

R-417A (Freon™ MO59)

Zetotropic blend (46.6 % R-125 - 50 % R-134a - 3.4 % R-600)

Molecular weight (g/mol)	106.75
Melting point (°C)	N/A
Boiling point (at 1.013 bar)	-39.07
Temperature glide at 1.013 bar (K)	4.99
Critical temperature (°C)	87.1
Critical pressure (bar absolute)	40.35
Specific heat (liquid) at + 25°C (kJ/kg.K)	1.444
Specific heat (vapour) at 1.013 bar and + 25°C (kJ/kg.K)	0.855
Thermal capacity ratio (Cp/Cv) at + 25°C and 1.013 bar	1.111
Viscosity (liquid) at + 25°C in Centipoise (10 ⁻³ Pa.s)	0.165
Surface tension at + 25°C in dyne per centimetre (10 ⁻³ N/m)	6.48
Classification NF-EN 378	A1
GWP (IPCC 4)	2346

🔍 Main applications

R-417A (Freon™ MO59) is a non azeotropic HFC blend intended as a "direct replacement" for R-22 (HCFC) in direct expansion small air-conditioning applications.

Note: for water chiller applications R-422D (Freon™ MO29) is recommended.

🔍 Commercial specifications

Composition: (50 % R-134a - 46.6 % R-125 - 3.4 % R-600) (±1 % / ±1.1 % / +0.1 % -0.4 %).

Purity: ≥ 99.5 % weight.

Water content: ≤ 10 ppm weight.

Chloride ion test: negative

Acidity (HC): ≤ 1 ppm weight.

High boiling residue: ≤ 1.5 % volume.

Résidus haute ébullition: ≤ 0.01 % volume.

🔍 Oils

Use a mineral (MO), an alkyl benzene (AB) or a polyol ester (POE) oil.

Check with **Climalife** regarding the viscosity of the oil selected for your application, and the miscibility with the fluid under consideration.

🔍 Regulation

The use of HFCs are restricted by the European Union Regulation n° 517/2014.

Recovery of halogenated refrigerants is compulsory as defined by the European regulation n° 517/2014.

(For their use, pay attention to the regulation of your country).

Thermodynamic properties of R-417A - Saturated state

Absolute pressure P (bar)	LIQUID					VAPOUR					Latent heat Lv (kJ/kg)
	Bubble point t' (°C)	Volume v' (dm ³ /kg)	Density ρ' (kg/dm ³)	Enthalpy h' (kJ/kg)	Entropy s' (kJ/kg.K)	Dew point t" (°C)	Volume v" (m ³ /kg)	Density ρ" (kg/m ³)	Enthalpy h" (kJ/kg)	Entropy s" (kJ/kg.K)	
0.018	-100	0.640	1.562	75.876	0.438	-93.42	7.823	0.128	313.370	1.783	237.494
0.028	-95	0.646	1.547	81.943	0.472	-88.55	5.095	0.196	316.329	1.764	234.387
0.043	-90	0.653	1.532	87.975	0.506	-83.67	3.412	0.293	319.319	1.747	231.344
0.064	-85	0.659	1.518	93.987	0.538	-78.8	2.343	0.427	322.336	1.732	228.349
0.093	-80	0.665	1.503	99.991	0.570	-73.93	1.647	0.607	325.375	1.718	225.384
0.133	-75	0.672	1.488	105.996	0.600	-69.06	1.182	0.846	328.433	1.706	222.437
0.186	-70	0.679	1.474	112.010	0.630	-64.19	0.865	1.156	331.503	1.695	219.494
0.254	-65	0.685	1.459	118.040	0.659	-59.32	0.645	1.551	334.583	1.686	216.544
0.342	-60	0.692	1.444	124.091	0.688	-54.45	0.488	2.050	337.667	1.677	213.577
0.453	-55	0.700	1.429	130.168	0.716	-49.59	0.375	2.668	340.750	1.670	210.582
0.592	-50	0.707	1.414	136.277	0.744	-44.72	0.292	3.427	343.828	1.663	207.551
0.763	-45	0.715	1.399	142.421	0.771	-39.85	0.230	4.347	346.894	1.657	204.473
0.970	-40	0.723	1.384	148.605	0.798	-34.99	0.183	5.452	349.945	1.652	201.340
1.013	-39.07	0.724	1.381	149.758	0.803	-34.08	0.176	5.680	350.509	1.651	200.751
1.220	-35	0.731	1.368	154.833	0.824	-30.12	0.148	6.768	352.975	1.648	198.142
1.517	-30	0.740	1.352	161.109	0.850	-25.25	0.120	8.321	355.978	1.644	194.870
1.868	-25	0.748	1.336	167.436	0.876	-20.38	0.099	10.142	358.950	1.640	191.514
2.279	-20	0.758	1.320	173.819	0.901	-15.52	0.082	12.263	361.885	1.637	188.066
2.757	-15	0.768	1.303	180.262	0.926	-10.65	0.068	14.721	364.776	1.635	184.514
3.308	-10	0.778	1.286	186.770	0.951	-5.78	0.057	17.554	367.618	1.633	180.849
3.939	-5	0.788	1.268	193.347	0.976	-0.92	0.048	20.806	370.404	1.631	177.057
4.658	0	0.800	1.250	200.000	1.000	3.95	0.041	24.526	373.126	1.629	173.126
5.471	5	0.812	1.232	206.734	1.024	8.82	0.035	28.771	375.774	1.628	169.040
6.388	10	0.825	1.213	213.556	1.048	13.68	0.030	33.603	378.338	1.626	164.782
7.415	15	0.838	1.193	220.474	1.072	18.54	0.026	39.097	380.805	1.625	160.331
8.561	20	0.853	1.173	227.497	1.096	23.41	0.022	45.339	383.160	1.624	155.663
9.835	25	0.869	1.151	234.635	1.120	28.27	0.019	52.433	385.387	1.623	150.752
11.246	30	0.886	1.129	241.902	1.144	33.12	0.017	60.503	387.465	1.621	145.563
12.802	35	0.904	1.106	249.312	1.167	37.98	0.014	69.704	389.370	1.620	140.058
14.513	40	0.925	1.081	256.884	1.191	42.83	0.012	80.227	391.073	1.618	134.188
16.389	45	0.948	1.055	264.643	1.215	47.67	0.011	92.324	392.536	1.615	127.893
18.441	50	0.974	1.026	272.620	1.239	52.51	0.009	106.328	393.711	1.613	121.091
20.679	55	1.004	0.996	280.859	1.264	57.33	0.008	122.701	394.530	1.609	113.671
23.117	60	1.039	0.962	289.423	1.289	62.15	0.007	142.117	394.895	1.605	105.472
25.767	65	1.082	0.925	298.408	1.315	66.95	0.006	165.628	394.653	1.599	96.244
28.645	70	1.135	0.881	307.980	1.342	71.72	0.005	195.041	393.546	1.591	85.565
31.766	75	1.208	0.828	318.468	1.372	76.45	0.004	233.969	391.064	1.580	72.596
35.147	80	1.324	0.755	330.751	1.405	81.1	0.003	282.042	385.884	1.561	55.133
38.724	85	1.697	0.589	351.971	1.464	85.33	0.002	442.845	368.542	1.510	16.571

Thermodynamic properties of R-417A - (superheated vapour) - Volume (dm³/kg)

Sat. Temp. °C	Sat. Pressure bar	Superheat (°C)																				
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
-100	0.009	14653.710	15079.830	15505.537	15930.927	16356.072	16781.023	17205.818	17630.487	18055.050	18479.526	18903.929	19328.268	19752.553	20176.791	20600.989	21025.150	21449.279	21873.380	22297.456	22721.509	23145.542
-95	0.015	9046.555	9302.937	9559.001	9814.818	10070.441	10325.907	10581.245	10836.479	11091.625	11346.697	11601.707	11856.661	12111.569	12366.436	12621.266	12876.065	13130.836	13385.581	13640.303	13895.006	14149.690
-90	0.025	572.589	5932.283	6091.727	6250.975	6410.066	6569.028	6727.886	6886.655	7045.350	7203.982	7362.560	7521.090	7679.579	7838.032	7996.453	8154.846	8313.214	8471.559	8629.883	8788.189	8946.479
-85	0.038	3795.601	3898.275	4000.748	4103.062	4205.247	4307.326	4409.317	4511.232	4613.085	4714.883	4816.633	4918.343	5020.016	5121.657	5223.269	5324.857	5426.422	5527.966	5629.482	5731.001	5832.496
-80	0.058	2564.617	2632.578	2700.376	2768.043	2835.602	2903.072	2970.467	3037.798	3105.074	3172.303	3239.484	3306.617	3373.760	3440.850	3507.915	3574.957	3641.979	3708.984	3775.969	3842.940	3909.898
-75	0.086	1776.439	1822.647	1878.719	1914.682	1960.553	2006.349	2052.080	2097.756	2143.384	2188.970	2234.520	2280.037	2325.526	2370.989	2416.430	2461.850	2507.255	2552.636	2598.006	2643.362	2688.705
-70	0.125	1258.597	1290.800	1322.890	1354.886	1386.805	1418.658	1450.455	1482.203	1513.910	1545.580	1577.217	1608.825	1640.408	1671.968	1703.507	1735.028	1766.533	1798.020	1829.495	1860.958	1892.409
-65	0.176	910.275	933.239	956.105	978.891	1001.609	1024.271	1046.883	1069.452	1091.984	1114.484	1136.954	1159.399	1181.820	1204.221	1226.603	1248.968	1271.318	1293.654	1315.978	1338.289	1360.591
-60	0.244	670.850	687.577	704.219	720.791	737.304	753.767	770.186	786.567	802.915	819.234	835.526	851.795	868.043	884.273	900.485	916.682	932.865	949.036	965.194	981.343	997.481
-55	0.331	502.963	515.391	527.744	540.035	552.273	564.467	576.622	588.743	600.834	612.898	624.939	636.959	648.960	660.943	672.911	684.865	696.807	708.736	720.655	732.564	744.464
-50	0.443	383.055	392.460	401.799	411.082	420.318	429.514	438.675	447.806	456.909	465.989	475.047	484.086	493.107	502.113	511.104	520.083	529.049	538.005	546.952	555.889	564.817
-45	0.583	295.947	303.188	310.370	317.501	324.590	331.643	338.664	345.658	352.627	359.574	366.501	373.411	380.304	387.184	394.050	400.904	407.748	414.581	421.405	428.221	435.030
-40	0.757	231.666	237.332	242.943	248.509	254.037	259.532	264.998	270.438	275.856	281.254	286.634	291.997	297.346	302.682	308.005	313.317	318.620	323.913	329.197	334.474	339.744
-35	0.969	183.535	188.035	192.486	196.896	201.270	205.614	209.932	214.226	218.499	222.754	226.992	231.215	235.425	239.622	243.808	247.984	252.151	256.308	260.458	264.601	268.737
-34.08	1.013	176.067	180.388	184.660	188.891	193.088	197.255	201.396	205.514	209.611	213.690	217.753	221.800	225.833	229.857	233.868	237.869	241.861	245.844	249.820	253.788	257.750
-30	1.226	147.006	150.633	154.213	157.755	161.265	164.747	168.204	171.640	175.057	178.456	181.840	185.210	188.567	191.913	195.248	198.574	201.891	205.200	208.502	211.797	215.085
-25	1.534	118.934	121.896	124.814	127.697	130.550	133.377	136.182	138.966	141.732	144.482	147.218	149.941	152.651	155.353	158.043	160.725	163.398	166.064	168.723	171.375	174.022
-20	1.898	97.108	99.557	101.966	104.342	106.690	109.013	111.315	113.598	115.865	118.117	120.355	122.581	124.796	127.001	129.196	131.383	133.563	135.735	137.901	140.061	142.215
-15	2.327	79.952	82.002	84.014	85.995	87.949	89.881	91.792	93.686	95.564	97.428	99.280	101.120	102.949	104.769	106.580	108.384	110.180	111.969	113.752	115.530	117.302
-10	2.826	66.330	68.066	69.765	71.435	73.080	74.703	76.308	77.895	79.468	81.027	82.575	84.111	85.638	87.156	88.665	90.167	91.662	93.151	94.634	96.112	97.584
-5	3.404	55.411	56.896	58.347	59.770	61.169	62.547	63.907	65.252	66.582	67.899	69.206	70.501	71.788	73.066	74.336	75.599	76.855	78.106	79.351	80.590	81.825
0	4.067	46.579	47.864	49.116	50.340	51.542	52.724	53.888	55.038	56.173	57.297	58.410	59.513	60.607	61.692	62.771	63.842	64.908	65.967	67.022	68.071	69.116
5	4.825	39.377	40.499	41.590	42.654	43.696	44.719	45.725	46.716	47.695	48.662	49.618	50.565	51.503	52.434	53.357	54.274	55.185	56.091	56.991	57.887	58.778
10	5.685	33.455	34.446	35.406	36.339	37.251	38.144	39.021	39.884	40.734	41.573	42.402	43.221	44.033	44.837	45.634	46.425	47.210	47.990	48.765	49.535	50.302
15	6.655	28.551	29.434	30.286	31.113	31.918	32.704	33.475	34.232	34.977	35.711	36.435	37.150	37.857	38.557	39.250	39.938	40.619	41.296	41.968	42.636	43.300
20	7.746	24.459	25.255	26.018	26.757	27.474	28.172	28.855	29.525	30.182	30.829	31.466	32.094	32.715	33.329	33.936	34.538	35.134	35.726	36.312	36.895	37.474
25	8.965	21.023	21.746	22.437	23.103	23.746	24.372	24.982	25.578	26.163	26.737	27.301	27.858	28.406	28.948	29.484	30.014	30.539	31.059	31.575	32.087	32.595
30	10.323	18.117	18.742	19.413	20.018	20.601	21.165	21.714	22.249	22.772	23.285	23.789	24.285	24.773	25.255	25.730	26.200	26.666	27.126	27.582	28.035	28.483
35	11.830	15.645	16.263	16.845	17.399	17.930	18.443	18.941	19.424	19.896	20.358	20.810	21.255	21.692	22.122	22.547	22.967	23.381	23.791	24.197	24.599	24.998
40	13.496	13.528	14.108	14.650	15.162	15.651	16.121	16.574	17.014	17.443	17.860	18.269	18.670	19.064	19.451	19.833	20.209	20.581	20.948	21.311	21.670	22.026
45	15.333	11.704	12.256	12.765	13.243	13.696	14.129	14.545	14.948	15.339	15.719	16.091	16.455	16.811	17.162	17.506	17.846	18.180	18.511	18.837	19.160	19.480
50	17.354	10.121	10.653	11.137	11.586	12.009	12.411	12.796	13.167	13.526	13.875	14.214	14.546	14.870	15.189	15.502	15.809	16.112	16.411	16.706	16.998	17.286
55	19.572	8.738	9.259	9.724	10.150	10.548	10.923	11.282	11.625	11.956	12.277	12.589	12.893	13.190	13.481	13.766	14.047	14.322	14.594	14.862	15.126	15.387
60	22.002	7.518	8.038	8.490	8.898	9.275	9.629	9.964	10.284	10.591	10.888	11.176	11.456	11.729	11.996	12.257	12.514	12.765	13.013	13.257	13.498	13.735
65	24.664	6.431	6.962	7.408	7.802	8.162	8.497	8.812	9.112	9.399	9.675	9.941	10.200	10.452	10.698	10.938	11.174	11.405	11.632	11.855	12.075	12.292
70	27.578	5.448	6.007	6.452	6.837	7.183	7.502	7.800	8.082	8.351	8.609	8.857	9.097	9.331	9.558	9.780	9.996	10.209	10.418	10.623	10.824	11.023
75	30.777	4.533	5.151	5.604	5.983	6.318	6.623	6.906	7.173	7.425	7.667	7.899	8.122	8.339	8.550	8.755	8.956	9.152	9.344	9.533	9.718	9.901
80	34.314	3.633	4.373	4.842	5.218	5.545	5.838	6.108	6.363	6.607	6.845	7.072	7.251	7.453	7.649	7.840	8.025	8.207	8.384	8.558	8.729	8.897
85	38.382	2.453	3.621	4.120	4.499	4.819	5.103	5.361	5.601	5.826	6.039	6.243	6.438	6.626	6.808	6.985	7.157	7.324	7.488	7.649	7.806	7.961

Thermodynamic properties of R-417A - (superheated vapour) - Enthalpy (kJ/kg)

Sat. Temp. °C	Sat. Pressure bar	Superheat (°C)																				
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
-100	0.009	309.432	312.476	315.570	318.712	321.904	325.145	328.436	331.776	335.164	338.602	342.088	345.622	349.204	352.834	356.511	360.236	364.008	367.826	371.691	375.602	379.559
-95	0.015	312.418	315.520	318.668	321.865	325.111	328.405	331.747	335.138	338.578	342.066	345.602	349.185	352.816	356.495	360.221	363.993	367.812	371.678	375.590	379.547	383.550
-90	0.025	315.443	318.601	321.806	325.066	328.357	331.704	335.099	338.542	342.032	345.571	349.156	352.790	356.470	360.197	363.971	367.791	371.653	375.571	379.530	383.534	387.583
-85	0.038	318.502	321.718	324.979	328.287	331.640	335.041	338.488	341.983	345.525	349.114	352.750	356.433	360.162	363.938	367.761	371.629	375.543	379.504	383.509	387.560	391.656
-80	0.058	321.591	324.866	328.185	331.548	334.956	338.411	341.912	345.459	349.053	352.693	356.379	360.112	363.891	367.716	371.587	375.504	379.466	383.473	387.526	391.623	395.765
-75	0.086	324.705	328.041	331.418	334.838	338.302	341.812	345.366	348.966	352.612	356.304	360.042	363.825	367.654	371.528	375.448	379.413	383.423	387.478	391.578	395.722	399.911
-70	0.125	327.841	331.237	334.674	338.152	341.673	345.238	348.848	352.502	356.201	359.945	363.734	367.568	371.447	375.372	379.341	383.353	387.413	391.516	395.663	399.854	404.089
-65	0.176	330.992	334.452	337.949	341.487	345.066	348.688	352.353	356.062	359.814	363.611	367.453	371.338	375.269	379.243	383.262	387.325	391.432	395.583	399.778	404.017	408.299
-60	0.244	334.154	337.678	341.239	344.837	348.476	352.155	355.877	359.642	363.449	367.300	371.194	375.132	379.114	383.140	387.209	391.322	395.478	399.678	403.922	408.207	412.536
-55	0.331	337.322	340.913	344.537	348.198	351.898	355.637	359.417	363.238	367.101	371.007	374.955	378.947	382.981	387.058	391.178	395.341	399.547	403.796	408.088	412.422	416.799
-50	0.443	340.489	344.149	347.840	351.566	355.328	359.128	362.967	366.847	370.767	374.729	378.732	382.778	386.865	390.995	395.167	399.381	403.637	407.936	412.276	416.659	421.084
-45	0.583	343.651	347.383	351.143	354.935	358.761	362.624	366.524	370.464	374.442	378.461	382.521	386.622	390.763	394.946	399.171	403.437	407.744	412.093	416.484	420.915	425.389
-40	0.757	346.802	350.609	354.440	358.301	362.194	366.121	370.084	374.085	378.123	382.201	386.318	390.475	394.672	398.909	403.187	407.506	411.865	416.265	420.706	425.188	429.710
-35	0.969	349.936	353.821	357.727	361.659	365.620	369.614	373.642	377.706	381.806	385.943	390.119	394.334	398.587	402.880	407.212	411.584	415.997	420.449	424.941	429.473	434.045
-34.08	1.013	350.509	354.409	358.329	362.274	366.248	370.255	374.295	378.370	382.482	386.631	390.817	395.042	399.306	403.609	407.952	412.334	416.756	421.218	425.719	430.261	434.842
-30	1.226	353.048	357.014	360.998	365.004	369.037	373.099	377.194	381.322	385.486	389.685	393.921	398.194	402.505	406.855	411.243	415.670	420.136	424.640	429.185	433.768	438.390
-25	1.534	356.132	360.184	364.248	368.331	372.438	376.572	380.735	384.931	389.159	393.422	397.720	402.053	406.424	410.831	415.276	419.758	424.279	428.837	433.434	438.070	442.743
-20	1.898	359.183	363.324	367.472	371.636	375.819	380.027	384.262	388.527	392.822	397.150	401.511	405.907	410.338	414.804	419.307	423.847	428.423	433.036	437.687	442.375	447.101
-15	2.327	362.194	366.429	370.666	374.913	379.177	383.461	387.770	392.106	396.470	400.865	405.292	409.751	414.244	418.772	423.334	427.932	432.565	437.234	441.940	446.682	451.460
-10	2.826	365.158	369.493	373.826	378.157	382.504	386.869	391.254	395.664	400.100	404.564	409.058	413.583	418.140	422.730	427.353	432.010	436.701	441.428	446.189	450.986	455.819
-5	3.404	368.070	372.510	376.937	381.364	385.798	390.245	394.710	399.197	403.707	408.243	412.806	417.399	422.021	426.675	431.360	436.078	440.829	445.614	450.433	455.285	460.173
0	4.067	370.922	375.472	380.002	384.525	389.051	393.585	398.134	402.700	407.287	411.897	416.532	421.194	425.885	430.604	413.244	444.946	449.740	454.567	459.427	464.320	469.245
5	4.825	373.704	378.373	383.012	387.637	392.258	396.884	401.519	406.169	410.836	415.523	420.233	424.966	429.726	434.513	439.329	444.173	449.048	453.953	458.889	463.858	468.858
10	5.685	376.407	381.202	385.958	390.691	395.414	400.136	404.862	409.599	414.349	419.116	423.903	428.711	433.543	438.400	443.283	448.193	453.132	458.100	463.099	468.125	473.184
15	6.655	379.018	383.950	388.831	393.680	398.511	403.334	408.157	412.985	417.822	422.673	427.540	432.425	437.331	442.260	447.213	452.191	457.195	462.227	467.287	472.369	477.495
20	7.746	381.523	386.606	391.623	396.596	401.543	406.474	411.399	416.323	421.251	426.189	431.139	436.104	441.087	446.090	451.115	456.162	461.235	466.337	471.457	476.609	481.788
25	8.965	383.906	389.156	394.322	399.413	404.502	409.594	414.681	419.766	424.850	429.959	434.995	439.744	444.807	449.887	454.986	460.105	465.248	470.413	475.603	480.819	486.061
30	10.323	386.147	391.586	396.914	402.175	407.381	412.551	417.697	422.829	427.954	433.078	438.206	443.341	448.487	453.646	458.822	464.016	469.230	474.466	479.723	485.005	490.311
35	11.830	388.223	393.879	399.396	404.817	410.169	415.472	420.741	425.987	431.218	436.442	441.665	446.890	452.122	457.365	462.621	467.892	473.180	478.487	483.815	489.164	494.536
40	13.496	390.106	396.014	401.742	407.345	412.858	418.305	423.705	429.072	434.416	439.745	445.068	450.388	455.710	461.039	466.377	471.728	477.093	482.474	487.874	493.293	498.733
45	15.333	391.761	397.969	403.999	409.745	415.435	421.039	426.580	432.077	437.541	442.982	448.409	453.829	459.245	464.664	470.089	475.522	480.966	486.424	491.898	497.389	502.898
50	17.354	393.142	399.713	405.965	412.002	417.888	423.663	429.358	434.994	440.586	446.146	451.684	457.207	462.723	468.236	473.750	479.269	484.796	490.333	495.881	501.444	507.029
55	19.572	394.184	401.208	407.794	414.095	420.201	426.166	432.028	437.814	443.543	449.229	454.885	460.519	466.138	471.749	477.357	482.965	488.578	494.198	499.827	505.465	511.123
60	22.002	394.796	402.406	409.395	416.003	422.358	428.533	434.579	440.527	446.403	452.255	458.005	463.756	469.484	475.199	480.904	486.606	492.308	498.013	503.724	509.445	515.176
65	24.664	394.837	403.240	410.722	417.697	424.336	430.747	436.959	443.121	449.156	455.123	461.036	466.910	472.754	478.577	484.386	490.185	495.979	501.773	507.570	513.372	519.183
70	27.578	394.069	403.618	411.738	419.142	426.109	432.787	439.258	445.580	451.788	457.913	463.966	469.972	475.938	481.876	487.792	493.693	499.585	505.472	511.357	517.245	523.137
75	30.777	392.026	403.403	412.357	420.288	427.640	434.620	441.343	447.879	454.276	460.568	466.777	472.923	479.020	485.079	491.110	497.119	503.112	509.096	515.074	521.051	527.028
80	34.314	387.522	402.368	412.662	421.050	428.860	436.190	443.197	449.974	456.580	463.057	469.433	475.731	481.968	488.158	494.310	500.433	506.535	512.621	518.697	524.767	530.834
85	38.382	372.768	399.723	411.574	421.061	429.462	437.230	444.584	451.649	458.501	465.194	471.763	478.235	484.632	490.968	497.257	503.508	509.730	515.930	522.114	528.286	534.451

Thermodynamic properties of R-417A - (superheated vapour) - Entropy (kJ/kg.K)

Sat. Temp. °C	Sat. Pressure bar	Superheat (°C)																				
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
-100	0.009	1.812	1.830	1.847	1.864	1.880	1.897	1.913	1.930	1.946	1.962	1.977	1.993	2.009	2.024	2.039	2.054	2.070	2.084	2.099	2.114	2.129
-95	0.015	1.790	1.807	1.824	1.841	1.857	1.874	1.890	1.906	1.922	1.938	1.953	1.969	1.984	2.000	2.015	2.030	2.045	2.060	2.074	2.089	2.103
-90	0.025	1.769	1.786	1.803	1.820	1.836	1.853	1.869	1.885	1.900	1.916	1.932	1.947	1.962	1.978	1.993	2.008	2.022	2.037	2.052	2.066	2.081
-85	0.038	1.751	1.768	1.785	1.801	1.818	1.834	1.850	1.866	1.881	1.897	1.912	1.928	1.943	1.958	1.973	1.988	2.002	2.017	2.032	2.046	2.060
-80	0.058	1.735	1.752	1.768	1.785	1.801	1.817	1.833	1.849	1.864	1.880	1.895	1.910	1.925	1.940	1.955	1.970	1.984	1.999	2.013	2.028	2.042
-75	0.086	1.721	1.737	1.754	1.770	1.786	1.802	1.818	1.833	1.849	1.864	1.880	1.895	1.910	1.924	1.939	1.954	1.968	1.983	1.997	2.011	2.026
-70	0.125	1.708	1.725	1.741	1.757	1.773	1.789	1.805	1.820	1.835	1.851	1.866	1.881	1.896	1.910	1.925	1.940	1.954	1.968	1.983	1.997	2.011
-65	0.176	1.697	1.713	1.729	1.746	1.761	1.777	1.793	1.808	1.823	1.838	1.853	1.868	1.883	1.898	1.912	1.927	1.941	1.956	1.970	1.984	1.998
-60	0.244	1.687	1.703	1.719	1.735	1.751	1.767	1.782	1.797	1.813	1.828	1.843	1.857	1.872	1.887	1.901	1.916	1.930	1.944	1.958	1.972	1.986
-55	0.331	1.678	1.694	1.710	1.726	1.742	1.757	1.773	1.788	1.803	1.818	1.833	1.848	1.862	1.877	1.891	1.906	1.920	1.934	1.948	1.962	1.976
-50	0.443	1.670	1.686	1.702	1.718	1.734	1.749	1.765	1.780	1.795	1.810	1.825	1.839	1.854	1.868	1.883	1.897	1.911	1.925	1.939	1.953	1.967
-45	0.583	1.663	1.680	1.695	1.711	1.727	1.742	1.757	1.773	1.788	1.802	1.817	1.832	1.846	1.861	1.875	1.889	1.903	1.917	1.931	1.945	1.959
-40	0.757	1.657	1.674	1.689	1.705	1.721	1.736	1.751	1.766	1.781	1.796	1.811	1.825	1.840	1.854	1.868	1.882	1.896	1.910	1.924	1.938	1.952
-35	0.969	1.652	1.668	1.684	1.700	1.715	1.731	1.746	1.761	1.776	1.790	1.805	1.820	1.834	1.848	1.862	1.876	1.890	1.904	1.918	1.932	1.945
-34.08	1.013	1.651	1.667	1.683	1.699	1.714	1.730	1.745	1.760	1.775	1.790	1.804	1.819	1.833	1.847	1.861	1.876	1.889	1.903	1.917	1.931	1.944
-30	1.226	1.648	1.664	1.680	1.695	1.711	1.726	1.741	1.756	1.771	1.786	1.800	1.815	1.829	1.843	1.857	1.871	1.885	1.899	1.913	1.927	1.940
-25	1.534	1.644	1.660	1.676	1.691	1.707	1.722	1.737	1.752	1.767	1.782	1.796	1.811	1.825	1.839	1.853	1.867	1.881	1.895	1.908	1.922	1.936
-20	1.898	1.640	1.656	1.672	1.688	1.703	1.719	1.734	1.749	1.763	1.778	1.793	1.807	1.821	1.835	1.849	1.863	1.877	1.891	1.905	1.918	1.932
-15	2.327	1.637	1.653	1.669	1.685	1.701	1.716	1.731	1.746	1.761	1.775	1.790	1.804	1.818	1.832	1.846	1.860	1.874	1.888	1.901	1.915	1.928
-10	2.826	1.635	1.651	1.667	1.683	1.698	1.713	1.729	1.743	1.758	1.773	1.787	1.802	1.816	1.830	1.844	1.858	1.872	1.885	1.899	1.912	1.926
-5	3.404	1.632	1.649	1.665	1.681	1.696	1.711	1.727	1.742	1.756	1.771	1.785	1.800	1.814	1.828	1.842	1.856	1.869	1.883	1.897	1.910	1.923
0	4.067	1.631	1.647	1.663	1.679	1.695	1.710	1.725	1.740	1.755	1.769	1.784	1.798	1.812	1.826	1.840	1.854	1.868	1.881	1.895	1.908	1.922
5	4.825	1.629	1.645	1.662	1.678	1.693	1.709	1.724	1.739	1.754	1.768	1.783	1.797	1.811	1.825	1.839	1.853	1.867	1.880	1.894	1.907	1.920
10	5.685	1.627	1.644	1.661	1.677	1.692	1.708	1.723	1.738	1.753	1.767	1.782	1.796	1.810	1.824	1.838	1.852	1.866	1.879	1.893	1.906	1.919
15	6.655	1.626	1.643	1.660	1.676	1.691	1.707	1.722	1.737	1.752	1.767	1.781	1.796	1.810	1.824	1.838	1.852	1.865	1.879	1.892	1.906	1.919
20	7.746	1.625	1.642	1.659	1.675	1.691	1.706	1.722	1.737	1.752	1.767	1.781	1.795	1.810	1.824	1.838	1.851	1.865	1.879	1.892	1.906	1.919
25	8.965	1.623	1.641	1.658	1.674	1.690	1.706	1.722	1.737	1.752	1.766	1.781	1.795	1.810	1.824	1.838	1.851	1.865	1.879	1.892	1.906	1.919
30	10.323	1.622	1.640	1.657	1.674	1.690	1.706	1.721	1.737	1.752	1.767	1.781	1.796	1.810	1.824	1.838	1.852	1.865	1.879	1.893	1.906	1.919
35	11.830	1.621	1.639	1.656	1.673	1.690	1.706	1.721	1.737	1.752	1.767	1.781	1.796	1.810	1.824	1.838	1.852	1.866	1.880	1.893	1.906	1.920
40	13.496	1.619	1.638	1.655	1.673	1.689	1.706	1.721	1.737	1.752	1.767	1.782	1.796	1.811	1.825	1.839	1.853	1.867	1.880	1.894	1.907	1.920
45	15.333	1.617	1.636	1.654	1.672	1.689	1.705	1.721	1.737	1.753	1.768	1.782	1.797	1.811	1.826	1.840	1.854	1.867	1.881	1.895	1.908	1.921
50	17.354	1.614	1.634	1.653	1.671	1.689	1.705	1.722	1.737	1.753	1.768	1.783	1.798	1.812	1.827	1.841	1.855	1.868	1.882	1.896	1.909	1.922
55	19.572	1.611	1.632	1.652	1.670	1.688	1.705	1.722	1.738	1.753	1.769	1.784	1.798	1.813	1.827	1.842	1.856	1.869	1.883	1.897	1.910	1.923
60	22.002	1.607	1.630	1.650	1.669	1.687	1.705	1.721	1.738	1.754	1.769	1.784	1.799	1.814	1.828	1.843	1.857	1.870	1.884	1.898	1.911	1.925
65	24.664	1.602	1.626	1.648	1.668	1.686	1.704	1.721	1.738	1.754	1.770	1.785	1.800	1.815	1.829	1.844	1.858	1.872	1.885	1.899	1.912	1.926
70	27.578	1.594	1.622	1.645	1.666	1.685	1.703	1.721	1.738	1.754	1.770	1.785	1.800	1.815	1.830	1.844	1.859	1.873	1.887	1.900	1.914	1.927
75	30.777	1.584	1.616	1.641	1.663	1.683	1.702	1.720	1.737	1.754	1.770	1.786	1.801	1.816	1.831	1.845	1.860	1.874	1.888	1.901	1.915	1.928
80	34.314	1.567	1.609	1.637	1.660	1.681	1.701	1.719	1.737	1.753	1.770	1.786	1.801	1.816	1.831	1.846	1.860	1.875	1.889	1.902	1.916	1.929
85	38.382	1.522	1.597	1.629	1.655	1.677	1.697	1.717	1.735	1.752	1.769	1.785	1.801	1.816	1.831	1.846	1.860	1.875	1.889	1.903	1.916	1.930