



Opteon™ YF

Automotive Refrigerant (HFO-1234yf)

Thermodynamic Properties of Opteon™ YF
SI Units



Chemours™

Physical Properties

Refrigerant Classification.....	HFO
Molecular Weight	114.04 g/mol
Boiling Point at One Atmosphere.....	-29.45 °C
Critical Temperature	94.70 °C
Critical Pressure	3382.20 kPa
Critical Density	475.55 kg/m ³
Critical Volume	0.0221 m ³ /kg
Ozone Depletion Potential	0
Global Warming Potential (AR5)	4
ASHRAE Standard 34 Safety Rating	A2L

Units and Factors

t = temperature in °C
P = pressure in kiloPascals absolute [kPa (abs)]
v_f = volume of saturated liquid in m ³ /kg
v_g = volume of saturated vapor in m ³ /kg
V = volume of superheated vapor in m ³ /kg
$d_f = 1/v_f$ = density of saturated liquid in kg/m ³
$d_g = 1/v_g$ = density of saturated vapor in kg/m ³
h_f = enthalpy of saturated liquid in kJ/kg
h_{fg} = enthalpy of vaporization in kJ/kg
h_g = enthalpy of saturated vapor in kJ/kg
H = enthalpy of superheated vapor in kJ/kg
s_f = entropy of saturated liquid in kJ/(kg) (K)
s_g = entropy of saturated vapor in kJ/(kg) (K)
S = entropy of superheated vapor in kJ/(kg) (K)

One atmosphere = 101.325 kPa

Reference point for enthalpy and entropy:

$h_f = 200$ kJ/kg at 0 °C

$sf = 1$ kJ/kg·K at 0 °C

Information generated using REFPROP version 9, release date November 2010.

Opteon™ YF (HFO-1234yf) Saturation Properties - Temperature Table

Temp °C	Pressure [kPa]		Volume [m³/kg]		Density [kg/m³]		Enthalpy [kJ/kg]			Entropy [kJ/K-kg]		Temp °C
	Liquid p_g	Vapor p_g	Liquid v_f	Vapor v_g	Liquid ρ_f	Vapor ρ_g	Liquid H_f	Latent H_{fg}	Vapor H_g	Liquid S_f	Vapor S_g	
-50	37.423	37.423	0.000758	0.4247	1318.4	2.355	139.6	190.2	329.9	0.757	1.610	-50
-49	39.477	39.477	0.000760	0.4040	1315.8	2.475	140.8	189.8	330.5	0.762	1.609	-49
-48	41.622	41.622	0.000762	0.3846	1313.2	2.600	141.9	189.3	331.2	0.767	1.608	-48
-47	43.859	43.859	0.000763	0.3662	1310.5	2.731	143.0	188.8	331.9	0.772	1.607	-47
-46	46.192	46.192	0.000765	0.3489	1307.9	2.866	144.2	188.4	332.5	0.777	1.607	-46
-45	48.624	48.624	0.000766	0.3326	1305.2	3.007	145.3	187.9	333.2	0.782	1.606	-45
-44	51.157	51.157	0.000768	0.3172	1302.6	3.153	146.5	187.4	333.9	0.787	1.605	-44
-43	53.795	53.795	0.000769	0.3026	1299.9	3.305	147.6	186.9	334.6	0.792	1.605	-43
-42	56.540	56.540	0.000771	0.2889	1297.2	3.462	148.8	186.5	335.2	0.797	1.604	-42
-41	59.397	59.397	0.000772	0.2758	1294.6	3.625	149.9	186.0	335.9	0.802	1.604	-41
-40	62.367	62.367	0.000774	0.2635	1291.9	3.795	151.1	185.5	336.6	0.807	1.603	-40
-39	65.454	65.454	0.000776	0.2519	1289.2	3.970	152.2	185.0	337.3	0.812	1.603	-39
-38	68.661	68.661	0.000777	0.2409	1286.5	4.152	153.4	184.5	337.9	0.817	1.602	-38
-37	71.992	71.992	0.000779	0.2304	1283.8	4.340	154.6	184.0	338.6	0.822	1.602	-37
-36	75.450	75.450	0.000781	0.2205	1281.0	4.535	155.7	183.5	339.3	0.827	1.601	-36
-35	79.039	79.039	0.000782	0.2111	1278.3	4.737	156.9	183.0	339.9	0.832	1.601	-35
-34	82.761	82.761	0.000784	0.2022	1275.6	4.946	158.1	182.5	340.6	0.837	1.600	-34
-33	86.620	86.620	0.000786	0.1937	1272.8	5.162	159.3	182.0	341.3	0.842	1.600	-33
-32	90.620	90.620	0.000787	0.1857	1270.1	5.386	160.4	181.5	342.0	0.847	1.600	-32
-31	94.764	94.764	0.000789	0.1780	1267.3	5.617	161.6	181.0	342.6	0.852	1.599	-31
-30	99.056	99.056	0.000791	0.1708	1264.5	5.855	162.8	180.5	343.3	0.857	1.599	-30
-29	103.500	103.500	0.000793	0.1639	1261.8	6.102	164.0	180.0	344.0	0.861	1.599	-29
-28	108.098	108.098	0.000794	0.1573	1259.0	6.357	165.2	179.5	344.7	0.866	1.598	-28
-27	112.856	112.856	0.000796	0.1511	1256.2	6.620	166.4	178.9	345.3	0.871	1.598	-27
-26	117.775	117.775	0.000798	0.1451	1253.4	6.891	167.6	178.4	346.0	0.876	1.598	-26
-25	122.861	122.861	0.000800	0.1394	1250.5	7.171	168.8	177.9	346.7	0.881	1.598	-25
-24	128.117	128.117	0.000801	0.1340	1247.7	7.460	170.0	177.4	347.4	0.886	1.598	-24
-23	133.548	133.548	0.000803	0.1289	1244.9	7.758	171.2	176.8	348.0	0.891	1.597	-23
-22	139.155	139.155	0.000805	0.1240	1242.0	8.066	172.4	176.3	348.7	0.895	1.597	-22
-21	144.945	144.945	0.000807	0.1193	1239.2	8.383	173.7	175.7	349.4	0.900	1.597	-21
-20	150.921	150.921	0.000809	0.1148	1236.3	8.709	174.9	175.2	350.1	0.905	1.597	-20
-19	157.086	157.086	0.000811	0.1105	1233.4	9.046	176.1	174.6	350.7	0.910	1.597	-19
-18	163.444	163.444	0.000813	0.1065	1230.5	9.392	177.3	174.1	351.4	0.915	1.597	-18
-17	170.001	170.001	0.000815	0.1026	1227.6	9.750	178.6	173.5	352.1	0.919	1.597	-17
-16	176.759	176.759	0.000817	0.0988	1224.7	10.117	179.8	172.9	352.7	0.924	1.597	-16
-15	183.724	183.724	0.000818	0.0953	1221.8	10.496	181.0	172.4	353.4	0.929	1.597	-15
-14	190.898	190.898	0.000820	0.0919	1218.8	10.885	182.3	171.8	354.1	0.934	1.597	-14
-13	198.287	198.287	0.000822	0.0886	1215.9	11.286	183.5	171.2	354.7	0.939	1.597	-13
-12	205.895	205.895	0.000824	0.0855	1212.9	11.699	184.8	170.6	355.4	0.943	1.597	-12
-11	213.726	213.726	0.000826	0.0825	1209.9	12.123	186.0	170.0	356.1	0.948	1.597	-11
-10	221.783	221.783	0.000829	0.0796	1207.0	12.559	187.3	169.5	356.7	0.953	1.597	-10
-9	230.072	230.072	0.000831	0.0769	1203.9	13.008	188.5	168.9	357.4	0.958	1.597	-9
-8	238.597	238.597	0.000833	0.0742	1200.9	13.469	189.8	168.3	358.0	0.962	1.597	-8
-7	247.363	247.363	0.000835	0.0717	1197.9	13.943	191.0	167.7	358.7	0.967	1.597	-7
-6	256.373	256.373	0.000837	0.0693	1194.9	14.431	192.3	167.0	359.4	0.972	1.597	-6
-5	265.632	265.632	0.000839	0.0670	1191.8	14.931	193.6	166.4	360.0	0.976	1.597	-5
-4	275.144	275.144	0.000841	0.0647	1188.7	15.446	194.9	165.8	360.7	0.981	1.597	-4
-3	284.915	284.915	0.000843	0.0626	1185.6	15.974	196.1	165.2	361.3	0.986	1.597	-3
-2	294.948	294.948	0.000846	0.0605	1182.5	16.517	197.4	164.6	362.0	0.991	1.598	-2
-1	305.249	305.249	0.000848	0.0586	1179.4	17.074	198.7	163.9	362.6	0.995	1.598	-1
0	315.821	315.821	0.000850	0.0567	1176.3	17.647	200.0	163.3	363.3	1.000	1.598	0
1	326.670	326.670	0.000852	0.0548	1173.1	18.234	201.3	162.6	363.9	1.005	1.598	1
2	337.800	337.800	0.000855	0.0531	1170.0	18.837	202.6	162.0	364.6	1.009	1.598	2
3	349.216	349.216	0.000857	0.0514	1166.8	19.457	203.9	161.3	365.2	1.014	1.598	3
4	360.923	360.923	0.000859	0.0498	1163.6	20.092	205.2	160.7	365.9	1.019	1.599	4
5	372.925	372.925	0.000862	0.0482	1160.4	20.744	206.5	160.0	366.5	1.023	1.599	5

Opteon™ YF (HFO-1234yf) Saturation Properties - Temperature Table

Temp °C	Pressure [kPa]		Volume [m³/kg]		Density [kg/m³]		Enthalpy [kJ/kg]			Entropy [kJ/K-kg]		Temp °C
	Liquid p_l	Vapor p_g	Liquid v_l	Vapor v_g	Liquid ρ_l	Vapor ρ_g	Liquid H_l	Latent H_{fg}	Vapor H_g	Liquid S_l	Vapor S_g	
6	385.227	385.227	0.000864	0.0467	1157.2	21.413	207.8	159.3	367.2	1.028	1.599	6
7	397.833	397.833	0.000867	0.0452	1153.9	22.100	209.1	158.7	367.8	1.033	1.599	7
8	410.750	410.750	0.000869	0.0439	1150.6	22.804	210.5	158.0	368.4	1.037	1.599	8
9	423.981	423.981	0.000872	0.0425	1147.3	23.526	211.8	157.3	369.1	1.042	1.600	9
10	437.532	437.532	0.000874	0.0412	1144.0	24.267	213.1	156.6	369.7	1.047	1.600	10
11	451.408	451.408	0.000877	0.0400	1140.7	25.027	214.4	155.9	370.3	1.051	1.600	11
12	465.613	465.613	0.000879	0.0387	1137.4	25.807	215.8	155.2	371.0	1.056	1.600	12
13	480.152	480.152	0.000882	0.0376	1134.0	26.606	217.1	154.5	371.6	1.061	1.601	13
14	495.031	495.031	0.000884	0.0365	1130.6	27.425	218.5	153.8	372.2	1.065	1.601	14
15	510.255	510.255	0.000887	0.0354	1127.2	28.266	219.8	153.0	372.8	1.070	1.601	15
16	525.828	525.828	0.000890	0.0343	1123.8	29.127	221.2	152.3	373.4	1.075	1.601	16
17	541.756	541.756	0.000893	0.0333	1120.3	30.011	222.5	151.6	374.1	1.079	1.602	17
18	558.044	558.044	0.000895	0.0323	1116.9	30.916	223.9	150.8	374.7	1.084	1.602	18
19	574.697	574.697	0.000898	0.0314	1113.4	31.845	225.2	150.1	375.3	1.088	1.602	19
20	591.721	591.721	0.000901	0.0305	1109.9	32.796	226.6	149.3	375.9	1.093	1.602	20
21	609.120	609.120	0.000904	0.0296	1106.3	33.772	228.0	148.5	376.5	1.098	1.603	21
22	626.901	626.901	0.000907	0.0288	1102.8	34.772	229.3	147.7	377.1	1.102	1.603	22
23	645.068	645.068	0.000910	0.0279	1099.2	35.797	230.7	147.0	377.7	1.107	1.603	23
24	663.626	663.626	0.000913	0.0271	1095.5	36.848	232.1	146.2	378.3	1.112	1.603	24
25	682.582	682.582	0.000916	0.0264	1091.9	37.925	233.5	145.4	378.9	1.116	1.604	25
26	701.940	701.940	0.000919	0.0256	1088.2	39.029	234.9	144.6	379.5	1.121	1.604	26
27	721.707	721.707	0.000922	0.0249	1084.5	40.161	236.3	143.7	380.0	1.125	1.604	27
28	741.887	741.887	0.000925	0.0242	1080.8	41.321	237.7	142.9	380.6	1.130	1.605	28
29	762.487	762.487	0.000928	0.0235	1077.1	42.510	239.1	142.1	381.2	1.135	1.605	29
30	783.511	783.511	0.000932	0.0229	1073.3	43.729	240.5	141.2	381.8	1.139	1.605	30
31	804.966	804.966	0.000935	0.0222	1069.5	44.979	241.9	140.4	382.3	1.144	1.605	31
32	826.857	826.857	0.000938	0.0216	1065.7	46.260	243.4	139.5	382.9	1.148	1.606	32
33	849.190	849.190	0.000942	0.0210	1061.8	47.573	244.8	138.7	383.4	1.153	1.606	33
34	871.971	871.971	0.000945	0.0204	1057.9	48.920	246.2	137.8	384.0	1.158	1.606	34
35	895.206	895.206	0.000949	0.0199	1054.0	50.301	247.6	136.9	384.5	1.162	1.606	35
36	918.900	918.900	0.000952	0.0193	1050.0	51.717	249.1	136.0	385.1	1.167	1.607	36
37	943.060	943.060	0.000956	0.0188	1046.0	53.169	250.5	135.1	385.6	1.171	1.607	37
38	967.691	967.691	0.000960	0.0183	1042.0	54.658	252.0	134.1	386.1	1.176	1.607	38
39	992.800	992.800	0.000963	0.0178	1037.9	56.186	253.4	133.2	386.7	1.181	1.607	39
40	1018.393	1018.393	0.000967	0.0173	1033.8	57.753	254.9	132.3	387.2	1.185	1.608	40
41	1044.476	1044.476	0.000971	0.0168	1029.6	59.360	256.4	131.3	387.7	1.190	1.608	41
42	1071.055	1071.055	0.000975	0.0164	1025.5	61.010	257.8	130.3	388.2	1.194	1.608	42
43	1098.137	1098.137	0.000979	0.0159	1021.2	62.702	259.3	129.4	388.7	1.199	1.608	43
44	1125.728	1125.728	0.000983	0.0155	1017.0	64.440	260.8	128.4	389.2	1.204	1.608	44
45	1153.834	1153.834	0.000988	0.0151	1012.6	66.223	262.3	127.4	389.7	1.208	1.608	45
46	1182.462	1182.462	0.000992	0.0147	1008.3	68.053	263.8	126.3	390.1	1.213	1.609	46
47	1211.618	1211.618	0.000996	0.0143	1003.9	69.933	265.3	125.3	390.6	1.217	1.609	47
48	1241.310	1241.310	0.001001	0.0139	999.4	71.863	266.8	124.3	391.1	1.222	1.609	48
49	1271.543	1271.543	0.001005	0.0135	994.9	73.846	268.3	123.2	391.5	1.227	1.609	49
50	1302.325	1302.325	0.001010	0.0132	990.4	75.884	269.9	122.1	392.0	1.231	1.609	50
51	1333.663	1333.663	0.001014	0.0128	985.8	77.978	271.4	121.0	392.4	1.236	1.609	51
52	1365.563	1365.563	0.001019	0.0125	981.1	80.130	272.9	119.9	392.8	1.241	1.609	52
53	1398.032	1398.032	0.001024	0.0121	976.4	82.343	274.5	118.8	393.3	1.245	1.609	53
54	1431.079	1431.079	0.001029	0.0118	971.6	84.619	276.0	117.7	393.7	1.250	1.609	54
55	1464.709	1464.709	0.001034	0.0115	966.7	86.961	277.6	116.5	394.1	1.254	1.610	55
56	1498.931	1498.931	0.001040	0.0112	961.8	89.371	279.2	115.3	394.5	1.259	1.610	56
57	1533.751	1533.751	0.001045	0.0109	956.8	91.852	280.7	114.1	394.9	1.264	1.610	57
58	1569.178	1569.178	0.001051	0.0106	951.7	94.407	282.3	112.9	395.2	1.269	1.609	58
59	1605.219	1605.219	0.001056	0.0103	946.6	97.040	283.9	111.7	395.6	1.273	1.609	59
60	1641.882	1641.882	0.001062	0.0100	941.3	99.754	285.5	110.4	395.9	1.278	1.609	60
61	1679.174	1679.174	0.001068	0.0098	936.0	102.552	287.1	109.1	396.3	1.283	1.609	61

Opteon™ YF (HFO-1234yf) Saturation Properties - Temperature Table

Temp °C	Pressure [kPa]		Volume [m³/kg]		Density [kg/m³]		Enthalpy [kJ/kg]			Entropy [kJ/K-kg]		Temp °C
	Liquid p _g	Vapor p _g	Liquid v _f	Vapor v _g	Liquid d _f	Vapor d _g	Liquid H _f	Latent H _{fg}	Vapor H _g	Liquid S _f	Vapor S _g	
62	1717.104	1717.104	0.001075	0.0095	930.6	105.438	288.8	107.8	396.6	1.287	1.609	62
63	1755.680	1755.680	0.001081	0.0092	925.1	108.418	290.4	106.5	396.9	1.292	1.609	63
64	1794.911	1794.911	0.001088	0.0090	919.5	111.496	292.1	105.1	397.2	1.297	1.609	64
65	1834.805	1834.805	0.001094	0.0087	913.7	114.676	293.7	103.7	397.5	1.302	1.609	65
66	1875.370	1875.370	0.001101	0.0085	907.9	117.964	295.4	102.3	397.7	1.307	1.608	66
67	1916.617	1916.617	0.001109	0.0082	901.9	121.367	297.1	100.9	398.0	1.311	1.608	67
68	1958.553	1958.553	0.001116	0.0080	895.8	124.891	298.8	99.4	398.2	1.316	1.608	68
69	2001.189	2001.189	0.001124	0.0078	889.6	128.544	300.5	97.9	398.4	1.321	1.607	69
70	2044.535	2044.535	0.001132	0.0076	883.2	132.332	302.2	96.3	398.6	1.326	1.607	70
71	2088.600	2088.600	0.001141	0.0073	876.7	136.266	304.0	94.8	398.7	1.331	1.606	71
72	2133.395	2133.395	0.001149	0.0071	870.0	140.355	305.7	93.1	398.9	1.336	1.606	72
73	2178.931	2178.931	0.001159	0.0069	863.1	144.611	307.5	91.5	399.0	1.341	1.605	73
74	2225.219	2225.219	0.001168	0.0067	856.1	149.044	309.3	89.8	399.1	1.346	1.605	74
75	2272.271	2272.271	0.001178	0.0065	848.8	153.671	311.1	88.0	399.1	1.351	1.604	75
76	2320.100	2320.100	0.001189	0.0063	841.4	158.505	313.0	86.2	399.2	1.356	1.603	76
77	2368.717	2368.717	0.001199	0.0061	833.7	163.566	314.8	84.3	399.2	1.361	1.602	77
78	2418.137	2418.137	0.001211	0.0059	825.7	168.874	316.7	82.4	399.1	1.366	1.601	78
79	2468.375	2468.375	0.001223	0.0057	817.5	174.454	318.6	80.4	399.0	1.372	1.600	79
80	2519.445	2519.445	0.001236	0.0055	809.0	180.333	320.5	78.4	398.9	1.377	1.599	80

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	45			50			55			60			Temp °C
	-46.51			-44.45			-42.56			-40.79			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.3575	332.2	1.607	0.3240	333.6	1.606	0.2964	334.9	1.604	0.2732	336.0	1.603	
-45	0.3602	333.3	1.612										-45
-40	0.3688	337.2	1.629	0.3310	337.0	1.620	0.3001	336.8	1.613	0.2743	336.7	1.606	-40
-35	0.3774	341.0	1.645	0.3388	340.9	1.637	0.3072	340.7	1.630	0.2809	340.6	1.623	-35
-30	0.3860	345.0	1.661	0.3466	344.8	1.653	0.3143	344.7	1.646	0.2874	344.5	1.639	-30
-25	0.3945	348.9	1.678	0.3543	348.8	1.670	0.3214	348.7	1.662	0.2939	348.5	1.655	-25
-20	0.4030	353.0	1.694	0.3620	352.8	1.686	0.3284	352.7	1.678	0.3004	352.6	1.672	-20
-15	0.4115	357.0	1.710	0.3696	356.9	1.702	0.3354	356.8	1.694	0.3069	356.7	1.688	-15
-10	0.4199	361.2	1.725	0.3773	361.0	1.717	0.3424	360.9	1.710	0.3133	360.8	1.704	-10
-5	0.4283	365.3	1.741	0.3849	365.2	1.733	0.3493	365.1	1.726	0.3197	365.0	1.719	-5
0	0.4367	369.6	1.757	0.3924	369.5	1.749	0.3562	369.3	1.742	0.3260	369.2	1.735	0
5	0.4451	373.8	1.772	0.4000	373.7	1.764	0.3631	373.6	1.757	0.3324	373.5	1.750	5
10	0.4534	378.1	1.788	0.4075	378.0	1.780	0.3700	378.0	1.773	0.3387	377.9	1.766	10
15	0.4617	382.5	1.803	0.4151	382.4	1.795	0.3769	382.3	1.788	0.3450	382.2	1.781	15
20	0.4701	386.9	1.818	0.4226	386.8	1.810	0.3837	386.7	1.803	0.3513	386.7	1.796	20
25	0.4784	391.4	1.833	0.4301	391.3	1.825	0.3905	391.2	1.818	0.3576	391.1	1.812	25
30	0.4867	395.9	1.848	0.4375	395.8	1.840	0.3973	395.7	1.833	0.3639	395.6	1.827	30
35	0.4949	400.4	1.863	0.4450	400.4	1.855	0.4042	400.3	1.848	0.3701	400.2	1.842	35
40	0.5032	405.0	1.878	0.4525	405.0	1.870	0.4110	404.9	1.863	0.3764	404.8	1.856	40
45	0.5115	409.7	1.893	0.4599	409.6	1.885	0.4177	409.5	1.878	0.3826	409.5	1.871	45
50	0.5197	414.4	1.907	0.4674	414.3	1.899	0.4245	414.2	1.892	0.3888	414.2	1.886	50
55	0.5280	419.1	1.922	0.4748	419.0	1.914	0.4313	419.0	1.907	0.3950	418.9	1.900	55
60	0.5362	423.9	1.936	0.4822	423.8	1.928	0.4380	423.8	1.921	0.4012	423.7	1.915	60
65	0.5444	428.7	1.951	0.4896	428.6	1.943	0.4448	428.6	1.936	0.4074	428.5	1.929	65
70	0.5526	433.6	1.965	0.4970	433.5	1.957	0.4516	433.4	1.950	0.4136	433.4	1.943	70
75	0.5609	438.5	1.979	0.5044	438.4	1.971	0.4583	438.4	1.964	0.4198	438.3	1.958	75
80	0.5691	443.4	1.993	0.5118	443.4	1.985	0.4650	443.3	1.978	0.4260	443.3	1.972	80
85	0.5773	448.4	2.007	0.5192	448.4	1.999	0.4718	448.3	1.992	0.4322	448.3	1.986	85
90	0.5855	453.4	2.021	0.5266	453.4	2.013	0.4785	453.3	2.006	0.4384	453.3	2.000	90
95	0.5937	458.5	2.035	0.5340	458.5	2.027	0.4852	458.4	2.020	0.4445	458.4	2.014	95
100	0.6019	463.6	2.049	0.5414	463.6	2.041	0.4919	463.5	2.034	0.4507	463.5	2.028	100

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	90			100			101.325			110			Temp °C
	-32.15			-29.78			-29.49			-27.60			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.1869	341.9	1.600	0.1693	343.5	1.599	0.1672	343.7	1.599	0.1548	344.9	1.598	
-30	0.1888	343.6	1.607										-30
-25	0.1933	347.7	1.623	0.1732	347.4	1.615	0.1708	347.3	1.614	0.1567	347.1	1.607	-25
-20	0.1978	351.8	1.640	0.1773	351.5	1.631	0.1748	351.5	1.630	0.1604	351.2	1.623	-20
-15	0.2022	355.9	1.656	0.1813	355.6	1.647	0.1788	355.6	1.646	0.1642	355.4	1.640	-15
-10	0.2066	360.1	1.672	0.1853	359.9	1.664	0.1828	359.8	1.663	0.1678	359.6	1.656	-10
-5	0.2110	364.3	1.688	0.1893	364.1	1.680	0.1867	364.1	1.679	0.1715	363.9	1.672	-5
0	0.2153	368.6	1.704	0.1932	368.4	1.695	0.1906	368.4	1.694	0.1751	368.2	1.688	0
5	0.2197	372.9	1.719	0.1971	372.7	1.711	0.1945	372.7	1.710	0.1787	372.5	1.704	5
10	0.2240	377.3	1.735	0.2010	377.1	1.727	0.1983	377.1	1.726	0.1822	376.9	1.719	10
15	0.2283	381.7	1.750	0.2049	381.5	1.742	0.2022	381.5	1.741	0.1858	381.3	1.735	15
20	0.2325	386.1	1.766	0.2088	386.0	1.758	0.2060	385.9	1.757	0.1893	385.8	1.750	20
25	0.2368	390.6	1.781	0.2126	390.5	1.773	0.2098	390.4	1.772	0.1929	390.3	1.765	25
30	0.2410	395.2	1.796	0.2165	395.0	1.788	0.2136	395.0	1.787	0.1964	394.9	1.781	30
35	0.2453	399.8	1.811	0.2203	399.6	1.803	0.2174	399.6	1.802	0.1999	399.5	1.796	35
40	0.2495	404.4	1.826	0.2241	404.2	1.818	0.2211	404.2	1.817	0.2034	404.1	1.811	40
45	0.2537	409.1	1.841	0.2279	408.9	1.833	0.2249	408.9	1.832	0.2068	408.8	1.825	45
50	0.2579	413.8	1.855	0.2317	413.6	1.847	0.2286	413.6	1.846	0.2103	413.5	1.840	50
55	0.2621	418.5	1.870	0.2355	418.4	1.862	0.2324	418.4	1.861	0.2138	418.3	1.855	55
60	0.2663	423.3	1.884	0.2393	423.2	1.877	0.2361	423.2	1.876	0.2172	423.1	1.869	60
65	0.2705	428.2	1.899	0.2431	428.0	1.891	0.2399	428.0	1.890	0.2207	427.9	1.884	65
70	0.2746	433.0	1.913	0.2468	432.9	1.905	0.2436	432.9	1.904	0.2241	432.8	1.898	70
75	0.2788	438.0	1.927	0.2506	437.9	1.920	0.2473	437.8	1.919	0.2275	437.8	1.912	75
80	0.2830	442.9	1.942	0.2544	442.8	1.934	0.2510	442.8	1.933	0.2310	442.7	1.927	80
85	0.2871	447.9	1.956	0.2581	447.8	1.948	0.2547	447.8	1.947	0.2344	447.7	1.941	85
90	0.2913	453.0	1.970	0.2619	452.9	1.962	0.2584	452.9	1.961	0.2378	452.8	1.955	90
95	0.2954	458.1	1.984	0.2656	458.0	1.976	0.2621	458.0	1.975	0.2412	457.9	1.969	95
100	0.2996	463.2	1.997	0.2693	463.1	1.990	0.2658	463.1	1.989	0.2446	463.0	1.982	100
105	0.3037	468.4	2.011	0.2731	468.3	2.003	0.2695	468.3	2.002	0.2480	468.2	1.996	105
110	0.3078	473.6	2.025	0.2768	473.5	2.017	0.2731	473.5	2.016	0.2514	473.4	2.010	110
115	0.3120	478.8	2.038	0.2805	478.7	2.031	0.2768	478.7	2.030	0.2548	478.7	2.024	115

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	120			130			140			150			Temp °C
	-25.56			-23.65			-21.85			-20.15			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.1426	346.3	1.598	0.1322	347.6	1.598	0.1233	348.8	1.597	0.1155	349.9	1.597	
-25	0.1430	346.8	1.600										-25
-20	0.1464	350.9	1.616	0.1346	350.7	1.610	0.1244	350.4	1.603	0.1156	350.1	1.598	-20
-15	0.1499	355.1	1.633	0.1378	354.9	1.626	0.1274	354.6	1.620	0.1184	354.3	1.614	-15
-10	0.1533	359.4	1.649	0.1409	359.1	1.642	0.1304	358.9	1.636	0.1212	358.6	1.631	-10
-5	0.1566	363.6	1.665	0.1441	363.4	1.659	0.1333	363.2	1.653	0.1240	362.9	1.647	-5
0	0.1600	367.9	1.681	0.1472	367.7	1.675	0.1362	367.5	1.669	0.1267	367.3	1.663	0
5	0.1633	372.3	1.697	0.1503	372.1	1.690	0.1391	371.9	1.684	0.1294	371.7	1.679	5
10	0.1666	376.7	1.712	0.1533	376.5	1.706	0.1420	376.3	1.700	0.1321	376.1	1.695	10
15	0.1699	381.1	1.728	0.1564	380.9	1.722	0.1448	380.8	1.716	0.1348	380.6	1.710	15
20	0.1731	385.6	1.743	0.1594	385.4	1.737	0.1477	385.3	1.731	0.1375	385.1	1.726	20
25	0.1764	390.1	1.759	0.1624	390.0	1.752	0.1505	389.8	1.747	0.1401	389.6	1.741	25
30	0.1796	394.7	1.774	0.1655	394.5	1.768	0.1533	394.4	1.762	0.1428	394.2	1.756	30
35	0.1828	399.3	1.789	0.1684	399.1	1.783	0.1561	399.0	1.777	0.1454	398.8	1.772	35
40	0.1861	403.9	1.804	0.1714	403.8	1.798	0.1589	403.6	1.792	0.1480	403.5	1.787	40
45	0.1893	408.6	1.819	0.1744	408.5	1.813	0.1616	408.3	1.807	0.1506	408.2	1.801	45
50	0.1925	413.4	1.833	0.1773	413.2	1.827	0.1644	413.1	1.822	0.1532	413.0	1.816	50
55	0.1956	418.1	1.848	0.1803	418.0	1.842	0.1671	417.9	1.836	0.1557	417.7	1.831	55
60	0.1988	422.9	1.863	0.1832	422.8	1.857	0.1699	422.7	1.851	0.1583	422.6	1.846	60
65	0.2020	427.8	1.877	0.1862	427.7	1.871	0.1726	427.6	1.865	0.1609	427.4	1.860	65
70	0.2051	432.7	1.892	0.1891	432.6	1.885	0.1753	432.5	1.880	0.1634	432.4	1.875	70
75	0.2083	437.6	1.906	0.1920	437.5	1.900	0.1781	437.4	1.894	0.1660	437.3	1.889	75
80	0.2114	442.6	1.920	0.1949	442.5	1.914	0.1808	442.4	1.908	0.1685	442.3	1.903	80
85	0.2146	447.6	1.934	0.1978	447.5	1.928	0.1835	447.4	1.922	0.1711	447.3	1.917	85
90	0.2177	452.7	1.948	0.2007	452.6	1.942	0.1862	452.5	1.937	0.1736	452.4	1.931	90
95	0.2209	457.8	1.962	0.2037	457.7	1.956	0.1889	457.6	1.950	0.1761	457.5	1.945	95
100	0.2240	462.9	1.976	0.2065	462.8	1.970	0.1916	462.7	1.964	0.1786	462.6	1.959	100
105	0.2271	468.1	1.990	0.2094	468.0	1.984	0.1943	467.9	1.978	0.1812	467.8	1.973	105
110	0.2302	473.3	2.003	0.2123	473.2	1.997	0.1970	473.1	1.992	0.1837	473.1	1.987	110
115	0.2334	478.6	2.017	0.2152	478.5	2.011	0.1997	478.4	2.005	0.1862	478.3	2.000	115
120	0.2365	483.9	2.031	0.2181	483.8	2.025	0.2023	483.7	2.019	0.1887	483.6	2.014	120

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	160			170			180			190			Temp °C
	-18.54			-17.00			-15.53			-14.12			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.1086	351.0	1.597	0.1026	352.1	1.597	0.0972	353.0	1.597	0.0923	354.0	1.597	
-15	0.1105	354.1	1.609	0.1036	353.8	1.603	0.0974	353.5	1.598				-15
-10	0.1132	358.4	1.625	0.1061	358.1	1.620	0.0998	357.8	1.615	0.0942	357.6	1.610	-10
-5	0.1158	362.7	1.641	0.1086	362.4	1.636	0.1022	362.2	1.632	0.0965	362.0	1.627	-5
0	0.1184	367.1	1.658	0.1111	366.8	1.653	0.1045	366.6	1.648	0.0987	366.4	1.643	0
5	0.1210	371.5	1.674	0.1135	371.2	1.669	0.1069	371.0	1.664	0.1009	370.8	1.659	5
10	0.1235	375.9	1.689	0.1159	375.7	1.684	0.1092	375.5	1.680	0.1031	375.3	1.675	10
15	0.1261	380.4	1.705	0.1183	380.2	1.700	0.1114	380.0	1.696	0.1053	379.8	1.691	15
20	0.1286	384.9	1.721	0.1207	384.7	1.716	0.1137	384.5	1.711	0.1074	384.3	1.707	20
25	0.1311	389.4	1.736	0.1231	389.3	1.731	0.1160	389.1	1.727	0.1096	388.9	1.722	25
30	0.1335	394.0	1.751	0.1254	393.9	1.747	0.1182	393.7	1.742	0.1117	393.5	1.738	30
35	0.1360	398.7	1.766	0.1277	398.5	1.762	0.1204	398.4	1.757	0.1138	398.2	1.753	35
40	0.1385	403.3	1.782	0.1301	403.2	1.777	0.1226	403.0	1.772	0.1159	402.9	1.768	40
45	0.1409	408.1	1.796	0.1324	407.9	1.792	0.1248	407.8	1.787	0.1180	407.6	1.783	45
50	0.1433	412.8	1.811	0.1347	412.7	1.807	0.1270	412.5	1.802	0.1201	412.4	1.798	50
55	0.1458	417.6	1.826	0.1370	417.5	1.821	0.1292	417.3	1.817	0.1222	417.2	1.813	55
60	0.1482	422.4	1.841	0.1393	422.3	1.836	0.1313	422.2	1.832	0.1242	422.1	1.827	60
65	0.1506	427.3	1.855	0.1415	427.2	1.850	0.1335	427.1	1.846	0.1263	427.0	1.842	65
70	0.1530	432.2	1.870	0.1438	432.1	1.865	0.1356	432.0	1.861	0.1283	431.9	1.856	70
75	0.1554	437.2	1.884	0.1461	437.1	1.879	0.1378	437.0	1.875	0.1303	436.9	1.871	75
80	0.1578	442.2	1.898	0.1483	442.1	1.894	0.1399	442.0	1.889	0.1324	441.9	1.885	80
85	0.1602	447.2	1.912	0.1506	447.1	1.908	0.1420	447.0	1.903	0.1344	446.9	1.899	85
90	0.1626	452.3	1.926	0.1528	452.2	1.922	0.1442	452.1	1.917	0.1364	452.0	1.913	90
95	0.1649	457.4	1.940	0.1551	457.3	1.936	0.1463	457.2	1.931	0.1384	457.1	1.927	95
100	0.1673	462.6	1.954	0.1573	462.5	1.950	0.1484	462.4	1.945	0.1405	462.3	1.941	100
105	0.1697	467.7	1.968	0.1595	467.6	1.963	0.1505	467.6	1.959	0.1425	467.5	1.955	105
110	0.1720	473.0	1.982	0.1618	472.9	1.977	0.1526	472.8	1.973	0.1445	472.7	1.969	110
115	0.1744	478.2	1.995	0.1640	478.1	1.991	0.1547	478.1	1.987	0.1465	478.0	1.982	115
120	0.1767	483.5	2.009	0.1662	483.4	2.004	0.1568	483.4	2.000	0.1485	483.3	1.996	120
125	0.1791	488.9	2.023	0.1684	488.8	2.018	0.1589	488.7	2.014	0.1505	488.6	2.010	125
130	0.1815	494.2	2.036	0.1706	494.2	2.031	0.1610	494.1	2.027	0.1524	494.0	2.023	130

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	200			210			220			230			Temp °C
	-12.77			-11.47			-10.22			-9.01			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0879	354.9	1.597	0.0839	355.7	1.597	0.0802	356.6	1.597	0.0769	357.4	1.597	
-10	0.0891	357.3	1.606	0.0845	357.0	1.602	0.0803	356.8	1.597				-10
-5	0.0913	361.7	1.623	0.0866	361.5	1.618	0.0824	361.2	1.614	0.0785	360.9	1.610	-5
0	0.0934	366.1	1.639	0.0887	365.9	1.635	0.0843	365.7	1.631	0.0804	365.4	1.627	0
5	0.0956	370.6	1.655	0.0907	370.4	1.651	0.0863	370.1	1.647	0.0823	369.9	1.643	5
10	0.0977	375.1	1.671	0.0927	374.9	1.667	0.0883	374.7	1.663	0.0842	374.4	1.659	10
15	0.0997	379.6	1.687	0.0947	379.4	1.683	0.0902	379.2	1.679	0.0860	379.0	1.675	15
20	0.1018	384.2	1.703	0.0967	384.0	1.699	0.0921	383.8	1.695	0.0878	383.6	1.691	20
25	0.1039	388.7	1.718	0.0987	388.6	1.714	0.0940	388.4	1.710	0.0896	388.2	1.707	25
30	0.1059	393.4	1.733	0.1006	393.2	1.730	0.0958	393.0	1.726	0.0914	392.9	1.722	30
35	0.1079	398.0	1.749	0.1025	397.9	1.745	0.0977	397.7	1.741	0.0932	397.6	1.737	35
40	0.1099	402.7	1.764	0.1045	402.6	1.760	0.0995	402.4	1.756	0.0950	402.3	1.753	40
45	0.1119	407.5	1.779	0.1064	407.3	1.775	0.1013	407.2	1.771	0.0967	407.0	1.768	45
50	0.1139	412.3	1.794	0.1083	412.1	1.790	0.1032	412.0	1.786	0.0985	411.8	1.783	50
55	0.1159	417.1	1.809	0.1101	417.0	1.805	0.1050	416.8	1.801	0.1002	416.7	1.798	55
60	0.1178	421.9	1.823	0.1120	421.8	1.819	0.1068	421.7	1.816	0.1020	421.6	1.812	60
65	0.1198	426.8	1.838	0.1139	426.7	1.834	0.1086	426.6	1.830	0.1037	426.5	1.827	65
70	0.1217	431.8	1.852	0.1158	431.6	1.849	0.1103	431.5	1.845	0.1054	431.4	1.841	70
75	0.1237	436.7	1.867	0.1176	436.6	1.863	0.1121	436.5	1.859	0.1071	436.4	1.856	75
80	0.1256	441.7	1.881	0.1195	441.6	1.877	0.1139	441.5	1.874	0.1088	441.4	1.870	80
85	0.1275	446.8	1.895	0.1213	446.7	1.891	0.1157	446.6	1.888	0.1105	446.5	1.884	85
90	0.1295	451.9	1.909	0.1231	451.8	1.906	0.1174	451.7	1.902	0.1122	451.6	1.899	90
95	0.1314	457.0	1.923	0.1250	456.9	1.920	0.1192	456.8	1.916	0.1139	456.7	1.913	95
100	0.1333	462.2	1.937	0.1268	462.1	1.934	0.1209	462.0	1.930	0.1155	461.9	1.927	100
105	0.1352	467.4	1.951	0.1286	467.3	1.947	0.1227	467.2	1.944	0.1172	467.1	1.940	105
110	0.1371	472.6	1.965	0.1305	472.5	1.961	0.1244	472.4	1.958	0.1189	472.3	1.954	110
115	0.1390	477.9	1.979	0.1323	477.8	1.975	0.1261	477.7	1.971	0.1206	477.6	1.968	115
120	0.1409	483.2	1.992	0.1341	483.1	1.988	0.1279	483.0	1.985	0.1222	482.9	1.981	120
125	0.1428	488.5	2.006	0.1359	488.5	2.002	0.1296	488.4	1.998	0.1239	488.3	1.995	125
130	0.1447	493.9	2.019	0.1377	493.8	2.015	0.1313	493.8	2.012	0.1255	493.7	2.008	130
135	0.1466	499.3	2.032	0.1395	499.3	2.029	0.1331	499.2	2.025	0.1272	499.1	2.022	135

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	240			250			260			270			Temp °C
	-7.84			-6.70			-5.60			-4.54			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0738	358.2	1.597	0.0710	358.9	1.597	0.0684	359.6	1.597	0.0659	360.3	1.597	
-5	0.0749	360.7	1.606	0.0716	360.4	1.603	0.0686	360.2	1.599				-5
0	0.0768	365.2	1.623	0.0734	364.9	1.619	0.0703	364.7	1.616	0.0675	364.4	1.612	0
5	0.0786	369.7	1.639	0.0752	369.5	1.636	0.0721	369.2	1.632	0.0691	369.0	1.629	5
10	0.0804	374.2	1.656	0.0769	374.0	1.652	0.0738	373.8	1.649	0.0708	373.6	1.645	10
15	0.0822	378.8	1.672	0.0787	378.6	1.668	0.0754	378.4	1.665	0.0724	378.2	1.661	15
20	0.0840	383.4	1.687	0.0804	383.2	1.684	0.0771	383.0	1.681	0.0740	382.8	1.677	20
25	0.0857	388.0	1.703	0.0821	387.9	1.700	0.0787	387.7	1.696	0.0756	387.5	1.693	25
30	0.0874	392.7	1.719	0.0837	392.5	1.715	0.0803	392.4	1.712	0.0772	392.2	1.709	30
35	0.0891	397.4	1.734	0.0854	397.2	1.731	0.0819	397.1	1.727	0.0787	396.9	1.724	35
40	0.0908	402.1	1.749	0.0870	402.0	1.746	0.0835	401.8	1.743	0.0803	401.7	1.739	40
45	0.0925	406.9	1.764	0.0887	406.8	1.761	0.0851	406.6	1.758	0.0818	406.5	1.755	45
50	0.0942	411.7	1.779	0.0903	411.6	1.776	0.0867	411.4	1.773	0.0833	411.3	1.770	50
55	0.0959	416.5	1.794	0.0919	416.4	1.791	0.0882	416.3	1.788	0.0848	416.1	1.785	55
60	0.0976	421.4	1.809	0.0935	421.3	1.806	0.0898	421.2	1.802	0.0863	421.0	1.799	60
65	0.0992	426.3	1.824	0.0951	426.2	1.820	0.0913	426.1	1.817	0.0878	426.0	1.814	65
70	0.1009	431.3	1.838	0.0967	431.2	1.835	0.0928	431.1	1.832	0.0893	430.9	1.829	70
75	0.1025	436.3	1.852	0.0983	436.2	1.849	0.0944	436.1	1.846	0.0907	435.9	1.843	75
80	0.1041	441.3	1.867	0.0998	441.2	1.864	0.0959	441.1	1.861	0.0922	441.0	1.858	80
85	0.1058	446.4	1.881	0.1014	446.3	1.878	0.0974	446.2	1.875	0.0937	446.1	1.872	85
90	0.1074	451.5	1.895	0.1030	451.4	1.892	0.0989	451.3	1.889	0.0951	451.2	1.886	90
95	0.1090	456.6	1.909	0.1045	456.5	1.906	0.1004	456.4	1.903	0.0966	456.3	1.900	95
100	0.1106	461.8	1.923	0.1061	461.7	1.920	0.1019	461.6	1.917	0.0980	461.5	1.914	100
105	0.1122	467.0	1.937	0.1076	466.9	1.934	0.1034	466.8	1.931	0.0995	466.7	1.928	105
110	0.1138	472.3	1.951	0.1092	472.2	1.948	0.1049	472.1	1.945	0.1009	472.0	1.942	110
115	0.1154	477.5	1.965	0.1107	477.4	1.961	0.1064	477.4	1.958	0.1023	477.3	1.956	115
120	0.1170	482.9	1.978	0.1122	482.8	1.975	0.1078	482.7	1.972	0.1038	482.6	1.969	120
125	0.1186	488.2	1.992	0.1138	488.1	1.989	0.1093	488.0	1.986	0.1052	488.0	1.983	125
130	0.1202	493.6	2.005	0.1153	493.5	2.002	0.1108	493.4	1.999	0.1066	493.4	1.996	130
135	0.1218	499.0	2.019	0.1168	499.0	2.015	0.1123	498.9	2.012	0.1080	498.8	2.010	135
140	0.1234	504.5	2.032	0.1184	504.4	2.029	0.1137	504.3	2.026	0.1094	504.3	2.023	140

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
	280			290			300			310			
	-3.50			-2.49			-1.51			-0.55			
Temp °C	V	H	S	V	H	S	V	H	S	V	H	S	Temp °C
	0.0637	361.0	1.597	0.0615	361.7	1.597	0.0596	362.3	1.598	0.0577	362.9	1.598	
0	0.0648	364.2	1.609	0.0623	363.9	1.606	0.0600	363.7	1.603	0.0579	363.4	1.600	0
5	0.0664	368.8	1.626	0.0639	368.5	1.622	0.0616	368.3	1.619	0.0594	368.1	1.616	5
10	0.0680	373.4	1.642	0.0655	373.2	1.639	0.0631	372.9	1.636	0.0609	372.7	1.633	10
15	0.0696	378.0	1.658	0.0670	377.8	1.655	0.0646	377.6	1.652	0.0623	377.4	1.649	15
20	0.0712	382.6	1.674	0.0685	382.4	1.671	0.0661	382.2	1.668	0.0638	382.0	1.665	20
25	0.0727	387.3	1.690	0.0700	387.1	1.687	0.0675	386.9	1.684	0.0652	386.8	1.681	25
30	0.0742	392.0	1.706	0.0715	391.8	1.703	0.0690	391.7	1.700	0.0666	391.5	1.697	30
35	0.0757	396.7	1.721	0.0730	396.6	1.718	0.0704	396.4	1.715	0.0680	396.2	1.713	35
40	0.0772	401.5	1.736	0.0744	401.4	1.734	0.0718	401.2	1.731	0.0693	401.0	1.728	40
45	0.0787	406.3	1.752	0.0758	406.2	1.749	0.0732	406.0	1.746	0.0707	405.9	1.743	45
50	0.0802	411.1	1.767	0.0773	411.0	1.764	0.0746	410.9	1.761	0.0720	410.7	1.758	50
55	0.0816	416.0	1.782	0.0787	415.9	1.779	0.0759	415.7	1.776	0.0733	415.6	1.773	55
60	0.0831	420.9	1.797	0.0801	420.8	1.794	0.0773	420.6	1.791	0.0747	420.5	1.788	60
65	0.0845	425.8	1.811	0.0815	425.7	1.808	0.0786	425.6	1.806	0.0760	425.5	1.803	65
70	0.0860	430.8	1.826	0.0829	430.7	1.823	0.0800	430.6	1.820	0.0773	430.5	1.818	70
75	0.0874	435.8	1.840	0.0842	435.7	1.838	0.0813	435.6	1.835	0.0786	435.5	1.832	75
80	0.0888	440.9	1.855	0.0856	440.8	1.852	0.0827	440.6	1.849	0.0799	440.5	1.847	80
85	0.0902	445.9	1.869	0.0870	445.8	1.866	0.0840	445.7	1.864	0.0812	445.6	1.861	85
90	0.0916	451.1	1.883	0.0884	451.0	1.880	0.0853	450.9	1.878	0.0825	450.7	1.875	90
95	0.0930	456.2	1.897	0.0897	456.1	1.894	0.0866	456.0	1.892	0.0837	455.9	1.889	95
100	0.0944	461.4	1.911	0.0911	461.3	1.909	0.0879	461.2	1.906	0.0850	461.1	1.903	100
105	0.0958	466.6	1.925	0.0924	466.5	1.922	0.0892	466.4	1.920	0.0863	466.3	1.917	105
110	0.0972	471.9	1.939	0.0938	471.8	1.936	0.0905	471.7	1.934	0.0875	471.6	1.931	110
115	0.0986	477.2	1.953	0.0951	477.1	1.950	0.0918	477.0	1.947	0.0888	476.9	1.945	115
120	0.1000	482.5	1.966	0.0964	482.4	1.964	0.0931	482.3	1.961	0.0901	482.3	1.958	120
125	0.1013	487.9	1.980	0.0978	487.8	1.977	0.0944	487.7	1.975	0.0913	487.6	1.972	125
130	0.1027	493.3	1.993	0.0991	493.2	1.991	0.0957	493.1	1.988	0.0926	493.0	1.986	130
135	0.1041	498.7	2.007	0.1004	498.6	2.004	0.0970	498.6	2.002	0.0938	498.5	1.999	135
140	0.1055	504.2	2.020	0.1017	504.1	2.017	0.0983	504.0	2.015	0.0950	504.0	2.012	140
145	0.1068	509.7	2.033	0.1031	509.6	2.031	0.0996	509.6	2.028	0.0963	509.5	2.026	145

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	320			330			340			350			Temp °C
	0.39			1.30			2.19			3.07			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0560	363.5	1.598	0.0543	364.1	1.598	0.0528	364.7	1.598	0.0513	365.3	1.598	
5	0.0573	367.8	1.613	0.0554	367.6	1.611	0.0535	367.3	1.608	0.0518	367.1	1.605	5
10	0.0588	372.5	1.630	0.0568	372.3	1.627	0.0549	372.0	1.624	0.0532	371.8	1.622	10
15	0.0602	377.2	1.646	0.0582	376.9	1.644	0.0563	376.7	1.641	0.0545	376.5	1.638	15
20	0.0616	381.8	1.662	0.0596	381.7	1.660	0.0576	381.4	1.657	0.0558	381.2	1.654	20
25	0.0630	386.6	1.678	0.0609	386.4	1.676	0.0589	386.2	1.673	0.0571	386.0	1.671	25
30	0.0643	391.3	1.694	0.0622	391.1	1.692	0.0602	391.0	1.689	0.0584	390.8	1.686	30
35	0.0657	396.1	1.710	0.0635	395.9	1.707	0.0615	395.7	1.705	0.0596	395.6	1.702	35
40	0.0670	400.9	1.725	0.0648	400.7	1.723	0.0628	400.6	1.720	0.0609	400.4	1.718	40
45	0.0683	405.7	1.741	0.0661	405.6	1.738	0.0641	405.4	1.735	0.0621	405.2	1.733	45
50	0.0696	410.6	1.756	0.0674	410.4	1.753	0.0653	410.3	1.751	0.0633	410.1	1.748	50
55	0.0709	415.5	1.771	0.0687	415.3	1.768	0.0665	415.2	1.766	0.0645	415.0	1.763	55
60	0.0722	420.4	1.786	0.0699	420.2	1.783	0.0677	420.1	1.781	0.0657	420.0	1.778	60
65	0.0735	425.3	1.800	0.0712	425.2	1.798	0.0690	425.1	1.795	0.0669	425.0	1.793	65
70	0.0748	430.3	1.815	0.0724	430.2	1.813	0.0702	430.1	1.810	0.0681	430.0	1.808	70
75	0.0760	435.4	1.830	0.0736	435.2	1.827	0.0714	435.1	1.825	0.0692	435.0	1.822	75
80	0.0773	440.4	1.844	0.0748	440.3	1.842	0.0726	440.2	1.839	0.0704	440.1	1.837	80
85	0.0785	445.5	1.858	0.0761	445.4	1.856	0.0737	445.3	1.854	0.0715	445.2	1.851	85
90	0.0798	450.6	1.873	0.0773	450.5	1.870	0.0749	450.4	1.868	0.0727	450.3	1.865	90
95	0.0810	455.8	1.887	0.0785	455.7	1.884	0.0761	455.6	1.882	0.0738	455.5	1.880	95
100	0.0823	461.0	1.901	0.0797	460.9	1.898	0.0773	460.8	1.896	0.0750	460.7	1.894	100
105	0.0835	466.3	1.915	0.0809	466.2	1.912	0.0784	466.1	1.910	0.0761	466.0	1.908	105
110	0.0847	471.5	1.929	0.0821	471.4	1.926	0.0796	471.3	1.924	0.0772	471.2	1.922	110
115	0.0859	476.8	1.942	0.0833	476.7	1.940	0.0807	476.7	1.938	0.0784	476.6	1.935	115
120	0.0872	482.2	1.956	0.0844	482.1	1.954	0.0819	482.0	1.951	0.0795	481.9	1.949	120
125	0.0884	487.6	1.970	0.0856	487.5	1.967	0.0830	487.4	1.965	0.0806	487.3	1.963	125
130	0.0896	493.0	1.983	0.0868	492.9	1.981	0.0842	492.8	1.978	0.0817	492.7	1.976	130
135	0.0908	498.4	1.997	0.0880	498.3	1.994	0.0853	498.3	1.992	0.0828	498.2	1.990	135
140	0.0920	503.9	2.010	0.0892	503.8	2.007	0.0865	503.7	2.005	0.0839	503.7	2.003	140
145	0.0932	509.4	2.023	0.0903	509.3	2.021	0.0876	509.3	2.018	0.0850	509.2	2.016	145
150	0.0944	515.0	2.036	0.0915	514.9	2.034	0.0887	514.8	2.032	0.0861	514.7	2.029	150

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	360			370			380			390			Temp °C
	3.92			4.76			5.58			6.38			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0499	365.8	1.598	0.0486	366.4	1.599	0.0473	366.9	1.599	0.0461	367.4	1.599	
5	0.0502	366.8	1.602	0.0486	366.6	1.599							5
10	0.0515	371.6	1.619	0.0500	371.3	1.616	0.0485	371.1	1.614	0.0471	370.9	1.611	10
15	0.0528	376.3	1.636	0.0512	376.1	1.633	0.0497	375.9	1.630	0.0483	375.6	1.628	15
20	0.0541	381.0	1.652	0.0525	380.8	1.649	0.0510	380.6	1.647	0.0495	380.4	1.644	20
25	0.0554	385.8	1.668	0.0537	385.6	1.666	0.0522	385.4	1.663	0.0507	385.2	1.661	25
30	0.0566	390.6	1.684	0.0549	390.4	1.681	0.0534	390.2	1.679	0.0519	390.0	1.677	30
35	0.0578	395.4	1.700	0.0561	395.2	1.697	0.0545	395.1	1.695	0.0530	394.9	1.693	35
40	0.0591	400.2	1.715	0.0573	400.1	1.713	0.0557	399.9	1.710	0.0541	399.7	1.708	40
45	0.0602	405.1	1.731	0.0585	404.9	1.728	0.0568	404.8	1.726	0.0553	404.6	1.724	45
50	0.0614	410.0	1.746	0.0597	409.8	1.743	0.0580	409.7	1.741	0.0564	409.5	1.739	50
55	0.0626	414.9	1.761	0.0608	414.8	1.759	0.0591	414.6	1.756	0.0575	414.5	1.754	55
60	0.0638	419.8	1.776	0.0619	419.7	1.774	0.0602	419.6	1.771	0.0586	419.4	1.769	60
65	0.0649	424.8	1.791	0.0631	424.7	1.788	0.0613	424.6	1.786	0.0596	424.4	1.784	65
70	0.0661	429.8	1.805	0.0642	429.7	1.803	0.0624	429.6	1.801	0.0607	429.5	1.799	70
75	0.0672	434.9	1.820	0.0653	434.8	1.818	0.0635	434.6	1.816	0.0618	434.5	1.813	75
80	0.0683	440.0	1.835	0.0664	439.8	1.832	0.0646	439.7	1.830	0.0628	439.6	1.828	80
85	0.0695	445.1	1.849	0.0675	445.0	1.847	0.0656	444.9	1.845	0.0639	444.7	1.842	85
90	0.0706	450.2	1.863	0.0686	450.1	1.861	0.0667	450.0	1.859	0.0649	449.9	1.857	90
95	0.0717	455.4	1.877	0.0697	455.3	1.875	0.0678	455.2	1.873	0.0660	455.1	1.871	95
100	0.0728	460.6	1.891	0.0708	460.5	1.889	0.0688	460.4	1.887	0.0670	460.3	1.885	100
105	0.0739	465.9	1.905	0.0718	465.8	1.903	0.0699	465.7	1.901	0.0680	465.6	1.899	105
110	0.0750	471.2	1.919	0.0729	471.1	1.917	0.0709	471.0	1.915	0.0690	470.9	1.913	110
115	0.0761	476.5	1.933	0.0740	476.4	1.931	0.0720	476.3	1.929	0.0701	476.2	1.927	115
120	0.0772	481.8	1.947	0.0751	481.7	1.945	0.0730	481.7	1.943	0.0711	481.6	1.940	120
125	0.0783	487.2	1.960	0.0761	487.1	1.958	0.0740	487.1	1.956	0.0721	487.0	1.954	125
130	0.0794	492.6	1.974	0.0772	492.6	1.972	0.0751	492.5	1.970	0.0731	492.4	1.968	130
135	0.0805	498.1	1.987	0.0782	498.0	1.985	0.0761	497.9	1.983	0.0741	497.9	1.981	135
140	0.0815	503.6	2.001	0.0793	503.5	1.999	0.0771	503.4	1.997	0.0751	503.4	1.995	140
145	0.0826	509.1	2.014	0.0803	509.0	2.012	0.0782	509.0	2.010	0.0761	508.9	2.008	145
150	0.0837	514.7	2.027	0.0814	514.6	2.025	0.0792	514.5	2.023	0.0771	514.4	2.021	150

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa															
		400			425			450			475				
Temp °C	7.17			9.08			10.90			12.65			Temp °C		
	V	H	S	V	H	S	V	H	S	V	H	S			
	0.0450	367.9	1.599	0.0424	369.1	1.600	0.0401	370.3	1.600	0.0380	371.4	1.600			
10	0.0457	370.6	1.609	0.0426	370.0	1.603							10		
15	0.0469	375.4	1.626	0.0438	374.8	1.620	0.0410	374.3	1.614	0.0385	373.7	1.609	15		
20	0.0481	380.2	1.642	0.0449	379.7	1.636	0.0421	379.1	1.631	0.0396	378.6	1.625	20		
25	0.0493	385.0	1.658	0.0461	384.5	1.653	0.0432	384.0	1.647	0.0406	383.5	1.642	25		
30	0.0504	389.9	1.674	0.0472	389.4	1.669	0.0442	388.9	1.664	0.0416	388.4	1.658	30		
35	0.0516	394.7	1.690	0.0482	394.3	1.685	0.0453	393.8	1.680	0.0426	393.4	1.675	35		
40	0.0527	399.6	1.706	0.0493	399.2	1.701	0.0463	398.7	1.695	0.0436	398.3	1.690	40		
45	0.0538	404.5	1.721	0.0503	404.1	1.716	0.0473	403.7	1.711	0.0446	403.3	1.706	45		
50	0.0549	409.4	1.737	0.0514	409.0	1.732	0.0483	408.6	1.727	0.0455	408.2	1.722	50		
55	0.0559	414.3	1.752	0.0524	414.0	1.747	0.0493	413.6	1.742	0.0465	413.2	1.737	55		
60	0.0570	419.3	1.767	0.0534	419.0	1.762	0.0502	418.6	1.757	0.0474	418.3	1.752	60		
65	0.0581	424.3	1.782	0.0544	424.0	1.777	0.0512	423.7	1.772	0.0483	423.3	1.767	65		
70	0.0591	429.3	1.797	0.0554	429.0	1.792	0.0521	428.7	1.787	0.0492	428.4	1.782	70		
75	0.0601	434.4	1.811	0.0564	434.1	1.806	0.0531	433.8	1.802	0.0501	433.5	1.797	75		
80	0.0612	439.5	1.826	0.0574	439.2	1.821	0.0540	438.9	1.816	0.0510	438.6	1.812	80		
85	0.0622	444.6	1.840	0.0584	444.4	1.835	0.0549	444.1	1.831	0.0519	443.8	1.826	85		
90	0.0632	449.8	1.855	0.0593	449.5	1.850	0.0559	449.3	1.845	0.0528	449.0	1.841	90		
95	0.0642	455.0	1.869	0.0603	454.7	1.864	0.0568	454.5	1.859	0.0536	454.2	1.855	95		
100	0.0652	460.2	1.883	0.0612	460.0	1.878	0.0577	459.7	1.873	0.0545	459.5	1.869	100		
105	0.0662	465.5	1.897	0.0622	465.3	1.892	0.0586	465.0	1.887	0.0554	464.8	1.883	105		
110	0.0672	470.8	1.911	0.0631	470.6	1.906	0.0595	470.3	1.901	0.0562	470.1	1.897	110		
115	0.0682	476.1	1.925	0.0641	475.9	1.920	0.0604	475.7	1.915	0.0571	475.4	1.911	115		
120	0.0692	481.5	1.938	0.0650	481.3	1.934	0.0613	481.0	1.929	0.0579	480.8	1.925	120		
125	0.0702	486.9	1.952	0.0660	486.7	1.947	0.0622	486.5	1.943	0.0588	486.2	1.938	125		
130	0.0712	492.3	1.966	0.0669	492.1	1.961	0.0630	491.9	1.956	0.0596	491.7	1.952	130		
135	0.0722	497.8	1.979	0.0678	497.6	1.974	0.0639	497.4	1.970	0.0604	497.2	1.966	135		
140	0.0732	503.3	1.993	0.0687	503.1	1.988	0.0648	502.9	1.983	0.0613	502.7	1.979	140		
145	0.0742	508.8	2.006	0.0697	508.6	2.001	0.0657	508.4	1.997	0.0621	508.2	1.992	145		
150	0.0751	514.4	2.019	0.0706	514.2	2.014	0.0666	514.0	2.010	0.0629	513.8	2.006	150		
155	0.0761	520.0	2.032	0.0715	519.8	2.027	0.0674	519.6	2.023	0.0638	519.4	2.019	155		

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa															
		500			525			550			575				
Temp °C	14.33			15.95			17.51			19.02			Temp °C		
	V	H	S	V	H	S	V	H	S	V	H	S			
	0.0361	372.4	1.601	0.0344	373.4	1.601	0.0328	374.4	1.602	0.0314	375.3	1.602			
15	0.0362	373.1	1.603										15		
20	0.0373	378.0	1.620	0.0352	377.5	1.615	0.0333	376.9	1.610	0.0316	376.3	1.606	20		
25	0.0383	383.0	1.637	0.0362	382.5	1.632	0.0343	381.9	1.627	0.0325	381.4	1.623	25		
30	0.0393	387.9	1.653	0.0371	387.4	1.649	0.0352	386.9	1.644	0.0334	386.4	1.640	30		
35	0.0402	392.9	1.670	0.0381	392.4	1.665	0.0361	392.0	1.660	0.0343	391.5	1.656	35		
40	0.0412	397.9	1.686	0.0390	397.4	1.681	0.0370	397.0	1.677	0.0352	396.5	1.672	40		
45	0.0421	402.9	1.701	0.0399	402.4	1.697	0.0378	402.0	1.693	0.0360	401.6	1.688	45		
50	0.0430	407.9	1.717	0.0408	407.5	1.713	0.0387	407.1	1.708	0.0368	406.7	1.704	50		
55	0.0439	412.9	1.732	0.0416	412.5	1.728	0.0395	412.1	1.724	0.0376	411.7	1.720	55		
60	0.0448	417.9	1.748	0.0425	417.6	1.743	0.0404	417.2	1.739	0.0384	416.8	1.735	60		
65	0.0457	423.0	1.763	0.0433	422.6	1.759	0.0412	422.3	1.754	0.0392	422.0	1.750	65		
70	0.0466	428.1	1.778	0.0442	427.8	1.774	0.0420	427.4	1.769	0.0400	427.1	1.766	70		
75	0.0474	433.2	1.793	0.0450	432.9	1.788	0.0428	432.6	1.784	0.0408	432.3	1.780	75		
80	0.0483	438.3	1.807	0.0458	438.0	1.803	0.0436	437.8	1.799	0.0415	437.5	1.795	80		
85	0.0491	443.5	1.822	0.0466	443.2	1.818	0.0444	443.0	1.814	0.0423	442.7	1.810	85		
90	0.0500	448.7	1.836	0.0474	448.5	1.832	0.0451	448.2	1.828	0.0430	447.9	1.824	90		
95	0.0508	454.0	1.851	0.0482	453.7	1.846	0.0459	453.4	1.843	0.0438	453.2	1.839	95		
100	0.0516	459.2	1.865	0.0490	459.0	1.861	0.0467	458.7	1.857	0.0445	458.5	1.853	100		
105	0.0524	464.5	1.879	0.0498	464.3	1.875	0.0474	464.0	1.871	0.0452	463.8	1.867	105		
110	0.0533	469.9	1.893	0.0506	469.6	1.889	0.0482	469.4	1.885	0.0460	469.1	1.881	110		
115	0.0541	475.2	1.907	0.0514	475.0	1.903	0.0489	474.8	1.899	0.0467	474.5	1.895	115		
120	0.0549	480.6	1.921	0.0522	480.4	1.917	0.0497	480.2	1.913	0.0474	479.9	1.909	120		
125	0.0557	486.0	1.934	0.0529	485.8	1.930	0.0504	485.6	1.927	0.0481	485.4	1.923	125		
130	0.0565	491.5	1.948	0.0537	491.3	1.944	0.0512	491.1	1.940	0.0488	490.9	1.937	130		
135	0.0573	497.0	1.961	0.0545	496.8	1.958	0.0519	496.6	1.954	0.0495	496.4	1.950	135		
140	0.0581	502.5	1.975	0.0552	502.3	1.971	0.0526	502.1	1.967	0.0502	501.9	1.964	140		
145	0.0589	508.1	1.988	0.0560	507.9	1.984	0.0534	507.7	1.981	0.0510	507.5	1.977	145		
150	0.0597	513.6	2.002	0.0568	513.5	1.998	0.0541	513.3	1.994	0.0516	513.1	1.990	150		
155	0.0605	519.3	2.015	0.0575	519.1	2.011	0.0548	518.9	2.007	0.0523	518.7	2.004	155		
160	0.0613	524.9	2.028	0.0583	524.7	2.024	0.0555	524.6	2.020	0.0530	524.4	2.017	160		

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa															
		600			625			650			675				
Temp °C	20.48			21.89			23.27			24.60			Temp °C		
	V	H	S	V	H	S	V	H	S	V	H	S			
	0.0301	376.2	1.602	0.0288	377.0	1.603	0.0277	377.8	1.603	0.0267	378.6	1.604			
25	0.0309	380.8	1.618	0.0294	380.2	1.614	0.0280	379.6	1.609	0.0267	379.1	1.605	25		
30	0.0318	385.9	1.635	0.0303	385.4	1.631	0.0289	384.8	1.627	0.0276	384.3	1.622	30		
35	0.0326	391.0	1.652	0.0311	390.5	1.648	0.0297	390.0	1.643	0.0284	389.5	1.639	35		
40	0.0335	396.1	1.668	0.0319	395.6	1.664	0.0305	395.1	1.660	0.0292	394.7	1.656	40		
45	0.0343	401.2	1.684	0.0327	400.7	1.680	0.0313	400.3	1.676	0.0299	399.8	1.673	45		
50	0.0351	406.3	1.700	0.0335	405.9	1.696	0.0320	405.4	1.692	0.0307	405.0	1.689	50		
55	0.0359	411.4	1.716	0.0343	411.0	1.712	0.0328	410.6	1.708	0.0314	410.2	1.705	55		
60	0.0367	416.5	1.731	0.0350	416.1	1.727	0.0335	415.7	1.724	0.0321	415.4	1.720	60		
65	0.0374	421.6	1.747	0.0358	421.3	1.743	0.0342	420.9	1.739	0.0328	420.6	1.736	65		
70	0.0382	426.8	1.762	0.0365	426.4	1.758	0.0349	426.1	1.754	0.0335	425.8	1.751	70		
75	0.0389	431.9	1.777	0.0372	431.6	1.773	0.0357	431.3	1.769	0.0342	431.0	1.766	75		
80	0.0397	437.1	1.792	0.0379	436.8	1.788	0.0363	436.5	1.784	0.0349	436.2	1.781	80		
85	0.0404	442.4	1.806	0.0386	442.1	1.803	0.0370	441.8	1.799	0.0355	441.5	1.796	85		
90	0.0411	447.6	1.821	0.0393	447.3	1.817	0.0377	447.1	1.814	0.0362	446.8	1.810	90		
95	0.0418	452.9	1.835	0.0400	452.6	1.832	0.0384	452.4	1.828	0.0368	452.1	1.825	95		
100	0.0425	458.2	1.850	0.0407	458.0	1.846	0.0390	457.7	1.843	0.0375	457.4	1.839	100		
105	0.0432	463.5	1.864	0.0414	463.3	1.860	0.0397	463.0	1.857	0.0381	462.8	1.854	105		
110	0.0439	468.9	1.878	0.0421	468.7	1.874	0.0404	468.4	1.871	0.0388	468.2	1.868	110		
115	0.0446	474.3	1.892	0.0428	474.1	1.888	0.0410	473.8	1.885	0.0394	473.6	1.882	115		
120	0.0453	479.7	1.906	0.0434	479.5	1.902	0.0417	479.3	1.899	0.0400	479.1	1.896	120		
125	0.0460	485.2	1.919	0.0441	485.0	1.916	0.0423	484.7	1.913	0.0406	484.5	1.910	125		
130	0.0467	490.7	1.933	0.0447	490.5	1.930	0.0429	490.2	1.927	0.0413	490.0	1.923	130		
135	0.0474	496.2	1.947	0.0454	496.0	1.943	0.0436	495.8	1.940	0.0419	495.6	1.937	135		
140	0.0481	501.7	1.960	0.0461	501.5	1.957	0.0442	501.3	1.954	0.0425	501.1	1.951	140		
145	0.0487	507.3	1.974	0.0467	507.1	1.970	0.0448	506.9	1.967	0.0431	506.7	1.964	145		
150	0.0494	512.9	1.987	0.0474	512.7	1.984	0.0455	512.5	1.980	0.0437	512.3	1.977	150		
155	0.0501	518.5	2.000	0.0480	518.4	1.997	0.0461	518.2	1.994	0.0443	518.0	1.991	155		
160	0.0508	524.2	2.013	0.0486	524.0	2.010	0.0467	523.8	2.007	0.0449	523.7	2.004	160		
165	0.0514	529.9	2.026	0.0493	529.7	2.023	0.0473	529.6	2.020	0.0455	529.4	2.017	165		
170	0.0521	535.6	2.039	0.0499	535.5	2.036	0.0479	535.3	2.033	0.0461	535.1	2.030	170		

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	700			725			750			775			Temp °C
	25.90			27.16			28.40			29.60			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0257	379.4	1.604	0.0248	380.1	1.604	0.0239	380.8	1.605	0.0231	381.5	1.605	
30	0.0264	383.7	1.618	0.0252	383.1	1.614	0.0242	382.6	1.610	0.0232	382.0	1.606	30
35	0.0272	389.0	1.635	0.0260	388.4	1.632	0.0250	387.9	1.628	0.0240	387.3	1.624	35
40	0.0279	394.2	1.652	0.0268	393.7	1.649	0.0257	393.2	1.645	0.0247	392.7	1.641	40
45	0.0287	399.4	1.669	0.0275	398.9	1.665	0.0264	398.5	1.662	0.0254	398.0	1.658	45
50	0.0294	404.6	1.685	0.0282	404.2	1.681	0.0271	403.7	1.678	0.0261	403.3	1.675	50
55	0.0301	409.8	1.701	0.0289	409.4	1.697	0.0278	409.0	1.694	0.0268	408.6	1.691	55
60	0.0308	415.0	1.717	0.0296	414.6	1.713	0.0285	414.2	1.710	0.0274	413.8	1.707	60
65	0.0315	420.2	1.732	0.0303	419.8	1.729	0.0291	419.5	1.726	0.0281	419.1	1.722	65
70	0.0322	425.4	1.748	0.0309	425.1	1.744	0.0298	424.7	1.741	0.0287	424.4	1.738	70
75	0.0328	430.7	1.763	0.0316	430.3	1.759	0.0304	430.0	1.756	0.0293	429.7	1.753	75
80	0.0335	435.9	1.778	0.0322	435.6	1.775	0.0310	435.3	1.771	0.0299	435.0	1.768	80
85	0.0341	441.2	1.793	0.0329	440.9	1.789	0.0316	440.6	1.786	0.0305	440.3	1.783	85
90	0.0348	446.5	1.807	0.0335	446.2	1.804	0.0322	445.9	1.801	0.0311	445.6	1.798	90
95	0.0354	451.8	1.822	0.0341	451.5	1.819	0.0328	451.3	1.816	0.0317	451.0	1.813	95
100	0.0360	457.2	1.836	0.0347	456.9	1.833	0.0334	456.6	1.830	0.0323	456.4	1.827	100
105	0.0367	462.5	1.851	0.0353	462.3	1.847	0.0340	462.0	1.845	0.0328	461.8	1.842	105
110	0.0373	467.9	1.865	0.0359	467.7	1.862	0.0346	467.5	1.859	0.0334	467.2	1.856	110
115	0.0379	473.4	1.879	0.0365	473.1	1.876	0.0352	472.9	1.873	0.0340	472.7	1.870	115
120	0.0385	478.8	1.893	0.0371	478.6	1.890	0.0358	478.4	1.887	0.0345	478.1	1.884	120
125	0.0391	484.3	1.907	0.0377	484.1	1.904	0.0363	483.9	1.901	0.0351	483.6	1.898	125
130	0.0397	489.8	1.920	0.0382	489.6	1.917	0.0369	489.4	1.915	0.0356	489.2	1.912	130
135	0.0403	495.4	1.934	0.0388	495.2	1.931	0.0375	494.9	1.928	0.0362	494.7	1.926	135
140	0.0409	500.9	1.948	0.0394	500.7	1.945	0.0380	500.5	1.942	0.0367	500.3	1.939	140
145	0.0415	506.5	1.961	0.0400	506.3	1.958	0.0386	506.1	1.955	0.0373	505.9	1.953	145
150	0.0421	512.2	1.974	0.0405	512.0	1.972	0.0391	511.8	1.969	0.0378	511.6	1.966	150
155	0.0426	517.8	1.988	0.0411	517.6	1.985	0.0397	517.4	1.982	0.0383	517.3	1.979	155
160	0.0432	523.5	2.001	0.0417	523.3	1.998	0.0402	523.1	1.995	0.0389	523.0	1.993	160
165	0.0438	529.2	2.014	0.0422	529.0	2.011	0.0408	528.9	2.008	0.0394	528.7	2.006	165
170	0.0444	535.0	2.027	0.0428	534.8	2.024	0.0413	534.6	2.021	0.0399	534.4	2.019	170
175	0.0450	540.7	2.040	0.0434	540.6	2.037	0.0419	540.4	2.034	0.0404	540.2	2.032	175

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	800			850			900			950			Temp °C
	30.77			33.04			35.20			37.28			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0224	382.2	1.605	0.0210	383.4	1.606	0.0198	384.6	1.606	0.0187	385.7	1.607	
35	0.0230	386.8	1.620	0.0213	385.6	1.613							35
40	0.0237	392.2	1.638	0.0220	391.1	1.631	0.0204	390.0	1.624	0.0190	388.8	1.617	40
45	0.0244	397.5	1.655	0.0227	396.5	1.648	0.0211	395.5	1.641	0.0197	394.5	1.635	45
50	0.0251	402.8	1.671	0.0233	401.9	1.665	0.0218	401.0	1.658	0.0203	400.0	1.652	50
55	0.0258	408.1	1.687	0.0240	407.3	1.681	0.0224	406.4	1.675	0.0209	405.5	1.669	55
60	0.0264	413.4	1.703	0.0246	412.6	1.697	0.0230	411.8	1.691	0.0215	411.0	1.685	60
65	0.0271	418.7	1.719	0.0252	418.0	1.713	0.0236	417.2	1.707	0.0221	416.4	1.702	65
70	0.0277	424.0	1.735	0.0258	423.3	1.729	0.0241	422.6	1.723	0.0227	421.8	1.718	70
75	0.0283	429.3	1.750	0.0264	428.7	1.744	0.0247	428.0	1.739	0.0232	427.3	1.733	75
80	0.0289	434.7	1.765	0.0270	434.0	1.760	0.0253	433.4	1.754	0.0237	432.7	1.749	80
85	0.0295	440.0	1.780	0.0275	439.4	1.775	0.0258	438.8	1.769	0.0243	438.1	1.764	85
90	0.0300	445.3	1.795	0.0281	444.8	1.790	0.0263	444.2	1.784	0.0248	443.6	1.779	90
95	0.0306	450.7	1.810	0.0286	450.2	1.804	0.0268	449.6	1.799	0.0253	449.0	1.794	95
100	0.0312	456.1	1.824	0.0292	455.6	1.819	0.0274	455.0	1.814	0.0258	454.5	1.809	100
105	0.0317	461.5	1.839	0.0297	461.0	1.833	0.0279	460.5	1.828	0.0263	460.0	1.823	105
110	0.0323	467.0	1.853	0.0302	466.5	1.848	0.0284	466.0	1.843	0.0267	465.5	1.838	110
115	0.0328	472.4	1.867	0.0307	471.9	1.862	0.0289	471.5	1.857	0.0272	471.0	1.852	115
120	0.0334	477.9	1.881	0.0313	477.4	1.876	0.0294	477.0	1.871	0.0277	476.5	1.866	120
125	0.0339	483.4	1.895	0.0318	483.0	1.890	0.0299	482.5	1.885	0.0282	482.1	1.880	125
130	0.0344	489.0	1.909	0.0323	488.5	1.904	0.0304	488.1	1.899	0.0286	487.7	1.894	130
135	0.0350	494.5	1.923	0.0328	494.1	1.918	0.0308	493.7	1.913	0.0291	493.3	1.908	135
140	0.0355	500.1	1.936	0.0333	499.7	1.931	0.0313	499.3	1.926	0.0296	498.9	1.922	140
145	0.0360	505.7	1.950	0.0338	505.4	1.945	0.0318	505.0	1.940	0.0300	504.6	1.935	145
150	0.0366	511.4	1.963	0.0343	511.0	1.958	0.0323	510.6	1.953	0.0305	510.3	1.949	150
155	0.0371	517.1	1.977	0.0348	516.7	1.972	0.0327	516.3	1.967	0.0309	516.0	1.962	155
160	0.0376	522.8	1.990	0.0353	522.4	1.985	0.0332	522.1	1.980	0.0314	521.7	1.976	160
165	0.0381	528.5	2.003	0.0358	528.2	1.998	0.0337	527.8	1.993	0.0318	527.5	1.989	165
170	0.0386	534.3	2.016	0.0362	533.9	2.011	0.0341	533.6	2.007	0.0322	533.3	2.002	170
175	0.0391	540.1	2.029	0.0367	539.7	2.024	0.0346	539.4	2.020	0.0327	539.1	2.015	175
180	0.0396	545.9	2.042	0.0372	545.6	2.037	0.0350	545.2	2.032	0.0331	544.9	2.028	180

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
Temp °C	1000			1100			1200			1300			Temp °C
	39.28			43.07			46.60			49.93			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0177	386.8	1.607	0.0159	388.7	1.608	0.0145	390.4	1.609	0.0132	391.9	1.609	
40	0.0178	387.6	1.610										40
45	0.0184	393.4	1.628	0.0162	391.0	1.615							45
50	0.0190	399.0	1.646	0.0168	396.9	1.634	0.0149	394.6	1.622	0.0132	392.0	1.609	50
55	0.0196	404.6	1.663	0.0174	402.6	1.651	0.0155	400.6	1.640	0.0138	398.3	1.629	55
60	0.0202	410.1	1.680	0.0179	408.3	1.669	0.0160	406.4	1.658	0.0144	404.4	1.647	60
65	0.0208	415.6	1.696	0.0185	413.9	1.685	0.0165	412.2	1.675	0.0149	410.3	1.665	65
70	0.0213	421.1	1.712	0.0190	419.5	1.702	0.0170	417.9	1.692	0.0154	416.2	1.682	70
75	0.0218	426.6	1.728	0.0195	425.1	1.718	0.0175	423.6	1.708	0.0158	422.0	1.699	75
80	0.0224	432.0	1.743	0.0200	430.6	1.734	0.0180	429.2	1.724	0.0163	427.7	1.715	80
85	0.0229	437.5	1.759	0.0205	436.2	1.749	0.0184	434.8	1.740	0.0167	433.4	1.731	85
90	0.0234	442.9	1.774	0.0209	441.7	1.764	0.0189	440.4	1.755	0.0172	439.1	1.747	90
95	0.0238	448.4	1.789	0.0214	447.2	1.780	0.0193	446.0	1.771	0.0176	444.8	1.762	95
100	0.0243	453.9	1.804	0.0218	452.8	1.795	0.0197	451.6	1.786	0.0180	450.4	1.778	100
105	0.0248	459.4	1.818	0.0223	458.3	1.809	0.0202	457.2	1.801	0.0184	456.1	1.793	105
110	0.0253	464.9	1.833	0.0227	463.9	1.824	0.0206	462.8	1.816	0.0188	461.8	1.808	110
115	0.0257	470.5	1.847	0.0231	469.5	1.838	0.0210	468.5	1.830	0.0192	467.4	1.822	115
120	0.0262	476.0	1.862	0.0236	475.1	1.853	0.0214	474.1	1.845	0.0195	473.1	1.837	120
125	0.0266	481.6	1.876	0.0240	480.7	1.867	0.0218	479.8	1.859	0.0199	478.8	1.851	125
130	0.0271	487.2	1.890	0.0244	486.3	1.881	0.0222	485.4	1.873	0.0203	484.5	1.866	130
135	0.0275	492.8	1.904	0.0248	492.0	1.895	0.0225	491.1	1.887	0.0206	490.2	1.880	135
140	0.0280	498.5	1.917	0.0252	497.7	1.909	0.0229	496.8	1.901	0.0210	496.0	1.894	140
145	0.0284	504.2	1.931	0.0256	503.4	1.923	0.0233	502.6	1.915	0.0213	501.7	1.907	145
150	0.0288	509.9	1.944	0.0260	509.1	1.936	0.0237	508.3	1.928	0.0217	507.5	1.921	150
155	0.0293	515.6	1.958	0.0264	514.8	1.950	0.0241	514.1	1.942	0.0220	513.3	1.935	155
160	0.0297	521.3	1.971	0.0268	520.6	1.963	0.0244	519.9	1.955	0.0224	519.1	1.948	160
165	0.0301	527.1	1.985	0.0272	526.4	1.976	0.0248	525.7	1.969	0.0227	525.0	1.962	165
170	0.0305	532.9	1.998	0.0276	532.2	1.990	0.0252	531.5	1.982	0.0231	530.8	1.975	170
175	0.0310	538.7	2.011	0.0280	538.1	2.003	0.0255	537.4	1.995	0.0234	536.7	1.988	175
180	0.0314	544.6	2.024	0.0284	544.0	2.016	0.0259	543.3	2.008	0.0238	542.6	2.001	180
185	0.0318	550.5	2.037	0.0288	549.8	2.029	0.0262	549.2	2.021	0.0241	548.6	2.014	185

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa															
		1400			1500			1600			1700				
Temp °C	53.06			56.03			58.86			61.55			Temp °C		
	V	H	S	V	H	S	V	H	S	V	H	S			
	0.0121	393.3	1.609	0.0112	394.5	1.610	0.0103	395.5	1.609	0.0096	396.4	1.609			
55	0.0124	395.8	1.617										55		
60	0.0129	402.2	1.636	0.0116	399.8	1.626	0.0105	397.1	1.614				60		
65	0.0134	408.3	1.655	0.0122	406.2	1.645	0.0110	403.9	1.634	0.0100	401.4	1.624	65		
70	0.0139	414.4	1.672	0.0127	412.4	1.663	0.0115	410.4	1.653	0.0105	408.2	1.644	70		
75	0.0144	420.3	1.690	0.0131	418.5	1.681	0.0120	416.7	1.672	0.0110	414.7	1.663	75		
80	0.0148	426.1	1.706	0.0135	424.5	1.698	0.0124	422.8	1.689	0.0114	421.0	1.681	80		
85	0.0153	432.0	1.723	0.0140	430.4	1.714	0.0128	428.9	1.706	0.0118	427.2	1.698	85		
90	0.0157	437.7	1.739	0.0144	436.3	1.731	0.0132	434.9	1.723	0.0122	433.3	1.715	90		
95	0.0161	443.5	1.754	0.0148	442.1	1.747	0.0136	440.8	1.739	0.0126	439.4	1.732	95		
100	0.0165	449.2	1.770	0.0151	448.0	1.762	0.0140	446.7	1.755	0.0129	445.3	1.748	100		
105	0.0168	454.9	1.785	0.0155	453.7	1.778	0.0143	452.5	1.770	0.0133	451.3	1.764	105		
110	0.0172	460.7	1.800	0.0159	459.5	1.793	0.0147	458.4	1.786	0.0136	457.2	1.779	110		
115	0.0176	466.4	1.815	0.0162	465.3	1.808	0.0150	464.2	1.801	0.0140	463.1	1.794	115		
120	0.0179	472.1	1.830	0.0166	471.1	1.823	0.0154	470.0	1.816	0.0143	469.0	1.809	120		
125	0.0183	477.8	1.844	0.0169	476.9	1.837	0.0157	475.9	1.831	0.0146	474.8	1.824	125		
130	0.0186	483.6	1.858	0.0172	482.6	1.852	0.0160	481.7	1.845	0.0149	480.7	1.839	130		
135	0.0190	489.3	1.873	0.0176	488.4	1.866	0.0163	487.5	1.860	0.0152	486.6	1.853	135		
140	0.0193	495.1	1.887	0.0179	494.2	1.880	0.0166	493.4	1.874	0.0155	492.5	1.868	140		
145	0.0197	500.9	1.901	0.0182	500.1	1.894	0.0169	499.2	1.888	0.0158	498.4	1.882	145		
150	0.0200	506.7	1.914	0.0185	505.9	1.908	0.0172	505.1	1.902	0.0161	504.3	1.896	150		
155	0.0203	512.5	1.928	0.0188	511.8	1.922	0.0175	511.0	1.916	0.0164	510.2	1.910	155		
160	0.0207	518.4	1.942	0.0192	517.6	1.935	0.0178	516.9	1.929	0.0167	516.1	1.924	160		
165	0.0210	524.3	1.955	0.0195	523.5	1.949	0.0181	522.8	1.943	0.0169	522.0	1.937	165		
170	0.0213	530.1	1.968	0.0198	529.4	1.962	0.0184	528.7	1.956	0.0172	528.0	1.951	170		
175	0.0216	536.0	1.982	0.0201	535.4	1.976	0.0187	534.7	1.970	0.0175	534.0	1.964	175		
180	0.0219	542.0	1.995	0.0204	541.3	1.989	0.0190	540.6	1.983	0.0178	540.0	1.977	180		
185	0.0223	547.9	2.008	0.0207	547.3	2.002	0.0193	546.6	1.996	0.0180	546.0	1.991	185		
190	0.0226	553.9	2.021	0.0210	553.3	2.015	0.0196	552.6	2.009	0.0183	552.0	2.004	190		
195	0.0229	559.9	2.034	0.0213	559.3	2.028	0.0198	558.7	2.022	0.0186	558.1	2.017	195		
200	0.0232	565.9	2.047	0.0215	565.3	2.041	0.0201	564.7	2.035	0.0188	564.1	2.030	200		

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k·K Saturation Properties in Light Blue

Absolute Pressure, kPa															
		1800			1900			2000			2200				
Temp °C	64.13			66.60			68.97			73.46			Temp °C		
	V	H	S	V	H	S	V	H	S	V	H	S			
	0.0089	397.2	1.609	0.0083	397.9	1.608	0.0078	398.4	1.607	0.0068	399.0	1.605			
65	0.0090	398.5	1.613										65		
70	0.0096	405.8	1.634	0.0087	403.1	1.623	0.0079	400.1	1.612				70		
75	0.0101	412.6	1.654	0.0092	410.3	1.644	0.0085	407.8	1.635	0.0070	401.8	1.613	75		
80	0.0105	419.2	1.672	0.0097	417.1	1.664	0.0089	415.0	1.655	0.0076	410.1	1.636	80		
85	0.0109	425.5	1.690	0.0101	423.7	1.682	0.0093	421.8	1.674	0.0080	417.6	1.658	85		
90	0.0113	431.8	1.707	0.0105	430.1	1.700	0.0097	428.4	1.692	0.0084	424.6	1.677	90		
95	0.0117	437.9	1.724	0.0109	436.4	1.717	0.0101	434.8	1.710	0.0088	431.4	1.696	95		
100	0.0120	444.0	1.741	0.0112	442.6	1.734	0.0105	441.1	1.727	0.0091	438.0	1.713	100		
105	0.0124	450.0	1.757	0.0115	448.7	1.750	0.0108	447.3	1.743	0.0095	444.4	1.731	105		
110	0.0127	456.0	1.772	0.0119	454.7	1.766	0.0111	453.5	1.760	0.0098	450.8	1.747	110		
115	0.0130	461.9	1.788	0.0122	460.8	1.782	0.0114	459.6	1.775	0.0101	457.1	1.764	115		
120	0.0133	467.9	1.803	0.0125	466.8	1.797	0.0117	465.6	1.791	0.0104	463.3	1.779	120		
125	0.0136	473.8	1.818	0.0128	472.7	1.812	0.0120	471.7	1.806	0.0107	469.5	1.795	125		
130	0.0139	479.7	1.833	0.0131	478.7	1.827	0.0123	477.7	1.821	0.0109	475.6	1.810	130		
135	0.0142	485.6	1.847	0.0134	484.7	1.842	0.0126	483.7	1.836	0.0112	481.7	1.825	135		
140	0.0145	491.6	1.862	0.0136	490.6	1.856	0.0128	489.7	1.851	0.0114	487.8	1.840	140		
145	0.0148	497.5	1.876	0.0139	496.6	1.871	0.0131	495.7	1.865	0.0117	493.9	1.855	145		
150	0.0151	503.4	1.890	0.0142	502.6	1.885	0.0134	501.7	1.879	0.0120	500.0	1.869	150		
155	0.0154	509.4	1.904	0.0144	508.6	1.899	0.0136	507.7	1.894	0.0122	506.1	1.884	155		
160	0.0156	515.3	1.918	0.0147	514.5	1.913	0.0139	513.7	1.908	0.0124	512.1	1.898	160		
165	0.0159	521.3	1.932	0.0150	520.5	1.926	0.0141	519.8	1.921	0.0127	518.2	1.912	165		
170	0.0162	527.3	1.945	0.0152	526.5	1.940	0.0144	525.8	1.935	0.0129	524.3	1.926	170		
175	0.0164	533.3	1.959	0.0155	532.6	1.954	0.0146	531.9	1.949	0.0131	530.4	1.939	175		
180	0.0167	539.3	1.972	0.0157	538.6	1.967	0.0149	537.9	1.962	0.0134	536.5	1.953	180		
185	0.0170	545.3	1.985	0.0160	544.7	1.980	0.0151	544.0	1.975	0.0136	542.6	1.966	185		
190	0.0172	551.4	1.998	0.0162	550.7	1.993	0.0153	550.1	1.989	0.0138	548.8	1.980	190		
195	0.0175	557.4	2.012	0.0165	556.8	2.007	0.0156	556.2	2.002	0.0140	554.9	1.993	195		
200	0.0177	563.5	2.024	0.0167	562.9	2.020	0.0158	562.3	2.015	0.0142	561.1	2.006	200		
205	0.0180	569.6	2.037	0.0169	569.0	2.032	0.0160	568.5	2.028	0.0144	567.3	2.019	205		
210	0.0182	575.8	2.050	0.0172	575.2	2.045	0.0163	574.6	2.041	0.0147	573.5	2.032	210		

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k-K Saturation Properties in Light Blue

Absolute Pressure, kPa													
	2400			2600			2800			3000			
	77.63			81.54			85.22			88.67			
Temp °C	V	H	S	V	H	S	V	H	S	V	H	S	Temp °C
	0.0060	399.1	1.602	0.0053	398.6	1.597	0.0046	397.3	1.590	0.0040	394.8	1.581	
80	0.0063	403.9	1.615										80
85	0.0068	412.6	1.639	0.0057	406.3	1.618							85
90	0.0073	420.4	1.661	0.0063	415.4	1.644	0.0053	409.1	1.623	0.0043	399.9	1.595	90
95	0.0077	427.7	1.681	0.0067	423.4	1.666	0.0058	418.5	1.649	0.0049	412.4	1.629	95
100	0.0080	434.6	1.700	0.0071	430.9	1.686	0.0062	426.7	1.671	0.0054	421.9	1.655	100
105	0.0084	441.4	1.718	0.0074	438.0	1.705	0.0066	434.4	1.691	0.0058	430.3	1.677	105
110	0.0087	448.0	1.735	0.0077	444.9	1.723	0.0069	441.7	1.711	0.0061	438.1	1.698	110
115	0.0090	454.4	1.752	0.0080	451.6	1.740	0.0072	448.7	1.729	0.0065	445.5	1.717	115
120	0.0093	460.8	1.768	0.0083	458.2	1.757	0.0075	455.5	1.746	0.0067	452.6	1.735	120
125	0.0095	467.1	1.784	0.0086	464.7	1.774	0.0077	462.2	1.763	0.0070	459.5	1.753	125
130	0.0098	473.4	1.800	0.0088	471.1	1.790	0.0080	468.8	1.780	0.0073	466.3	1.770	130
135	0.0100	479.6	1.815	0.0091	477.5	1.805	0.0082	475.3	1.796	0.0075	473.0	1.786	135
140	0.0103	485.8	1.830	0.0093	483.8	1.821	0.0085	481.7	1.811	0.0077	479.6	1.802	140
145	0.0105	492.0	1.845	0.0095	490.1	1.836	0.0087	488.1	1.827	0.0080	486.1	1.818	145
150	0.0108	498.2	1.860	0.0098	496.4	1.851	0.0089	494.5	1.842	0.0082	492.6	1.833	150
155	0.0110	504.3	1.874	0.0100	502.6	1.865	0.0091	500.8	1.857	0.0084	499.0	1.848	155
160	0.0112	510.5	1.889	0.0102	508.8	1.880	0.0093	507.1	1.871	0.0086	505.4	1.863	160
165	0.0115	516.6	1.903	0.0104	515.0	1.894	0.0095	513.4	1.886	0.0088	511.7	1.878	165
170	0.0117	522.8	1.917	0.0106	521.3	1.908	0.0097	519.7	1.900	0.0090	518.1	1.892	170
175	0.0119	529.0	1.930	0.0108	527.5	1.922	0.0099	526.0	1.914	0.0092	524.4	1.906	175
180	0.0121	535.1	1.944	0.0110	533.7	1.936	0.0101	532.2	1.928	0.0093	530.8	1.920	180
185	0.0123	541.3	1.958	0.0112	539.9	1.950	0.0103	538.5	1.942	0.0095	537.1	1.934	185
190	0.0125	547.5	1.971	0.0114	546.1	1.963	0.0105	544.8	1.955	0.0097	543.4	1.948	190
195	0.0127	553.7	1.984	0.0116	552.4	1.976	0.0107	551.1	1.969	0.0099	549.7	1.962	195
200	0.0129	559.9	1.998	0.0118	558.6	1.990	0.0109	557.3	1.982	0.0101	556.1	1.975	200
205	0.0131	566.1	2.011	0.0120	564.9	2.003	0.0111	563.6	1.995	0.0102	562.4	1.988	205
210	0.0133	572.3	2.024	0.0122	571.1	2.016	0.0112	569.9	2.009	0.0104	568.8	2.002	210
215	0.0135	578.5	2.036	0.0124	577.4	2.029	0.0114	576.3	2.022	0.0106	575.1	2.015	215
220	0.0137	584.8	2.049	0.0126	583.7	2.042	0.0116	582.6	2.034	0.0107	581.5	2.028	220
225	0.0139	591.1	2.062	0.0128	590.0	2.054	0.0118	588.9	2.047	0.0109	587.8	2.041	225

Opteon™ YF (HFO-1234yf) Superheated Vapor - Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/k·K Saturation Properties in Light Blue

Absolute Pressure, kPa														
		3200			3250			3300			3350			
		91.92			92.70			93.47			94.22			
Temp °C	V	H	S	V	H	S	V	H	S	V	H	S	Temp °C	
	0.0033	390.1	1.566	0.0031	388.2	1.560	0.0029	385.5	1.553	0.0026	381.1	1.540		
95	0.0041	404.0	1.604	0.0038	401.0	1.595	0.0035	397.4	1.585	0.0032	392.2	1.570	95	
100	0.0047	416.1	1.637	0.0045	414.5	1.632	0.0043	412.7	1.626	0.0041	410.7	1.621	100	
105	0.0051	425.7	1.662	0.0049	424.4	1.658	0.0048	423.1	1.654	0.0046	421.7	1.650	105	
110	0.0055	434.2	1.685	0.0053	433.1	1.681	0.0052	432.0	1.678	0.0050	430.9	1.674	110	
115	0.0058	442.0	1.705	0.0056	441.1	1.702	0.0055	440.2	1.699	0.0053	439.3	1.696	115	
120	0.0061	449.5	1.724	0.0059	448.7	1.721	0.0058	447.9	1.718	0.0056	447.1	1.716	120	
125	0.0064	456.7	1.742	0.0062	456.0	1.740	0.0061	455.3	1.737	0.0059	454.5	1.734	125	
130	0.0066	463.7	1.760	0.0065	463.1	1.757	0.0063	462.4	1.755	0.0062	461.7	1.752	130	
135	0.0069	470.6	1.777	0.0067	470.0	1.774	0.0066	469.4	1.772	0.0064	468.7	1.770	135	
140	0.0071	477.3	1.793	0.0069	476.8	1.791	0.0068	476.2	1.789	0.0066	475.6	1.786	140	
145	0.0073	484.0	1.809	0.0071	483.5	1.807	0.0070	482.9	1.805	0.0069	482.4	1.803	145	
150	0.0075	490.6	1.825	0.0074	490.1	1.823	0.0072	489.6	1.821	0.0071	489.0	1.819	150	
155	0.0077	497.1	1.840	0.0076	496.6	1.838	0.0074	496.1	1.836	0.0073	495.7	1.834	155	
160	0.0079	503.6	1.855	0.0078	503.1	1.853	0.0076	502.7	1.851	0.0075	502.2	1.849	160	
165	0.0081	510.0	1.870	0.0080	509.6	1.868	0.0078	509.2	1.866	0.0077	508.7	1.864	165	
170	0.0083	516.5	1.885	0.0081	516.1	1.883	0.0080	515.7	1.881	0.0078	515.2	1.879	170	
175	0.0085	522.9	1.899	0.0083	522.5	1.897	0.0082	522.1	1.895	0.0080	521.7	1.894	175	
180	0.0087	529.3	1.913	0.0085	528.9	1.911	0.0083	528.5	1.910	0.0082	528.1	1.908	180	
185	0.0088	535.7	1.927	0.0087	535.3	1.925	0.0085	534.9	1.924	0.0084	534.6	1.922	185	
190	0.0090	542.0	1.941	0.0088	541.7	1.939	0.0087	541.4	1.938	0.0085	541.0	1.936	190	
195	0.0092	548.4	1.955	0.0090	548.1	1.953	0.0089	547.8	1.951	0.0087	547.4	1.950	195	
200	0.0093	554.8	1.968	0.0092	554.5	1.967	0.0090	554.2	1.965	0.0089	553.8	1.963	200	
205	0.0095	561.2	1.982	0.0093	560.9	1.980	0.0092	560.6	1.978	0.0090	560.2	1.977	205	
210	0.0097	567.6	1.995	0.0095	567.3	1.993	0.0093	567.0	1.992	0.0092	566.7	1.990	210	
215	0.0098	574.0	2.008	0.0097	573.7	2.007	0.0095	573.4	2.005	0.0093	573.1	2.003	215	
220	0.0100	580.4	2.021	0.0098	580.1	2.020	0.0097	579.8	2.018	0.0095	579.5	2.017	220	
225	0.0102	586.8	2.034	0.0100	586.5	2.033	0.0098	586.2	2.031	0.0096	585.9	2.030	225	
230	0.0103	593.2	2.047	0.0101	592.9	2.045	0.0100	592.6	2.044	0.0098	592.4	2.042	230	
235	0.0105	599.6	2.060	0.0103	599.3	2.058	0.0101	599.1	2.057	0.0099	598.8	2.055	235	
240	0.0106	606.0	2.072	0.0104	605.8	2.071	0.0103	605.5	2.069	0.0101	605.3	2.068	240	

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