

Table Thermodynamique R 452A (XP44)

	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)
-80	0.14674	0.1151	1512.5	0.74891	103.18	314.65	0.58449	1.6903
-79	0.1574	0.1237	1509.5	0.80115	104.31	315.25	0.59029	1.6876
-78	0.16868	0.13283	1506.5	0.85633	105.43	315.85	0.59607	1.6851
-77	0.18062	0.14251	1503.4	0.91456	106.56	316.45	0.60183	1.6825
-76	0.19325	0.15277	1500.4	0.97598	107.69	317.05	0.60757	1.6801
-75	0.2066	0.16364	1497.4	1.0407	108.82	317.65	0.61329	1.6776
-74	0.22069	0.17513	1494.4	1.1089	109.95	318.25	0.61898	1.6753
-73	0.23556	0.18728	1491.3	1.1806	111.09	318.85	0.62466	1.673
-72	0.25125	0.20011	1488.3	1.2561	112.22	319.45	0.63031	1.6707
-71	0.26777	0.21366	1485.3	1.3354	113.36	320.06	0.63595	1.6685
-70	0.28517	0.22796	1482.2	1.4187	114.5	320.66	0.64156	1.6664
-69	0.30347	0.24302	1479.2	1.5061	115.64	321.26	0.64716	1.6643
-68	0.32273	0.2589	1476.1	1.5978	116.78	321.86	0.65273	1.6622
-67	0.34296	0.27561	1473	1.694	117.93	322.46	0.65829	1.6602
-66	0.36421	0.29319	1469.9	1.7948	119.07	323.07	0.66383	1.6582
-65	0.38651	0.31167	1466.9	1.9003	120.22	323.67	0.66935	1.6563
-64	0.4099	0.33109	1463.8	2.0107	121.37	324.27	0.67485	1.6544
-63	0.43443	0.35148	1460.7	2.1262	122.52	324.87	0.68034	1.6526
-62	0.46012	0.37288	1457.6	2.247	123.68	325.47	0.6858	1.6508
-61	0.48702	0.39532	1454.4	2.3732	124.83	326.08	0.69126	1.6491
-60	0.51517	0.41885	1451.3	2.5049	125.99	326.68	0.69669	1.6474
-59	0.54462	0.44349	1448.2	2.6425	127.15	327.28	0.70211	1.6457
-58	0.57539	0.46929	1445	2.786	128.31	327.88	0.70751	1.6441
-57	0.60755	0.49629	1441.9	2.9356	129.47	328.48	0.71289	1.6425
-56	0.64112	0.52452	1438.7	3.0916	130.64	329.08	0.71826	1.6409
-55	0.67615	0.55403	1435.6	3.2541	131.81	329.68	0.72361	1.6394
-54	0.7127	0.58486	1432.4	3.4233	132.98	330.28	0.72895	1.6379
-53	0.7508	0.61705	1429.2	3.5993	134.15	330.88	0.73427	1.6365
-52	0.7905	0.65064	1426	3.7825	135.32	331.48	0.73958	1.6351
-51	0.83185	0.68568	1422.8	3.9731	136.5	332.07	0.74487	1.6337
-50	0.8749	0.7222	1419.6	4.1711	137.68	332.67	0.75015	1.6323
-49	0.91968	0.76027	1416.4	4.3768	138.86	333.27	0.75542	1.631
-48	0.96626	0.79991	1413.2	4.5905	140.04	333.87	0.76066	1.6297
-47	1.0147	0.84119	1409.9	4.8124	141.22	334.46	0.7659	1.6285
-46	1.065	0.88413	1406.7	5.0427	142.41	335.06	0.77112	1.6273
-45	1.1173	0.9288	1403.4	5.2815	143.6	335.65	0.77633	1.6261
-44	1.1715	0.97524	1400.2	5.5293	144.79	336.24	0.78153	1.6249
-43	1.2278	1.0235	1396.9	5.7861	145.99	336.83	0.78671	1.6238
-42	1.2862	1.0736	1393.6	6.0522	147.18	337.43	0.79188	1.6227
-41	1.3468	1.1257	1390.3	6.3279	148.38	338.02	0.79704	1.6216
-40	1.4095	1.1797	1387	6.6133	149.58	338.61	0.80218	1.6205
-39	1.4745	1.2357	1383.7	6.9089	150.79	339.19	0.80731	1.6195
-38	1.5419	1.2938	1380.3	7.2147	151.99	339.78	0.81244	1.6185
-37	1.6115	1.3541	1377	7.5312	153.2	340.37	0.81754	1.6175
-36	1.6837	1.4165	1373.6	7.8584	154.41	340.95	0.82264	1.6165

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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)
-35	1.7583	1.4811	1370.2	8.1968	155.63	341.54	0.82773	1.6156
-34	1.8354	1.5481	1366.8	8.5466	156.85	342.12	0.8328	1.6147
-33	1.9152	1.6173	1363.4	8.908	158.06	342.7	0.83786	1.6138
-32	1.9975	1.689	1360	9.2814	159.29	343.28	0.84292	1.613
-31	2.0826	1.7631	1356.6	9.667	160.51	343.86	0.84796	1.6121
-30	2.1705	1.8398	1353.2	10.065	161.74	344.44	0.85299	1.6113
-29	2.2612	1.919	1349.7	10.476	162.97	345.01	0.85801	1.6105
-28	2.3548	2.0008	1346.2	10.9	164.2	345.59	0.86302	1.6097
-27	2.4514	2.0854	1342.7	11.338	165.44	346.16	0.86802	1.6089
-26	2.5509	2.1726	1339.2	11.789	166.68	346.73	0.87302	1.6082
-25	2.6535	2.2627	1335.7	12.254	167.92	347.3	0.878	1.6075
-24	2.7593	2.3557	1332.2	12.734	169.16	347.87	0.88297	1.6068
-23	2.8682	2.4516	1328.6	13.229	170.41	348.43	0.88793	1.6061
-22	2.9804	2.5504	1325.1	13.739	171.66	349	0.89289	1.6054
-21	3.096	2.6523	1321.5	14.264	172.91	349.56	0.89783	1.6047
-20	3.2149	2.7574	1317.9	14.805	174.17	350.12	0.90277	1.6041
-19	3.3372	2.8656	1314.3	15.362	175.43	350.68	0.9077	1.6035
-18	3.4631	2.977	1310.6	15.936	176.69	351.23	0.91262	1.6028
-17	3.5925	3.0918	1307	16.527	177.96	351.79	0.91753	1.6022
-16	3.7256	3.2099	1303.3	17.135	179.22	352.34	0.92244	1.6017
-15	3.8624	3.3315	1299.6	17.761	180.5	352.89	0.92733	1.6011
-14	4.0029	3.4566	1295.9	18.405	181.77	353.44	0.93222	1.6005
-13	4.1473	3.5852	1292.2	19.068	183.05	353.98	0.9371	1.6
-12	4.2956	3.7175	1288.4	19.75	184.33	354.52	0.94198	1.5994
-11	4.4478	3.8535	1284.7	20.451	185.62	355.06	0.94685	1.5989
-10	4.6041	3.9932	1280.9	21.172	186.91	355.6	0.95171	1.5984
-9	4.7645	4.1368	1277	21.914	188.2	356.14	0.95656	1.5979
-8	4.929	4.2844	1273.2	22.676	189.5	356.67	0.96141	1.5974
-7	5.0978	4.4359	1269.3	23.46	190.8	357.2	0.96625	1.5969
-6	5.2709	4.5914	1265.5	24.266	192.1	357.72	0.97109	1.5965
-5	5.4483	4.7511	1261.6	25.094	193.41	358.25	0.97592	1.596
-4	5.6302	4.915	1257.6	25.945	194.72	358.77	0.98075	1.5956
-3	5.8166	5.0832	1253.7	26.82	196.03	359.28	0.98557	1.5951
-2	6.0076	5.2557	1249.7	27.719	197.35	359.8	0.99038	1.5947
-1	6.2033	5.4326	1245.7	28.643	198.67	360.31	0.99519	1.5942
0	6.4036	5.614	1241.6	29.592	200	360.82	1	1.5938
1	6.6088	5.8	1237.6	30.567	201.33	361.32	1.0048	1.5934
2	6.8188	5.9907	1233.5	31.568	202.67	361.82	1.0096	1.593
3	7.0337	6.1861	1229.3	32.597	204	362.32	1.0144	1.5926
4	7.2537	6.3862	1225.2	33.654	205.35	362.81	1.0192	1.5922
5	7.4787	6.5913	1221	34.739	206.69	363.3	1.024	1.5918
6	7.7089	6.8013	1216.8	35.854	208.05	363.78	1.0288	1.5914
7	7.9443	7.0164	1212.6	36.999	209.4	364.26	1.0335	1.591
8	8.185	7.2366	1208.3	38.176	210.76	364.73	1.0383	1.5906
9	8.431	7.462	1204	39.384	212.13	365.2	1.0431	1.5902

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10	8.6825	7.6927	1199.6	40.624	213.5	365.67	1.0479	1.5898
11	8.9395	7.9287	1195.2	41.899	214.87	366.13	1.0526	1.5894
12	9.2021	8.1702	1190.8	43.207	216.25	366.59	1.0574	1.589
13	9.4704	8.4173	1186.4	44.551	217.64	367.04	1.0622	1.5886
14	9.7444	8.67	1181.9	45.932	219.03	367.48	1.0669	1.5882
15	10.024	8.9284	1177.3	47.35	220.42	367.92	1.0717	1.5878
16	10.31	9.1926	1172.8	48.807	221.82	368.35	1.0765	1.5874
17	10.602	9.4627	1168.2	50.303	223.23	368.78	1.0812	1.587
18	10.899	9.7388	1163.5	51.841	224.64	369.2	1.086	1.5866
19	11.203	10.021	1158.8	53.42	226.05	369.62	1.0908	1.5862
20	11.513	10.309	1154.1	55.043	227.48	370.03	1.0955	1.5858
21	11.829	10.604	1149.3	56.71	228.9	370.43	1.1003	1.5853
22	12.152	10.905	1144.4	58.424	230.34	370.82	1.1051	1.5849
23	12.481	11.212	1139.6	60.185	231.78	371.21	1.1098	1.5845
24	12.817	11.526	1134.6	61.995	233.22	371.59	1.1146	1.584
25	13.159	11.847	1129.6	63.856	234.67	371.96	1.1194	1.5835
26	13.508	12.174	1124.6	65.769	236.13	372.33	1.1242	1.5831
27	13.863	12.508	1119.5	67.736	237.6	372.69	1.129	1.5826
28	14.226	12.849	1114.4	69.76	239.07	373.03	1.1337	1.5821
29	14.595	13.198	1109.1	71.841	240.55	373.37	1.1385	1.5816
30	14.972	13.553	1103.9	73.982	242.04	373.7	1.1433	1.5811
31	15.355	13.916	1098.5	76.186	243.53	374.02	1.1481	1.5805
32	15.745	14.286	1093.1	78.454	245.03	374.34	1.153	1.58
33	16.143	14.663	1087.6	80.789	246.54	374.64	1.1578	1.5794
34	16.548	15.048	1082.1	83.194	248.06	374.93	1.1626	1.5788
35	16.961	15.441	1076.5	85.671	249.59	375.21	1.1674	1.5782
36	17.381	15.842	1070.8	88.223	251.12	375.48	1.1723	1.5776
37	17.808	16.251	1065	90.854	252.66	375.74	1.1771	1.577
38	18.244	16.668	1059.1	93.566	254.22	375.98	1.182	1.5763
39	18.687	17.093	1053.2	96.364	255.78	376.21	1.1869	1.5756
40	19.137	17.526	1047.1	99.251	257.35	376.43	1.1918	1.5749
41	19.596	17.968	1041	102.23	258.94	376.64	1.1967	1.5742
42	20.063	18.418	1034.7	105.31	260.53	376.83	1.2016	1.5734
43	20.538	18.878	1028.4	108.49	262.14	377.01	1.2066	1.5726
44	21.021	19.346	1021.9	111.78	263.76	377.17	1.2115	1.5718
45	21.512	19.823	1015.3	115.18	265.39	377.32	1.2165	1.5709
46	22.012	20.309	1008.6	118.7	267.03	377.45	1.2215	1.57
47	22.52	20.805	1001.7	122.34	268.69	377.56	1.2265	1.5691
48	23.037	21.311	994.68	126.12	270.36	377.65	1.2316	1.5681
49	23.562	21.826	987.52	130.04	272.05	377.72	1.2367	1.567
50	24.096	22.351	980.2	134.11	273.75	377.77	1.2418	1.566
51	24.639	22.886	972.7	138.34	275.47	377.79	1.2469	1.5648
52	25.191	23.431	965.01	142.74	277.21	377.79	1.2521	1.5636
53	25.752	23.987	957.13	147.32	278.96	377.77	1.2573	1.5624
54	26.322	24.554	949.02	152.09	280.74	377.72	1.2626	1.5611

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55	26.901	25.132	940.69	157.08	282.54	377.64	1.2679	1.5597
56	27.489	25.721	932.1	162.3	284.36	377.52	1.2732	1.5582
57	28.087	26.321	923.23	167.76	286.21	377.38	1.2786	1.5567
58	28.695	26.933	914.06	173.49	288.09	377.19	1.2841	1.555
59	29.312	27.558	904.55	179.52	290	376.96	1.2897	1.5533
60	29.938	28.194	894.67	185.88	291.94	376.69	1.2953	1.5514