.9	282.54	394.34	1.2691	1.6103
57	21.63	20.518	982.79	121.48	284.24	394.49	1.2741	1.6095
58	22.117	21.004	976.08	125.18	285.95	394.61	1.2791	1.6087
59	22.613	21.499	969.22	129.02	287.68	394.71	1.2841	1.6078
60	23.117	22.002	962.22	133.01	289.42	394.8	1.2892	1.6069
61	23.63	22.516	955.05	137.15	291.18	394.86	1.2943	1.606
62	24.151	23.038	947.7	141.46	292.96	394.89	1.2995	1.6049
63	24.681	23.57	940.18	145.94	294.76	394.9	1.3047	1.6039
64	25.219	24.112	932.45	150.61	296.57	394.88	1.3099	1.6027
65	25.767	24.664	924.51	155.49	298.41	394.84	1.3152	1.6015
66	26.324	25.225	916.34	160.58	300.27	394.76	1.3205	1.6002
67	26.89	25.797	907.91	165.91	302.15	394.65	1.3258	1.5989
68	27.465	26.38	899.21	171.51	304.07	394.5	1.3313	1.5974
69	28.05	26.974	890.22	177.38	306.01	394.3	1.3368	1.5959
70	28.645	27.578	880.88	183.57	307.98	394.07	1.3423	1.5942
71	29.249	28.194	871.19	190.1	309.99	393.78	1.348	1.5924
72	29.863	28.821	861.08	197.02	312.04	393.44	1.3537	1.5905
73	30.487	29.461	850.51	204.36	314.13	393.04	1.3595	1.5884
74	31.121	30.113	839.41	212.2	316.27	392.57	1.3655	1.5861

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75	31.766	30.777	827.71	220.6	318.47	392.03	1.3716	1.5837
76	32.421	31.455	815.32	229.64	320.73	391.39	1.3779	1.581
77	33.087	32.147	802.09	239.45	323.07	390.64	1.3843	1.578
78	33.763	32.853	787.86	250.17	325.51	389.77	1.391	1.5747
79	34.45	33.575	772.4	262.01	328.06	388.74	1.398	1.571
80	35.147	34.314	755.35	275.27	330.75	387.52	1.4054	1.5667