

R-423A (Freon™ 39TC)

Zetropic blend (52.5 % R-134a – 47.5 % R-227ea)

Molecular weight (g/mol)	125.96
Melting point (°C)	N/A
Boiling point (at 1.013 bar)	-24.18
Temperature glide at 1.013 bar (K)	0.67
Critical temperature (°C)	99.1
Critical pressure (bar absolute)	35.63
Specific heat (liquid) at + 25°C (kJ/kg.K)	1.313
Specific heat (vapour) at 1.013 bar and + 25°C (kJ/kg.K)	0.833
Thermal capacity ratio (Cp/Cv) at + 25°C and 1.013 bar	1.098
Viscosity (liquid) at + 25°C in Centipoise (10 ⁻³ Pa.s)	0.204
Surface tension at + 25°C in dyne per centimetre (10 ⁻³ N/m)	7.44
Classification NF-EN 378	A1
GWP (IPCC 4)	2280

🔍 Main applications

R-423A (Freon™ 39TC) is a "near azeotropic" HFC blend intended to replace the R-12 in centrifugal chiller compressors.

🔍 Commercial specifications

Composition: 52.5 % R-134a – 47.5 % R-227ea (±1 % / ±1 %)

Purity: ≥ 99.5 % weight.

Water content: ≤ 10 ppm weight.

Chloride ion test: negative.

Acidity (HCl): ≤ 1 ppm weight.

Non-condensables (gas phase): ≤ 1.5 % volume.

High boiling residue: ≤ 0.01 % volume.

🔍 Oils

Use a polyol ester (POE).

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

🔍 Regulation

The use and implementation of R-423A are governed by EU Regulation n° 517/2014.

The recovery of R-423A is mandatory under EU Regulation n° 517/2014.

(Refer to regulations enforced in each country).

Thermodynamic properties of R-423A - 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)	
0.005	-100	0.596	1.677	86.045	0.484	-99.36	22.546	0.044	299.495	1.715	213.450
0.009	-95	0.601	1.663	91.404	0.515	-94.36	13.795	0.072	302.396	1.697	210.992
0.014	-90	0.606	1.649	96.786	0.544	-89.37	8.721	0.115	305.342	1.681	208.556
0.022	-85	0.612	1.635	102.194	0.574	-84.37	5.681	0.176	308.329	1.668	206.135
0.034	-80	0.617	1.621	107.631	0.602	-79.37	3.802	0.263	311.355	1.655	203.724
0.050	-75	0.622	1.607	113.099	0.630	-74.37	2.608	0.383	314.415	1.645	201.316
0.073	-70	0.628	1.593	118.600	0.657	-69.37	1.831	0.546	317.507	1.635	198.907
0.104	-65	0.634	1.578	124.135	0.684	-64.37	1.312	0.762	320.625	1.627	196.490
0.146	-60	0.640	1.564	129.706	0.711	-59.37	0.958	1.044	323.766	1.620	194.059
0.200	-55	0.646	1.549	135.315	0.737	-54.36	0.712	1.405	326.925	1.614	191.610
0.270	-50	0.652	1.534	140.962	0.762	-49.36	0.538	1.860	330.098	1.609	189.135
0.359	-45	0.658	1.519	146.651	0.787	-44.36	0.412	2.428	333.280	1.604	186.630
0.470	-40	0.665	1.504	152.381	0.812	-39.35	0.320	3.126	336.468	1.601	184.087
0.607	-35	0.672	1.488	158.156	0.837	-34.35	0.252	3.975	339.656	1.598	181.500
0.774	-30	0.679	1.473	163.977	0.861	-29.34	0.200	4.999	342.841	1.596	178.864
0.976	-25	0.686	1.457	169.846	0.885	-24.34	0.161	6.220	346.017	1.594	176.171
1.013	-24.18	0.688	1.454	170.809	0.889	-23.52	0.155	6.440	346.534	1.594	175.725
1.218	-20	0.694	1.441	175.766	0.908	-19.33	0.130	7.666	349.180	1.592	173.414
1.505	-15	0.702	1.424	181.738	0.932	-14.33	0.107	9.365	352.326	1.592	170.587
1.841	-10	0.710	1.407	187.766	0.955	-9.32	0.088	11.349	355.448	1.591	167.682
2.234	-5	0.719	1.390	193.852	0.977	-4.32	0.073	13.652	358.543	1.591	164.691
2.688	0	0.728	1.373	200.000	1.000	0.69	0.061	16.311	361.604	1.591	161.604
3.209	5	0.738	1.355	206.213	1.022	5.69	0.052	19.368	364.626	1.591	158.413
3.805	10	0.748	1.337	212.495	1.045	10.69	0.044	22.870	367.602	1.592	155.107
4.482	15	0.759	1.318	218.852	1.067	15.69	0.037	26.867	370.526	1.592	151.674
5.246	20	0.770	1.299	225.287	1.089	20.69	0.032	31.419	373.388	1.593	148.102
6.104	25	0.782	1.279	231.806	1.110	25.69	0.027	36.593	376.182	1.594	144.375
7.065	30	0.795	1.258	238.418	1.132	30.69	0.024	42.467	378.895	1.595	140.477
8.135	35	0.809	1.237	245.128	1.154	35.68	0.020	49.132	381.516	1.596	136.388
9.321	40	0.824	1.214	251.947	1.176	40.68	0.018	56.698	384.030	1.597	132.083
10.633	45	0.840	1.191	258.886	1.197	45.67	0.015	65.297	386.420	1.598	127.533
12.078	50	0.857	1.166	265.959	1.219	50.65	0.013	75.094	388.663	1.598	122.705
13.666	55	0.877	1.140	273.182	1.241	55.64	0.012	86.297	390.734	1.598	117.552
15.405	60	0.899	1.113	280.576	1.262	60.62	0.010	99.177	392.596	1.598	112.020
17.306	65	0.923	1.083	288.172	1.285	65.59	0.009	114.098	394.204	1.598	106.032
19.380	70	0.952	1.051	296.009	1.307	70.57	0.008	131.568	395.493	1.597	99.485
21.637	75	0.985	1.015	304.144	1.330	75.53	0.007	152.335	396.372	1.595	92.228
24.093	80	1.026	0.975	312.671	1.354	80.49	0.006	177.577	396.698	1.591	84.026
26.762	85	1.077	0.928	321.752	1.378	85.43	0.005	209.347	396.227	1.586	74.475
29.664	90	1.149	0.871	331.727	1.405	90.36	0.004	251.894	394.464	1.578	62.737
32.824	95	1.269	0.788	343.625	1.437	95.26	0.003	317.938	389.941	1.562	46.316

Thermodynamic properties of R-423A - (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	0.005	24072.955	24771.663	25469.827	26167.584	26865.032	27562.240	28259.258	28956.124	29652.868	30349.506	31046.060	31742.541	32438.959	33135.324	33831.642	34527.920	35224.161	35920.370	36616.550	37312.705	38008.838
-95	0.008	14656.924	15071.212	15485.091	15898.659	16311.986	16725.124	17138.109	17550.970	17963.726	18376.400	18788.999	19201.536	19614.019	20026.455	20438.850	20851.209	21263.536	21675.835	22088.108	22500.359	22912.588
-90	0.013	9226.351	9480.673	9734.682	9988.448	10242.023	10495.445	10748.743	11001.938	11255.047	11508.062	11761.055	12013.975	12266.847	12519.678	12772.473	13025.236	13277.971	13530.680	13783.366	14036.032	14288.679
-85	0.021	5986.595	6147.759	6308.678	6469.404	6629.976	6790.423	6950.766	7111.023	7271.207	7431.328	7591.395	7751.415	7911.394	8071.337	8231.247	8391.129	8550.986	8710.819	8870.633	9030.427	9190.205
-80	0.032	3993.163	4098.317	4203.276	4308.078	4412.753	4517.325	4621.809	4726.220	4830.568	4934.861	5039.108	5143.313	5247.482	5351.618	5455.726	5559.809	5663.869	5767.908	5871.928	5975.932	6079.921
-75	0.048	2731.442	2801.922	2872.242	2942.432	3012.517	3082.514	3152.437	3222.297	3292.102	3361.859	3431.575	3501.255	3570.902	3640.521	3710.114	3779.684	3849.239	3918.765	3988.279	4057.778	4127.263
-70	0.070	1911.864	1960.290	2008.584	2056.769	2104.865	2152.886	2200.842	2248.744	2296.598	2344.410	2392.185	2439.926	2487.642	2535.330	2582.996	2630.640	2678.266	2725.875	2773.469	2821.049	2868.617
-65	0.100	1366.648	1400.697	1434.632	1468.476	1502.242	1535.944	1569.589	1603.186	1636.741	1670.259	1703.744	1737.201	1770.631	1804.038	1837.425	1870.793	1904.144	1937.479	1970.801	2004.110	2037.407
-60	0.140	995.905	1020.361	1044.720	1068.999	1093.211	1117.367	1141.472	1165.536	1189.561	1213.554	1237.518	1261.455	1285.369	1309.263	1333.137	1356.994	1380.836	1404.664	1428.479	1452.283	1476.076
-55	0.192	738.649	756.569	774.403	792.167	809.872	827.527	845.138	862.711	880.251	897.764	915.244	932.704	950.143	967.563	984.966	1002.353	1019.726	1037.087	1054.435	1071.773	1089.101
-50	0.260	556.776	570.152	583.452	596.690	609.876	623.016	636.118	649.185	662.222	675.233	688.219	701.184	714.130	727.059	739.972	752.871	765.756	778.631	791.494	804.348	817.192
-45	0.346	425.955	436.114	446.205	456.241	466.229	476.177	486.090	495.971	505.826	515.656	525.464	535.253	545.025	554.780	564.522	574.250	583.966	593.672	603.367	613.054	622.732
-40	0.454	330.338	338.180	345.961	353.691	361.379	369.030	376.650	384.241	391.807	399.351	406.875	414.382	421.872	429.348	436.810	444.261	451.700	459.130	466.550	473.962	481.366
-35	0.587	259.406	265.553	271.644	277.689	283.695	289.667	295.611	301.528	307.423	313.298	319.154	324.994	330.819	336.631	342.431	348.219	353.997	359.766	365.527	371.280	377.025
-30	0.750	206.056	210.943	215.780	220.574	225.324	230.060	234.760	239.438	244.094	248.731	253.352	257.957	262.549	267.128	271.696	276.254	280.802	285.342	289.874	294.398	298.916
-25	0.947	165.412	169.351	173.243	177.096	180.915	184.707	188.473	192.218	195.943	199.651	203.343	207.021	210.687	214.341	217.984	221.618	225.243	228.861	232.470	236.073	239.670
-23.52	1.013	155.284	158.988	162.647	166.267	169.855	173.414	176.950	180.464	183.960	187.438	190.901	194.350	197.787	201.212	204.628	208.034	211.431	214.820	218.202	221.578	224.947
-20	1.183	134.076	137.291	140.463	143.598	146.703	149.781	152.836	155.871	158.887	161.888	164.874	167.847	170.808	173.758	176.698	179.630	182.553	185.469	188.378	191.280	194.177
-15	1.463	109.645	112.302	114.918	117.500	120.053	122.581	125.088	127.575	130.046	132.502	134.944	137.373	139.792	142.201	144.600	146.992	149.375	151.751	154.121	156.485	158.843
-10	1.793	90.400	92.621	94.803	96.952	99.075	101.174	103.254	105.315	107.360	109.391	111.410	113.417	115.414	117.401	119.379	121.350	123.313	125.270	127.221	129.168	131.105
-5	2.177	75.091	76.967	78.807	80.616	82.400	84.161	85.904	87.629	89.340	91.037	92.722	94.396	96.061	97.716	99.364	101.004	102.637	104.264	105.885	107.501	109.112
0	2.621	62.801	64.403	65.973	67.509	69.022	70.515	71.989	73.448	74.892	76.324	77.744	79.154	80.555	81.947	83.331	84.709	86.080	87.445	88.804	90.159	91.509
5	3.133	52.851	54.233	55.581	56.901	58.198	59.475	60.734	61.978	63.209	64.427	65.635	66.833	68.022	69.203	70.377	71.544	72.705	73.860	75.010	76.155	77.296
10	3.718	44.729	45.933	47.104	48.248	49.369	50.471	51.556	52.626	53.684	54.730	55.765	56.792	57.810	58.820	59.824	60.811	61.811	62.797	63.778	64.754	65.726
15	4.383	38.051	39.109	40.135	41.135	42.112	43.071	44.014	44.943	45.859	46.765	47.660	48.547	49.425	50.296	51.160	52.018	52.871	53.718	54.561	55.399	56.233
20	5.134	32.518	33.457	34.364	35.246	36.106	36.947	37.773	38.586	39.386	40.175	40.955	41.727	42.490	43.247	43.997	44.741	45.480	46.214	46.943	47.668	48.390
25	5.980	27.904	28.745	29.554	30.338	31.100	31.844	32.574	33.289	33.993	34.687	35.372	36.048	36.716	37.378	38.034	38.684	39.328	39.968	40.604	41.235	41.863
30	6.926	24.032	24.791	25.519	26.221	26.902	27.566	28.214	28.849	29.473	30.087	30.692	31.289	31.878	32.461	33.038	33.609	34.175	34.737	35.295	35.848	36.398
35	7.981	20.780	21.453	22.113	22.747	23.361	23.956	24.537	25.105	25.662	26.209	26.746	27.277	27.800	28.316	28.827	29.332	29.833	30.329	30.821	31.309	31.794
40	9.153	17.981	18.618	19.222	19.799	20.356	20.895	21.418	21.929	22.429	22.920	23.401	23.875	24.342	24.802	25.257	25.707	26.152	26.593	27.029	27.462	27.892
45	10.450	15.605	16.197	16.754	17.284	17.793	18.283	18.759	19.222	19.674	20.116	20.549	20.976	21.395	21.808	22.215	22.618	23.016	23.409	23.799	24.185	24.568
50	11.881	13.562	14.118	14.636	15.127	15.595	16.045	16.480	16.901	17.312	17.714	18.106	18.492	18.870	19.243	19.610	19.972	20.329	20.683	21.033	21.379	21.722
55	13.454	11.796	12.323	12.810	13.267	13.701	14.117	14.517	14.904	15.279	15.645	16.003	16.353	16.697	17.035	17.367	17.694	18.017	18.336	18.652	18.963	19.272
60	15.181	10.259	10.766	11.227	11.657	12.063	12.448	12.819	13.175	13.521	13.857	14.184	14.504	14.818	15.125	15.428	15.725	16.018	16.307	16.593	16.875	17.154
65	17.070	8.913	9.406	9.849	10.256	10.638	10.999	11.343	11.674	11.994	12.303	12.605	12.898	13.186	13.467	13.743	14.015	14.282	14.545	14.805	15.062	15.315
70	19.135	7.726	8.214	8.643	9.032	9.394	9.733	10.056	10.364	10.661	10.948	11.227	11.498	11.762	12.021	12.274	12.523	12.768	13.009	13.246	13.480	13.711
75	21.387	6.670	7.122	7.583	7.958	8.303	8.625	8.928	9.218	9.495	9.762	10.020	10.271	10.516	10.754	10.988	11.217	11.441	11.662	11.880	12.094	12.306
80	23.843	5.719	6.229	6.646	7.012	7.343	7.650	7.937	8.209	8.469	8.719	8.959	9.193	9.420	9.641	9.856	10.068	10.275	10.478	10.678	10.875	11.069
85	26.520	4.849	5.395	5.816	6.175	6.495	6.788	7.061	7.319	7.563	7.798	8.023	8.240	8.451	8.657	8.857	9.053	9.244	9.432	9.617	9.798	9.976
90	29.442	4.029	4.645	5.076	5.431	5.743	6.025	6.285	6.529	6.760	6.980	7.192	7.395	7.592	7.783	7.969	8.151	8.329	8.503	8.673	8.841	9.007
95	32.646	3.193	3.964	4.412	4.766	5.071	5.343	5.592	5.824	6.042	6.250	6.449	6.639	6.824	7.002	7.175	7.344	7.509	7.671	7.829	7.984	8.137

Thermodynamic properties of R-423A - (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	0.005	299.126	302.061	305.047	308.083	311.170	314.306	317.492	320.728	324.012	327.345	330.726	334.155	337.631	341.154	344.723	348.340	352.002	355.710	359.463	363.264	367.108	370.996
-95	0.008	302.024	305.015	308.056	311.146	314.285	317.474	320.711	323.997	327.331	330.713	334.143	337.620	341.143	344.714	348.331	351.993	355.702	359.456	363.254	367.098	370.986	374.909
-90	0.013	304.967	308.014	311.109	314.253	317.445	320.685	323.973	327.307	330.691	334.121	337.600	341.128	344.699	348.317	351.980	355.689	359.444	363.244	367.087	370.973	374.893	378.843
-85	0.021	307.951	311.054	314.204	317.401	320.645	323.937	327.277	330.663	334.097	337.577	341.104	344.677	348.296	351.961	355.671	359.427	363.227	367.070	370.962	374.896	378.873	382.879
-80	0.032	310.973	314.132	317.337	320.588	323.885	327.229	330.619	334.056	337.539	341.069	344.644	348.265	351.932	355.644	359.401	363.203	367.046	370.941	374.875	378.851	382.857	386.891
-75	0.048	314.029	317.245	320.505	323.810	327.160	330.556	333.998	337.486	341.019	344.598	348.222	351.891	355.606	359.365	363.169	367.018	370.910	374.846	378.826	382.849	386.915	391.000
-70	0.070	317.116	320.388	323.705	327.065	330.469	333.917	337.411	340.949	344.533	348.161	351.835	355.553	359.315	363.122	366.973	370.870	374.815	378.796	382.763	386.833	390.946	395.100
-65	0.100	320.230	323.562	326.934	330.349	333.807	337.308	340.854	344.444	348.078	351.757	355.480	359.246	363.057	366.912	370.810	374.751	378.736	382.763	386.833	390.946	395.100	399.244
-60	0.140	323.367	326.757	330.187	333.658	337.171	340.727	344.326	347.968	351.653	355.382	359.155	362.971	366.830	370.732	374.678	378.666	382.697	386.770	390.885	395.043	399.244	403.413
-55	0.192	326.522	329.973	333.462	336.990	340.559	344.169	347.821	351.516	355.254	359.034	362.857	366.722	370.630	374.581	378.574	382.609	386.687	390.806	394.967	399.169	403.413	407.611
-50	0.260	329.691	333.204	336.753	340.340	343.966	347.632	351.339	355.087	358.877	362.709	366.583	370.498	374.456	378.455	382.497	386.579	390.704	394.869	399.072	403.323	407.611	411.935
-45	0.346	332.870	336.447	340.058	343.704	347.388	351.111	354.874	358.677	362.520	366.405	370.330	374.296	378.304	382.353	386.442	390.573	394.745	398.957	403.209	407.520	411.835	422.199
-40	0.454	336.054	339.697	343.371	347.079	350.823	354.604	358.424	362.282	366.180	370.118	374.096	378.113	382.172	386.270	390.409	394.588	398.807	403.066	407.365	411.703	422.199	426.523
-35	0.587	339.240	342.951	346.691	350.462	354.267	358.107	361.985	365.900	369.853	373.845	377.876	381.946	386.056	390.205	394.393	398.621	402.888	407.194	411.540	415.924	420.347	424.811
-30	0.750	342.422	346.204	350.011	353.847	357.715	361.617	365.554	369.527	373.536	377.584	381.669	385.792	389.953	394.153	398.392	402.669	406.985	411.339	415.732	420.163	424.632	429.141
-25	0.947	345.596	349.452	353.329	357.232	361.165	365.129	369.127	373.159	377.226	381.330	385.470	389.647	393.862	398.114	402.403	406.730	411.095	415.498	419.938	424.416	428.931	433.485
-23.52	1.013	346.534	350.412	354.310	358.234	362.186	366.169	370.185	374.235	378.320	382.441	386.597	390.791	395.021	399.289	403.593	407.935	412.315	416.732	421.186	425.678	430.207	434.771
-20	1.183	348.758	352.690	356.640	360.612	364.612	368.640	372.701	376.793	380.920	385.081	389.277	393.510	397.778	402.082	406.424	410.802	415.216	419.668	424.156	428.681	433.243	437.843
-15	1.463	351.903	355.915	359.940	363.984	368.052	372.147	376.272	380.427	384.614	388.834	393.087	397.375	401.698	406.057	410.450	414.880	419.345	423.846	428.383	432.956	437.565	442.207
-10	1.793	355.026	359.121	363.224	367.343	371.483	375.646	379.836	384.055	388.304	392.584	396.897	401.242	405.621	410.034	414.481	418.962	423.479	428.030	432.617	437.238	441.895	446.589
-5	2.177	358.122	362.304	366.489	370.685	374.899	379.133	383.391	387.676	391.988	396.330	400.703	405.106	409.542	414.010	418.512	423.047	427.615	432.218	436.854	441.525	446.229	450.964
0	2.621	361.186	365.459	369.730	374.007	378.279	382.604	386.933	391.285	395.663	400.068	404.501	408.965	413.459	417.984	422.541	427.130	431.751	436.405	441.093	445.813	450.567	455.354
5	3.133	364.211	368.582	372.942	377.303	381.672	386.056	390.457	394.879	399.324	403.794	408.290	412.815	417.368	421.951	426.565	431.209	435.884	440.591	445.330	450.101	454.904	459.740
10	3.718	367.193	371.665	376.120	380.569	385.021	389.484	393.960	398.454	402.968	407.505	412.066	416.651	421.268	425.910	430.581	435.281	440.012	444.772	449.564	454.386	459.240	464.128
15	4.383	370.123	374.704	379.258	383.800	388.339	392.883	397.438	402.006	406.592	411.198	415.826	420.477	425.154	429.857	434.587	439.345	444.131	448.947	453.791	458.666	463.574	468.515
20	5.134	372.995	377.692	382.351	386.991	391.621	396.251	400.886	405.532	410.192	414.889	419.566	424.283	429.024	433.789	438.579	443.396	448.240	453.111	458.010	462.938	467.895	472.884
25	5.980	375.799	380.621	385.393	390.135	394.861	399.581	404.301	409.027	413.764	418.515	423.282	428.068	432.875	437.704	442.556	447.433	452.335	457.266	462.221	467.200	472.201	477.224
30	6.926	378.526	383.482	388.375	393.227	398.054	402.868	407.678	412.488	417.305	422.132	426.973	431.829	436.704	441.598	446.514	451.452	456.414	461.401	466.413	471.450	476.514	481.603
35	7.981	381.163	386.267	391.290	396.259	401.195	406.109	411.011	415.910	420.810	425.716	430.633	435.562	440.507	445.469	450.450	455.452	460.475	465.521	470.591	475.684	480.800	485.943
40	9.153	383.696	388.963	394.128	399.225	404.275	409.295	414.296	419.287	424.275	429.264	434.259	439.264	444.281	449.313	454.362	459.429	464.515	469.622	474.752	479.905	485.079	490.272
45	10.450	386.108	391.558	396.880	402.114	407.289	412.422	417.528	422.616	427.695	432.771	437.849	442.928	448.024	453.128	458.246	463.380	468.531	473.701	478.891	484.101	489.330	494.578
50	11.881	388.378	394.037	399.533	404.918	410.227	415.482	420.699	425.891	431.066	436.233	441.397	446.562	451.732	456.910	462.100	467.303	472.521	477.756	483.008	488.280	493.573	498.884
55	13.454	390.479	396.379	402.072	407.626	413.081	418.467	423.804	429.106	434.383	439.646	444.899	450.149	455.401	460.657	465.921	471.195	476.482	481.783	487.107	492.444	497.793	503.154
60	15.181	392.377	398.564	404.483	410.224	415.841	421.370	426.835	432.254	437.640	443.003	448.352	453.691	459.027	464.364	469.705	475.053	480.411	485.783	491.169	496.562	501.976	507.407
65	17.070	394.027	400.562	406.744	412.698	418.495	424.181	429.785	435.330	440.832	446.302	451.750	457.183	462.607	468.020	473.423	478.815	484.205	489.594	495.191	500.796	506.411	512.037
70	19.135	395.365	402.338	408.833	415.032	421.031	426.889	432.645	438.326	443.951	449.535	455.088	460.620	466.137	471.645	477.149	482.654	488.161	493.674	499.196	504.728	510.272	515.830
75	21.387	396.301	403.847	410.722	417.206	423.433	429.484	435.406	441.234	446.992	452.696	458.361	463.997	469.611	475.211	480.800	486.389	491.975	497.561	503.151	508.746	514.347	520.054
80	23.843	396.696	405.030	412.728	419.197	425.686	431.951	438.057	444.045	449.954	455.779	461.563	467.308	473.025	478.721	484.403	490.076	495.744	501.411	507.081	512.755	518.436	524.123
85	26.520	396.309	405.808	413.758	420.979	427.770	434.276	440.584	446.747	452.802	458.775	464.684	470.546	476.371	482.168	487.945	493.708	499.461	505.210	510.957	516.706	522.459	528.216
90	29.442	394.658	406.074	414.814	422.521	429.660	436.439	442.972	449.326	455.548	461.670	467.715	473.700	479.639	485.542	491.419	497.276	503.119	508.952	514.780	520.607	526.434	532.261
95	32.646	390.323	405.667	415.469	423.769	431.317	438.406	445.189	451.755	458.159	464.443	470.632	476.750	482.810	488.826	494.808	500.764	506.701	512.623	518.536	524.443	530.348	536.253

Thermodynamic properties of R-423A - (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	0.005	1.717	1.734	1.751	1.767	1.783	1.799	1.815	1.831	1.846	1.862	1.877	1.892	1.907	1.922	1.937	1.952	1.967	1.981	1.995	2.010	2.024
-95	0.008	1.699	1.716	1.732	1.748	1.765	1.780	1.796	1.812	1.827	1.843	1.858	1.873	1.888	1.903	1.917	1.932	1.946	1.961	1.975	1.989	2.003
-90	0.013	1.683	1.700	1.716	1.732	1.748	1.764	1.779	1.795	1.810	1.825	1.840	1.855	1.870	1.885	1.900	1.914	1.928	1.943	1.957	1.971	1.985
-85	0.021	1.669	1.685	1.702	1.718	1.733	1.749	1.764	1.780	1.795	1.810	1.825	1.840	1.855	1.869	1.884	1.898	1.912	1.927	1.941	1.955	1.969
-80	0.032	1.657	1.673	1.689	1.705	1.720	1.736	1.751	1.766	1.782	1.797	1.811	1.826	1.841	1.855	1.870	1.884	1.898	1.912	1.926	1.940	1.954
-75	0.048	1.646	1.662	1.678	1.693	1.709	1.724	1.740	1.755	1.770	1.785	1.799	1.814	1.828	1.843	1.857	1.871	1.886	1.900	1.914	1.927	1.941
-70	0.070	1.636	1.652	1.668	1.684	1.699	1.714	1.729	1.744	1.759	1.774	1.789	1.803	1.818	1.832	1.846	1.860	1.874	1.888	1.902	1.916	1.930
-65	0.100	1.628	1.644	1.659	1.675	1.690	1.705	1.720	1.735	1.750	1.765	1.779	1.794	1.808	1.822	1.837	1.851	1.865	1.878	1.892	1.906	1.919
-60	0.140	1.621	1.637	1.652	1.667	1.683	1.698	1.713	1.728	1.742	1.757	1.771	1.786	1.800	1.814	1.828	1.842	1.856	1.870	1.883	1.897	1.911
-55	0.192	1.615	1.630	1.646	1.661	1.676	1.691	1.706	1.721	1.735	1.750	1.764	1.779	1.793	1.807	1.821	1.835	1.848	1.862	1.876	1.889	1.903
-50	0.260	1.609	1.625	1.640	1.656	1.671	1.686	1.700	1.715	1.730	1.744	1.758	1.772	1.787	1.801	1.814	1.828	1.842	1.856	1.869	1.883	1.896
-45	0.346	1.605	1.620	1.636	1.651	1.666	1.681	1.696	1.710	1.725	1.739	1.753	1.767	1.781	1.795	1.809	1.823	1.836	1.850	1.864	1.877	1.890
-40	0.454	1.601	1.617	1.632	1.647	1.662	1.677	1.691	1.706	1.720	1.735	1.749	1.763	1.777	1.791	1.805	1.818	1.832	1.845	1.859	1.872	1.885
-35	0.587	1.598	1.614	1.629	1.644	1.659	1.674	1.688	1.703	1.717	1.731	1.745	1.759	1.773	1.787	1.801	1.814	1.828	1.841	1.855	1.868	1.881
-30	0.750	1.596	1.611	1.626	1.641	1.656	1.671	1.686	1.700	1.714	1.728	1.742	1.756	1.770	1.784	1.798	1.811	1.825	1.838	1.851	1.865	1.878
-25	0.947	1.594	1.609	1.625	1.640	1.654	1.669	1.683	1.698	1.712	1.726	1.740	1.754	1.768	1.782	1.795	1.809	1.822	1.835	1.849	1.862	1.875
-23.52	1.013	1.594	1.609	1.624	1.639	1.654	1.669	1.683	1.697	1.712	1.726	1.740	1.754	1.767	1.781	1.795	1.808	1.821	1.835	1.848	1.861	1.874
-20	1.183	1.593	1.608	1.623	1.638	1.653	1.668	1.682	1.696	1.711	1.725	1.739	1.752	1.766	1.780	1.793	1.807	1.820	1.833	1.847	1.860	1.873
-15	1.463	1.592	1.607	1.622	1.637	1.652	1.667	1.681	1.695	1.709	1.723	1.737	1.751	1.765	1.778	1.792	1.805	1.819	1.832	1.845	1.858	1.871
-10	1.793	1.591	1.607	1.622	1.637	1.651	1.666	1.680	1.695	1.709	1.723	1.737	1.750	1.764	1.778	1.791	1.804	1.818	1.831	1.844	1.857	1.870
-5	2.177	1.591	1.606	1.622	1.636	1.651	1.666	1.680	1.694	1.709	1.723	1.736	1.750	1.764	1.777	1.791	1.804	1.817	1.830	1.843	1.856	1.869
0	2.621	1.591	1.606	1.622	1.637	1.651	1.666	1.680	1.695	1.709	1.723	1.736	1.750	1.764	1.777	1.791	1.804	1.817	1.830	1.843	1.856	1.869
5	3.133	1.591	1.607	1.622	1.637	1.652	1.666	1.681	1.695	1.709	1.723	1.737	1.751	1.764	1.778	1.791	1.804	1.817	1.830	1.843	1.856	1.869
10	3.718	1.592	1.607	1.623	1.638	1.653	1.667	1.682	1.696	1.710	1.724	1.738	1.751	1.765	1.778	1.792	1.805	1.818	1.831	1.844	1.857	1.869
15	4.383	1.592	1.608	1.624	1.639	1.654	1.668	1.683	1.697	1.711	1.725	1.739	1.752	1.766	1.779	1.793	1.806	1.819	1.832	1.845	1.857	1.870
20	5.134	1.593	1.609	1.625	1.640	1.655	1.669	1.684	1.698	1.712	1.726	1.740	1.753	1.767	1.780	1.794	1.807	1.820	1.833	1.846	1.859	1.871
25	5.980	1.594	1.610	1.626	1.641	1.656	1.671	1.685	1.699	1.714	1.728	1.741	1.755	1.768	1.782	1.795	1.808	1.821	1.834	1.847	1.860	1.873
30	6.926	1.595	1.611	1.627	1.642	1.657	1.672	1.687	1.701	1.715	1.729	1.743	1.757	1.770	1.783	1.797	1.810	1.823	1.836	1.849	1.861	1.874
35	7.981	1.596	1.612	1.628	1.644	1.659	1.674	1.688	1.703	1.717	1.731	1.745	1.758	1.772	1.785	1.799	1.812	1.825	1.838	1.850	1.863	1.876
40	9.153	1.597	1.613	1.630	1.645	1.660	1.675	1.690	1.705	1.719	1.733	1.747	1.760	1.774	1.787	1.801	1.814	1.827	1.840	1.852	1.865	1.878
45	10.450	1.598	1.615	1.631	1.647	1.662	1.677	1.692	1.706	1.721	1.735	1.749	1.762	1.776	1.789	1.803	1.816	1.829	1.842	1.855	1.867	1.880
50	11.881	1.598	1.615	1.632	1.648	1.664	1.679	1.694	1.708	1.723	1.737	1.751	1.765	1.778	1.792	1.805	1.818	1.831	1.844	1.857	1.869	1.882
55	13.454	1.598	1.616	1.633	1.650	1.665	1.681	1.696	1.710	1.725	1.739	1.753	1.767	1.780	1.794	1.807	1.820	1.833	1.846	1.859	1.872	1.884
60	15.181	1.598	1.617	1.634	1.651	1.667	1.682	1.698	1.712	1.727	1.741	1.755	1.769	1.783	1.796	1.810	1.823	1.836	1.849	1.862	1.874	1.887
65	17.070	1.598	1.617	1.635	1.652	1.668	1.684	1.699	1.714	1.729	1.743	1.758	1.771	1.785	1.799	1.812	1.825	1.838	1.851	1.864	1.877	1.889
70	19.135	1.597	1.617	1.636	1.653	1.670	1.686	1.701	1.716	1.731	1.746	1.760	1.774	1.788	1.801	1.815	1.828	1.841	1.854	1.867	1.879	1.892
75	21.387	1.595	1.616	1.636	1.654	1.671	1.687	1.703	1.718	1.733	1.748	1.762	1.776	1.790	1.804	1.817	1.830	1.843	1.856	1.869	1.882	1.895
80	23.843	1.592	1.615	1.636	1.654	1.672	1.688	1.704	1.720	1.735	1.750	1.764	1.778	1.792	1.806	1.820	1.833	1.846	1.859	1.872	1.885	1.897
85	26.520	1.587	1.613	1.635	1.654	1.672	1.689	1.706	1.722	1.737	1.752	1.766	1.781	1.795	1.808	1.822	1.835	1.849	1.862	1.875	1.887	1.900
90	29.442	1.579	1.610	1.633	1.654	1.673	1.690	1.707	1.723	1.738	1.754	1.768	1.783	1.797	1.811	1.824	1.838	1.851	1.864	1.877	1.890	1.903
95	32.646	1.563	1.605	1.631	1.653	1.672	1.691	1.708	1.724	1.740	1.755	1.770	1.785	1.799	1.813	1.827	1.840	1.853	1.867	1.880	1.892	1.905