

Refrigeration Components Canada Ltd.

Refrigerant 404A [R-125/143a/134a (44/52/4)] Properties of Liquid on the Bubble Line and Vapor on the Dew Line

Pres- sure, psia	Temp.°, °F		Density, Volume, lb/ft ³ , ft ³ /lb		Enthalpy, Btu/lb		Entropy, Btu/lb·°F		Specific Heat c_p , Btu/lb·°F			Vel. of Sound, ft/s		Viscosity, lb _m /ft·h		Thermal Cond., Btu/h·ft·°F		Surface Tension, dyne/cm	Pres- sure, psia
	Bubble	Dew	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor		
1.00	-130.39	-128.34	89.49	36.1508	-25.77	71.14	-0.06894	0.22484	0.2751	0.1549	1.161	3077.	439.4	1.6838	0.0178	0.0701	0.00360	17.40	1.00
1.50	-120.83	-118.88	88.56	24.7288	-23.13	72.51	-0.06105	0.22074	0.2766	0.1584	1.160	2987.	444.2	1.5074	0.0183	0.0684	0.00378	16.90	1.50
2.00	-113.63	-111.76	87.86	18.8932	-21.14	73.55	-0.05522	0.21796	0.2779	0.1610	1.159	2921.	447.7	1.3938	0.0187	0.0671	0.00391	16.51	2.00
2.50	-107.80	-105.98	87.29	15.3350	-19.51	74.39	-0.05057	0.21588	0.2790	0.1633	1.159	2867.	450.4	1.3116	0.0191	0.0661	0.00403	16.19	2.50
3.00	-102.86	-101.09	86.81	12.9318	-18.13	75.11	-0.04667	0.21424	0.2801	0.1652	1.158	2822.	452.6	1.2478	0.0193	0.0652	0.00412	15.92	3.00
4.00	-94.72	-93.02	86.00	9.8828	-15.84	76.30	-0.04033	0.21175	0.2819	0.1685	1.158	2749.	456.1	1.1529	0.0198	0.0638	0.00429	15.47	4.00
5.00	-88.09	-86.45	85.34	8.0221	-13.97	77.26	-0.03525	0.20991	0.2835	0.1712	1.159	2689.	458.7	1.0837	0.0202	0.0627	0.00442	15.09	5.00
6.00	-82.47	-80.87	84.78	6.7646	-12.37	78.08	-0.03099	0.20847	0.2849	0.1737	1.159	2639.	460.8	1.0299	0.0205	0.0618	0.00451	14.77	6.00
7.00	-77.56	-75.99	84.28	5.8562	-10.97	78.80	-0.02730	0.20729	0.2862	0.1758	1.160	2596.	462.5	0.9860	0.0207	0.0610	0.00462	14.48	7.00
8.00	-73.18	-71.65	83.84	5.1681	-9.71	79.43	-0.02403	0.20630	0.2874	0.1778	1.161	2557.	463.9	0.9493	0.0210	0.0603	0.00471	14.22	8.00
10.00	-65.59	-64.12	83.06	4.1930	-7.52	80.53	-0.01843	0.20472	0.2895	0.1813	1.162	2491.	466.2	0.8902	0.0214	0.0591	0.00488	13.77	10.00
12.00	-59.13	-57.70	82.39	3.5336	-5.64	81.47	-0.01371	0.20349	0.2914	0.1844	1.164	2434.	467.9	0.8440	0.0217	0.0581	0.00503	13.38	12.00
14.00	-53.48	-52.08	81.79	3.0571	-3.99	82.28	-0.00962	0.20250	0.2931	0.1872	1.166	2385.	469.3	0.8063	0.0220	0.0572	0.00516	13.04	14.00
14.70b	-51.66	-50.27	81.60	2.9207	-3.45	82.55	-0.00831	0.20220	0.2937	0.1881	1.166	2369.	469.7	0.7947	0.0221	0.0569	0.00520	12.93	14.70
16.00	-48.43	-47.06	81.26	2.6959	-2.50	83.01	-0.00599	0.20168	0.2947	0.1898	1.168	2341.	470.3	0.7745	0.0223	0.0564	0.00527	12.73	16.00
18.00	-43.85	-42.51	80.77	2.4125	-1.14	83.66	-0.00273	0.20098	0.2962	0.1922	1.169	2302.	471.2	0.7473	0.0225	0.0557	0.00538	12.45	18.00
20.00	-39.65	-38.34	80.32	2.1840	0.10	84.26	0.00025	0.20038	0.2977	0.1945	1.171	2265.	471.8	0.7234	0.0227	0.0551	0.00548	12.18	20.00
22.00	-35.77	-34.48	79.90	1.9956	1.26	84.81	0.00298	0.19985	0.2990	0.1966	1.173	2232.	472.3	0.7022	0.0230	0.0545	0.00558	11.94	22.00
24.00	-32.16	-30.89	79.50	1.8376	2.35	85.32	0.00552	0.19938	0.3003	0.1986	1.175	2201.	472.7	0.6831	0.0231	0.0540	0.00566	11.71	24.00
26.00	-28.77	-27.52	79.13	1.7031	3.37	85.79	0.00789	0.19896	0.3015	0.2006	1.177	2172.	473.1	0.6659	0.0233	0.0535	0.00575	11.50	26.00
28.00	-25.58	-24.35	78.74	1.5872	4.33	86.24	0.01011	0.19858	0.3027	0.2024	1.179	2144.	473.3	0.6502	0.0235	0.0530	0.00583	11.29	28.00
30.00	-22.66	-21.35	78.44	1.4862	5.25	86.66	0.01221	0.19824	0.3038	0.2042	1.181	2118.	473.4	0.6357	0.0237	0.0526	0.00590	11.10	30.00
32.00	-19.69	-18.49	78.12	1.3974	6.13	87.05	0.01419	0.19793	0.3049	0.2059	1.183	2093.	473.5	0.6224	0.0238	0.0521	0.00598	10.92	32.00
34.00	-16.96	-15.77	77.81	1.3186	6.96	87.43	0.01607	0.19764	0.3060	0.2076	1.185	2070.	473.6	0.6100	0.0240	0.0517	0.00605	10.74	34.00
36.00	-14.35	-13.18	77.51	1.2484	7.77	87.78	0.01787	0.19738	0.3071	0.2093	1.187	2048.	473.5	0.5984	0.0241	0.0514	0.00611	10.57	36.00
38.00	-11.85	-10.69	77.22	1.1852	8.54	88.12	0.01959	0.19713	0.3081	0.2108	1.189	2026.	473.5	0.5876	0.0243	0.0510	0.00617	10.41	38.00
40.00	-9.44	-8.30	76.94	1.1282	9.28	88.45	0.02123	0.19690	0.3091	0.2124	1.191	2005.	473.4	0.5774	0.0244	0.0507	0.00624	10.25	40.00
42.00	-7.13	-5.99	76.68	1.0764	10.00	88.76	0.02281	0.19669	0.3101	0.2139	1.193	1985.	473.3	0.5677	0.0244	0.0503	0.00638	10.10	42.00
44.00	-4.90	-3.77	76.41	1.0291	10.69	89.06	0.02433	0.19649	0.3110	0.2154	1.195	1966.	473.1	0.5586	0.0245	0.0500	0.00644	9.96	44.00
46.00	-2.74	-1.63	76.16	0.9858	11.36	89.35	0.02579	0.19630	0.3120	0.2168	1.197	1948.	472.9	0.5500	0.0247	0.0497	0.00650	9.82	46.00
48.00	-0.66	0.44	75.91	0.9460	12.02	89.62	0.02721	0.19612	0.3129	0.2183	1.199	1930.	472.7	0.5418	0.0248	0.0494	0.00656	9.68	48.00
50.00	1.36	2.45	75.67	0.9092	12.65	89.89	0.02858	0.19595	0.3138	0.2197	1.202	1912.	472.5	0.5340	0.0249	0.0491	0.00661	9.55	50.00
55.00	6.15	7.22	75.10	0.8286	14.16	90.52	0.03181	0.19557	0.3160	0.2231	1.207	1871.	471.8	0.5159	0.0252	0.0485	0.00675	9.23	55.00
60.00	10.62	11.67	74.55	0.7610	15.58	91.09	0.03482	0.19523	0.3182	0.2263	1.212	1833.	471.0	0.4996	0.0255	0.0478	0.00688	8.93	60.00
65.00	14.82	15.85	74.04	0.7035	16.92	91.63	0.03763	0.19493	0.3203	0.2295	1.217	1796.	470.2	0.4849	0.0257	0.0473	0.00700	8.66	65.00
70.00	18.78	19.79	73.54	0.6538	18.20	92.12	0.04028	0.19466	0.3223	0.2326	1.223	1762.	469.2	0.4714	0.0260	0.0467	0.00712	8.39	70.00
75.00	22.53	23.52	73.06	0.6106	19.41	92.59	0.04278	0.19441	0.3244	0.2357	1.228	1730.	468.2	0.4589	0.0262	0.0462	0.00723	8.14	75.00
80.00	26.09	27.07	72.61	0.5725	20.58	93.02	0.04516	0.19417	0.3264	0.2387	1.234	1699.	467.1	0.4473	0.0264	0.0457	0.00735	7.91	80.00
85.00	29.50	30.46	72.16	0.5388	21.69	93.43	0.04742	0.19396	0.3283	0.2416	1.239	1669.	466.0	0.4366	0.0267	0.0452	0.00746	7.68	85.00
90.00	32.75	33.70	71.73	0.5087	22.76	93.82	0.04958	0.19376	0.3303	0.2445	1.245	1641.	464.8	0.4265	0.0269	0.0448	0.00756	7.46	90.00
95.00	35.87	36.81	71.32	0.4816	23.80	94.18	0.05165	0.19357	0.3322	0.2474	1.251	1613.	463.6	0.4170	0.0271	0.0444	0.00767	7.25	95.00
100.00	38.87	39.79	70.91	0.4572	24.80	94.53	0.05364	0.19339	0.3341	0.2503	1.257	1587.	462.3	0.4081	0.0273	0.0440	0.00777	7.05	100.00
110.00	44.55	45.45	70.13	0.4147	26.71	95.16	0.05739	0.19305	0.3380	0.2559	1.269	1537.	459.7	0.3917	0.0276	0.0432	0.00798	6.67	110.00
120.00	49.86	50.73	69.39	0.3790	28.51	95.74	0.06089	0.19274	0.3418	0.2616	1.282	1490.	457.0	0.3768	0.0280	0.0425	0.00818	6.32	120.00
130.00	54.84	55.69	68.67	0.3487	30.22	96.26	0.06418	0.19245	0.3457	0.2673	1.296	1446.	454.2	0.3632	0.0284	0.0418	0.00838	5.99	130.00
140.00	59.55	60.37	67.97	0.3225	31.85	96.74	0.06728	0.19217	0.3496	0.2730	1.310	1403.	451.3	0.3508	0.0287	0.0412	0.00858	5.68	140.00
150.00	64.01	64.81	67.30	0.2996	33.41	97.17	0.07022	0.19189	0.3535	0.2789	1.324	1363.	448.3	0.3392	0.0291	0.0406	0.00877	5.38	150.00
160.00	68.25	69.04	66.64	0.2795	34.91	97.57	0.07302	0.19163	0.3576	0.2848	1.340	1325.	445.3	0.3285	0.0294	0.0400	0.00897	5.10	160.00
170.00	72.30	73.07	66.00	0.2616	36.36	97.93	0.07570	0.19136	0.3617	0.2909	1.356	1288.	442.2	0.3184	0.0297	0.0395	0.00917	4.84	170.00
180.00	76.18	76.93	65.37	0.2457	37.75	98.25	0.07826	0.19110	0.3659	0.2972	1.373	1252.	439.1	0.3090	0.0301	0.0390	0.00937	4.58	180.00
190.00	79.89	80.63	64.75	0.2313	39.11	98.55	0.08073	0.19083	0.3703	0.3036	1.391	1218.	436.0	0.3000	0.0304	0.0385	0.00958	4.34	190.00
200.00	83.47	84.18	64.14	0.2183	40.42	98.82	0.08311	0.19057	0.3748	0.3103	1.410	1185.	432.7	0.2916	0.0307	0.0380	0.00979	4.11	200.00
220.00	90.23	90.91	62.95	0.1957	42.95	99.29	0.08762	0.19002	0.3844	0.3246	1.452	1121.	426.2	0.2759	0.0314	0.0371	0.01022	3.68	220.00
240.00	96.54	97.20	61.78	0.1767	45.36	99.66	0.09187	0.18944	0.3948	0.3402	1.499	1060.	419.5	0.2615	0.0320	0.0362			