

Table Thermodynamique R 410A

	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)
-70	0.35621	0.35446	1406.7	1.5584	101.24	389.25	0.58588	2.0038
-69	0.379	0.37717	1403.6	1.6517	102.59	389.81	0.59251	1.9996
-68	0.40296	0.40105	1400.6	1.7494	103.94	390.37	0.59911	1.9955
-67	0.42814	0.42614	1397.6	1.8517	105.3	390.93	0.60568	1.9914
-66	0.45458	0.45248	1394.6	1.9588	106.65	391.48	0.61223	1.9874
-65	0.48233	0.48013	1391.5	2.0708	108	392.03	0.61874	1.9835
-64	0.51143	0.50914	1388.5	2.1878	109.36	392.58	0.62523	1.9796
-63	0.54194	0.53954	1385.4	2.31	110.72	393.13	0.63169	1.9757
-62	0.5739	0.57139	1382.4	2.4376	112.07	393.68	0.63812	1.972
-61	0.60736	0.60473	1379.3	2.5708	113.43	394.22	0.64453	1.9682
-60	0.64238	0.63963	1376.2	2.7097	114.79	394.76	0.65091	1.9646
-59	0.679	0.67612	1373.1	2.8545	116.15	395.3	0.65726	1.961
-58	0.71728	0.71427	1370	3.0055	117.51	395.84	0.66359	1.9574
-57	0.75726	0.75412	1366.9	3.1627	118.88	396.37	0.66989	1.9539
-56	0.79902	0.79573	1363.8	3.3263	120.24	396.91	0.67617	1.9504
-55	0.84259	0.83916	1360.7	3.4966	121.6	397.44	0.68243	1.947
-54	0.88804	0.88445	1357.6	3.6737	122.97	397.96	0.68866	1.9436
-53	0.93543	0.93168	1354.5	3.8579	124.34	398.49	0.69487	1.9403
-52	0.9848	0.98089	1351.3	4.0494	125.7	399.01	0.70105	1.937
-51	1.0362	1.0321	1348.2	4.2482	127.07	399.53	0.70722	1.9338
-50	1.0898	1.0855	1345	4.4548	128.45	400.05	0.71336	1.9306
-49	1.1455	1.141	1341.9	4.6692	129.82	400.57	0.71947	1.9275
-48	1.2034	1.1988	1338.7	4.8916	131.19	401.08	0.72557	1.9244
-47	1.2637	1.2588	1335.5	5.1224	132.57	401.59	0.73165	1.9213
-46	1.3263	1.3212	1332.3	5.3617	133.95	402.1	0.7377	1.9183
-45	1.3913	1.386	1329.1	5.6098	135.32	402.6	0.74374	1.9154
-44	1.4588	1.4533	1325.9	5.8668	136.7	403.1	0.74975	1.9124
-43	1.5288	1.5231	1322.7	6.1331	138.09	403.6	0.75575	1.9095
-42	1.6015	1.5955	1319.4	6.4088	139.47	404.1	0.76173	1.9067
-41	1.6769	1.6706	1316.2	6.6942	140.86	404.59	0.76768	1.9038
-40	1.755	1.7485	1312.9	6.9896	142.24	405.08	0.77362	1.9011
-39	1.8359	1.8292	1309.7	7.2952	143.63	405.57	0.77954	1.8983
-38	1.9198	1.9127	1306.4	7.6112	145.03	406.05	0.78545	1.8956
-37	2.0065	1.9992	1303.1	7.938	146.42	406.53	0.79133	1.8929
-36	2.0964	2.0888	1299.8	8.2758	147.82	407.01	0.7972	1.8903
-35	2.1893	2.1814	1296.5	8.6248	149.21	407.48	0.80306	1.8876
-34	2.2854	2.2772	1293.1	8.9854	150.61	407.95	0.80889	1.885
-33	2.3848	2.3762	1289.8	9.3578	152.02	408.42	0.81471	1.8825
-32	2.4875	2.4786	1286.4	9.7423	153.42	408.88	0.82052	1.88
-31	2.5935	2.5843	1283.1	10.139	154.83	409.34	0.82631	1.8775
-30	2.7031	2.6935	1279.7	10.549	156.24	409.8	0.83208	1.875
-29	2.8162	2.8062	1276.3	10.972	157.65	410.25	0.83784	1.8725
-28	2.9329	2.9226	1272.9	11.408	159.06	410.7	0.84358	1.8701
-27	3.0534	3.0426	1269.4	11.857	160.48	411.14	0.84931	1.8677
-26	3.1776	3.1665	1266	12.321	161.9	411.58	0.85503	1.8654

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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)
-25	3.3057	3.2941	1262.5	12.799	163.32	412.02	0.86074	1.863
-24	3.4377	3.4257	1259.1	13.292	164.75	412.45	0.86643	1.8607
-23	3.5738	3.5613	1255.6	13.8	166.18	412.88	0.87211	1.8584
-22	3.7139	3.701	1252.1	14.323	167.61	413.31	0.87777	1.8562
-21	3.8582	3.8449	1248.6	14.861	169.04	413.73	0.88343	1.8539
-20	4.0069	3.993	1245	15.416	170.48	414.14	0.88907	1.8517
-19	4.1598	4.1455	1241.5	15.988	171.92	414.55	0.8947	1.8495
-18	4.3172	4.3024	1237.9	16.576	173.37	414.96	0.90032	1.8473
-17	4.4791	4.4638	1234.3	17.182	174.81	415.36	0.90593	1.8451
-16	4.6456	4.6298	1230.7	17.805	176.26	415.76	0.91153	1.843
-15	4.8168	4.8004	1227.1	18.447	177.72	416.15	0.91712	1.8408
-14	4.9927	4.9758	1223.4	19.107	179.18	416.54	0.9227	1.8387
-13	5.1735	5.1561	1219.7	19.786	180.64	416.92	0.92827	1.8366
-12	5.3593	5.3412	1216	20.485	182.1	417.3	0.93383	1.8345
-11	5.5501	5.5314	1212.3	21.203	183.57	417.67	0.93938	1.8325
-10	5.746	5.7268	1208.6	21.942	185.04	418.04	0.94493	1.8304
-9	5.9472	5.9273	1204.8	22.702	186.52	418.4	0.95047	1.8284
-8	6.1536	6.1331	1201.1	23.484	188	418.76	0.956	1.8264
-7	6.3654	6.3442	1197.3	24.287	189.48	419.11	0.96152	1.8244
-6	6.5828	6.5609	1193.4	25.113	190.97	419.45	0.96703	1.8224
-5	6.8057	6.7831	1189.6	25.962	192.47	419.79	0.97254	1.8204
-4	7.0342	7.011	1185.7	26.835	193.96	420.12	0.97804	1.8184
-3	7.2686	7.2446	1181.8	27.732	195.47	420.45	0.98354	1.8164
-2	7.5087	7.484	1177.9	28.654	196.97	420.77	0.98903	1.8145
-1	7.7549	7.7294	1173.9	29.601	198.48	421.08	0.99452	1.8125
0	8.0071	7.9808	1169.9	30.575	200	421.39	1	1.8106
1	8.2654	8.2384	1165.9	31.575	201.52	421.69	1.0055	1.8086
2	8.5299	8.5021	1161.9	32.603	203.05	421.98	1.011	1.8067
3	8.8008	8.7722	1157.8	33.659	204.58	422.27	1.0164	1.8048
4	9.0782	9.0487	1153.7	34.744	206.11	422.54	1.0219	1.8029
5	9.3621	9.3318	1149.6	35.859	207.66	422.81	1.0274	1.801
6	9.6526	9.6214	1145.4	37.005	209.2	423.08	1.0328	1.7991
7	9.9498	9.9178	1141.2	38.182	210.76	423.33	1.0383	1.7972
8	10.254	10.221	1137	39.392	212.31	423.58	1.0437	1.7952
9	10.565	10.531	1132.8	40.634	213.88	423.82	1.0492	1.7933
10	10.883	10.848	1128.5	41.911	215.45	424.05	1.0546	1.7914
11	11.208	11.172	1124.1	43.223	217.03	424.27	1.0601	1.7895
12	11.541	11.504	1119.7	44.571	218.61	424.48	1.0656	1.7876
13	11.881	11.843	1115.3	45.957	220.2	424.69	1.071	1.7857
14	12.228	12.189	1110.9	47.38	221.79	424.88	1.0765	1.7838
15	12.583	12.543	1106.4	48.844	223.4	425.07	1.0819	1.7819
16	12.945	12.904	1101.9	50.348	225.01	425.24	1.0874	1.78
17	13.316	13.274	1097.3	51.894	226.62	425.41	1.0929	1.7781
18	13.694	13.651	1092.7	53.483	228.25	425.56	1.0983	1.7761
19	14.08	14.036	1088	55.117	229.88	425.7	1.1038	1.7742

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20	14.475	14.429	1083.3	56.798	231.52	425.83	1.1093	1.7722
21	14.877	14.831	1078.5	58.525	233.16	425.95	1.1148	1.7703
22	15.288	15.241	1073.7	60.303	234.82	426.06	1.1202	1.7683
23	15.708	15.659	1068.8	62.131	236.48	426.16	1.1257	1.7663
24	16.136	16.086	1063.9	64.012	238.15	426.24	1.1312	1.7643
25	16.572	16.521	1058.9	65.948	239.84	426.31	1.1368	1.7623
26	17.018	16.966	1053.9	67.94	241.53	426.37	1.1423	1.7603
27	17.473	17.419	1048.8	69.991	243.22	426.41	1.1478	1.7582
28	17.936	17.882	1043.6	72.103	244.93	426.44	1.1533	1.7561
29	18.409	18.353	1038.4	74.279	246.65	426.46	1.1589	1.7541
30	18.891	18.834	1033.1	76.52	248.38	426.46	1.1644	1.7519
31	19.383	19.324	1027.7	78.83	250.12	426.44	1.17	1.7498
32	19.884	19.824	1022.3	81.211	251.87	426.41	1.1756	1.7476
33	20.395	20.334	1016.7	83.666	253.63	426.35	1.1812	1.7454
34	20.916	20.854	1011.2	86.199	255.41	426.28	1.1868	1.7432
35	21.447	21.383	1005.5	88.813	257.19	426.2	1.1924	1.741
36	21.988	21.923	999.71	91.511	258.99	426.09	1.1981	1.7387
37	22.539	22.473	993.86	94.298	260.8	425.96	1.2038	1.7364
38	23.101	23.033	987.91	97.179	262.63	425.81	1.2095	1.734
39	23.673	23.604	981.87	100.16	264.47	425.64	1.2152	1.7316
40	24.256	24.186	975.72	103.24	266.32	425.45	1.2209	1.7291
41	24.85	24.779	969.46	106.42	268.19	425.23	1.2267	1.7266
42	25.455	25.382	963.08	109.73	270.08	424.98	1.2325	1.7241
43	26.071	25.997	956.58	113.15	271.99	424.71	1.2383	1.7215
44	26.699	26.624	949.95	116.7	273.91	424.41	1.2442	1.7188
45	27.338	27.261	943.19	120.38	275.85	424.08	1.2501	1.7161
46	27.988	27.911	936.28	124.21	277.81	423.72	1.256	1.7133
47	28.651	28.572	929.21	128.19	279.79	423.33	1.262	1.7104
48	29.325	29.246	921.98	132.33	281.8	422.9	1.268	1.7075
49	30.012	29.932	914.57	136.64	283.83	422.43	1.2741	1.7044
50	30.711	30.63	906.97	141.15	285.88	421.92	1.2802	1.7013
51	31.422	31.341	899.16	145.85	287.97	421.37	1.2864	1.698
52	32.147	32.065	891.12	150.77	290.08	420.77	1.2927	1.6947
53	32.884	32.802	882.84	155.93	292.23	420.12	1.299	1.6912
54	33.635	33.552	874.29	161.35	294.41	419.41	1.3054	1.6876
55	34.398	34.316	865.44	167.04	296.63	418.65	1.3119	1.6839
56	35.176	35.094	856.26	173.05	298.89	417.82	1.3186	1.6799
57	35.967	35.886	846.72	179.4	301.2	416.92	1.3253	1.6758
58	36.773	36.692	836.76	186.14	303.57	415.94	1.3322	1.6715
59	37.592	37.513	826.34	193.3	305.99	414.87	1.3392	1.667
60	38.426	38.348	815.37	200.95	308.48	413.7	1.3464	1.6622
61	39.276	39.199	803.78	209.17	311.06	412.41	1.3537	1.6571
62	40.14	40.066	791.46	218.03	313.72	410.99	1.3614	1.6517
63	41.019	40.949	778.25	227.66	316.5	409.42	1.3693	1.6458
64	41.915	41.848	763.97	238.21	319.41	407.67	1.3776	1.6395

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65	42.826	42.763	748.34	249.89	322.49	405.69	1.3864	1.6325
66	43.754	43.697	730.95	263.01	325.78	403.43	1.3957	1.6247
67	44.699	44.648	711.18	278.04	329.38	400.8	1.4059	1.6159
68	45.661	45.618	687.93	295.74	333.4	397.65	1.4174	1.6057
69	46.641	46.607	659.03	317.59	338.15	393.73	1.4308	1.5933
70	47.639	47.617	618.88	347.08	344.34	388.39	1.4484	1.5768