

R410A 冷媒飽和性質表 (Saturated Properties Table of R410A Refrigerant)

冷媒(refrigerant) : R410A		臨界溫度(critical temperature) : 344.5 K 臨界壓力(critical Pressure) : 4902.6 kPa 莫爾質量(molar mass) : 72.6 kg/kmol																	
溫度 (temp.)	壓力 (press.)	比容 (specific volume)		比焓 (specific enthalpy)		比熵 (spec. entropy)		定壓比熱 (isobaric sp. heat)		定容比熱 (isochoric sp. heat)		黏度 (viscosity)		熱傳導率 (thermal conductivity)		聲速 (speed of sound)		表面張力 (surface tension)	
°C	kPa	m³/kg		kJ/kg		kJ/(kgK)		kJ/(kgK)		kJ/(kgK)		mPa·s		W/(mK)		m/s		m-N/m	
相(phase)		液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)
-88	10.2	0.0007	2.0782	78.1	380.1	0.53	2.16	1.34	0.67	0.87	0.54	809.2	8.19	0.1683	0.0073	1002.9	159.8	24.7	24.7
-86	11.9	0.0007	1.7996	80.8	381.2	0.55	2.15	1.34	0.67	0.86	0.55	772.3	8.28	0.1670	0.0074	993.1	160.4	24.3	24.3
-84	13.8	0.0007	1.5641	83.5	382.4	0.56	2.14	1.34	0.68	0.86	0.55	737.6	8.37	0.1657	0.0074	983.3	161.1	23.9	23.9
-82	15.9	0.0007	1.3641	86.1	383.6	0.57	2.13	1.34	0.69	0.86	0.56	704.9	8.46	0.1643	0.0075	973.5	161.8	23.5	23.5
-80	18.4	0.0007	1.1938	88.8	384.7	0.59	2.12	1.35	0.69	0.86	0.56	674.0	8.55	0.1630	0.0076	963.7	162.4	23.1	23.1
-78	21.1	0.0007	1.0481	91.5	385.9	0.60	2.11	1.35	0.70	0.86	0.57	644.9	8.65	0.1617	0.0077	954.0	163.0	22.8	22.8
-76	24.2	0.0007	0.9231	94.2	387.0	0.62	2.10	1.35	0.71	0.86	0.57	617.4	8.74	0.1603	0.0078	944.2	163.6	22.4	22.4
-74	27.6	0.0007	0.8154	96.9	388.1	0.63	2.09	1.35	0.71	0.86	0.58	591.4	8.83	0.1590	0.0079	934.5	164.2	22.0	22.0
-72	31.4	0.0007	0.7224	99.6	389.3	0.64	2.08	1.35	0.72	0.86	0.59	566.8	8.93	0.1577	0.0079	924.7	164.8	21.6	21.6
-70	35.6	0.0007	0.6418	102.3	390.4	0.66	2.07	1.35	0.73	0.86	0.59	543.6	9.02	0.1563	0.0080	914.9	165.3	21.3	21.3
-68	40.3	0.0007	0.5717	105.0	391.5	0.67	2.07	1.35	0.73	0.86	0.60	521.7	9.11	0.1550	0.0081	905.2	165.8	20.9	20.9
-66	45.5	0.0007	0.5106	107.7	392.6	0.68	2.06	1.35	0.74	0.86	0.60	500.9	9.21	0.1536	0.0082	895.4	166.4	20.5	20.5
-64	51.1	0.0007	0.4572	110.4	393.7	0.70	2.05	1.35	0.75	0.85	0.61	481.2	9.30	0.1522	0.0083	885.7	166.9	20.1	20.1
-62	57.4	0.0007	0.4103	113.2	394.8	0.71	2.04	1.36	0.76	0.85	0.61	462.5	9.40	0.1509	0.0084	875.9	167.3	19.8	19.8
-60	64.2	0.0007	0.3691	115.9	395.9	0.72	2.04	1.36	0.77	0.85	0.62	444.8	9.49	0.1495	0.0085	866.2	167.8	19.4	19.4
-58	71.7	0.0007	0.3328	118.6	397.0	0.73	2.03	1.36	0.78	0.85	0.63	428.1	9.59	0.1482	0.0086	856.4	168.2	19.0	19.0
-56	79.9	0.0007	0.3007	121.3	398.1	0.75	2.02	1.36	0.79	0.85	0.63	412.2	9.68	0.1468	0.0087	846.6	168.6	18.7	18.7
-54	88.8	0.0007	0.2723	124.1	399.1	0.76	2.01	1.37	0.79	0.85	0.64	397.0	9.78	0.1454	0.0088	836.8	169.0	18.3	18.3
-52	98.5	0.0007	0.2470	126.8	400.2	0.77	2.01	1.37	0.80	0.85	0.65	382.7	9.88	0.1441	0.0089	827.0	169.4	17.9	17.9
-50	109.0	0.0007	0.2245	129.5	401.2	0.78	2.00	1.37	0.81	0.85	0.65	369.0	9.97	0.1427	0.0090	817.2	169.8	17.6	17.6
-48	120.3	0.0007	0.2045	132.3	402.3	0.80	2.00	1.37	0.82	0.86	0.66	356.1	10.07	0.1414	0.0091	807.4	170.1	17.2	17.2
-46	132.6	0.0008	0.1865	135.0	403.3	0.81	1.99	1.38	0.83	0.86	0.67	343.7	10.17	0.1400	0.0092	797.5	170.4	16.9	16.9
-44	145.9	0.0008	0.1705	137.8	404.3	0.82	1.98	1.38	0.84	0.86	0.67	331.9	10.27	0.1387	0.0093	787.7	170.7	16.5	16.5
-42	160.2	0.0008	0.1561	140.6	405.3	0.83	1.98	1.38	0.85	0.86	0.68	320.7	10.37	0.1373	0.0094	777.8	170.9	16.1	16.1
-40	175.5	0.0008	0.1431	143.4	406.3	0.84	1.97	1.39	0.86	0.86	0.69	310.0	10.46	0.1360	0.0095	767.9	171.2	15.8	15.8
-38	192.0	0.0008	0.1314	146.1	407.2	0.86	1.97	1.39	0.88	0.86	0.69	299.8	10.56	0.1346	0.0096	758.0	171.4	15.4	15.4
-36	209.6	0.0008	0.1209	148.9	408.2	0.87	1.96	1.40	0.89	0.86	0.70	290.1	10.67	0.1333	0.0097	748.1	171.5	15.1	15.1
-34	228.5	0.0008	0.1113	151.7	409.1	0.88	1.96	1.40	0.90	0.86	0.71	280.8	10.77	0.1319	0.0098	738.1	171.7	14.7	14.7
-32	248.7	0.0008	0.1027	154.6	410.1	0.89	1.95	1.41	0.91	0.86	0.71	271.9	10.87	0.1306	0.0099	728.1	171.8	14.4	14.4
-30	270.3	0.0008	0.0948	157.4	411.0	0.90	1.95	1.41	0.92	0.86	0.72	263.4	10.97	0.1293	0.0101	718.1	171.9	14.0	14.0
-28	293.3	0.0008	0.0877	160.2	411.9	0.91	1.94	1.42	0.93	0.86	0.73	255.3	11.07	0.1279	0.0102	708.1	172.0	13.7	13.7
-26	317.7	0.0008	0.0812	163.1	412.7	0.93	1.94	1.42	0.94	0.86	0.74	247.5	11.18	0.1266	0.0103	698.0	172.0	13.4	13.4
-24	343.8	0.0008	0.0752	165.9	413.6	0.94	1.93	1.43	0.96	0.87	0.74	240.1	11.28	0.1253	0.0104	687.9	172.1	13.0	13.0
-22	371.4	0.0008	0.0698	168.8	414.5	0.95	1.93	1.43	0.97	0.87	0.75	232.9	11.39	0.1240	0.0105	677.8	172.0	12.7	12.7
-20	400.7	0.0008	0.0649	171.7	415.3	0.96	1.92	1.44	0.98	0.87	0.76	226.1	11.49	0.1227	0.0107	667.6	172.0	12.3	12.3
-18	431.7	0.0008	0.0603	174.5	416.1	0.97	1.92	1.44	1.00	0.87	0.76	219.5	11.60	0.1214	0.0108	657.4	171.9	12.0	12.0
-16	464.5	0.0008	0.0562	177.4	416.9	0.98	1.91	1.45	1.01	0.87	0.77	213.1	11.71	0.1201	0.0110	647.2	171.8	11.7	11.7
-14	499.2	0.0008	0.0523	180.4	417.7	0.99	1.91	1.46	1.02	0.87	0.78	207.0	11.82	0.1188	0.0111	636.9	171.7	11.3	11.3
-12	535.9	0.0008	0.0488	183.3	418.4	1.00	1.91	1.47	1.04	0.87	0.79	201.2	11.93	0.1175	0.0113	626.5	171.5	11.0	11.0
-10	574.6	0.0008	0.0456	186.2	419.2	1.02	1.90	1.47	1.05	0.88	0.79	195.5	12.04	0.1162	0.0114	616.2	171.3	10.7	10.7

Refer to the NIST Database 23 - RefProp 7.0, created by Cheng-Te Lin, Kuenling refrigerating machinery Co., LTD.

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°C	kPa	m3/kg		kJ/kg		kJ/(kgK)		kJ/(kgK)		kJ/(kgK)		mPa-s		W/(mK)		m/s		m-N/m	
相(phase)		液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)	液(liq.)	汽(vap.)
-8	615.3	0.0008	0.0426	189.2	419.9	1.03	1.90	1.48	1.07	0.88	0.80	190.1	12.15	0.1149	0.0116	605.8	171.1	10.4	10.4
-6	658.3	0.0008	0.0398	192.2	420.6	1.04	1.89	1.49	1.08	0.88	0.81	184.8	12.27	0.1136	0.0118	595.3	170.8	10.0	10.0
-4	703.4	0.0008	0.0373	195.2	421.3	1.05	1.89	1.50	1.10	0.88	0.81	179.8	12.38	0.1124	0.0120	584.8	170.5	9.7	9.7
-2	750.9	0.0008	0.0349	198.2	421.9	1.06	1.88	1.51	1.12	0.88	0.82	174.9	12.50	0.1111	0.0121	574.3	170.2	9.4	9.4
0	800.7	0.0009	0.0327	201.2	422.5	1.07	1.88	1.52	1.14	0.89	0.83	170.1	12.62	0.1098	0.0123	563.7	169.8	9.1	9.1
2	853.0	0.0009	0.0307	204.3	423.1	1.08	1.88	1.53	1.15	0.89	0.83	165.5	12.74	0.1086	0.0125	553.1	169.4	8.8	8.8
4	907.8	0.0009	0.0288	207.3	423.7	1.09	1.87	1.54	1.17	0.89	0.84	161.1	12.86	0.1073	0.0127	542.4	168.9	8.4	8.4
6	965.3	0.0009	0.0270	210.4	424.2	1.10	1.87	1.55	1.19	0.89	0.85	156.8	12.98	0.1061	0.0130	531.7	168.5	8.1	8.1
8	1025.4	0.0009	0.0254	213.5	424.7	1.11	1.87	1.57	1.21	0.90	0.86	152.6	13.11	0.1049	0.0132	520.9	167.9	7.8	7.8
10	1088.4	0.0009	0.0239	216.7	425.2	1.13	1.86	1.58	1.23	0.90	0.86	148.6	13.36	0.1036	0.0134	510.1	167.4	7.5	7.5
12	1154.1	0.0009	0.0224	219.8	425.6	1.14	1.86	1.59	1.26	0.90	0.87	144.6	13.50	0.1024	0.0137	499.3	166.8	7.2	7.2
14	1222.9	0.0009	0.0211	223.0	426.0	1.15	1.85	1.61	1.28	0.90	0.88	140.8	13.64	0.1012	0.0139	488.4	166.1	6.9	6.9
16	1294.6	0.0009	0.0199	226.2	426.4	1.16	1.85	1.62	1.31	0.91	0.88	137.0	13.79	0.1000	0.0142	477.4	165.5	6.6	6.6
18	1369.5	0.0009	0.0187	229.5	426.7	1.17	1.85	1.64	1.33	0.91	0.89	133.4	13.94	0.0987	0.0145	466.4	164.7	6.3	6.3
20	1447.6	0.0009	0.0176	232.8	426.9	1.18	1.84	1.66	1.36	0.91	0.90	129.9	14.09	0.0975	0.0148	455.3	164.0	6.0	6.0
22	1529.0	0.0009	0.0166	236.1	427.2	1.19	1.84	1.68	1.39	0.92	0.91	126.4	14.25	0.0963	0.0151	444.1	163.2	5.7	5.7
24	1613.8	0.0009	0.0156	239.4	427.3	1.20	1.83	1.70	1.43	0.92	0.91	123.0	14.42	0.0951	0.0155	432.9	162.3	5.4	5.4
26	1702.0	0.0009	0.0147	242.8	427.5	1.21	1.83	1.72	1.46	0.92	0.92	119.7	14.59	0.0939	0.0159	421.6	161.4	5.2	5.2
28	1793.8	0.0010	0.0139	246.2	427.5	1.22	1.83	1.74	1.50	0.93	0.93	116.4	14.77	0.0927	0.0163	410.3	160.5	4.9	4.9
30	1889.3	0.0010	0.0131	249.6	427.5	1.24	1.82	1.77	1.55	0.93	0.94	113.2	14.95	0.0915	0.0167	398.8	159.4	4.6	4.6
32	1988.6	0.0010	0.0123	253.1	427.5	1.25	1.82	1.80	1.59	0.94	0.95	110.1	15.15	0.0904	0.0172	387.3	158.4	4.3	4.3
34	2091.8	0.0010	0.0116	256.6	427.3	1.26	1.81	1.83	1.65	0.94	0.96	107.0	15.35	0.0892	0.0177	375.7	157.3	4.1	4.1
36	2198.9	0.0010	0.0109	260.2	427.1	1.27	1.81	1.86	1.71	0.95	0.97	104.0	15.56	0.0880	0.0182	363.9	156.1	3.8	3.8
38	2310.2	0.0010	0.0103	263.9	426.8	1.28	1.80	1.90	1.77	0.95	0.98	101.0	15.78	0.0868	0.0188	352.1	154.9	3.5	3.5
40	2425.6	0.0010	0.0097	267.5	426.5	1.29	1.80	1.94	1.84	0.96	0.99	98.1	16.01	0.0857	0.0195	340.1	153.6	3.3	3.3
42	2545.4	0.0010	0.0091	271.3	426.0	1.30	1.79	1.99	1.93	0.96	1.00	95.2	16.26	0.0845	0.0202	327.9	152.2	3.0	3.0
44	2669.7	0.0011	0.0086	275.1	425.4	1.31	1.79	2.04	2.02	0.97	1.01	92.3	16.52	0.0833	0.0211	315.6	150.7	2.7	2.7
46	2798.5	0.0011	0.0080	279.0	424.7	1.33	1.78	2.10	2.13	0.98	1.02	89.4	16.80	0.0822	0.0220	303.0	149.2	2.5	2.5
48	2932.1	0.0011	0.0076	283.0	423.9	1.34	1.78	2.17	2.25	0.98	1.03	86.5	17.11	0.0810	0.0230	290.2	147.6	2.3	2.3
50	3070.6	0.0011	0.0071	287.1	422.9	1.35	1.77	2.26	2.40	0.99	1.05	83.7	17.43	0.0799	0.0241	277.2	145.9	2.0	2.0
52	3214.0	0.0011	0.0066	291.2	421.8	1.36	1.76	2.36	2.58	1.00	1.06	80.8	17.79	0.0788	0.0253	263.9	144.1	1.8	1.8
54	3362.7	0.0011	0.0062	295.6	420.4	1.38	1.76	2.49	2.80	1.01	1.08	77.9	18.19	0.0776	0.0268	250.2	142.2	1.6	1.6
56	3516.8	0.0012	0.0058	300.0	418.9	1.39	1.75	2.65	3.08	1.02	1.09	75.0	18.63	0.0765	0.0285	236.1	140.2	1.3	1.3
58	3676.4	0.0012	0.0054	304.7	417.0	1.40	1.74	2.86	3.44	1.04	1.11	71.9	19.12	0.0755	0.0304	221.5	138.1	1.1	1.1
60	3841.8	0.0012	0.0050	309.6	414.8	1.42	1.73	3.15	3.93	1.05	1.13	68.8	19.70	0.0744	0.0328	206.4	135.8	0.9	0.9
62	4013.3	0.0013	0.0046	314.9	412.1	1.43	1.72	3.58	4.63	1.07	1.15	65.5	20.37	0.0735	0.0356	190.7	133.3	0.7	0.7
64	4191.1	0.0013	0.0042	320.6	408.8	1.45	1.71	4.26	5.70	1.09	1.18	61.9	21.19	0.0728	0.0393	174.1	130.6	0.5	0.5
66	4375.4	0.0014	0.0038	326.9	404.6	1.47	1.70	5.51	7.60	1.13	1.21	58.0	22.25	0.0726	0.0442	156.5	127.7	0.4	0.4
68	4566.8	0.0015	0.0034	334.5	398.8	1.49	1.68	8.54	11.80	1.17	1.25	53.2	23.73	0.0735	0.0518	137.6	124.2	0.2	0.2
70	4765.3	0.0016	0.0029	345.3	389.6	1.52	1.65	24.52	28.76	1.26	1.31	44.1	26.28	0.0768	0.0679	117.2	119.5	0.1	0.1

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