

Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
76	-69.32	0.01360	1.1513	73.51	0.8686	-13.92	150.56	136.64	-0.0339	0.3518	-14.11	120.44	2.0054	1.4451	3195.3	731.0
77	-68.78	0.01362	1.1370	73.44	0.8795	-13.66	150.35	136.69	-0.0333	0.3514	-13.85	120.48	2.0070	1.4461	3188.1	731.1
78	-68.24	0.01363	1.1230	73.37	0.8904	-13.41	150.15	136.74	-0.0326	0.3509	-13.61	120.51	2.0086	1.4471	3181.0	731.2
79	-67.71	0.01364	1.1094	73.31	0.9014	-13.16	149.94	136.78	-0.0320	0.3505	-13.36	120.55	2.0103	1.4481	3174.0	731.4
80	-67.18	0.01365	1.0962	73.24	0.9123	-12.91	149.74	136.83	-0.0314	0.3501	-13.11	120.59	2.0119	1.4491	3167.0	731.5
81	-66.66	0.01367	1.0832	73.18	0.9232	-12.67	149.54	136.87	-0.0308	0.3497	-12.87	120.62	2.0135	1.4501	3160.1	731.6
82	-66.14	0.01368	1.0706	73.11	0.9341	-12.42	149.34	136.92	-0.0302	0.3493	-12.63	120.66	2.0151	1.4511	3153.3	731.7
83	-65.63	0.01369	1.0582	73.05	0.9450	-12.18	149.14	136.96	-0.0295	0.3489	-12.39	120.70	2.0167	1.4521	3146.5	731.8
84	-65.12	0.01370	1.0462	72.98	0.9559	-11.94	148.94	137.00	-0.0289	0.3486	-12.16	120.73	2.0182	1.4531	3139.8	731.9
85	-64.61	0.01371	1.0344	72.92	0.9668	-11.71	148.76	137.05	-0.0284	0.3482	-11.92	120.76	2.0198	1.4541	3133.2	732.0
86	-64.11	0.01373	1.0228	72.86	0.9777	-11.47	148.56	137.09	-0.0278	0.3478	-11.69	120.80	2.0214	1.4551	3126.6	732.0
87	-63.62	0.01374	1.0116	72.79	0.9886	-11.24	148.37	137.13	-0.0272	0.3474	-11.46	120.83	2.0230	1.4561	3120.1	732.1
88	-63.13	0.01375	1.0005	72.73	0.9995	-11.01	148.18	137.17	-0.0266	0.3471	-11.23	120.86	2.0246	1.4572	3113.7	732.2
89	-62.64	0.01376	0.9897	72.67	1.0104	-10.78	147.99	137.21	-0.0260	0.3467	-11.00	120.90	2.0261	1.4582	3107.2	732.3
90	-62.16	0.01377	0.9792	72.61	1.0213	-10.55	147.80	137.25	-0.0255	0.3463	-10.78	120.93	2.0277	1.4592	3100.9	732.4
91	-61.68	0.01378	0.9688	72.55	1.0322	-10.32	147.60	137.28	-0.0249	0.3460	-10.56	120.96	2.0293	1.4602	3094.6	732.4
92	-61.20	0.01380	0.9587	72.49	1.0431	-10.10	147.42	137.32	-0.0244	0.3456	-10.34	120.99	2.0308	1.4612	3088.4	732.5
93	-60.73	0.01381	0.9488	72.43	1.0540	-9.88	147.24	137.36	-0.0238	0.3453	-10.12	121.02	2.0324	1.4622	3082.2	732.6
94	-60.27	0.01382	0.9391	72.37	1.0649	-9.66	147.06	137.40	-0.0233	0.3449	-9.90	121.05	2.0339	1.4633	3076.0	732.6
95	-59.80	0.01383	0.9296	72.31	1.0758	-9.44	146.87	137.43	-0.0227	0.3446	-9.68	121.08	2.0355	1.4643	3069.9	732.7
96	-59.34	0.01384	0.9202	72.25	1.0867	-9.22	146.69	137.47	-0.0222	0.3442	-9.47	121.11	2.0370	1.4653	3063.9	732.8
97	-58.89	0.01385	0.9111	72.19	1.0976	-9.01	146.51	137.50	-0.0216	0.3439	-9.25	121.14	2.0386	1.4663	3057.9	732.8
98	-58.43	0.01386	0.9021	72.13	1.1085	-8.79	146.33	137.54	-0.0211	0.3436	-9.04	121.17	2.0401	1.4674	3051.9	732.9
99	-57.98	0.01387	0.8933	72.08	1.1194	-8.58	146.15	137.57	-0.0206	0.3433	-8.83	121.19	2.0416	1.4684	3046.0	732.9
100	-57.54	0.01389	0.8847	72.02	1.1303	-8.37	145.97	137.60	-0.0201	0.3429	-8.63	121.22	2.0432	1.4694	3040.2	733.0
101	-57.10	0.01390	0.8763	71.96	1.1412	-8.16	145.80	137.64	-0.0196	0.3426	-8.42	121.25	2.0447	1.4704	3034.4	733.0
102	-56.66	0.01391	0.8680	71.90	1.1521	-7.95	145.62	137.67	-0.0191	0.3423	-8.21	121.28	2.0462	1.4715	3028.6	733.1
103	-56.22	0.01392	0.8598	71.85	1.1630	-7.75	145.45	137.70	-0.0185	0.3420	-8.01	121.30	2.0478	1.4725	3022.9	733.1
104	-55.79	0.01393	0.8519	71.79	1.1739	-7.54	145.27	137.73	-0.0180	0.3416	-7.81	121.33	2.0493	1.4735	3017.2	733.1
105	-55.36	0.01394	0.8440	71.74	1.1848	-7.34	145.10	137.76	-0.0176	0.3413	-7.61	121.35	2.0508	1.4746	3011.5	733.2
106	-54.93	0.01395	0.8363	71.68	1.1957	-7.13	144.92	137.79	-0.0171	0.3410	-7.41	121.38	2.0523	1.4756	3005.9	733.2
107	-54.51	0.01396	0.8287	71.63	1.2067	-6.93	144.75	137.82	-0.0166	0.3407	-7.21	121.40	2.0538	1.4766	3000.4	733.2
108	-54.09	0.01397	0.8213	71.57	1.2176	-6.73	144.58	137.85	-0.0161	0.3404	-7.01	121.43	2.0553	1.4777	2994.8	733.3
109	-53.67	0.01398	0.8140	71.52	1.2285	-6.54	144.42	137.88	-0.0156	0.3401	-6.82	121.45	2.0569	1.4787	2989.3	733.3
110	-53.25	0.01399	0.8068	71.46	1.2394	-6.34	144.25	137.91	-0.0151	0.3398	-6.62	121.48	2.0584	1.4798	2983.9	733.3
111	-52.84	0.01400	0.7998	71.41	1.2503	-6.14	144.08	137.94	-0.0146	0.3395	-6.43	121.50	2.0599	1.4808	2978.5	733.4
112	-52.43	0.01401	0.7929	71.36	1.2612	-5.95	143.92	137.97	-0.0142	0.3392	-6.24	121.53	2.0614	1.4819	2973.1	733.4
113	-52.03	0.01403	0.7861	71.30	1.2722	-5.75	143.75	138.00	-0.0137	0.3389	-6.05	121.55	2.0629	1.4829	2967.7	733.4
114	-51.62	0.01404	0.7794	71.25	1.2831	-5.56	143.58	138.02	-0.0132	0.3386	-5.86	121.57	2.0644	1.4839	2962.4	733.4
115	-51.22	0.01405	0.7728	71.20	1.2940	-5.37	143.42	138.05	-0.0128	0.3384	-5.67	121.59	2.0659	1.4850	2957.2	733.4

R-744

Carbon Dioxide

CO2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
116	-50.82	0.01406	0.7663	71.14	1.3049	-5.18	143.26	138.08	-0.0123	0.3381	-5.48	121.62	2.0674	1.4860	2951.9	733.5
117	-50.42	0.01407	0.7600	71.09	1.3159	-4.99	143.09	138.10	-0.0119	0.3378	-5.30	121.64	2.0689	1.4871	2946.7	733.5
118	-50.03	0.01408	0.7537	71.04	1.3268	-4.81	142.94	138.13	-0.0114	0.3375	-5.11	121.66	2.0704	1.4882	2941.5	733.5
119	-49.64	0.01409	0.7475	70.99	1.3377	-4.62	142.77	138.15	-0.0110	0.3372	-4.93	121.68	2.0719	1.4892	2936.4	733.5
120	-49.25	0.01410	0.7415	70.94	1.3487	-4.43	142.61	138.18	-0.0105	0.3370	-4.75	121.70	2.0733	1.4903	2931.3	733.5
121	-48.86	0.01411	0.7355	70.89	1.3596	-4.25	142.45	138.20	-0.0101	0.3367	-4.57	121.72	2.0748	1.4913	2926.2	733.5
122	-48.48	0.01412	0.7296	70.84	1.3706	-4.07	142.30	138.23	-0.0096	0.3364	-4.39	121.74	2.0763	1.4924	2921.1	733.5
123	-48.10	0.01413	0.7239	70.79	1.3815	-3.88	142.13	138.25	-0.0092	0.3362	-4.21	121.76	2.0778	1.4934	2916.1	733.5
124	-47.72	0.01414	0.7182	70.73	1.3925	-3.70	141.97	138.27	-0.0088	0.3359	-4.03	121.78	2.0793	1.4945	2911.1	733.5
125	-47.34	0.01415	0.7126	70.68	1.4034	-3.52	141.82	138.30	-0.0083	0.3356	-3.85	121.80	2.0808	1.4956	2906.2	733.5
126	-46.97	0.01416	0.7070	70.63	1.4144	-3.34	141.66	138.32	-0.0079	0.3354	-3.67	121.82	2.0822	1.4966	2901.2	733.5
127	-46.59	0.01417	0.7016	70.59	1.4253	-3.17	141.51	138.34	-0.0075	0.3351	-3.50	121.84	2.0837	1.4977	2896.3	733.5
128	-46.22	0.01418	0.6963	70.54	1.4363	-2.99	141.36	138.37	-0.0071	0.3348	-3.32	121.86	2.0852	1.4988	2891.4	733.5
129	-45.86	0.01419	0.6910	70.49	1.4472	-2.81	141.20	138.39	-0.0066	0.3346	-3.15	121.88	2.0867	1.4999	2886.6	733.5
130	-45.49	0.01420	0.6858	70.44	1.4582	-2.64	141.05	138.41	-0.0062	0.3343	-2.98	121.90	2.0881	1.5009	2881.8	733.5
131	-45.13	0.01421	0.6807	70.39	1.4692	-2.46	140.89	138.43	-0.0058	0.3341	-2.81	121.92	2.0896	1.5020	2877.0	733.5
132	-44.76	0.01422	0.6756	70.34	1.4801	-2.29	140.74	138.45	-0.0054	0.3338	-2.64	121.94	2.0911	1.5031	2872.2	733.5
133	-44.40	0.01423	0.6706	70.29	1.4911	-2.12	140.59	138.47	-0.0050	0.3336	-2.47	121.95	2.0926	1.5042	2867.5	733.5
134	-44.05	0.01424	0.6657	70.24	1.5021	-1.94	140.43	138.49	-0.0046	0.3333	-2.30	121.97	2.0940	1.5052	2862.8	733.5
135	-43.69	0.01425	0.6609	70.20	1.5131	-1.77	140.28	138.51	-0.0042	0.3331	-2.13	121.99	2.0955	1.5063	2858.1	733.5
136	-43.34	0.01426	0.6561	70.15	1.5241	-1.60	140.13	138.53	-0.0038	0.3328	-1.96	122.01	2.0970	1.5074	2853.4	733.5
137	-42.98	0.01427	0.6515	70.10	1.5350	-1.44	139.99	138.55	-0.0034	0.3326	-1.80	122.02	2.0984	1.5085	2848.8	733.4
138	-42.63	0.01428	0.6468	70.05	1.5460	-1.27	139.84	138.57	-0.0030	0.3323	-1.63	122.04	2.0999	1.5096	2844.1	733.4
139	-42.28	0.01428	0.6423	70.01	1.5570	-1.10	139.69	138.59	-0.0026	0.3321	-1.47	122.06	2.1014	1.5107	2839.5	733.4
140	-41.94	0.01429	0.6378	69.96	1.5680	-0.93	139.54	138.61	-0.0022	0.3319	-1.30	122.07	2.1028	1.5118	2835.0	733.4
141	-41.59	0.01430	0.6333	69.91	1.5790	-0.77	139.40	138.63	-0.0018	0.3316	-1.14	122.09	2.1043	1.5129	2830.4	733.4
142	-41.25	0.01431	0.6289	69.87	1.5900	-0.60	139.24	138.64	-0.0014	0.3314	-0.98	122.11	2.1057	1.5140	2825.9	733.3
143	-40.91	0.01432	0.6246	69.82	1.6010	-0.44	139.10	138.66	-0.0010	0.3311	-0.82	122.12	2.1072	1.5151	2821.4	733.3
144	-40.57	0.01433	0.6203	69.77	1.6120	-0.27	138.95	138.68	-0.0006	0.3309	-0.66	122.14	2.1087	1.5162	2816.9	733.3
145	-40.23	0.01434	0.6161	69.73	1.6231	-0.11	138.81	138.70	-0.0003	0.3307	-0.50	122.15	2.1101	1.5173	2812.5	733.3
146	-39.90	0.01435	0.6120	69.68	1.6341	0.05	138.66	138.71	0.0001	0.3305	-0.34	122.17	2.1116	1.5184	2808.0	733.3
147	-39.56	0.01436	0.6079	69.64	1.6451	0.21	138.52	138.73	0.0005	0.3302	-0.18	122.18	2.1130	1.5195	2803.6	733.2
148	-39.23	0.01437	0.6038	69.59	1.6561	0.37	138.38	138.75	0.0009	0.3300	-0.02	122.20	2.1145	1.5206	2799.2	733.2
149	-38.90	0.01438	0.5998	69.55	1.6672	0.53	138.23	138.76	0.0012	0.3298	0.13	122.21	2.1159	1.5217	2794.8	733.2
150	-38.57	0.01439	0.5959	69.50	1.6782	0.69	138.09	138.78	0.0016	0.3295	0.29	122.23	2.1174	1.5228	2790.5	733.1
151	-38.24	0.01440	0.5920	69.46	1.6892	0.85	137.94	138.79	0.0020	0.3293	0.45	122.24	2.1188	1.5239	2786.1	733.1
152	-37.92	0.01441	0.5881	69.41	1.7003	1.01	137.80	138.81	0.0024	0.3291	0.60	122.26	2.1203	1.5250	2781.8	733.1
153	-37.59	0.01442	0.5843	69.37	1.7113	1.16	137.67	138.83	0.0027	0.3289	0.75	122.27	2.1217	1.5261	2777.5	733.0
154	-37.27	0.01443	0.5806	69.32	1.7224	1.32	137.52	138.84	0.0031	0.3287	0.91	122.28	2.1232	1.5273	2773.3	733.0
155	-36.95	0.01444	0.5769	69.28	1.7334	1.47	137.39	138.86	0.0034	0.3284	1.06	122.30	2.1247	1.5284	2769.0	733.0



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
156	-36.63	0.01444	0.5732	69.23	1.7445	1.63	137.24	138.87	0.0038	0.3282	1.21	122.31	2.1261	1.5295	2764.8	732.9
157	-36.31	0.01445	0.5696	69.19	1.7556	1.78	137.10	138.88	0.0042	0.3280	1.36	122.32	2.1276	1.5306	2760.6	732.9
158	-35.99	0.01446	0.5661	69.15	1.7666	1.94	136.96	138.90	0.0045	0.3278	1.51	122.34	2.1290	1.5317	2756.4	732.9
159	-35.68	0.01447	0.5625	69.10	1.7777	2.09	136.82	138.91	0.0049	0.3276	1.66	122.35	2.1305	1.5329	2752.2	732.8
160	-35.36	0.01448	0.5590	69.06	1.7888	2.24	136.69	138.93	0.0052	0.3274	1.81	122.36	2.1319	1.5340	2748.0	732.8
161	-35.05	0.01449	0.5556	69.02	1.7999	2.39	136.55	138.94	0.0056	0.3272	1.96	122.37	2.1334	1.5351	2743.9	732.8
162	-34.74	0.01450	0.5522	68.97	1.8109	2.54	136.41	138.95	0.0059	0.3269	2.11	122.39	2.1348	1.5363	2739.8	732.7
163	-34.43	0.01451	0.5488	68.93	1.8220	2.69	136.28	138.97	0.0063	0.3267	2.26	122.40	2.1362	1.5374	2735.7	732.7
164	-34.12	0.01452	0.5455	68.89	1.8331	2.84	136.14	138.98	0.0066	0.3265	2.40	122.41	2.1377	1.5385	2731.6	732.6
165	-33.82	0.01453	0.5422	68.84	1.8442	2.99	136.00	138.99	0.0070	0.3263	2.55	122.42	2.1391	1.5397	2727.5	732.6
166	-33.51	0.01454	0.5390	68.80	1.8553	3.14	135.86	139.00	0.0073	0.3261	2.69	122.44	2.1406	1.5408	2723.5	732.5
167	-33.21	0.01454	0.5358	68.76	1.8664	3.29	135.72	139.01	0.0076	0.3259	2.84	122.45	2.1420	1.5420	2719.4	732.5
168	-32.91	0.01455	0.5326	68.72	1.8776	3.44	135.59	139.03	0.0080	0.3257	2.98	122.46	2.1435	1.5431	2715.4	732.4
169	-32.60	0.01456	0.5295	68.67	1.8887	3.58	135.46	139.04	0.0083	0.3255	3.13	122.47	2.1449	1.5443	2711.4	732.4
170	-32.30	0.01457	0.5264	68.63	1.8998	3.73	135.32	139.05	0.0087	0.3253	3.27	122.48	2.1464	1.5454	2707.4	732.4
171	-32.01	0.01458	0.5233	68.59	1.9109	3.88	135.18	139.06	0.0090	0.3251	3.41	122.49	2.1478	1.5466	2703.4	732.3
172	-31.71	0.01459	0.5203	68.55	1.9221	4.02	135.05	139.07	0.0093	0.3249	3.56	122.50	2.1493	1.5477	2699.5	732.3
173	-31.41	0.01460	0.5173	68.51	1.9332	4.16	134.92	139.08	0.0097	0.3247	3.70	122.51	2.1507	1.5489	2695.5	732.2
174	-31.12	0.01461	0.5143	68.47	1.9443	4.31	134.78	139.09	0.0100	0.3245	3.84	122.52	2.1522	1.5501	2691.6	732.2
175	-30.82	0.01462	0.5114	68.42	1.9555	4.45	134.66	139.11	0.0103	0.3243	3.98	122.53	2.1536	1.5512	2687.7	732.1
176	-30.53	0.01462	0.5085	68.38	1.9666	4.59	134.53	139.12	0.0106	0.3241	4.12	122.54	2.1551	1.5524	2683.8	732.1
177	-30.24	0.01463	0.5056	68.34	1.9778	4.74	134.39	139.13	0.0110	0.3239	4.26	122.55	2.1565	1.5536	2679.9	732.0
178	-29.95	0.01464	0.5028	68.30	1.9890	4.88	134.26	139.14	0.0113	0.3237	4.40	122.56	2.1580	1.5547	2676.0	731.9
179	-29.66	0.01465	0.5000	68.26	2.0001	5.02	134.13	139.15	0.0116	0.3235	4.53	122.57	2.1594	1.5559	2672.2	731.9
180	-29.37	0.01466	0.4972	68.22	2.0113	5.16	134.00	139.16	0.0119	0.3233	4.67	122.58	2.1608	1.5571	2668.4	731.8
181	-29.09	0.01467	0.4944	68.18	2.0225	5.30	133.86	139.16	0.0122	0.3231	4.81	122.59	2.1623	1.5583	2664.5	731.8
182	-28.80	0.01468	0.4917	68.14	2.0337	5.44	133.73	139.17	0.0126	0.3230	4.95	122.60	2.1637	1.5594	2660.7	731.7
183	-28.52	0.01469	0.4890	68.10	2.0449	5.58	133.60	139.18	0.0129	0.3228	5.08	122.61	2.1652	1.5606	2656.9	731.7
184	-28.24	0.01469	0.4864	68.06	2.0560	5.72	133.47	139.19	0.0132	0.3226	5.22	122.62	2.1666	1.5618	2653.2	731.6
185	-27.95	0.01470	0.4837	68.02	2.0672	5.86	133.34	139.20	0.0135	0.3224	5.35	122.63	2.1681	1.5630	2649.4	731.6
186	-27.67	0.01471	0.4811	67.98	2.0785	5.99	133.22	139.21	0.0138	0.3222	5.49	122.64	2.1695	1.5642	2645.6	731.5
187	-27.39	0.01472	0.4786	67.94	2.0897	6.13	133.09	139.22	0.0141	0.3220	5.62	122.65	2.1710	1.5654	2641.9	731.4
188	-27.11	0.01473	0.4760	67.90	2.1009	6.27	132.96	139.23	0.0144	0.3218	5.76	122.66	2.1724	1.5666	2638.2	731.4
189	-26.84	0.01474	0.4735	67.86	2.1121	6.40	132.83	139.23	0.0148	0.3216	5.89	122.66	2.1739	1.5678	2634.5	731.3
190	-26.56	0.01475	0.4710	67.82	2.1233	6.54	132.70	139.24	0.0151	0.3215	6.02	122.67	2.1753	1.5690	2630.8	731.3
191	-26.29	0.01475	0.4685	67.78	2.1346	6.68	132.57	139.25	0.0154	0.3213	6.15	122.68	2.1768	1.5702	2627.1	731.2
192	-26.01	0.01476	0.4660	67.74	2.1458	6.81	132.45	139.26	0.0157	0.3211	6.29	122.69	2.1782	1.5714	2623.4	731.1
193	-25.74	0.01477	0.4636	67.70	2.1570	6.94	132.32	139.26	0.0160	0.3209	6.42	122.70	2.1797	1.5726	2619.7	731.1
194	-25.47	0.01478	0.4612	67.66	2.1683	7.08	132.19	139.27	0.0163	0.3207	6.55	122.70	2.1811	1.5738	2616.1	731.0
195	-25.20	0.01479	0.4588	67.62	2.1795	7.21	132.07	139.28	0.0166	0.3206	6.68	122.71	2.1826	1.5750	2612.5	730.9



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
196	-24.93	0.01480	0.4565	67.58	2.1908	7.35	131.94	139.29	0.0169	0.3204	6.81	122.72	2.1840	1.5762	2608.8	730.9
197	-24.66	0.01481	0.4541	67.54	2.2021	7.48	131.81	139.29	0.0172	0.3202	6.94	122.73	2.1855	1.5774	2605.2	730.8
198	-24.39	0.01481	0.4518	67.50	2.2133	7.61	131.69	139.30	0.0175	0.3200	7.07	122.73	2.1869	1.5786	2601.6	730.7
199	-24.12	0.01482	0.4495	67.47	2.2246	7.74	131.57	139.31	0.0178	0.3198	7.20	122.74	2.1884	1.5798	2598.0	730.7
200	-23.86	0.01483	0.4473	67.43	2.2359	7.87	131.44	139.31	0.0181	0.3197	7.32	122.75	2.1898	1.5811	2594.5	730.6
201	-23.59	0.01484	0.4450	67.39	2.2472	8.00	131.32	139.32	0.0184	0.3195	7.45	122.76	2.1913	1.5823	2590.9	730.5
202	-23.33	0.01485	0.4428	67.35	2.2585	8.13	131.19	139.32	0.0187	0.3193	7.58	122.76	2.1927	1.5835	2587.3	730.5
203	-23.06	0.01486	0.4406	67.31	2.2698	8.26	131.07	139.33	0.0189	0.3191	7.71	122.77	2.1942	1.5848	2583.8	730.4
204	-22.80	0.01487	0.4384	67.27	2.2811	8.39	130.95	139.34	0.0192	0.3190	7.83	122.78	2.1956	1.5860	2580.3	730.3
205	-22.54	0.01487	0.4362	67.24	2.2924	8.52	130.82	139.34	0.0195	0.3188	7.96	122.78	2.1971	1.5872	2576.7	730.3
206	-22.28	0.01488	0.4341	67.20	2.3037	8.65	130.70	139.35	0.0198	0.3186	8.08	122.79	2.1986	1.5885	2573.2	730.2
207	-22.02	0.01489	0.4320	67.16	2.3151	8.78	130.57	139.35	0.0201	0.3185	8.21	122.79	2.2000	1.5897	2569.7	730.1
208	-21.76	0.01490	0.4299	67.12	2.3264	8.91	130.45	139.36	0.0204	0.3183	8.34	122.80	2.2015	1.5909	2566.2	730.0
209	-21.51	0.01491	0.4278	67.08	2.3377	9.04	130.32	139.36	0.0207	0.3181	8.46	122.81	2.2029	1.5922	2562.8	730.0
210	-21.25	0.01492	0.4257	67.05	2.3491	9.16	130.21	139.37	0.0210	0.3179	8.58	122.81	2.2044	1.5934	2559.3	729.9
211	-20.99	0.01492	0.4237	67.01	2.3604	9.29	130.08	139.37	0.0212	0.3178	8.71	122.82	2.2059	1.5947	2555.9	729.8
212	-20.74	0.01493	0.4216	66.97	2.3718	9.42	129.96	139.38	0.0215	0.3176	8.83	122.82	2.2073	1.5959	2552.4	729.8
213	-20.48	0.01494	0.4196	66.93	2.3831	9.54	129.84	139.38	0.0218	0.3174	8.95	122.83	2.2088	1.5972	2549.0	729.7
214	-20.23	0.01495	0.4176	66.90	2.3945	9.67	129.72	139.39	0.0221	0.3173	9.08	122.84	2.2102	1.5985	2545.6	729.6
215	-19.98	0.01496	0.4157	66.86	2.4059	9.79	129.60	139.39	0.0224	0.3171	9.20	122.84	2.2117	1.5997	2542.1	729.5
216	-19.73	0.01497	0.4137	66.82	2.4173	9.92	129.47	139.39	0.0226	0.3169	9.32	122.85	2.2132	1.6010	2538.7	729.5
217	-19.48	0.01497	0.4118	66.78	2.4287	10.04	129.36	139.40	0.0229	0.3168	9.44	122.85	2.2146	1.6023	2535.3	729.4
218	-19.23	0.01498	0.4098	66.75	2.4400	10.17	129.23	139.40	0.0232	0.3166	9.56	122.86	2.2161	1.6035	2532.0	729.3
219	-18.98	0.01499	0.4079	66.71	2.4514	10.29	129.11	139.40	0.0235	0.3164	9.68	122.86	2.2176	1.6048	2528.6	729.2
220	-18.73	0.01500	0.4060	66.67	2.4629	10.42	128.99	139.41	0.0237	0.3163	9.81	122.87	2.2190	1.6061	2525.2	729.1
221	-18.48	0.01501	0.4042	66.64	2.4743	10.54	128.87	139.41	0.0240	0.3161	9.93	122.87	2.2205	1.6073	2521.9	729.1
222	-18.24	0.01502	0.4023	66.60	2.4857	10.66	128.75	139.41	0.0243	0.3160	10.05	122.88	2.2220	1.6086	2518.5	729.0
223	-17.99	0.01502	0.4005	66.56	2.4971	10.79	128.64	139.42	0.0246	0.3158	10.17	122.88	2.2234	1.6099	2515.2	728.9
224	-17.75	0.01503	0.3986	66.53	2.5085	10.91	128.51	139.42	0.0248	0.3156	10.28	122.89	2.2249	1.6112	2511.8	728.8
225	-17.50	0.01504	0.3968	66.49	2.5200	11.03	128.39	139.42	0.0251	0.3155	10.40	122.89	2.2264	1.6125	2508.5	728.7
226	-17.26	0.01505	0.3950	66.45	2.5314	11.15	128.28	139.43	0.0254	0.3153	10.52	122.89	2.2278	1.6138	2505.2	728.7
227	-17.02	0.01506	0.3933	66.42	2.5429	11.27	128.16	139.43	0.0256	0.3152	10.64	122.90	2.2293	1.6151	2501.9	728.6
228	-16.78	0.01506	0.3915	66.38	2.5543	11.39	128.04	139.43	0.0259	0.3150	10.76	122.90	2.2308	1.6164	2498.6	728.5
229	-16.54	0.01507	0.3897	66.35	2.5658	11.51	127.92	139.43	0.0262	0.3148	10.87	122.91	2.2323	1.6177	2495.3	728.4
230	-16.30	0.01508	0.3880	66.31	2.5773	11.63	127.81	139.44	0.0264	0.3147	10.99	122.91	2.2337	1.6190	2492.1	728.3
231	-16.06	0.01509	0.3863	66.27	2.5888	11.75	127.69	139.44	0.0267	0.3145	11.11	122.91	2.2352	1.6203	2488.8	728.3
232	-15.82	0.01510	0.3846	66.24	2.6003	11.87	127.57	139.44	0.0270	0.3144	11.22	122.92	2.2367	1.6216	2485.6	728.2
233	-15.58	0.01511	0.3829	66.20	2.6117	11.99	127.45	139.44	0.0272	0.3142	11.34	122.92	2.2382	1.6229	2482.3	728.1
234	-15.34	0.01511	0.3812	66.17	2.6232	12.11	127.33	139.44	0.0275	0.3141	11.46	122.93	2.2396	1.6242	2479.1	728.0
235	-15.11	0.01512	0.3795	66.13	2.6348	12.23	127.21	139.44	0.0277	0.3139	11.57	122.93	2.2411	1.6255	2475.8	727.9



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
236	-14.87	0.01513	0.3779	66.10	2.6463	12.35	127.10	139.45	0.0280	0.3137	11.69	122.93	2.2426	1.6268	2472.6	727.8
237	-14.64	0.01514	0.3763	66.06	2.6578	12.47	126.99	139.45	0.0283	0.3136	11.80	122.94	2.2441	1.6282	2469.4	727.8
238	-14.40	0.01515	0.3746	66.02	2.6693	12.58	126.87	139.45	0.0285	0.3134	11.92	122.94	2.2456	1.6295	2466.2	727.7
239	-14.17	0.01515	0.3730	65.99	2.6809	12.70	126.75	139.45	0.0288	0.3133	12.03	122.94	2.2470	1.6308	2463.0	727.6
240	-13.94	0.01516	0.3714	65.95	2.6924	12.82	126.63	139.45	0.0290	0.3131	12.14	122.94	2.2485	1.6321	2459.8	727.5
241	-13.71	0.01517	0.3698	65.92	2.7039	12.93	126.52	139.45	0.0293	0.3130	12.26	122.95	2.2500	1.6335	2456.6	727.4
242	-13.47	0.01518	0.3683	65.88	2.7155	13.05	126.40	139.45	0.0295	0.3128	12.37	122.95	2.2515	1.6348	2453.4	727.3
243	-13.24	0.01519	0.3667	65.85	2.7271	13.17	126.28	139.45	0.0298	0.3127	12.48	122.95	2.2530	1.6361	2450.3	727.2
244	-13.01	0.01520	0.3652	65.81	2.7386	13.28	126.17	139.45	0.0300	0.3125	12.60	122.96	2.2545	1.6375	2447.1	727.1
245	-12.79	0.01520	0.3636	65.78	2.7502	13.40	126.05	139.45	0.0303	0.3124	12.71	122.96	2.2560	1.6388	2444.0	727.1
246	-12.56	0.01521	0.3621	65.74	2.7618	13.51	125.94	139.45	0.0306	0.3122	12.82	122.96	2.2575	1.6402	2440.8	727.0
247	-12.33	0.01522	0.3606	65.71	2.7734	13.63	125.82	139.45	0.0308	0.3121	12.93	122.96	2.2589	1.6415	2437.7	726.9
248	-12.10	0.01523	0.3591	65.67	2.7850	13.74	125.71	139.45	0.0311	0.3119	13.04	122.97	2.2604	1.6429	2434.5	726.8
249	-11.88	0.01524	0.3576	65.64	2.7966	13.86	125.59	139.45	0.0313	0.3118	13.16	122.97	2.2619	1.6442	2431.4	726.7
250	-11.65	0.01524	0.3561	65.60	2.8082	13.97	125.48	139.45	0.0315	0.3116	13.27	122.97	2.2634	1.6456	2428.3	726.6
251	-11.43	0.01525	0.3546	65.57	2.8198	14.09	125.37	139.45	0.0318	0.3115	13.38	122.97	2.2649	1.6469	2425.2	726.5
252	-11.20	0.01526	0.3532	65.54	2.8315	14.20	125.25	139.45	0.0320	0.3113	13.49	122.97	2.2664	1.6483	2422.1	726.4
253	-10.98	0.01527	0.3517	65.50	2.8431	14.31	125.14	139.45	0.0323	0.3112	13.60	122.98	2.2679	1.6497	2419.0	726.3
254	-10.75	0.01528	0.3503	65.47	2.8547	14.43	125.03	139.45	0.0325	0.3111	13.71	122.98	2.2694	1.6510	2415.9	726.2
255	-10.53	0.01528	0.3489	65.43	2.8664	14.54	124.91	139.45	0.0328	0.3109	13.82	122.98	2.2709	1.6524	2412.8	726.1
256	-10.31	0.01529	0.3475	65.40	2.8781	14.65	124.80	139.45	0.0330	0.3108	13.93	122.98	2.2724	1.6538	2409.7	726.0
257	-10.09	0.01530	0.3461	65.36	2.8897	14.76	124.69	139.45	0.0333	0.3106	14.03	122.98	2.2739	1.6552	2406.7	726.0
258	-9.87	0.01531	0.3447	65.33	2.9014	14.87	124.58	139.45	0.0335	0.3105	14.14	122.98	2.2754	1.6566	2403.6	725.9
259	-9.65	0.01532	0.3433	65.29	2.9131	14.99	124.46	139.45	0.0338	0.3103	14.25	122.99	2.2769	1.6579	2400.6	725.8
260	-9.43	0.01532	0.3419	65.26	2.9248	15.10	124.35	139.45	0.0340	0.3102	14.36	122.99	2.2784	1.6593	2397.5	725.7
261	-9.21	0.01533	0.3406	65.23	2.9365	15.21	124.24	139.45	0.0342	0.3100	14.47	122.99	2.2799	1.6607	2394.5	725.6
262	-8.99	0.01534	0.3392	65.19	2.9482	15.32	124.12	139.44	0.0345	0.3099	14.58	122.99	2.2814	1.6621	2391.4	725.5
263	-8.77	0.01535	0.3379	65.16	2.9599	15.43	124.01	139.44	0.0347	0.3098	14.68	122.99	2.2830	1.6635	2388.4	725.4
264	-8.56	0.01536	0.3365	65.13	2.9716	15.54	123.90	139.44	0.0350	0.3096	14.79	122.99	2.2845	1.6649	2385.4	725.3
265	-8.34	0.01536	0.3352	65.09	2.9833	15.65	123.79	139.44	0.0352	0.3095	14.90	122.99	2.2860	1.6663	2382.4	725.2
266	-8.13	0.01537	0.3339	65.06	2.9951	15.76	123.68	139.44	0.0354	0.3093	15.00	122.99	2.2875	1.6677	2379.3	725.1
267	-7.91	0.01538	0.3326	65.02	3.0068	15.87	123.57	139.44	0.0357	0.3092	15.11	122.99	2.2890	1.6691	2376.3	725.0
268	-7.70	0.01539	0.3313	64.99	3.0185	15.98	123.45	139.43	0.0359	0.3090	15.22	122.99	2.2905	1.6705	2373.3	724.9
269	-7.48	0.01540	0.3300	64.96	3.0303	16.09	123.34	139.43	0.0361	0.3089	15.32	122.99	2.2920	1.6720	2370.3	724.8
270	-7.27	0.01540	0.3287	64.92	3.0421	16.20	123.23	139.43	0.0364	0.3088	15.43	122.99	2.2935	1.6734	2367.4	724.7
271	-7.06	0.01541	0.3275	64.89	3.0538	16.31	123.12	139.43	0.0366	0.3086	15.53	123.00	2.2951	1.6748	2364.4	724.6
272	-6.84	0.01542	0.3262	64.86	3.0656	16.41	123.02	139.43	0.0368	0.3085	15.64	123.00	2.2966	1.6762	2361.4	724.5
273	-6.63	0.01543	0.3250	64.82	3.0774	16.52	122.90	139.42	0.0371	0.3084	15.74	123.00	2.2981	1.6777	2358.4	724.4
274	-6.42	0.01544	0.3237	64.79	3.0892	16.63	122.79	139.42	0.0373	0.3082	15.85	123.00	2.2996	1.6791	2355.5	724.3
275	-6.21	0.01544	0.3225	64.76	3.1010	16.74	122.68	139.42	0.0375	0.3081	15.95	123.00	2.3011	1.6805	2352.5	724.2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
276	-6.00	0.01545	0.3213	64.72	3.1128	16.85	122.56	139.41	0.0378	0.3079	16.06	123.00	2.3027	1.6820	2349.6	724.1
277	-5.79	0.01546	0.3200	64.69	3.1247	16.95	122.46	139.41	0.0380	0.3078	16.16	123.00	2.3042	1.6834	2346.6	724.0
278	-5.58	0.01547	0.3188	64.66	3.1365	17.06	122.35	139.41	0.0382	0.3077	16.26	123.00	2.3057	1.6848	2343.7	723.9
279	-5.38	0.01547	0.3176	64.62	3.1483	17.17	122.24	139.41	0.0384	0.3075	16.37	123.00	2.3072	1.6863	2340.7	723.8
280	-5.17	0.01548	0.3164	64.59	3.1602	17.27	122.13	139.40	0.0387	0.3074	16.47	123.00	2.3087	1.6877	2337.8	723.7
281	-4.96	0.01549	0.3153	64.56	3.1720	17.38	122.02	139.40	0.0389	0.3073	16.57	123.00	2.3103	1.6892	2334.9	723.6
282	-4.75	0.01550	0.3141	64.53	3.1839	17.49	121.91	139.40	0.0391	0.3071	16.68	123.00	2.3118	1.6906	2331.9	723.5
283	-4.55	0.01551	0.3129	64.49	3.1958	17.59	121.80	139.39	0.0394	0.3070	16.78	122.99	2.3133	1.6921	2329.0	723.4
284	-4.34	0.01551	0.3118	64.46	3.2076	17.70	121.69	139.39	0.0396	0.3069	16.88	122.99	2.3149	1.6936	2326.1	723.3
285	-4.14	0.01552	0.3106	64.43	3.2195	17.80	121.59	139.39	0.0398	0.3067	16.98	122.99	2.3164	1.6950	2323.2	723.2
286	-3.93	0.01553	0.3095	64.39	3.2314	17.91	121.47	139.38	0.0400	0.3066	17.09	122.99	2.3179	1.6965	2320.3	723.1
287	-3.73	0.01554	0.3083	64.36	3.2433	18.01	121.37	139.38	0.0403	0.3064	17.19	122.99	2.3195	1.6980	2317.4	723.0
288	-3.53	0.01555	0.3072	64.33	3.2552	18.12	121.25	139.37	0.0405	0.3063	17.29	122.99	2.3210	1.6995	2314.5	722.9
289	-3.32	0.01555	0.3061	64.30	3.2672	18.22	121.15	139.37	0.0407	0.3062	17.39	122.99	2.3225	1.7009	2311.6	722.8
290	-3.12	0.01556	0.3050	64.26	3.2791	18.33	121.04	139.37	0.0409	0.3060	17.49	122.99	2.3241	1.7024	2308.8	722.7
291	-2.92	0.01557	0.3039	64.23	3.2910	18.43	120.93	139.36	0.0411	0.3059	17.59	122.99	2.3256	1.7039	2305.9	722.6
292	-2.72	0.01558	0.3028	64.20	3.3030	18.54	120.83	139.36	0.0414	0.3058	17.69	122.99	2.3271	1.7054	2303.0	722.5
293	-2.52	0.01559	0.3017	64.17	3.3149	18.64	120.71	139.35	0.0416	0.3057	17.79	122.99	2.3287	1.7069	2300.1	722.4
294	-2.32	0.01559	0.3006	64.13	3.3269	18.74	120.61	139.35	0.0418	0.3055	17.89	122.99	2.3302	1.7084	2297.3	722.3
295	-2.12	0.01560	0.2995	64.10	3.3389	18.85	120.50	139.34	0.0420	0.3054	17.99	122.98	2.3318	1.7099	2294.4	722.2
296	-1.92	0.01561	0.2984	64.07	3.3508	18.95	120.39	139.34	0.0422	0.3053	18.09	122.98	2.3333	1.7114	2291.6	722.0
297	-1.72	0.01562	0.2974	64.04	3.3628	19.05	120.29	139.34	0.0425	0.3051	18.19	122.98	2.3348	1.7129	2288.7	721.9
298	-1.52	0.01562	0.2963	64.01	3.3748	19.15	120.18	139.33	0.0427	0.3050	18.29	122.98	2.3364	1.7144	2285.9	721.8
299	-1.32	0.01563	0.2953	63.97	3.3868	19.26	120.07	139.33	0.0429	0.3049	18.39	122.98	2.3379	1.7159	2283.0	721.7
300	-1.12	0.01564	0.2942	63.94	3.3988	19.36	119.96	139.32	0.0431	0.3047	18.49	122.98	2.3395	1.7175	2280.2	721.6
301	-0.93	0.01565	0.2932	63.91	3.4109	19.46	119.86	139.32	0.0433	0.3046	18.59	122.97	2.3410	1.7190	2277.4	721.5
302	-0.73	0.01566	0.2922	63.88	3.4229	19.56	119.75	139.31	0.0436	0.3045	18.69	122.97	2.3426	1.7205	2274.5	721.4
303	-0.53	0.01566	0.2911	63.84	3.4349	19.67	119.65	139.31	0.0438	0.3043	18.79	122.97	2.3441	1.7220	2271.7	721.3
304	-0.34	0.01567	0.2901	63.81	3.4470	19.77	119.53	139.30	0.0440	0.3042	18.88	122.97	2.3457	1.7236	2268.9	721.2
305	-0.14	0.01568	0.2891	63.78	3.4590	19.87	119.42	139.29	0.0442	0.3041	18.98	122.97	2.3472	1.7251	2266.1	721.1
306	0.05	0.01569	0.2881	63.75	3.4711	19.97	119.32	139.29	0.0444	0.3040	19.08	122.97	2.3488	1.7267	2263.3	721.0
307	0.24	0.01569	0.2871	63.72	3.4832	20.07	119.21	139.28	0.0446	0.3038	19.18	122.96	2.3503	1.7282	2260.5	720.9
308	0.44	0.01570	0.2861	63.69	3.4953	20.17	119.11	139.28	0.0448	0.3037	19.28	122.96	2.3519	1.7297	2257.7	720.7
309	0.63	0.01571	0.2851	63.65	3.5074	20.27	119.00	139.27	0.0450	0.3036	19.37	122.96	2.3534	1.7313	2254.9	720.6
310	0.82	0.01572	0.2841	63.62	3.5195	20.37	118.90	139.27	0.0453	0.3035	19.47	122.96	2.3550	1.7329	2252.1	720.5
311	1.02	0.01573	0.2832	63.59	3.5316	20.47	118.79	139.26	0.0455	0.3033	19.57	122.95	2.3565	1.7344	2249.3	720.4
312	1.21	0.01573	0.2822	63.56	3.5437	20.57	118.69	139.26	0.0457	0.3032	19.66	122.95	2.3581	1.7360	2246.5	720.3
313	1.40	0.01574	0.2812	63.53	3.5558	20.67	118.58	139.25	0.0459	0.3031	19.76	122.95	2.3596	1.7375	2243.7	720.2
314	1.59	0.01575	0.2803	63.50	3.5680	20.77	118.47	139.24	0.0461	0.3029	19.86	122.95	2.3612	1.7391	2240.9	720.1
315	1.78	0.01576	0.2793	63.46	3.5801	20.87	118.37	139.24	0.0463	0.3028	19.95	122.94	2.3628	1.7407	2238.1	720.0



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
316	1.97	0.01577	0.2784	63.43	3.5923	20.97	118.26	139.23	0.0465	0.3027	20.05	122.94	2.3643	1.7423	2235.4	719.9
317	2.16	0.01577	0.2774	63.40	3.6044	21.07	118.15	139.22	0.0467	0.3026	20.14	122.94	2.3659	1.7438	2232.6	719.7
318	2.35	0.01578	0.2765	63.37	3.6166	21.17	118.05	139.22	0.0469	0.3024	20.24	122.94	2.3674	1.7454	2229.8	719.6
319	2.54	0.01579	0.2756	63.34	3.6288	21.27	117.94	139.21	0.0471	0.3023	20.33	122.93	2.3690	1.7470	2227.1	719.5
320	2.73	0.01580	0.2747	63.31	3.6410	21.37	117.83	139.20	0.0474	0.3022	20.43	122.93	2.3706	1.7486	2224.3	719.4
321	2.92	0.01580	0.2737	63.28	3.6532	21.46	117.74	139.20	0.0476	0.3021	20.53	122.93	2.3721	1.7502	2221.6	719.3
322	3.10	0.01581	0.2728	63.24	3.6654	21.56	117.63	139.19	0.0478	0.3020	20.62	122.92	2.3737	1.7518	2218.8	719.2
323	3.29	0.01582	0.2719	63.21	3.6776	21.66	117.52	139.18	0.0480	0.3018	20.71	122.92	2.3753	1.7534	2216.1	719.1
324	3.48	0.01583	0.2710	63.18	3.6899	21.76	117.42	139.18	0.0482	0.3017	20.81	122.92	2.3768	1.7550	2213.3	719.0
325	3.66	0.01584	0.2701	63.15	3.7021	21.86	117.31	139.17	0.0484	0.3016	20.90	122.91	2.3784	1.7566	2210.6	718.8
326	3.85	0.01584	0.2692	63.12	3.7143	21.95	117.21	139.16	0.0486	0.3015	21.00	122.91	2.3800	1.7583	2207.9	718.7
327	4.03	0.01585	0.2683	63.09	3.7266	22.05	117.11	139.16	0.0488	0.3013	21.09	122.91	2.3815	1.7599	2205.1	718.6
328	4.22	0.01586	0.2675	63.06	3.7389	22.15	117.00	139.15	0.0490	0.3012	21.19	122.90	2.3831	1.7615	2202.4	718.5
329	4.40	0.01587	0.2666	63.03	3.7512	22.25	116.90	139.14	0.0492	0.3011	21.28	122.90	2.3847	1.7631	2199.7	718.4
330	4.59	0.01587	0.2657	63.00	3.7634	22.34	116.79	139.13	0.0494	0.3010	21.37	122.90	2.3863	1.7648	2197.0	718.3
331	4.77	0.01588	0.2649	62.97	3.7757	22.44	116.69	139.13	0.0496	0.3008	21.47	122.89	2.3878	1.7664	2194.2	718.2
332	4.95	0.01589	0.2640	62.93	3.7880	22.54	116.58	139.12	0.0498	0.3007	21.56	122.89	2.3894	1.7681	2191.5	718.0
333	5.14	0.01590	0.2631	62.90	3.8004	22.63	116.48	139.11	0.0500	0.3006	21.65	122.89	2.3910	1.7697	2188.8	717.9
334	5.32	0.01591	0.2623	62.87	3.8127	22.73	116.37	139.10	0.0502	0.3005	21.75	122.88	2.3926	1.7714	2186.1	717.8
335	5.50	0.01591	0.2614	62.84	3.8250	22.82	116.28	139.10	0.0504	0.3004	21.84	122.88	2.3941	1.7730	2183.4	717.7
336	5.68	0.01592	0.2606	62.81	3.8374	22.92	116.17	139.09	0.0506	0.3002	21.93	122.88	2.3957	1.7747	2180.7	717.6
337	5.86	0.01593	0.2598	62.78	3.8497	23.02	116.06	139.08	0.0508	0.3001	22.02	122.87	2.3973	1.7763	2178.0	717.5
338	6.05	0.01594	0.2589	62.75	3.8621	23.11	115.96	139.07	0.0510	0.3000	22.11	122.87	2.3989	1.7780	2175.3	717.3
339	6.23	0.01594	0.2581	62.72	3.8745	23.21	115.85	139.06	0.0512	0.2999	22.21	122.86	2.4005	1.7797	2172.6	717.2
340	6.41	0.01595	0.2573	62.69	3.8868	23.30	115.76	139.06	0.0514	0.2998	22.30	122.86	2.4020	1.7814	2169.9	717.1
341	6.59	0.01596	0.2565	62.66	3.8992	23.40	115.65	139.05	0.0516	0.2996	22.39	122.85	2.4036	1.7830	2167.2	717.0
342	6.77	0.01597	0.2557	62.63	3.9116	23.49	115.55	139.04	0.0518	0.2995	22.48	122.85	2.4052	1.7847	2164.5	716.9
343	6.94	0.01598	0.2548	62.60	3.9241	23.59	115.44	139.03	0.0520	0.2994	22.57	122.85	2.4068	1.7864	2161.9	716.8
344	7.12	0.01598	0.2540	62.57	3.9365	23.68	115.34	139.02	0.0522	0.2993	22.66	122.84	2.4084	1.7881	2159.2	716.6
345	7.30	0.01599	0.2532	62.54	3.9489	23.78	115.24	139.02	0.0524	0.2992	22.76	122.84	2.4100	1.7898	2156.5	716.5
346	7.48	0.01600	0.2524	62.51	3.9614	23.87	115.14	139.01	0.0526	0.2990	22.85	122.83	2.4115	1.7915	2153.8	716.4
347	7.66	0.01601	0.2517	62.47	3.9738	23.97	115.04	139.00	0.0528	0.2989	22.94	122.83	2.4131	1.7932	2151.2	716.3
348	7.83	0.01601	0.2509	62.44	3.9863	24.06	114.93	138.99	0.0530	0.2988	23.03	122.82	2.4147	1.7949	2148.5	716.2
349	8.01	0.01602	0.2501	62.41	3.9987	24.15	114.83	138.98	0.0532	0.2987	23.12	122.82	2.4163	1.7966	2145.8	716.1
350	8.19	0.01603	0.2493	62.38	4.0112	24.25	114.72	138.97	0.0534	0.2986	23.21	122.81	2.4179	1.7984	2143.2	715.9
351	8.36	0.01604	0.2485	62.35	4.0237	24.34	114.62	138.96	0.0536	0.2985	23.30	122.81	2.4195	1.8001	2140.5	715.8
352	8.54	0.01605	0.2478	62.32	4.0362	24.43	114.52	138.95	0.0537	0.2983	23.39	122.80	2.4211	1.8018	2137.9	715.7
353	8.71	0.01605	0.2470	62.29	4.0487	24.53	114.41	138.94	0.0539	0.2982	23.48	122.80	2.4227	1.8036	2135.2	715.6
354	8.89	0.01606	0.2462	62.26	4.0613	24.62	114.32	138.94	0.0541	0.2981	23.57	122.80	2.4243	1.8053	2132.6	715.5
355	9.06	0.01607	0.2455	62.23	4.0738	24.71	114.22	138.93	0.0543	0.2980	23.66	122.79	2.4259	1.8070	2129.9	715.3



Pressure (psia)	Temp. (°F)	Volume (ft³/lbm)		Density (lbm/ft³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
356	9.24	0.01608	0.2447	62.20	4.0863	24.81	114.11	138.92	0.0545	0.2979	23.75	122.79	2.4275	1.8088	2127.3	715.2
357	9.41	0.01609	0.2440	62.17	4.0989	24.90	114.01	138.91	0.0547	0.2978	23.84	122.78	2.4291	1.8105	2124.7	715.1
358	9.58	0.01609	0.2432	62.14	4.1115	24.99	113.91	138.90	0.0549	0.2976	23.93	122.77	2.4307	1.8123	2122.0	715.0
359	9.76	0.01610	0.2425	62.11	4.1240	25.09	113.81	138.89	0.0551	0.2975	24.02	122.77	2.4323	1.8141	2119.4	714.9
360	9.93	0.01611	0.2417	62.08	4.1366	25.18	113.70	138.88	0.0553	0.2974	24.10	122.76	2.4339	1.8158	2116.8	714.7
361	10.10	0.01612	0.2410	62.05	4.1492	25.27	113.60	138.87	0.0555	0.2973	24.19	122.76	2.4355	1.8176	2114.1	714.6
362	10.27	0.01612	0.2403	62.02	4.1618	25.36	113.50	138.86	0.0557	0.2972	24.28	122.75	2.4371	1.8194	2111.5	714.5
363	10.45	0.01613	0.2396	61.99	4.1744	25.45	113.40	138.85	0.0558	0.2971	24.37	122.75	2.4387	1.8212	2108.9	714.4
364	10.62	0.01614	0.2388	61.96	4.1871	25.55	113.29	138.84	0.0560	0.2969	24.46	122.74	2.4403	1.8230	2106.3	714.2
365	10.79	0.01615	0.2381	61.93	4.1997	25.64	113.19	138.83	0.0562	0.2968	24.55	122.74	2.4419	1.8247	2103.6	714.1
366	10.96	0.01616	0.2374	61.90	4.2124	25.73	113.09	138.82	0.0564	0.2967	24.63	122.73	2.4435	1.8265	2101.0	714.0
367	11.13	0.01616	0.2367	61.87	4.2250	25.82	112.99	138.81	0.0566	0.2966	24.72	122.73	2.4451	1.8283	2098.4	713.9
368	11.30	0.01617	0.2360	61.84	4.2377	25.91	112.89	138.80	0.0568	0.2965	24.81	122.72	2.4467	1.8302	2095.8	713.8
369	11.47	0.01618	0.2353	61.81	4.2504	26.00	112.79	138.79	0.0570	0.2964	24.90	122.71	2.4483	1.8320	2093.2	713.6
370	11.64	0.01619	0.2346	61.78	4.2631	26.09	112.69	138.78	0.0572	0.2963	24.99	122.71	2.4499	1.8338	2090.6	713.5
371	11.81	0.01619	0.2339	61.75	4.2758	26.19	112.59	138.77	0.0573	0.2961	25.07	122.70	2.4516	1.8356	2088.0	713.4
372	11.98	0.01620	0.2332	61.72	4.2885	26.28	112.49	138.76	0.0575	0.2960	25.16	122.70	2.4532	1.8374	2085.4	713.3
373	12.14	0.01621	0.2325	61.69	4.3012	26.37	112.38	138.75	0.0577	0.2959	25.25	122.69	2.4548	1.8393	2082.8	713.1
374	12.31	0.01622	0.2318	61.66	4.3139	26.46	112.28	138.74	0.0579	0.2958	25.33	122.68	2.4564	1.8411	2080.2	713.0
375	12.48	0.01623	0.2311	61.63	4.3267	26.55	112.18	138.73	0.0581	0.2957	25.42	122.68	2.4580	1.8429	2077.6	712.9
376	12.65	0.01623	0.2304	61.60	4.3394	26.64	112.08	138.72	0.0583	0.2956	25.51	122.67	2.4596	1.8448	2075.0	712.8
377	12.81	0.01624	0.2298	61.57	4.3522	26.73	111.98	138.71	0.0585	0.2955	25.59	122.67	2.4613	1.8466	2072.4	712.7
378	12.98	0.01625	0.2291	61.54	4.3650	26.82	111.88	138.70	0.0586	0.2954	25.68	122.66	2.4629	1.8485	2069.8	712.5
379	13.15	0.01626	0.2284	61.52	4.3778	26.91	111.77	138.68	0.0588	0.2952	25.77	122.65	2.4645	1.8504	2067.3	712.4
380	13.31	0.01626	0.2278	61.49	4.3906	27.00	111.67	138.67	0.0590	0.2951	25.85	122.65	2.4661	1.8522	2064.7	712.3
381	13.48	0.01627	0.2271	61.46	4.4034	27.09	111.57	138.66	0.0592	0.2950	25.94	122.64	2.4678	1.8541	2062.1	712.2
382	13.64	0.01628	0.2264	61.43	4.4162	27.18	111.47	138.65	0.0594	0.2949	26.03	122.63	2.4694	1.8560	2059.5	712.0
383	13.81	0.01629	0.2258	61.40	4.4290	27.27	111.37	138.64	0.0596	0.2948	26.11	122.63	2.4710	1.8579	2057.0	711.9
384	13.97	0.01630	0.2251	61.37	4.4419	27.36	111.28	138.63	0.0597	0.2947	26.20	122.62	2.4726	1.8598	2054.4	711.8
385	14.14	0.01630	0.2245	61.34	4.4547	27.44	111.18	138.62	0.0599	0.2946	26.28	122.61	2.4743	1.8616	2051.8	711.7
386	14.30	0.01631	0.2238	61.31	4.4676	27.53	111.08	138.61	0.0601	0.2945	26.37	122.61	2.4759	1.8635	2049.3	711.5
387	14.47	0.01632	0.2232	61.28	4.4805	27.62	110.98	138.60	0.0603	0.2943	26.45	122.60	2.4776	1.8655	2046.7	711.4
388	14.63	0.01633	0.2226	61.25	4.4934	27.71	110.87	138.58	0.0605	0.2942	26.54	122.59	2.4792	1.8674	2044.1	711.3
389	14.79	0.01634	0.2219	61.22	4.5063	27.80	110.77	138.57	0.0606	0.2941	26.62	122.59	2.4808	1.8693	2041.6	711.2
390	14.96	0.01634	0.2213	61.19	4.5192	27.89	110.67	138.56	0.0608	0.2940	26.71	122.58	2.4825	1.8712	2039.0	711.0
391	15.12	0.01635	0.2207	61.16	4.5321	27.98	110.57	138.55	0.0610	0.2939	26.79	122.57	2.4841	1.8731	2036.5	710.9
392	15.28	0.01636	0.2200	61.13	4.5451	28.07	110.48	138.54	0.0612	0.2938	26.88	122.57	2.4857	1.8751	2033.9	710.8
393	15.44	0.01637	0.2194	61.10	4.5580	28.15	110.38	138.53	0.0614	0.2937	26.96	122.56	2.4874	1.8770	2031.4	710.7
394	15.61	0.01637	0.2188	61.07	4.5710	28.24	110.27	138.51	0.0615	0.2936	27.05	122.55	2.4890	1.8789	2028.8	710.5
395	15.77	0.01638	0.2182	61.04	4.5839	28.33	110.17	138.50	0.0617	0.2935	27.13	122.55	2.4907	1.8809	2026.3	710.4

R-744
Carbon Dioxide
CO2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
396	15.93	0.01639	0.2175	61.02	4.5969	28.42	110.07	138.49	0.0619	0.2933	27.22	122.54	2.4923	1.8828	2023.8	710.3
397	16.09	0.01640	0.2169	60.99	4.6099	28.51	109.98	138.48	0.0621	0.2932	27.30	122.53	2.4940	1.8848	2021.2	710.1
398	16.25	0.01641	0.2163	60.96	4.6229	28.59	109.88	138.47	0.0623	0.2931	27.38	122.52	2.4956	1.8868	2018.7	710.0
399	16.41	0.01641	0.2157	60.93	4.6359	28.68	109.77	138.45	0.0624	0.2930	27.47	122.52	2.4973	1.8887	2016.2	709.9
400	16.57	0.01642	0.2151	60.90	4.6489	28.77	109.67	138.44	0.0626	0.2929	27.55	122.51	2.4989	1.8907	2013.6	709.8
401	16.73	0.01643	0.2145	60.87	4.6620	28.86	109.58	138.43	0.0628	0.2928	27.64	122.50	2.5006	1.8927	2011.1	709.6
402	16.89	0.01644	0.2139	60.84	4.6750	28.94	109.48	138.42	0.0630	0.2927	27.72	122.49	2.5023	1.8947	2008.6	709.5
403	17.05	0.01645	0.2133	60.81	4.6881	29.03	109.37	138.40	0.0631	0.2926	27.80	122.49	2.5039	1.8967	2006.1	709.4
404	17.21	0.01645	0.2127	60.78	4.7012	29.12	109.27	138.39	0.0633	0.2925	27.89	122.48	2.5056	1.8987	2003.5	709.3
405	17.36	0.01646	0.2121	60.75	4.7143	29.20	109.18	138.38	0.0635	0.2924	27.97	122.47	2.5073	1.9007	2001.0	709.1
406	17.52	0.01647	0.2115	60.72	4.7274	29.29	109.08	138.37	0.0637	0.2923	28.05	122.46	2.5089	1.9027	1998.5	709.0
407	17.68	0.01648	0.2110	60.69	4.7405	29.38	108.97	138.35	0.0638	0.2921	28.14	122.46	2.5106	1.9047	1996.0	708.9
408	17.84	0.01648	0.2104	60.67	4.7536	29.46	108.88	138.34	0.0640	0.2920	28.22	122.45	2.5123	1.9068	1993.5	708.7
409	18.00	0.01649	0.2098	60.64	4.7667	29.55	108.78	138.33	0.0642	0.2919	28.30	122.44	2.5139	1.9088	1991.0	708.6
410	18.15	0.01650	0.2092	60.61	4.7799	29.64	108.68	138.32	0.0644	0.2918	28.38	122.43	2.5156	1.9108	1988.5	708.5
411	18.31	0.01651	0.2086	60.58	4.7930	29.72	108.58	138.30	0.0645	0.2917	28.47	122.42	2.5173	1.9129	1986.0	708.4
412	18.47	0.01652	0.2081	60.55	4.8062	29.81	108.48	138.29	0.0647	0.2916	28.55	122.42	2.5190	1.9149	1983.5	708.2
413	18.62	0.01652	0.2075	60.52	4.8194	29.89	108.39	138.28	0.0649	0.2915	28.63	122.41	2.5207	1.9170	1981.0	708.1
414	18.78	0.01653	0.2069	60.49	4.8326	29.98	108.28	138.26	0.0651	0.2914	28.71	122.40	2.5223	1.9190	1978.5	708.0
415	18.93	0.01654	0.2064	60.46	4.8458	30.07	108.18	138.25	0.0652	0.2913	28.80	122.39	2.5240	1.9211	1976.0	707.8
416	19.09	0.01655	0.2058	60.43	4.8590	30.15	108.09	138.24	0.0654	0.2912	28.88	122.38	2.5257	1.9232	1973.5	707.7
417	19.24	0.01656	0.2052	60.41	4.8722	30.24	107.98	138.22	0.0656	0.2911	28.96	122.38	2.5274	1.9253	1971.0	707.6
418	19.40	0.01656	0.2047	60.38	4.8855	30.32	107.89	138.21	0.0658	0.2910	29.04	122.37	2.5291	1.9273	1968.5	707.5
419	19.55	0.01657	0.2041	60.35	4.8987	30.41	107.79	138.20	0.0659	0.2909	29.12	122.36	2.5308	1.9294	1966.0	707.3
420	19.71	0.01658	0.2036	60.32	4.9120	30.49	107.69	138.18	0.0661	0.2907	29.20	122.35	2.5325	1.9315	1963.5	707.2
421	19.86	0.01659	0.2030	60.29	4.9253	30.58	107.59	138.17	0.0663	0.2906	29.29	122.34	2.5342	1.9336	1961.1	707.1
422	20.01	0.01660	0.2025	60.26	4.9386	30.66	107.50	138.16	0.0664	0.2905	29.37	122.33	2.5359	1.9358	1958.6	706.9
423	20.17	0.01660	0.2019	60.23	4.9519	30.75	107.39	138.14	0.0666	0.2904	29.45	122.32	2.5376	1.9379	1956.1	706.8
424	20.32	0.01661	0.2014	60.20	4.9652	30.83	107.30	138.13	0.0668	0.2903	29.53	122.32	2.5393	1.9400	1953.6	706.7
425	20.47	0.01662	0.2009	60.17	4.9785	30.92	107.20	138.12	0.0670	0.2902	29.61	122.31	2.5410	1.9421	1951.2	706.5
426	20.63	0.01663	0.2003	60.15	4.9919	31.00	107.10	138.10	0.0671	0.2901	29.69	122.30	2.5427	1.9443	1948.7	706.4
427	20.78	0.01663	0.1998	60.12	5.0052	31.09	107.00	138.09	0.0673	0.2900	29.77	122.29	2.5444	1.9464	1946.2	706.3
428	20.93	0.01664	0.1993	60.09	5.0186	31.17	106.90	138.07	0.0675	0.2899	29.85	122.28	2.5462	1.9486	1943.8	706.2
429	21.08	0.01665	0.1987	60.06	5.0320	31.26	106.80	138.06	0.0676	0.2898	29.94	122.27	2.5479	1.9507	1941.3	706.0
430	21.24	0.01666	0.1982	60.03	5.0454	31.34	106.71	138.05	0.0678	0.2897	30.02	122.26	2.5496	1.9529	1938.8	705.9
431	21.39	0.01667	0.1977	60.00	5.0588	31.43	106.60	138.03	0.0680	0.2896	30.10	122.25	2.5513	1.9551	1936.4	705.8
432	21.54	0.01667	0.1972	59.97	5.0722	31.51	106.51	138.02	0.0681	0.2895	30.18	122.25	2.5531	1.9572	1933.9	705.6
433	21.69	0.01668	0.1966	59.95	5.0856	31.59	106.41	138.00	0.0683	0.2894	30.26	122.24	2.5548	1.9594	1931.5	705.5
434	21.84	0.01669	0.1961	59.92	5.0991	31.68	106.31	137.99	0.0685	0.2893	30.34	122.23	2.5565	1.9616	1929.0	705.4
435	21.99	0.01670	0.1956	59.89	5.1125	31.76	106.21	137.97	0.0686	0.2892	30.42	122.22	2.5583	1.9638	1926.6	705.2

Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
436	22.14	0.01671	0.1951	59.86	5.1260	31.85	106.11	137.96	0.0688	0.2891	30.50	122.21	2.5600	1.9660	1924.1	705.1
437	22.29	0.01671	0.1946	59.83	5.1395	31.93	106.01	137.94	0.0690	0.2889	30.58	122.20	2.5617	1.9682	1921.7	705.0
438	22.44	0.01672	0.1941	59.80	5.1530	32.01	105.92	137.93	0.0691	0.2888	30.66	122.19	2.5635	1.9704	1919.3	704.8
439	22.59	0.01673	0.1936	59.77	5.1665	32.10	105.82	137.92	0.0693	0.2887	30.74	122.18	2.5652	1.9727	1916.8	704.7
440	22.74	0.01674	0.1931	59.75	5.1800	32.18	105.72	137.90	0.0695	0.2886	30.82	122.17	2.5670	1.9749	1914.4	704.6
441	22.89	0.01675	0.1926	59.72	5.1935	32.26	105.63	137.89	0.0696	0.2885	30.90	122.16	2.5687	1.9771	1911.9	704.4
442	23.04	0.01675	0.1921	59.69	5.2071	32.35	105.52	137.87	0.0698	0.2884	30.98	122.15	2.5705	1.9794	1909.5	704.3
443	23.18	0.01676	0.1916	59.66	5.2207	32.43	105.43	137.86	0.0700	0.2883	31.06	122.14	2.5723	1.9816	1907.1	704.2
444	23.33	0.01677	0.1911	59.63	5.2342	32.51	105.33	137.84	0.0701	0.2882	31.13	122.13	2.5740	1.9839	1904.7	704.0
445	23.48	0.01678	0.1906	59.60	5.2478	32.60	105.23	137.83	0.0703	0.2881	31.21	122.12	2.5758	1.9862	1902.2	703.9
446	23.63	0.01679	0.1901	59.57	5.2614	32.68	105.13	137.81	0.0705	0.2880	31.29	122.11	2.5776	1.9884	1899.8	703.8
447	23.77	0.01679	0.1896	59.55	5.2750	32.76	105.04	137.80	0.0706	0.2879	31.37	122.10	2.5793	1.9907	1897.4	703.6
448	23.92	0.01680	0.1891	59.52	5.2887	32.84	104.94	137.78	0.0708	0.2878	31.45	122.09	2.5811	1.9930	1895.0	703.5
449	24.07	0.01681	0.1886	59.49	5.3023	32.93	104.83	137.76	0.0710	0.2877	31.53	122.08	2.5829	1.9953	1892.6	703.4
450	24.22	0.01682	0.1881	59.46	5.3160	33.01	104.74	137.75	0.0711	0.2876	31.61	122.07	2.5847	1.9976	1890.2	703.3
451	24.36	0.01683	0.1876	59.43	5.3296	33.09	104.64	137.73	0.0713	0.2875	31.69	122.06	2.5865	1.9999	1887.7	703.1
452	24.51	0.01683	0.1872	59.40	5.3433	33.18	104.55	137.72	0.0715	0.2874	31.77	122.05	2.5883	2.0022	1885.3	703.0
453	24.65	0.01684	0.1867	59.38	5.3570	33.26	104.44	137.70	0.0716	0.2873	31.84	122.04	2.5901	2.0046	1882.9	702.8
454	24.80	0.01685	0.1862	59.35	5.3707	33.34	104.35	137.69	0.0718	0.2872	31.92	122.03	2.5919	2.0069	1880.5	702.7
455	24.94	0.01686	0.1857	59.32	5.3844	33.42	104.25	137.67	0.0719	0.2871	32.00	122.02	2.5937	2.0092	1878.1	702.6
456	25.09	0.01687	0.1853	59.29	5.3982	33.50	104.16	137.66	0.0721	0.2870	32.08	122.01	2.5955	2.0116	1875.7	702.4
457	25.24	0.01687	0.1848	59.26	5.4119	33.59	104.06	137.64	0.0723	0.2869	32.16	122.00	2.5973	2.0139	1873.3	702.3
458	25.38	0.01688	0.1843	59.23	5.4257	33.67	103.95	137.62	0.0724	0.2868	32.24	121.99	2.5991	2.0163	1870.9	702.2
459	25.52	0.01689	0.1838	59.21	5.4395	33.75	103.86	137.61	0.0726	0.2867	32.31	121.98	2.6009	2.0187	1868.5	702.0
460	25.67	0.01690	0.1834	59.18	5.4533	33.83	103.76	137.59	0.0728	0.2866	32.39	121.97	2.6027	2.0210	1866.2	701.9
461	25.81	0.01691	0.1829	59.15	5.4671	33.91	103.67	137.58	0.0729	0.2865	32.47	121.96	2.6046	2.0234	1863.8	701.8
462	25.96	0.01692	0.1825	59.12	5.4809	33.99	103.57	137.56	0.0731	0.2864	32.55	121.95	2.6064	2.0258	1861.4	701.6
463	26.10	0.01692	0.1820	59.09	5.4947	34.08	103.46	137.54	0.0732	0.2862	32.63	121.94	2.6082	2.0282	1859.0	701.5
464	26.24	0.01693	0.1815	59.06	5.5086	34.16	103.37	137.53	0.0734	0.2861	32.70	121.93	2.6101	2.0306	1856.6	701.4
465	26.39	0.01694	0.1811	59.04	5.5224	34.24	103.27	137.51	0.0736	0.2860	32.78	121.92	2.6119	2.0331	1854.3	701.2
466	26.53	0.01695	0.1806	59.01	5.5363	34.32	103.18	137.50	0.0737	0.2859	32.86	121.91	2.6138	2.0355	1851.9	701.1
467	26.67	0.01696	0.1802	58.98	5.5502	34.40	103.08	137.48	0.0739	0.2858	32.94	121.90	2.6156	2.0379	1849.5	701.0
468	26.81	0.01696	0.1797	58.95	5.5641	34.48	102.98	137.46	0.0740	0.2857	33.01	121.89	2.6175	2.0403	1847.1	700.8
469	26.96	0.01697	0.1793	58.92	5.5780	34.56	102.89	137.45	0.0742	0.2856	33.09	121.88	2.6193	2.0428	1844.8	700.7
470	27.10	0.01698	0.1788	58.89	5.5920	34.64	102.79	137.43	0.0744	0.2855	33.17	121.87	2.6212	2.0453	1842.4	700.6
471	27.24	0.01699	0.1784	58.87	5.6059	34.73	102.69	137.41	0.0745	0.2854	33.24	121.86	2.6231	2.0477	1840.0	700.4
472	27.38	0.01700	0.1779	58.84	5.6199	34.81	102.59	137.40	0.0747	0.2853	33.32	121.84	2.6249	2.0502	1837.7	700.3
473	27.52	0.01700	0.1775	58.81	5.6339	34.89	102.49	137.38	0.0748	0.2852	33.40	121.83	2.6268	2.0527	1835.3	700.2
474	27.67	0.01701	0.1771	58.78	5.6478	34.97	102.39	137.36	0.0750	0.2851	33.47	121.82	2.6287	2.0552	1833.0	700.0
475	27.81	0.01702	0.1766	58.75	5.6619	35.05	102.30	137.35	0.0752	0.2850	33.55	121.81	2.6306	2.0577	1830.6	699.9

R-744

Carbon Dioxide

CO2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
476	27.95	0.01703	0.1762	58.73	5.6759	35.13	102.20	137.33	0.0753	0.2849	33.63	121.80	2.6325	2.0602	1828.3	699.7
477	28.09	0.01704	0.1758	58.70	5.6899	35.21	102.10	137.31	0.0755	0.2848	33.70	121.79	2.6344	2.0627	1825.9	699.6
478	28.23	0.01705	0.1753	58.67	5.7040	35.29	102.00	137.29	0.0756	0.2847	33.78	121.78	2.6363	2.0652	1823.6	699.5
479	28.37	0.01705	0.1749	58.64	5.7180	35.37	101.91	137.28	0.0758	0.2846	33.86	121.77	2.6382	2.0677	1821.2	699.3
480	28.51	0.01706	0.1745	58.61	5.7321	35.45	101.81	137.26	0.0760	0.2845	33.93	121.75	2.6401	2.0703	1818.9	699.2
481	28.65	0.01707	0.1740	58.58	5.7462	35.53	101.71	137.24	0.0761	0.2844	34.01	121.74	2.6420	2.0728	1816.5	699.1
482	28.79	0.01708	0.1736	58.56	5.7603	35.61	101.62	137.23	0.0763	0.2843	34.09	121.73	2.6439	2.0754	1814.2	698.9
483	28.93	0.01709	0.1732	58.53	5.7744	35.69	101.52	137.21	0.0764	0.2842	34.16	121.72	2.6458	2.0780	1811.9	698.8
484	29.06	0.01709	0.1728	58.50	5.7886	35.77	101.42	137.19	0.0766	0.2841	34.24	121.71	2.6478	2.0805	1809.5	698.6
485	29.20	0.01710	0.1723	58.47	5.8027	35.85	101.32	137.17	0.0767	0.2840	34.31	121.70	2.6497	2.0831	1807.2	698.5
486	29.34	0.01711	0.1719	58.44	5.8169	35.93	101.23	137.16	0.0769	0.2839	34.39	121.69	2.6516	2.0857	1804.9	698.4
487	29.48	0.01712	0.1715	58.42	5.8311	36.01	101.13	137.14	0.0771	0.2838	34.47	121.67	2.6536	2.0883	1802.5	698.2
488	29.62	0.01713	0.1711	58.39	5.8453	36.09	101.03	137.12	0.0772	0.2837	34.54	121.66	2.6555	2.0909	1800.2	698.1
489	29.76	0.01714	0.1707	58.36	5.8595	36.17	100.93	137.10	0.0774	0.2836	34.62	121.65	2.6575	2.0935	1797.9	698.0
490	29.89	0.01714	0.1703	58.33	5.8737	36.25	100.84	137.09	0.0775	0.2835	34.69	121.64	2.6594	2.0962	1795.6	697.8
491	30.03	0.01715	0.1698	58.30	5.8880	36.33	100.74	137.07	0.0777	0.2834	34.77	121.63	2.6614	2.0988	1793.3	697.7
492	30.17	0.01716	0.1694	58.28	5.9022	36.41	100.64	137.05	0.0778	0.2833	34.84	121.61	2.6634	2.1014	1790.9	697.5
493	30.31	0.01717	0.1690	58.25	5.9165	36.49	100.54	137.03	0.0780	0.2832	34.92	121.60	2.6653	2.1041	1788.6	697.4
494	30.44	0.01718	0.1686	58.22	5.9308	36.57	100.45	137.01	0.0781	0.2831	34.99	121.59	2.6673	2.1068	1786.3	697.3
495	30.58	0.01719	0.1682	58.19	5.9451	36.64	100.36	137.00	0.0783	0.2830	35.07	121.58	2.6693	2.1094	1784.0	697.1
496	30.72	0.01719	0.1678	58.16	5.9594	36.72	100.26	136.98	0.0785	0.2829	35.14	121.57	2.6713	2.1121	1781.7	697.0
497	30.85	0.01720	0.1674	58.14	5.9738	36.80	100.16	136.96	0.0786	0.2828	35.22	121.55	2.6733	2.1148	1779.4	696.9
498	30.99	0.01721	0.1670	58.11	5.9881	36.88	100.06	136.94	0.0788	0.2827	35.30	121.54	2.6753	2.1175	1777.1	696.7
499	31.13	0.01722	0.1666	58.08	6.0025	36.96	99.96	136.92	0.0789	0.2826	35.37	121.53	2.6773	2.1202	1774.8	696.6
500	31.26	0.01723	0.1662	58.05	6.0169	37.04	99.86	136.90	0.0791	0.2825	35.44	121.52	2.6793	2.1229	1772.5	696.4
501	31.40	0.01724	0.1658	58.02	6.0313	37.12	99.77	136.89	0.0792	0.2824	35.52	121.50	2.6814	2.1257	1770.2	696.3
502	31.53	0.01724	0.1654	58.00	6.0457	37.20	99.67	136.87	0.0794	0.2823	35.59	121.49	2.6834	2.1284	1767.9	696.2
503	31.67	0.01725	0.1650	57.97	6.0601	37.28	99.57	136.85	0.0795	0.2822	35.67	121.48	2.6854	2.1311	1765.6	696.0
504	31.80	0.01726	0.1646	57.94	6.0746	37.35	99.48	136.83	0.0797	0.2821	35.74	121.47	2.6875	2.1339	1763.4	695.9
505	31.94	0.01727	0.1642	57.91	6.0890	37.43	99.38	136.81	0.0798	0.2820	35.82	121.45	2.6895	2.1367	1761.1	695.7
506	32.07	0.01728	0.1638	57.88	6.1035	37.51	99.28	136.79	0.0800	0.2819	35.89	121.44	2.6915	2.1394	1758.8	695.6
507	32.21	0.01729	0.1635	57.86	6.1180	37.59	99.18	136.77	0.0801	0.2818	35.97	121.43	2.6936	2.1422	1756.5	695.5
508	32.34	0.01729	0.1631	57.83	6.1325	37.67	99.09	136.76	0.0803	0.2817	36.04	121.42	2.6957	2.1450	1754.2	695.3
509	32.47	0.01730	0.1627	57.80	6.1470	37.75	98.99	136.74	0.0805	0.2816	36.12	121.40	2.6977	2.1478	1752.0	695.2
510	32.61	0.01731	0.1623	57.77	6.1616	37.82	98.90	136.72	0.0806	0.2815	36.19	121.39	2.6998	2.1506	1749.7	695.0
511	32.74	0.01732	0.1619	57.74	6.1761	37.90	98.80	136.70	0.0808	0.2814	36.26	121.38	2.7019	2.1535	1747.4	694.9
512	32.87	0.01733	0.1615	57.72	6.1907	37.98	98.70	136.68	0.0809	0.2813	36.34	121.36	2.7040	2.1563	1745.2	694.8
513	33.01	0.01734	0.1612	57.69	6.2053	38.06	98.60	136.66	0.0811	0.2812	36.41	121.35	2.7061	2.1591	1742.9	694.6
514	33.14	0.01734	0.1608	57.66	6.2199	38.14	98.50	136.64	0.0812	0.2811	36.49	121.34	2.7082	2.1620	1740.6	694.5
515	33.27	0.01735	0.1604	57.63	6.2345	38.22	98.41	136.62	0.0814	0.2810	36.56	121.33	2.7103	2.1649	1738.4	694.3



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
516	33.41	0.01736	0.1600	57.60	6.2492	38.29	98.31	136.60	0.0815	0.2809	36.63	121.31	2.7124	2.1677	1736.1	694.2
517	33.54	0.01737	0.1597	57.58	6.2638	38.37	98.21	136.58	0.0817	0.2808	36.71	121.30	2.7145	2.1706	1733.8	694.1
518	33.67	0.01738	0.1593	57.55	6.2785	38.45	98.11	136.56	0.0818	0.2807	36.78	121.29	2.7167	2.1735	1731.6	693.9
519	33.80	0.01739	0.1589	57.52	6.2932	38.53	98.01	136.54	0.0820	0.2806	36.86	121.27	2.7188	2.1764	1729.3	693.8
520	33.93	0.01739	0.1585	57.49	6.3079	38.60	97.92	136.52	0.0821	0.2805	36.93	121.26	2.7209	2.1794	1727.1	693.6
521	34.07	0.01740	0.1582	57.46	6.3226	38.68	97.82	136.50	0.0823	0.2804	37.00	121.25	2.7231	2.1823	1724.8	693.5
522	34.20	0.01741	0.1578	57.44	6.3374	38.76	97.73	136.49	0.0824	0.2803	37.08	121.23	2.7252	2.1852	1722.6	693.4
523	34.33	0.01742	0.1574	57.41	6.3521	38.84	97.63	136.47	0.0826	0.2802	37.15	121.22	2.7274	2.1882	1720.4	693.2
524	34.46	0.01743	0.1571	57.38	6.3669	38.91	97.54	136.45	0.0827	0.2801	37.22	121.21	2.7296	2.1911	1718.1	693.1
525	34.59	0.01744	0.1567	57.35	6.3817	38.99	97.44	136.43	0.0829	0.2800	37.30	121.19	2.7317	2.1941	1715.9	692.9
526	34.72	0.01745	0.1563	57.32	6.3965	39.07	97.34	136.41	0.0830	0.2799	37.37	121.18	2.7339	2.1971	1713.6	692.8
527	34.85	0.01745	0.1560	57.30	6.4113	39.15	97.25	136.39	0.0832	0.2798	37.44	121.16	2.7361	2.2001	1711.4	692.7
528	34.98	0.01746	0.1556	57.27	6.4262	39.22	97.15	136.37	0.0833	0.2797	37.52	121.15	2.7383	2.2031	1709.2	692.5
529	35.11	0.01747	0.1553	57.24	6.4410	39.30	97.05	136.35	0.0835	0.2796	37.59	121.14	2.7405	2.2061	1706.9	692.4
530	35.24	0.01748	0.1549	57.21	6.4559	39.38	96.95	136.33	0.0836	0.2795	37.66	121.12	2.7427	2.2091	1704.7	692.2
531	35.37	0.01749	0.1545	57.19	6.4708	39.45	96.85	136.30	0.0838	0.2794	37.73	121.11	2.7450	2.2122	1702.5	692.1
532	35.50	0.01750	0.1542	57.16	6.4857	39.53	96.75	136.28	0.0839	0.2793	37.81	121.10	2.7472	2.2152	1700.3	691.9
533	35.63	0.01750	0.1538	57.13	6.5007	39.61	96.65	136.26	0.0841	0.2792	37.88	121.08	2.7494	2.2183	1698.1	691.8
534	35.76	0.01751	0.1535	57.10	6.5156	39.69	96.56	136.24	0.0842	0.2791	37.95	121.07	2.7517	2.2213	1695.8	691.7
535	35.89	0.01752	0.1531	57.07	6.5306	39.76	96.46	136.22	0.0844	0.2790	38.03	121.05	2.7539	2.2244	1693.6	691.5
536	36.02	0.01753	0.1528	57.05	6.5456	39.84	96.36	136.20	0.0845	0.2789	38.10	121.04	2.7562	2.2275	1691.4	691.4
537	36.15	0.01754	0.1524	57.02	6.5606	39.92	96.27	136.18	0.0847	0.2788	38.17	121.03	2.7584	2.2306	1689.2	691.2
538	36.28	0.01755	0.1521	56.99	6.5756	39.99	96.17	136.16	0.0848	0.2787	38.24	121.01	2.7607	2.2337	1687.0	691.1
539	36.40	0.01756	0.1517	56.96	6.5906	40.07	96.07	136.14	0.0850	0.2786	38.32	121.00	2.7630	2.2368	1684.8	690.9
540	36.53	0.01756	0.1514	56.93	6.6057	40.15	95.98	136.12	0.0851	0.2785	38.39	120.98	2.7653	2.2400	1682.6	690.8
541	36.66	0.01757	0.1510	56.91	6.6207	40.22	95.88	136.10	0.0853	0.2784	38.46	120.97	2.7676	2.2431	1680.4	690.7
542	36.79	0.01758	0.1507	56.88	6.6358	40.30	95.78	136.08	0.0854	0.2783	38.53	120.95	2.7699	2.2463	1678.2	690.5
543	36.92	0.01759	0.1504	56.85	6.6509	40.37	95.69	136.06	0.0855	0.2782	38.61	120.94	2.7722	2.2495	1676.0	690.4
544	37.04	0.01760	0.1500	56.82	6.6661	40.45	95.59	136.04	0.0857	0.2781	38.68	120.92	2.7745	2.2527	1673.8	690.2
545	37.17	0.01761	0.1497	56.80	6.6812	40.53	95.49	136.02	0.0858	0.2780	38.75	120.91	2.7769	2.2559	1671.6	690.1
546	37.30	0.01762	0.1493	56.77	6.6964	40.60	95.39	135.99	0.0860	0.2779	38.82	120.90	2.7792	2.2591	1669.4	689.9
547	37.42	0.01763	0.1490	56.74	6.7115	40.68	95.29	135.97	0.0861	0.2778	38.89	120.88	2.7816	2.2623	1667.2	689.8
548	37.55	0.01763	0.1487	56.71	6.7267	40.76	95.20	135.95	0.0863	0.2777	38.97	120.87	2.7839	2.2655	1665.0	689.6
549	37.68	0.01764	0.1483	56.68	6.7419	40.83	95.10	135.93	0.0864	0.2776	39.04	120.85	2.7863	2.2688	1662.8	689.5
550	37.80	0.01765	0.1480	56.66	6.7572	40.91	95.00	135.91	0.0866	0.2775	39.11	120.84	2.7887	2.2720	1660.7	689.4
551	37.93	0.01766	0.1477	56.63	6.7724	40.98	94.91	135.89	0.0867	0.2774	39.18	120.82	2.7910	2.2753	1658.5	689.2
552	38.06	0.01767	0.1473	56.60	6.7877	41.06	94.81	135.87	0.0869	0.2773	39.25	120.81	2.7934	2.2786	1656.3	689.1
553	38.18	0.01768	0.1470	56.57	6.8030	41.14	94.71	135.84	0.0870	0.2773	39.33	120.79	2.7958	2.2819	1654.1	688.9
554	38.31	0.01769	0.1467	56.54	6.8183	41.21	94.61	135.82	0.0872	0.2772	39.40	120.78	2.7982	2.2852	1651.9	688.8
555	38.43	0.01769	0.1463	56.52	6.8336	41.29	94.51	135.80	0.0873	0.2771	39.47	120.76	2.8007	2.2885	1649.8	688.6



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
556	38.56	0.01770	0.1460	56.49	6.8490	41.36	94.42	135.78	0.0874	0.2770	39.54	120.75	2.8031	2.2919	1647.6	688.5
557	38.69	0.01771	0.1457	56.46	6.8643	41.44	94.32	135.76	0.0876	0.2769	39.61	120.73	2.8055	2.2952	1645.4	688.3
558	38.81	0.01772	0.1454	56.43	6.8797	41.51	94.23	135.74	0.0877	0.2768	39.68	120.72	2.8080	2.2986	1643.3	688.2
559	38.94	0.01773	0.1450	56.40	6.8951	41.59	94.12	135.71	0.0879	0.2767	39.76	120.70	2.8104	2.3019	1641.1	688.1
560	39.06	0.01774	0.1447	56.38	6.9105	41.67	94.02	135.69	0.0880	0.2766	39.83	120.69	2.8129	2.3053	1638.9	687.9
561	39.18	0.01775	0.1444	56.35	6.9260	41.74	93.93	135.67	0.0882	0.2765	39.90	120.67	2.8154	2.3087	1636.8	687.8
562	39.31	0.01776	0.1441	56.32	6.9414	41.82	93.83	135.65	0.0883	0.2764	39.97	120.65	2.8178	2.3121	1634.6	687.6
563	39.43	0.01776	0.1437	56.29	6.9569	41.89	93.73	135.62	0.0885	0.2763	40.04	120.64	2.8203	2.3156	1632.5	687.5
564	39.56	0.01777	0.1434	56.27	6.9724	41.97	93.63	135.60	0.0886	0.2762	40.11	120.62	2.8228	2.3190	1630.3	687.3
565	39.68	0.01778	0.1431	56.24	6.9879	42.04	93.54	135.58	0.0888	0.2761	40.18	120.61	2.8254	2.3225	1628.2	687.2
566	39.81	0.01779	0.1428	56.21	7.0035	42.12	93.44	135.56	0.0889	0.2760	40.25	120.59	2.8279	2.3259	1626.0	687.0
567	39.93	0.01780	0.1425	56.18	7.0190	42.19	93.35	135.54	0.0890	0.2759	40.33	120.58	2.8304	2.3294	1623.9	686.9
568	40.05	0.01781	0.1422	56.15	7.0346	42.27	93.24	135.51	0.0892	0.2758	40.40	120.56	2.8329	2.3329	1621.7	686.7
569	40.18	0.01782	0.1418	56.13	7.0502	42.34	93.15	135.49	0.0893	0.2757	40.47	120.55	2.8355	2.3364	1619.6	686.6
570	40.30	0.01783	0.1415	56.10	7.0658	42.42	93.05	135.47	0.0895	0.2756	40.54	120.53	2.8381	2.3399	1617.5	686.5
571	40.42	0.01784	0.1412	56.07	7.0815	42.49	92.95	135.44	0.0896	0.2755	40.61	120.51	2.8406	2.3435	1615.3	686.3
572	40.54	0.01784	0.1409	56.04	7.0971	42.57	92.85	135.42	0.0898	0.2754	40.68	120.50	2.8432	2.3470	1613.2	686.2
573	40.67	0.01785	0.1406	56.01	7.1128	42.64	92.76	135.40	0.0899	0.2753	40.75	120.48	2.8458	2.3506	1611.1	686.0
574	40.79	0.01786	0.1403	55.99	7.1285	42.72	92.66	135.38	0.0900	0.2752	40.82	120.47	2.8484	2.3541	1608.9	685.9
575	40.91	0.01787	0.1400	55.96	7.1442	42.79	92.56	135.35	0.0902	0.2751	40.89	120.45	2.8510	2.3577	1606.8	685.7
576	41.03	0.01788	0.1397	55.93	7.1599	42.87	92.46	135.33	0.0903	0.2750	40.96	120.43	2.8536	2.3613	1604.7	685.6
577	41.16	0.01789	0.1394	55.90	7.1757	42.94	92.37	135.31	0.0905	0.2749	41.03	120.42	2.8563	2.3650	1602.5	685.4
578	41.28	0.01790	0.1391	55.87	7.1915	43.02	92.26	135.28	0.0906	0.2748	41.10	120.40	2.8589	2.3686	1600.4	685.3
579	41.40	0.01791	0.1388	55.85	7.2072	43.09	92.17	135.26	0.0908	0.2747	41.17	120.38	2.8616	2.3723	1598.3	685.1
580	41.52	0.01792	0.1385	55.82	7.2231	43.17	92.07	135.24	0.0909	0.2746	41.24	120.37	2.8642	2.3759	1596.2	685.0
581	41.64	0.01792	0.1381	55.79	7.2389	43.24	91.97	135.21	0.0910	0.2745	41.32	120.35	2.8669	2.3796	1594.1	684.8
582	41.76	0.01793	0.1378	55.76	7.2548	43.32	91.87	135.19	0.0912	0.2744	41.39	120.34	2.8696	2.3833	1592.0	684.7
583	41.89	0.01794	0.1375	55.73	7.2706	43.39	91.78	135.17	0.0913	0.2743	41.46	120.32	2.8723	2.3870	1589.8	684.5
584	42.01	0.01795	0.1372	55.71	7.2865	43.47	91.67	135.14	0.0915	0.2742	41.53	120.30	2.8750	2.3907	1587.7	684.4
585	42.13	0.01796	0.1369	55.68	7.3024	43.54	91.58	135.12	0.0916	0.2741	41.60	120.29	2.8777	2.3945	1585.6	684.2
586	42.25	0.01797	0.1366	55.65	7.3184	43.62	91.48	135.10	0.0918	0.2740	41.67	120.27	2.8804	2.3982	1583.5	684.1
587	42.37	0.01798	0.1363	55.62	7.3343	43.69	91.38	135.07	0.0919	0.2739	41.74	120.25	2.8832	2.4020	1581.4	684.0
588	42.49	0.01799	0.1361	55.59	7.3503	43.77	91.29	135.05	0.0920	0.2738	41.81	120.24	2.8859	2.4058	1579.3	683.8
589	42.61	0.01800	0.1358	55.57	7.3663	43.84	91.18	135.02	0.0922	0.2737	41.88	120.22	2.8887	2.4096	1577.2	683.7
590	42.73	0.01801	0.1355	55.54	7.3824	43.91	91.09	135.00	0.0923	0.2736	41.95	120.20	2.8915	2.4134	1575.1	683.5
591	42.85	0.01802	0.1352	55.51	7.3984	43.99	90.99	134.98	0.0925	0.2735	42.02	120.18	2.8943	2.4172	1573.0	683.4
592	42.97	0.01802	0.1349	55.48	7.4145	44.06	90.89	134.95	0.0926	0.2734	42.09	120.17	2.8970	2.4211	1570.9	683.2
593	43.09	0.01803	0.1346	55.45	7.4305	44.14	90.79	134.93	0.0927	0.2733	42.16	120.15	2.8999	2.4249	1568.8	683.1
594	43.21	0.01804	0.1343	55.43	7.4467	44.21	90.69	134.90	0.0929	0.2732	42.23	120.13	2.9027	2.4288	1566.7	682.9
595	43.33	0.01805	0.1340	55.40	7.4628	44.29	90.60	134.88	0.0930	0.2731	42.30	120.12	2.9055	2.4327	1564.7	682.8

R-744

Carbon Dioxide

CO2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
596	43.45	0.01806	0.1337	55.37	7.4789	44.36	90.50	134.86	0.0932	0.2730	42.37	120.10	2.9084	2.4366	1562.6	682.6
597	43.56	0.01807	0.1334	55.34	7.4951	44.43	90.40	134.83	0.0933	0.2729	42.44	120.08	2.9112	2.4406	1560.5	682.5
598	43.68	0.01808	0.1331	55.31	7.5113	44.51	90.30	134.81	0.0935	0.2729	42.51	120.06	2.9141	2.4445	1558.4	682.3
599	43.80	0.01809	0.1329	55.29	7.5275	44.58	90.20	134.78	0.0936	0.2728	42.58	120.05	2.9170	2.4485	1556.3	682.2
600	43.92	0.01810	0.1326	55.26	7.5438	44.66	90.10	134.76	0.0937	0.2727	42.65	120.03	2.9199	2.4525	1554.2	682.0
601	44.04	0.01811	0.1323	55.23	7.5600	44.73	90.00	134.73	0.0939	0.2726	42.72	120.01	2.9228	2.4565	1552.2	681.9
602	44.16	0.01812	0.1320	55.20	7.5763	44.80	89.91	134.71	0.0940	0.2725	42.79	119.99	2.9257	2.4605	1550.1	681.7
603	44.28	0.01813	0.1317	55.17	7.5926	44.88	89.80	134.68	0.0942	0.2724	42.85	119.98	2.9286	2.4645	1548.0	681.6
604	44.39	0.01813	0.1314	55.15	7.6089	44.95	89.71	134.66	0.0943	0.2723	42.92	119.96	2.9316	2.4685	1545.9	681.4
605	44.51	0.01814	0.1311	55.12	7.6253	45.03	89.60	134.63	0.0944	0.2722	42.99	119.94	2.9345	2.4726	1543.9	681.3
606	44.63	0.01815	0.1309	55.09	7.6416	45.10	89.51	134.61	0.0946	0.2721	43.06	119.92	2.9375	2.4767	1541.8	681.1
607	44.75	0.01816	0.1306	55.06	7.6580	45.17	89.41	134.58	0.0947	0.2720	43.13	119.91	2.9405	2.4808	1539.7	681.0
608	44.86	0.01817	0.1303	55.03	7.6744	45.25	89.31	134.56	0.0949	0.2719	43.20	119.89	2.9435	2.4849	1537.7	680.8
609	44.98	0.01818	0.1300	55.01	7.6909	45.32	89.21	134.53	0.0950	0.2718	43.27	119.87	2.9465	2.4890	1535.6	680.7
610	45.10	0.01819	0.1298	54.98	7.7073	45.40	89.12	134.51	0.0951	0.2717	43.34	119.85	2.9495	2.4932	1533.6	680.5
611	45.22	0.01820	0.1295	54.95	7.7238	45.47	89.01	134.48	0.0953	0.2716	43.41	119.83	2.9525	2.4974	1531.5	680.4
612	45.33	0.01821	0.1292	54.92	7.7403	45.54	88.92	134.46	0.0954	0.2715	43.48	119.82	2.9556	2.5016	1529.5	680.2
613	45.45	0.01822	0.1289	54.89	7.7569	45.62	88.81	134.43	0.0955	0.2714	43.55	119.80	2.9586	2.5058	1527.4	680.1
614	45.57	0.01823	0.1286	54.86	7.7734	45.69	88.72	134.41	0.0957	0.2713	43.62	119.78	2.9617	2.5100	1525.3	679.9
615	45.68	0.01824	0.1284	54.84	7.7900	45.76	88.62	134.38	0.0958	0.2712	43.69	119.76	2.9648	2.5142	1523.3	679.8
616	45.80	0.01825	0.1281	54.81	7.8066	45.84	88.52	134.36	0.0960	0.2711	43.76	119.74	2.9679	2.5185	1521.3	679.6
617	45.91	0.01826	0.1278	54.78	7.8232	45.91	88.42	134.33	0.0961	0.2710	43.82	119.73	2.9710	2.5228	1519.2	679.5
618	46.03	0.01826	0.1276	54.75	7.8398	45.98	88.32	134.30	0.0962	0.2709	43.89	119.71	2.9741	2.5271	1517.2	679.3
619	46.15	0.01827	0.1273	54.72	7.8565	46.06	88.22	134.28	0.0964	0.2708	43.96	119.69	2.9773	2.5314	1515.1	679.1
620	46.26	0.01828	0.1270	54.70	7.8732	46.13	88.12	134.25	0.0965	0.2707	44.03	119.67	2.9804	2.5357	1513.1	679.0
621	46.38	0.01829	0.1267	54.67	7.8899	46.20	88.03	134.23	0.0967	0.2706	44.10	119.65	2.9836	2.5401	1511.0	678.8
622	46.49	0.01830	0.1265	54.64	7.9067	46.28	87.92	134.20	0.0968	0.2705	44.17	119.63	2.9868	2.5445	1509.0	678.7
623	46.61	0.01831	0.1262	54.61	7.9234	46.35	87.82	134.17	0.0969	0.2704	44.24	119.61	2.9900	2.5489	1507.0	678.5
624	46.72	0.01832	0.1259	54.58	7.9402	46.42	87.73	134.15	0.0971	0.2703	44.31	119.60	2.9932	2.5533	1504.9	678.4
625	46.84	0.01833	0.1257	54.55	7.9570	46.50	87.62	134.12	0.0972	0.2702	44.38	119.58	2.9964	2.5577	1502.9	678.2
626	46.95	0.01834	0.1254	54.53	7.9738	46.57	87.52	134.09	0.0973	0.2701	44.44	119.56	2.9997	2.5622	1500.9	678.1
627	47.07	0.01835	0.1252	54.50	7.9907	46.64	87.43	134.07	0.0975	0.2700	44.51	119.54	3.0029	2.5666	1498.8	677.9
628	47.18	0.01836	0.1249	54.47	8.0076	46.72	87.32	134.04	0.0976	0.2699	44.58	119.52	3.0062	2.5711	1496.8	677.8
629	47.30	0.01837	0.1246	54.44	8.0245	46.79	87.23	134.02	0.0978	0.2698	44.65	119.50	3.0095	2.5756	1494.8	677.6
630	47.41	0.01838	0.1244	54.41	8.0414	46.86	87.13	133.99	0.0979	0.2697	44.72	119.48	3.0128	2.5802	1492.8	677.5
631	47.52	0.01839	0.1241	54.38	8.0584	46.94	87.02	133.96	0.0980	0.2696	44.79	119.46	3.0161	2.5847	1490.8	677.3
632	47.64	0.01840	0.1238	54.36	8.0754	47.01	86.93	133.94	0.0982	0.2695	44.86	119.44	3.0194	2.5893	1488.7	677.2
633	47.75	0.01841	0.1236	54.33	8.0924	47.08	86.83	133.91	0.0983	0.2694	44.93	119.42	3.0228	2.5939	1486.7	677.0
634	47.87	0.01842	0.1233	54.30	8.1094	47.16	86.72	133.88	0.0984	0.2693	44.99	119.40	3.0261	2.5985	1484.7	676.9
635	47.98	0.01843	0.1231	54.27	8.1264	47.23	86.62	133.85	0.0986	0.2692	45.06	119.39	3.0295	2.6032	1482.7	676.7



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
636	48.09	0.01844	0.1228	54.24	8.1435	47.30	86.53	133.83	0.0987	0.2691	45.13	119.37	3.0329	2.6078	1480.7	676.5
637	48.21	0.01845	0.1225	54.21	8.1606	47.38	86.43	133.80	0.0989	0.2690	45.20	119.35	3.0363	2.6125	1478.7	676.4
638	48.32	0.01846	0.1223	54.19	8.1778	47.45	86.32	133.77	0.0990	0.2689	45.27	119.33	3.0398	2.6172	1476.7	676.2
639	48.43	0.01847	0.1220	54.16	8.1949	47.52	86.23	133.75	0.0991	0.2688	45.34	119.31	3.0432	2.6219	1474.6	676.1
640	48.55	0.01848	0.1218	54.13	8.2121	47.59	86.13	133.72	0.0993	0.2687	45.40	119.29	3.0467	2.6267	1472.6	675.9
641	48.66	0.01848	0.1215	54.10	8.2293	47.67	86.02	133.69	0.0994	0.2686	45.47	119.27	3.0501	2.6314	1470.6	675.8
642	48.77	0.01849	0.1213	54.07	8.2465	47.74	85.92	133.66	0.0995	0.2685	45.54	119.25	3.0536	2.6362	1468.6	675.6
643	48.88	0.01850	0.1210	54.04	8.2638	47.81	85.83	133.64	0.0997	0.2684	45.61	119.23	3.0571	2.6410	1466.6	675.5
644	49.00	0.01851	0.1208	54.01	8.2811	47.89	85.73	133.61	0.0998	0.2683	45.68	119.21	3.0607	2.6459	1464.6	675.3
645	49.11	0.01852	0.1205	53.99	8.2984	47.96	85.62	133.58	0.1000	0.2683	45.75	119.19	3.0642	2.6507	1462.6	675.2
646	49.22	0.01853	0.1203	53.96	8.3157	48.03	85.52	133.55	0.1001	0.2682	45.81	119.17	3.0678	2.6556	1460.6	675.0
647	49.33	0.01854	0.1200	53.93	8.3331	48.10	85.43	133.53	0.1002	0.2681	45.88	119.15	3.0713	2.6605	1458.7	674.8
648	49.44	0.01855	0.1198	53.90	8.3505	48.18	85.32	133.50	0.1004	0.2680	45.95	119.13	3.0749	2.6654	1456.7	674.7
649	49.56	0.01856	0.1195	53.87	8.3679	48.25	85.22	133.47	0.1005	0.2679	46.02	119.11	3.0785	2.6704	1454.7	674.5
650	49.67	0.01857	0.1193	53.84	8.3853	48.32	85.12	133.44	0.1006	0.2678	46.09	119.09	3.0822	2.6753	1452.7	674.4
651	49.78	0.01858	0.1190	53.82	8.4028	48.40	85.02	133.41	0.1008	0.2677	46.16	119.07	3.0858	2.6803	1450.7	674.2
652	49.89	0.01859	0.1188	53.79	8.4203	48.47	84.92	133.39	0.1009	0.2676	46.22	119.05	3.0895	2.6854	1448.7	674.1
653	50.00	0.01860	0.1185	53.76	8.4378	48.54	84.82	133.36	0.1010	0.2675	46.29	119.03	3.0931	2.6904	1446.7	673.9
654	50.11	0.01861	0.1183	53.73	8.4553	48.61	84.72	133.33	0.1012	0.2674	46.36	119.01	3.0968	2.6955	1444.7	673.8
655	50.22	0.01862	0.1180	53.70	8.4729	48.69	84.61	133.30	0.1013	0.2673	46.43	118.99	3.1006	2.7006	1442.8	673.6
656	50.33	0.01863	0.1178	53.67	8.4905	48.76	84.51	133.27	0.1015	0.2672	46.50	118.96	3.1043	2.7057	1440.8	673.4
657	50.45	0.01864	0.1175	53.64	8.5081	48.83	84.41	133.24	0.1016	0.2671	46.56	118.94	3.1080	2.7108	1438.8	673.3
658	50.56	0.01865	0.1173	53.61	8.5258	48.90	84.31	133.21	0.1017	0.2670	46.63	118.92	3.1118	2.7160	1436.8	673.1
659	50.67	0.01866	0.1171	53.59	8.5435	48.98	84.21	133.19	0.1019	0.2669	46.70	118.90	3.1156	2.7212	1434.8	673.0
660	50.78	0.01867	0.1168	53.56	8.5612	49.05	84.11	133.16	0.1020	0.2668	46.77	118.88	3.1194	2.7264	1432.9	672.8
661	50.89	0.01868	0.1166	53.53	8.5789	49.12	84.01	133.13	0.1021	0.2667	46.84	118.86	3.1232	2.7316	1430.9	672.7
662	51.00	0.01869	0.1163	53.50	8.5967	49.19	83.91	133.10	0.1023	0.2666	46.90	118.84	3.1271	2.7369	1428.9	672.5
663	51.11	0.01870	0.1161	53.47	8.6145	49.27	83.80	133.07	0.1024	0.2665	46.97	118.82	3.1309	2.7422	1427.0	672.3
664	51.22	0.01871	0.1158	53.44	8.6323	49.34	83.70	133.04	0.1025	0.2664	47.04	118.80	3.1348	2.7475	1425.0	672.2
665	51.33	0.01872	0.1156	53.41	8.6501	49.41	83.60	133.01	0.1027	0.2663	47.11	118.78	3.1387	2.7528	1423.0	672.0
666	51.44	0.01873	0.1154	53.39	8.6680	49.48	83.50	132.98	0.1028	0.2662	47.17	118.75	3.1426	2.7582	1421.1	671.9
667	51.55	0.01874	0.1151	53.36	8.6859	49.56	83.39	132.95	0.1029	0.2661	47.24	118.73	3.1466	2.7636	1419.1	671.7
668	51.66	0.01875	0.1149	53.33	8.7038	49.63	83.29	132.92	0.1031	0.2660	47.31	118.71	3.1505	2.7690	1417.1	671.6
669	51.76	0.01876	0.1147	53.30	8.7218	49.70	83.19	132.89	0.1032	0.2659	47.38	118.69	3.1545	2.7745	1415.2	671.4
670	51.87	0.01877	0.1144	53.27	8.7398	49.77	83.09	132.86	0.1033	0.2658	47.45	118.67	3.1585	2.7799	1413.2	671.2
671	51.98	0.01878	0.1142	53.24	8.7578	49.85	82.99	132.84	0.1035	0.2657	47.51	118.65	3.1625	2.7854	1411.3	671.1
672	52.09	0.01879	0.1140	53.21	8.7758	49.92	82.89	132.81	0.1036	0.2656	47.58	118.63	3.1666	2.7910	1409.3	670.9
673	52.20	0.01880	0.1137	53.18	8.7939	49.99	82.79	132.78	0.1038	0.2655	47.65	118.60	3.1706	2.7965	1407.4	670.8
674	52.31	0.01881	0.1135	53.15	8.8120	50.06	82.69	132.75	0.1039	0.2654	47.72	118.58	3.1747	2.8021	1405.4	670.6
675	52.42	0.01882	0.1133	53.13	8.8302	50.14	82.58	132.72	0.1040	0.2653	47.78	118.56	3.1788	2.8077	1403.5	670.4

R-744

Carbon Dioxide

CO2

Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
676	52.53	0.01883	0.1130	53.10	8.8483	50.21	82.48	132.69	0.1042	0.2652	47.85	118.54	3.1829	2.8134	1401.5	670.3
677	52.63	0.01884	0.1128	53.07	8.8665	50.28	82.38	132.66	0.1043	0.2651	47.92	118.52	3.1871	2.8190	1399.6	670.1
678	52.74	0.01885	0.1126	53.04	8.8847	50.35	82.28	132.63	0.1044	0.2650	47.99	118.49	3.1912	2.8247	1397.6	670.0
679	52.85	0.01887	0.1123	53.01	8.9030	50.43	82.18	132.60	0.1046	0.2649	48.05	118.47	3.1954	2.8305	1395.7	669.8
680	52.96	0.01888	0.1121	52.98	8.9213	50.50	82.07	132.57	0.1047	0.2648	48.12	118.45	3.1996	2.8362	1393.7	669.6
681	53.07	0.01889	0.1119	52.95	8.9396	50.57	81.96	132.53	0.1048	0.2647	48.19	118.43	3.2039	2.8420	1391.8	669.5
682	53.17	0.01890	0.1116	52.92	8.9579	50.64	81.86	132.50	0.1050	0.2646	48.26	118.41	3.2081	2.8478	1389.8	669.3
683	53.28	0.01891	0.1114	52.89	8.9763	50.71	81.76	132.47	0.1051	0.2645	48.32	118.38	3.2124	2.8537	1387.9	669.2
684	53.39	0.01892	0.1112	52.86	8.9947	50.79	81.65	132.44	0.1052	0.2644	48.39	118.36	3.2167	2.8595	1385.9	669.0
685	53.50	0.01893	0.1110	52.84	9.0131	50.86	81.55	132.41	0.1054	0.2643	48.46	118.34	3.2210	2.8655	1384.0	668.8
686	53.60	0.01894	0.1107	52.81	9.0316	50.93	81.45	132.38	0.1055	0.2642	48.53	118.32	3.2253	2.8714	1382.1	668.7
687	53.71	0.01895	0.1105	52.78	9.0501	51.00	81.35	132.35	0.1056	0.2641	48.59	118.29	3.2297	2.8774	1380.1	668.5
688	53.82	0.01896	0.1103	52.75	9.0686	51.08	81.24	132.32	0.1058	0.2640	48.66	118.27	3.2341	2.8834	1378.2	668.4
689	53.92	0.01897	0.1101	52.72	9.0872	51.15	81.14	132.29	0.1059	0.2639	48.73	118.25	3.2385	2.8894	1376.3	668.2
690	54.03	0.01898	0.1098	52.69	9.1058	51.22	81.04	132.26	0.1060	0.2638	48.80	118.23	3.2429	2.8954	1374.3	668.0
691	54.14	0.01899	0.1096	52.66	9.1244	51.29	80.94	132.23	0.1062	0.2637	48.86	118.20	3.2474	2.9015	1372.4	667.9
692	54.24	0.01900	0.1094	52.63	9.1430	51.37	80.84	132.20	0.1063	0.2636	48.93	118.18	3.2518	2.9077	1370.5	667.7
693	54.35	0.01901	0.1092	52.60	9.1617	51.44	80.72	132.16	0.1064	0.2635	49.00	118.16	3.2563	2.9138	1368.5	667.6
694	54.46	0.01902	0.1089	52.57	9.1804	51.51	80.62	132.13	0.1066	0.2634	49.07	118.13	3.2608	2.9200	1366.6	667.4
695	54.56	0.01903	0.1087	52.54	9.1992	51.58	80.52	132.10	0.1067	0.2633	49.13	118.11	3.2654	2.9262	1364.7	667.2
696	54.67	0.01904	0.1085	52.51	9.2179	51.65	80.42	132.07	0.1068	0.2632	49.20	118.09	3.2700	2.9325	1362.8	667.1
697	54.77	0.01905	0.1083	52.48	9.2368	51.73	80.31	132.04	0.1070	0.2631	49.27	118.06	3.2746	2.9388	1360.8	666.9
698	54.88	0.01906	0.1080	52.46	9.2556	51.80	80.21	132.01	0.1071	0.2630	49.33	118.04	3.2792	2.9451	1358.9	666.7
699	54.99	0.01908	0.1078	52.43	9.2745	51.87	80.10	131.97	0.1072	0.2629	49.40	118.02	3.2838	2.9515	1357.0	666.6
700	55.09	0.01909	0.1076	52.40	9.2934	51.94	80.00	131.94	0.1074	0.2628	49.47	117.99	3.2885	2.9578	1355.1	666.4
701	55.20	0.01910	0.1074	52.37	9.3123	52.01	79.90	131.91	0.1075	0.2627	49.54	117.97	3.2932	2.9643	1353.2	666.3
702	55.30	0.01911	0.1072	52.34	9.3313	52.09	79.79	131.88	0.1076	0.2626	49.60	117.95	3.2979	2.9707	1351.2	666.1
703	55.41	0.01912	0.1070	52.31	9.3503	52.16	79.69	131.85	0.1078	0.2625	49.67	117.92	3.3026	2.9772	1349.3	665.9
704	55.51	0.01913	0.1067	52.28	9.3693	52.23	79.58	131.81	0.1079	0.2624	49.74	117.90	3.3074	2.9837	1347.4	665.8
705	55.62	0.01914	0.1065	52.25	9.3884	52.30	79.48	131.78	0.1080	0.2623	49.81	117.88	3.3122	2.9903	1345.5	665.6
706	55.72	0.01915	0.1063	52.22	9.4075	52.38	79.38	131.75	0.1082	0.2622	49.87	117.85	3.3170	2.9969	1343.6	665.4
707	55.83	0.01916	0.1061	52.19	9.4266	52.45	79.27	131.72	0.1083	0.2621	49.94	117.83	3.3219	3.0035	1341.7	665.3
708	55.93	0.01917	0.1059	52.16	9.4458	52.52	79.16	131.68	0.1084	0.2620	50.01	117.80	3.3268	3.0102	1339.8	665.1
709	56.04	0.01918	0.1057	52.13	9.4650	52.59	79.06	131.65	0.1086	0.2619	50.07	117.78	3.3317	3.0169	1337.8	664.9
710	56.14	0.01919	0.1054	52.10	9.4843	52.66	78.96	131.62	0.1087	0.2618	50.14	117.76	3.3366	3.0237	1335.9	664.8
711	56.24	0.01921	0.1052	52.07	9.5035	52.74	78.84	131.58	0.1088	0.2617	50.21	117.73	3.3415	3.0305	1334.0	664.6
712	56.35	0.01922	0.1050	52.04	9.5228	52.81	78.74	131.55	0.1090	0.2616	50.28	117.71	3.3465	3.0373	1332.1	664.4
713	56.45	0.01923	0.1048	52.01	9.5422	52.88	78.64	131.52	0.1091	0.2615	50.34	117.68	3.3515	3.0441	1330.2	664.3
714	56.56	0.01924	0.1046	51.98	9.5616	52.95	78.54	131.49	0.1092	0.2614	50.41	117.66	3.3566	3.0510	1328.3	664.1
715	56.66	0.01925	0.1044	51.95	9.5810	53.03	78.43	131.45	0.1094	0.2613	50.48	117.63	3.3616	3.0580	1326.4	664.0

R-744

Carbon Dioxide

CO2

Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
716	56.76	0.01926	0.1042	51.92	9.6004	53.10	78.32	131.42	0.1095	0.2612	50.54	117.61	3.3667	3.0650	1324.5	663.8
717	56.87	0.01927	0.1040	51.89	9.6199	53.17	78.22	131.39	0.1096	0.2611	50.61	117.58	3.3718	3.0720	1322.6	663.6
718	56.97	0.01928	0.1037	51.86	9.6394	53.24	78.11	131.35	0.1098	0.2610	50.68	117.56	3.3770	3.0790	1320.7	663.5
719	57.07	0.01929	0.1035	51.83	9.6590	53.31	78.01	131.32	0.1099	0.2609	50.75	117.53	3.3822	3.0861	1318.8	663.3
720	57.18	0.01930	0.1033	51.80	9.6786	53.39	77.89	131.28	0.1100	0.2608	50.81	117.51	3.3874	3.0932	1316.9	663.1
721	57.28	0.01932	0.1031	51.77	9.6982	53.46	77.79	131.25	0.1102	0.2606	50.88	117.48	3.3926	3.1004	1315.0	663.0
722	57.38	0.01933	0.1029	51.74	9.7179	53.53	77.69	131.22	0.1103	0.2605	50.95	117.46	3.3979	3.1076	1313.1	662.8
723	57.49	0.01934	0.1027	51.71	9.7376	53.60	77.58	131.18	0.1104	0.2604	51.01	117.43	3.4031	3.1149	1311.2	662.6
724	57.59	0.01935	0.1025	51.68	9.7573	53.68	77.48	131.15	0.1106	0.2603	51.08	117.41	3.4085	3.1222	1309.3	662.5
725	57.69	0.01936	0.1023	51.65	9.7771	53.75	77.37	131.12	0.1107	0.2602	51.15	117.38	3.4138	3.1295	1307.4	662.3
726	57.79	0.01937	0.1021	51.62	9.7969	53.82	77.26	131.08	0.1108	0.2601	51.22	117.36	3.4192	3.1369	1305.5	662.1
727	57.90	0.01938	0.1019	51.59	9.8167	53.89	77.16	131.05	0.1110	0.2600	51.28	117.33	3.4246	3.1443	1303.6	662.0
728	58.00	0.01939	0.1017	51.56	9.8366	53.96	77.05	131.01	0.1111	0.2599	51.35	117.31	3.4301	3.1518	1301.7	661.8
729	58.10	0.01941	0.1015	51.53	9.8565	54.04	76.94	130.98	0.1112	0.2598	51.42	117.28	3.4355	3.1593	1299.8	661.6
730	58.20	0.01942	0.1013	51.50	9.8765	54.11	76.83	130.94	0.1114	0.2597	51.48	117.26	3.4410	3.1669	1297.9	661.5
731	58.31	0.01943	0.1011	51.47	9.8965	54.18	76.73	130.91	0.1115	0.2596	51.55	117.23	3.4466	3.1745	1296.0	661.3
732	58.41	0.01944	0.1008	51.44	9.9165	54.25	76.62	130.87	0.1116	0.2595	51.62	117.20	3.4521	3.1821	1294.2	661.1
733	58.51	0.01945	0.1006	51.41	9.9366	54.33	76.52	130.84	0.1118	0.2594	51.69	117.18	3.4577	3.1898	1292.3	661.0
734	58.61	0.01946	0.1004	51.38	9.9567	54.40	76.40	130.80	0.1119	0.2593	51.75	117.15	3.4634	3.1976	1290.4	660.8
735	58.71	0.01947	0.1002	51.35	9.9768	54.47	76.30	130.77	0.1120	0.2592	51.82	117.13	3.4690	3.2053	1288.5	660.6
736	58.82	0.01949	0.1000	51.32	9.9970	54.54	76.19	130.73	0.1122	0.2591	51.89	117.10	3.4747	3.2132	1286.6	660.4
737	58.92	0.01950	0.0998	51.29	10.0170	54.61	76.09	130.70	0.1123	0.2590	51.95	117.07	3.4805	3.2210	1284.7	660.3
738	59.02	0.01951	0.0996	51.26	10.0370	54.69	75.97	130.66	0.1124	0.2589	52.02	117.05	3.4862	3.2290	1282.8	660.1
739	59.12	0.01952	0.0994	51.23	10.0580	54.76	75.87	130.63	0.1125	0.2588	52.09	117.02	3.4920	3.2369	1280.9	659.9
740	59.22	0.01953	0.0992	51.20	10.0780	54.83	75.76	130.59	0.1127	0.2587	52.16	117.00	3.4978	3.2449	1279.1	659.8
741	59.32	0.01954	0.0990	51.17	10.0990	54.90	75.66	130.56	0.1128	0.2586	52.22	116.97	3.5037	3.2530	1277.2	659.6
742	59.42	0.01955	0.0988	51.14	10.1190	54.98	75.54	130.52	0.1129	0.2585	52.29	116.94	3.5096	3.2611	1275.3	659.4
743	59.52	0.01957	0.0986	51.11	10.1390	55.05	75.43	130.48	0.1131	0.2584	52.36	116.92	3.5155	3.2693	1273.4	659.3
744	59.62	0.01958	0.0984	51.08	10.1600	55.12	75.33	130.45	0.1132	0.2583	52.42	116.89	3.5215	3.2775	1271.5	659.1
745	59.72	0.01959	0.0982	51.05	10.1800	55.19	75.22	130.41	0.1133	0.2582	52.49	116.86	3.5275	3.2858	1269.6	658.9
746	59.82	0.01960	0.0980	51.02	10.2010	55.27	75.12	130.38	0.1135	0.2581	52.56	116.83	3.5336	3.2941	1267.7	658.7
747	59.93	0.01961	0.0978	50.99	10.2220	55.34	75.00	130.34	0.1136	0.2580	52.63	116.81	3.5396	3.3024	1265.9	658.6
748	60.03	0.01963	0.0976	50.96	10.2420	55.41	74.89	130.30	0.1137	0.2579	52.69	116.78	3.5457	3.3109	1264.0	658.4
749	60.13	0.01964	0.0974	50.93	10.2630	55.48	74.79	130.27	0.1139	0.2577	52.76	116.75	3.5519	3.3193	1262.1	658.2
750	60.23	0.01965	0.0972	50.90	10.2840	55.56	74.68	130.23	0.1140	0.2576	52.83	116.73	3.5581	3.3279	1260.2	658.1
751	60.33	0.01966	0.0970	50.86	10.3050	55.63	74.56	130.19	0.1141	0.2575	52.89	116.70	3.5643	3.3364	1258.3	657.9
752	60.43	0.01967	0.0968	50.83	10.3250	55.70	74.46	130.16	0.1143	0.2574	52.96	116.67	3.5705	3.3451	1256.5	657.7
753	60.53	0.01968	0.0967	50.80	10.3460	55.77	74.35	130.12	0.1144	0.2573	53.03	116.64	3.5768	3.3537	1254.6	657.5
754	60.63	0.01970	0.0965	50.77	10.3670	55.85	74.24	130.08	0.1145	0.2572	53.10	116.62	3.5832	3.3625	1252.7	657.4
755	60.72	0.01971	0.0963	50.74	10.3880	55.92	74.13	130.05	0.1147	0.2571	53.16	116.59	3.5895	3.3713	1250.8	657.2

R-744

Carbon Dioxide

CO2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
756	60.82	0.01972	0.0961	50.71	10.4090	55.99	74.02	130.01	0.1148	0.2570	53.23	116.56	3.5959	3.3801	1249.0	657.0
757	60.92	0.01973	0.0959	50.68	10.4300	56.06	73.91	129.97	0.1149	0.2569	53.30	116.53	3.6024	3.3890	1247.1	656.9
758	61.02	0.01974	0.0957	50.65	10.4510	56.14	73.81	129.94	0.1151	0.2568	53.36	116.51	3.6089	3.3980	1245.2	656.7
759	61.12	0.01976	0.0955	50.62	10.4720	56.21	73.69	129.90	0.1152	0.2567	53.43	116.48	3.6154	3.4070	1243.3	656.5
760	61.22	0.01977	0.0953	50.59	10.4940	56.28	73.58	129.86	0.1153	0.2566	53.50	116.45	3.6220	3.4161	1241.4	656.3
761	61.32	0.01978	0.0951	50.56	10.5150	56.35	73.47	129.82	0.1155	0.2565	53.57	116.42	3.6286	3.4252	1239.6	656.2
762	61.42	0.01979	0.0949	50.52	10.5360	56.43	73.35	129.78	0.1156	0.2564	53.63	116.39	3.6352	3.4344	1237.7	656.0
763	61.52	0.01981	0.0947	50.49	10.5570	56.50	73.25	129.75	0.1157	0.2563	53.70	116.36	3.6419	3.4436	1235.8	655.8
764	61.62	0.01982	0.0945	50.46	10.5790	56.57	73.14	129.71	0.1159	0.2562	53.77	116.34	3.6486	3.4530	1233.9	655.6
765	61.71	0.01983	0.0943	50.43	10.6000	56.64	73.03	129.67	0.1160	0.2561	53.84	116.31	3.6554	3.4623	1232.1	655.5
766	61.81	0.01984	0.0941	50.40	10.6220	56.72	72.91	129.63	0.1161	0.2559	53.90	116.28	3.6622	3.4718	1230.2	655.3
767	61.91	0.01985	0.0940	50.37	10.6430	56.79	72.80	129.59	0.1163	0.2558	53.97	116.25	3.6690	3.4813	1228.3	655.1
768	62.01	0.01987	0.0938	50.34	10.6650	56.86	72.70	129.56	0.1164	0.2557	54.04	116.22	3.6759	3.4908	1226.4	654.9
769	62.11	0.01988	0.0936	50.31	10.6860	56.94	72.59	129.52	0.1165	0.2556	54.10	116.19	3.6829	3.5004	1224.6	654.8
770	62.21	0.01989	0.0934	50.27	10.7080	57.01	72.47	129.48	0.1167	0.2555	54.17	116.16	3.6898	3.5101	1222.7	654.6
771	62.30	0.01990	0.0932	50.24	10.7290	57.08	72.36	129.44	0.1168	0.2554	54.24	116.13	3.6969	3.5199	1220.8	654.4
772	62.40	0.01992	0.0930	50.21	10.7510	57.15	72.25	129.40	0.1169	0.2553	54.31	116.10	3.7039	3.5297	1218.9	654.2
773	62.50	0.01993	0.0928	50.18	10.7730	57.23	72.13	129.36	0.1171	0.2552	54.37	116.08	3.7110	3.5396	1217.1	654.1
774	62.60	0.01994	0.0926	50.15	10.7950	57.30	72.02	129.32	0.1172	0.2551	54.44	116.05	3.7182	3.5495	1215.2	653.9
775	62.69	0.01995	0.0925	50.12	10.8170	57.37	71.91	129.28	0.1173	0.2550	54.51	116.02	3.7254	3.5595	1213.3	653.7
776	62.79	0.01997	0.0923	50.09	10.8380	57.45	71.80	129.24	0.1175	0.2549	54.58	115.99	3.7327	3.5696	1211.4	653.5
777	62.89	0.01998	0.0921	50.05	10.8600	57.52	71.69	129.21	0.1176	0.2548	54.64	115.96	3.7399	3.5797	1209.6	653.3
778	62.99	0.01999	0.0919	50.02	10.8820	57.59	71.58	129.17	0.1177	0.2547	54.71	115.93	3.7473	3.5900	1207.7	653.2
779	63.08	0.02000	0.0917	49.99	10.9040	57.66	71.47	129.13	0.1178	0.2546	54.78	115.90	3.7547	3.6003	1205.8	653.0
780	63.18	0.02002	0.0915	49.96	10.9270	57.74	71.35	129.09	0.1180	0.2544	54.85	115.87	3.7621	3.6106	1203.9	652.8
781	63.28	0.02003	0.0913	49.93	10.9490	57.81	71.24	129.05	0.1181	0.2543	54.91	115.84	3.7696	3.6210	1202.1	652.6
782	63.38	0.02004	0.0912	49.89	10.9710	57.88	71.13	129.01	0.1182	0.2542	54.98	115.81	3.7771	3.6315	1200.2	652.5
783	63.47	0.02006	0.0910	49.86	10.9930	57.96	71.01	128.97	0.1184	0.2541	55.05	115.78	3.7847	3.6421	1198.3	652.3
784	63.57	0.02007	0.0908	49.83	11.0150	58.03	70.90	128.93	0.1185	0.2540	55.12	115.75	3.7923	3.6528	1196.4	652.1
785	63.67	0.02008	0.0906	49.80	11.0380	58.10	70.79	128.89	0.1186	0.2539	55.18	115.72	3.8000	3.6635	1194.6	651.9
786	63.76	0.02009	0.0904	49.77	11.0600	58.18	70.67	128.85	0.1188	0.2538	55.25	115.69	3.8077	3.6743	1192.7	651.7
787	63.86	0.02011	0.0902	49.73	11.0830	58.25	70.55	128.80	0.1189	0.2537	55.32	115.66	3.8155	3.6851	1190.8	651.6
788	63.95	0.02012	0.0900	49.70	11.1050	58.32	70.44	128.76	0.1190	0.2536	55.39	115.62	3.8233	3.6961	1188.9	651.4
789	64.05	0.02013	0.0899	49.67	11.1280	58.40	70.32	128.72	0.1192	0.2535	55.46	115.59	3.8312	3.7071	1187.0	651.2
790	64.15	0.02015	0.0897	49.64	11.1500	58.47	70.21	128.68	0.1193	0.2534	55.52	115.56	3.8391	3.7182	1185.2	651.0
791	64.24	0.02016	0.0895	49.61	11.1730	58.54	70.10	128.64	0.1194	0.2532	55.59	115.53	3.8471	3.7294	1183.3	650.8
792	64.34	0.02017	0.0893	49.57	11.1960	58.62	69.98	128.60	0.1196	0.2531	55.66	115.50	3.8552	3.7407	1181.4	650.6
793	64.43	0.02019	0.0891	49.54	11.2180	58.69	69.87	128.56	0.1197	0.2530	55.73	115.47	3.8633	3.7520	1179.5	650.5
794	64.53	0.02020	0.0890	49.51	11.2410	58.76	69.76	128.52	0.1198	0.2529	55.79	115.44	3.8714	3.7634	1177.7	650.3
795	64.63	0.02021	0.0888	49.48	11.2640	58.84	69.64	128.48	0.1200	0.2528	55.86	115.41	3.8796	3.7749	1175.8	650.1



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
796	64.72	0.02023	0.0886	49.44	11.2870	58.91	69.52	128.43	0.1201	0.2527	55.93	115.38	3.8879	3.7865	1173.9	649.9
797	64.82	0.02024	0.0884	49.41	11.3100	58.98	69.41	128.39	0.1202	0.2526	56.00	115.34	3.8962	3.7982	1172.0	649.7
798	64.91	0.02025	0.0882	49.38	11.3330	59.06	69.29	128.35	0.1204	0.2525	56.07	115.31	3.9045	3.8100	1170.1	649.6
799	65.01	0.02027	0.0881	49.35	11.3560	59.13	69.18	128.31	0.1205	0.2524	56.13	115.28	3.9130	3.8218	1168.3	649.4
800	65.10	0.02028	0.0879	49.31	11.3790	59.21	69.07	128.27	0.1206	0.2522	56.20	115.25	3.9214	3.8337	1166.4	649.2
801	65.20	0.02029	0.0877	49.28	11.4020	59.28	68.94	128.22	0.1208	0.2521	56.27	115.22	3.9300	3.8458	1164.5	649.0
802	65.29	0.02031	0.0875	49.25	11.4260	59.35	68.83	128.18	0.1209	0.2520	56.34	115.18	3.9386	3.8579	1162.6	648.8
803	65.39	0.02032	0.0873	49.22	11.4490	59.43	68.71	128.14	0.1210	0.2519	56.41	115.15	3.9472	3.8701	1160.7	648.6
804	65.48	0.02033	0.0872	49.18	11.4720	59.50	68.60	128.10	0.1212	0.2518	56.47	115.12	3.9559	3.8823	1158.8	648.5
805	65.58	0.02035	0.0870	49.15	11.4960	59.57	68.48	128.05	0.1213	0.2517	56.54	115.09	3.9647	3.8947	1157.0	648.3
806	65.67	0.02036	0.0868	49.12	11.5190	59.65	68.36	128.01	0.1214	0.2516	56.61	115.05	3.9736	3.9072	1155.1	648.1
807	65.77	0.02037	0.0866	49.08	11.5430	59.72	68.25	127.97	0.1216	0.2515	56.68	115.02	3.9824	3.9198	1153.2	647.9
808	65.86	0.02039	0.0865	49.05	11.5660	59.80	68.12	127.92	0.1217	0.2513	56.75	114.99	3.9914	3.9324	1151.3	647.7
809	65.95	0.02040	0.0863	49.02	11.5900	59.87	68.01	127.88	0.1218	0.2512	56.81	114.96	4.0004	3.9452	1149.4	647.5
810	66.05	0.02041	0.0861	48.99	11.6140	59.94	67.90	127.84	0.1220	0.2511	56.88	114.92	4.0095	3.9580	1147.5	647.3
811	66.14	0.02043	0.0859	48.95	11.6370	60.02	67.77	127.79	0.1221	0.2510	56.95	114.89	4.0187	3.9710	1145.6	647.1
812	66.24	0.02044	0.0858	48.92	11.6610	60.09	67.66	127.75	0.1222	0.2509	57.02	114.86	4.0279	3.9841	1143.7	647.0
813	66.33	0.02046	0.0856	48.89	11.6850	60.17	67.54	127.71	0.1224	0.2508	57.09	114.82	4.0372	3.9972	1141.9	646.8
814	66.43	0.02047	0.0854	48.85	11.7090	60.24	67.42	127.66	0.1225	0.2507	57.16	114.79	4.0465	4.0105	1140.0	646.6
815	66.52	0.02048	0.0852	48.82	11.7330	60.32	67.31	127.62	0.1226	0.2506	57.22	114.76	4.0559	4.0238	1138.1	646.4
816	66.61	0.02050	0.0851	48.79	11.7570	60.39	67.18	127.57	0.1228	0.2504	57.29	114.72	4.0654	4.0373	1136.2	646.2
817	66.71	0.02051	0.0849	48.75	11.7810	60.46	67.07	127.53	0.1229	0.2503	57.36	114.69	4.0750	4.0509	1134.3	646.0
818	66.80	0.02053	0.0847	48.72	11.8050	60.54	66.95	127.49	0.1230	0.2502	57.43	114.65	4.0846	4.0645	1132.4	645.8
819	66.89	0.02054	0.0845	48.69	11.8300	60.61	66.83	127.44	0.1232	0.2501	57.50	114.62	4.0943	4.0783	1130.5	645.6
820	66.99	0.02055	0.0844	48.65	11.8540	60.69	66.71	127.40	0.1233	0.2500	57.57	114.59	4.1040	4.0922	1128.6	645.5
821	67.08	0.02057	0.0842	48.62	11.8780	60.76	66.59	127.35	0.1235	0.2499	57.64	114.55	4.1139	4.1062	1126.7	645.3
822	67.17	0.02058	0.0840	48.58	11.9030	60.84	66.47	127.31	0.1236	0.2497	57.70	114.52	4.1238	4.1203	1124.8	645.1
823	67.27	0.02060	0.0838	48.55	11.9270	60.91	66.35	127.26	0.1237	0.2496	57.77	114.48	4.1337	4.1345	1122.9	644.9
824	67.36	0.02061	0.0837	48.52	11.9520	60.99	66.22	127.21	0.1239	0.2495	57.84	114.45	4.1438	4.1489	1121.0	644.7
825	67.45	0.02063	0.0835	48.48	11.9760	61.06	66.11	127.17	0.1240	0.2494	57.91	114.41	4.1539	4.1633	1119.1	644.5
826	67.54	0.02064	0.0833	48.45	12.0010	61.14	65.98	127.12	0.1241	0.2493	57.98	114.38	4.1641	4.1779	1117.2	644.3
827	67.64	0.02066	0.0832	48.42	12.0260	61.21	65.87	127.08	0.1243	0.2492	58.05	114.34	4.1744	4.1926	1115.3	644.1
828	67.73	0.02067	0.0830	48.38	12.0510	61.29	65.74	127.03	0.1244	0.2491	58.12	114.31	4.1848	4.2074	1113.4	643.9
829	67.82	0.02068	0.0828	48.35	12.0750	61.36	65.63	126.99	0.1245	0.2489	58.19	114.27	4.1952	4.2224	1111.5	643.7
830	67.91	0.02070	0.0826	48.31	12.1000	61.44	65.50	126.94	0.1247	0.2488	58.25	114.24	4.2057	4.2374	1109.5	643.5
831	68.01	0.02071	0.0825	48.28	12.1250	61.51	65.38	126.89	0.1248	0.2487	58.32	114.20	4.2163	4.2526	1107.6	643.3
832	68.10	0.02073	0.0823	48.24	12.1500	61.59	65.26	126.85	0.1249	0.2486	58.39	114.17	4.2270	4.2679	1105.7	643.1
833	68.19	0.02074	0.0821	48.21	12.1760	61.66	65.14	126.80	0.1251	0.2485	58.46	114.13	4.2377	4.2833	1103.8	643.0
834	68.28	0.02076	0.0820	48.18	12.2010	61.74	65.01	126.75	0.1252	0.2484	58.53	114.09	4.2486	4.2989	1101.9	642.8
835	68.38	0.02077	0.0818	48.14	12.2260	61.81	64.90	126.71	0.1253	0.2482	58.60	114.06	4.2595	4.3146	1100.0	642.6

Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
836	68.47	0.02079	0.0816	48.11	12.2510	61.89	64.77	126.66	0.1255	0.2481	58.67	114.02	4.2705	4.3304	1098.1	642.4
837	68.56	0.02080	0.0815	48.07	12.2770	61.96	64.65	126.61	0.1256	0.2480	58.74	113.99	4.2816	4.3464	1096.1	642.2
838	68.65	0.02082	0.0813	48.04	12.3020	62.04	64.52	126.56	0.1257	0.2479	58.81	113.95	4.2928	4.3625	1094.2	642.0
839	68.74	0.02083	0.0811	48.00	12.3280	62.11	64.41	126.52	0.1259	0.2478	58.88	113.91	4.3041	4.3787	1092.3	641.8
840	68.83	0.02085	0.0809	47.97	12.3540	62.19	64.28	126.47	0.1260	0.2476	58.95	113.88	4.3155	4.3951	1090.4	641.6
841	68.93	0.02086	0.0808	47.93	12.3790	62.27	64.16	126.42	0.1262	0.2475	59.02	113.84	4.3269	4.4116	1088.5	641.4
842	69.02	0.02088	0.0806	47.90	12.4050	62.34	64.03	126.37	0.1263	0.2474	59.09	113.80	4.3385	4.4283	1086.5	641.2
843	69.11	0.02089	0.0804	47.86	12.4310	62.42	63.90	126.32	0.1264	0.2473	59.16	113.77	4.3501	4.4451	1084.6	641.0
844	69.20	0.02091	0.0803	47.83	12.4570	62.49	63.78	126.27	0.1266	0.2472	59.23	113.73	4.3618	4.4620	1082.7	640.8
845	69.29	0.02092	0.0801	47.79	12.4830	62.57	63.66	126.23	0.1267	0.2470	59.29	113.69	4.3737	4.4791	1080.7	640.6
846	69.38	0.02094	0.0799	47.76	12.5090	62.64	63.54	126.18	0.1268	0.2469	59.36	113.65	4.3856	4.4964	1078.8	640.4
847	69.47	0.02095	0.0798	47.72	12.5350	62.72	63.41	126.13	0.1270	0.2468	59.43	113.62	4.3976	4.5138	1076.9	640.2
848	69.56	0.02097	0.0796	47.69	12.5610	62.80	63.28	126.08	0.1271	0.2467	59.50	113.58	4.4098	4.5314	1074.9	640.0
849	69.65	0.02099	0.0794	47.65	12.5880	62.87	63.16	126.03	0.1272	0.2466	59.57	113.54	4.4220	4.5491	1073.0	639.8
850	69.74	0.02100	0.0793	47.62	12.6140	62.95	63.03	125.98	0.1274	0.2464	59.64	113.50	4.4343	4.5669	1071.0	639.6
851	69.84	0.02102	0.0791	47.58	12.6400	63.03	62.91	125.93	0.1275	0.2463	59.71	113.46	4.4468	4.5850	1069.1	639.4
852	69.93	0.02103	0.0789	47.55	12.6670	63.10	62.78	125.88	0.1277	0.2462	59.78	113.43	4.4593	4.6032	1067.2	639.2
853	70.02	0.02105	0.0788	47.51	12.6940	63.18	62.65	125.83	0.1278	0.2461	59.85	113.39	4.4719	4.6215	1065.2	639.0
854	70.11	0.02106	0.0786	47.48	12.7200	63.26	62.53	125.78	0.1279	0.2460	59.92	113.35	4.4847	4.6401	1063.3	638.8
855	70.20	0.02108	0.0784	47.44	12.7470	63.33	62.40	125.73	0.1281	0.2458	59.99	113.31	4.4976	4.6588	1061.3	638.6
856	70.29	0.02110	0.0783	47.40	12.7740	63.41	62.27	125.68	0.1282	0.2457	60.06	113.27	4.5105	4.6776	1059.4	638.4
857	70.38	0.02111	0.0781	47.37	12.8010	63.49	62.15	125.63	0.1283	0.2456	60.13	113.23	4.5236	4.6967	1057.4	638.2
858	70.47	0.02113	0.0780	47.33	12.8280	63.56	62.02	125.58	0.1285	0.2455	60.21	113.19	4.5368	4.7159	1055.4	638.0
859	70.56	0.02114	0.0778	47.30	12.8550	63.64	61.89	125.53	0.1286	0.2453	60.28	113.15	4.5501	4.7353	1053.5	637.7
860	70.65	0.02116	0.0776	47.26	12.8820	63.72	61.77	125.48	0.1288	0.2452	60.35	113.11	4.5636	4.7549	1051.5	637.5
861	70.74	0.02118	0.0775	47.22	12.9090	63.79	61.63	125.42	0.1289	0.2451	60.42	113.07	4.5771	4.7747	1049.6	637.3
862	70.83	0.02119	0.0773	47.19	12.9370	63.87	61.50	125.37	0.1290	0.2450	60.49	113.03	4.5908	4.7946	1047.6	637.1
863	70.92	0.02121	0.0771	47.15	12.9640	63.95	61.37	125.32	0.1292	0.2448	60.56	112.99	4.6046	4.8148	1045.6	636.9
864	71.01	0.02123	0.0770	47.11	12.9920	64.02	61.25	125.27	0.1293	0.2447	60.63	112.95	4.6185	4.8351	1043.6	636.7
865	71.09	0.02124	0.0768	47.08	13.0190	64.10	61.12	125.22	0.1294	0.2446	60.70	112.91	4.6326	4.8556	1041.7	636.5
866	71.18	0.02126	0.0766	47.04	13.0470	64.18	60.98	125.16	0.1296	0.2445	60.77	112.87	4.6468	4.8764	1039.7	636.3
867	71.27	0.02128	0.0765	47.00	13.0750	64.26	60.85	125.11	0.1297	0.2443	60.84	112.83	4.6611	4.8973	1037.7	636.1
868	71.36	0.02129	0.0763	46.97	13.1030	64.33	60.73	125.06	0.1299	0.2442	60.91	112.79	4.6755	4.9185	1035.7	635.9
869	71.45	0.02131	0.0762	46.93	13.1310	64.41	60.60	125.01	0.1300	0.2441	60.98	112.75	4.6901	4.9398	1033.8	635.7
870	71.54	0.02133	0.0760	46.89	13.1590	64.49	60.46	124.95	0.1301	0.2440	61.05	112.71	4.7048	4.9614	1031.8	635.4
871	71.63	0.02134	0.0758	46.86	13.1870	64.57	60.33	124.90	0.1303	0.2438	61.13	112.67	4.7196	4.9831	1029.8	635.2
872	71.72	0.02136	0.0757	46.82	13.2150	64.65	60.20	124.85	0.1304	0.2437	61.20	112.63	4.7346	5.0051	1027.8	635.0
873	71.81	0.02138	0.0755	46.78	13.2430	64.72	60.07	124.79	0.1306	0.2436	61.27	112.59	4.7497	5.0273	1025.8	634.8
874	71.90	0.02139	0.0753	46.75	13.2720	64.80	59.94	124.74	0.1307	0.2435	61.34	112.54	4.7650	5.0497	1023.8	634.6
875	71.98	0.02141	0.0752	46.71	13.3000	64.88	59.80	124.68	0.1308	0.2433	61.41	112.50	4.7804	5.0724	1021.8	634.4

R-744

Carbon Dioxide

CO2



Pressure (psia)	Temp. (°F)	Volume (ft³/lbm)		Density (lbm/ft³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
876	72.07	0.02143	0.0750	46.67	13.3290	64.96	59.67	124.63	0.1310	0.2432	61.48	112.46	4.7960	5.0953	1019.8	634.2
877	72.16	0.02144	0.0749	46.63	13.3570	65.04	59.54	124.58	0.1311	0.2431	61.56	112.42	4.8117	5.1184	1017.8	633.9
878	72.25	0.02146	0.0747	46.60	13.3860	65.12	59.41	124.52	0.1313	0.2429	61.63	112.37	4.8276	5.1417	1015.8	633.7
879	72.34	0.02148	0.0745	46.56	13.4150	65.19	59.28	124.47	0.1314	0.2428	61.70	112.33	4.8436	5.1653	1013.8	633.5
880	72.43	0.02150	0.0744	46.52	13.4440	65.27	59.14	124.41	0.1315	0.2427	61.77	112.29	4.8598	5.1892	1011.8	633.3
881	72.51	0.02151	0.0742	46.48	13.4730	65.35	59.00	124.35	0.1317	0.2425	61.84	112.25	4.8761	5.2133	1009.8	633.1
882	72.60	0.02153	0.0741	46.45	13.5020	65.43	58.87	124.30	0.1318	0.2424	61.91	112.20	4.8927	5.2376	1007.7	632.9
883	72.69	0.02155	0.0739	46.41	13.5320	65.51	58.73	124.24	0.1320	0.2423	61.99	112.16	4.9093	5.2622	1005.7	632.6
884	72.78	0.02157	0.0737	46.37	13.5610	65.59	58.60	124.19	0.1321	0.2422	62.06	112.12	4.9262	5.2870	1003.7	632.4
885	72.87	0.02158	0.0736	46.33	13.5900	65.67	58.46	124.13	0.1322	0.2420	62.13	112.07	4.9432	5.3122	1001.7	632.2
886	72.95	0.02160	0.0734	46.29	13.6200	65.75	58.32	124.07	0.1324	0.2419	62.20	112.03	4.9604	5.3375	999.6	632.0
887	73.04	0.02162	0.0733	46.25	13.6500	65.83	58.19	124.02	0.1325	0.2418	62.28	111.98	4.9778	5.3632	997.6	631.7
888	73.13	0.02164	0.0731	46.22	13.6790	65.91	58.05	123.96	0.1327	0.2416	62.35	111.94	4.9953	5.3891	995.6	631.5
889	73.22	0.02166	0.0729	46.18	13.7090	65.99	57.91	123.90	0.1328	0.2415	62.42	111.90	5.0130	5.4154	993.5	631.3
890	73.30	0.02167	0.0728	46.14	13.7390	66.07	57.78	123.85	0.1330	0.2414	62.49	111.85	5.0310	5.4419	991.5	631.1
891	73.39	0.02169	0.0726	46.10	13.7690	66.15	57.64	123.79	0.1331	0.2412	62.57	111.81	5.0491	5.4686	989.5	630.9
892	73.48	0.02171	0.0725	46.06	13.8000	66.23	57.50	123.73	0.1332	0.2411	62.64	111.76	5.0674	5.4957	987.4	630.6
893	73.56	0.02173	0.0723	46.02	13.8300	66.31	57.36	123.67	0.1334	0.2410	62.71	111.72	5.0859	5.5231	985.4	630.4
894	73.65	0.02175	0.0721	45.98	13.8600	66.39	57.22	123.61	0.1335	0.2408	62.79	111.67	5.1046	5.5508	983.3	630.2
895	73.74	0.02177	0.0720	45.94	13.8910	66.47	57.09	123.56	0.1337	0.2407	62.86	111.63	5.1235	5.5788	981.2	629.9
896	73.83	0.02179	0.0718	45.90	13.9220	66.55	56.95	123.50	0.1338	0.2406	62.93	111.58	5.1426	5.6071	979.2	629.7
897	73.91	0.02180	0.0717	45.86	13.9520	66.63	56.81	123.44	0.1340	0.2404	63.01	111.53	5.1619	5.6358	977.1	629.5
898	74.00	0.02182	0.0715	45.83	13.9830	66.71	56.67	123.38	0.1341	0.2403	63.08	111.49	5.1814	5.6648	975.0	629.2
899	74.09	0.02184	0.0714	45.79	14.0140	66.79	56.53	123.32	0.1342	0.2401	63.15	111.44	5.2012	5.6941	973.0	629.0
900	74.17	0.02186	0.0712	45.75	14.0450	66.87	56.39	123.26	0.1344	0.2400	63.23	111.39	5.2211	5.7237	970.9	628.8
901	74.26	0.02188	0.0710	45.71	14.0770	66.95	56.25	123.20	0.1345	0.2399	63.30	111.35	5.2413	5.7537	968.8	628.5
902	74.34	0.02190	0.0709	45.67	14.1080	67.03	56.11	123.14	0.1347	0.2397	63.38	111.30	5.2617	5.7840	966.7	628.3
903	74.43	0.02192	0.0707	45.63	14.1390	67.11	55.97	123.08	0.1348	0.2396	63.45	111.25	5.2824	5.8147	964.7	628.1
904	74.52	0.02194	0.0706	45.59	14.1710	67.20	55.83	123.02	0.1350	0.2395	63.52	111.21	5.3033	5.8458	962.6	627.8
905	74.60	0.02196	0.0704	45.55	14.2030	67.28	55.68	122.96	0.1351	0.2393	63.60	111.16	5.3244	5.8772	960.5	627.6
906	74.69	0.02198	0.0703	45.51	14.2350	67.36	55.54	122.90	0.1353	0.2392	63.67	111.11	5.3458	5.9090	958.4	627.4
907	74.78	0.02200	0.0701	45.46	14.2670	67.44	55.39	122.83	0.1354	0.2390	63.75	111.06	5.3674	5.9411	956.3	627.1
908	74.86	0.02202	0.0699	45.42	14.2990	67.52	55.25	122.77	0.1355	0.2389	63.82	111.01	5.3893	5.9737	954.2	626.9
909	74.95	0.02204	0.0698	45.38	14.3310	67.61	55.11	122.71	0.1357	0.2388	63.90	110.96	5.4115	6.0067	952.1	626.6
910	75.03	0.02206	0.0696	45.34	14.3630	67.69	54.96	122.65	0.1358	0.2386	63.97	110.92	5.4339	6.0401	950.0	626.4
911	75.12	0.02208	0.0695	45.30	14.3960	67.77	54.81	122.58	0.1360	0.2385	64.05	110.87	5.4566	6.0738	947.8	626.2
912	75.20	0.02210	0.0693	45.26	14.4280	67.85	54.67	122.52	0.1361	0.2383	64.12	110.82	5.4795	6.1080	945.7	625.9
913	75.29	0.02212	0.0692	45.22	14.4610	67.94	54.53	122.46	0.1363	0.2382	64.20	110.77	5.5027	6.1427	943.6	625.7
914	75.37	0.02214	0.0690	45.18	14.4940	68.02	54.37	122.39	0.1364	0.2381	64.27	110.72	5.5263	6.1777	941.5	625.4
915	75.46	0.02216	0.0688	45.14	14.5270	68.10	54.23	122.33	0.1366	0.2379	64.35	110.67	5.5501	6.2132	939.3	625.2

R-744

Carbon Dioxide
CO2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
916	75.55	0.02218	0.0687	45.09	14.5600	68.18	54.09	122.27	0.1367	0.2378	64.42	110.62	5.5742	6.2492	937.2	624.9
917	75.63	0.02220	0.0685	45.05	14.5930	68.27	53.93	122.20	0.1369	0.2376	64.50	110.57	5.5986	6.2856	935.1	624.7
918	75.72	0.02222	0.0684	45.01	14.6270	68.35	53.79	122.14	0.1370	0.2375	64.58	110.52	5.6233	6.3225	932.9	624.4
919	75.80	0.02224	0.0682	44.97	14.6600	68.44	53.64	122.07	0.1372	0.2373	64.65	110.47	5.6484	6.3599	930.8	624.2
920	75.89	0.02226	0.0681	44.93	14.6940	68.52	53.49	122.01	0.1373	0.2372	64.73	110.41	5.6737	6.3977	928.6	623.9
921	75.97	0.02228	0.0679	44.88	14.7280	68.60	53.34	121.94	0.1375	0.2370	64.80	110.36	5.6994	6.4361	926.5	623.7
922	76.06	0.02230	0.0677	44.84	14.7620	68.69	53.19	121.88	0.1376	0.2369	64.88	110.31	5.7254	6.4750	924.3	623.4
923	76.14	0.02232	0.0676	44.80	14.7960	68.77	53.04	121.81	0.1378	0.2367	64.96	110.26	5.7518	6.5144	922.2	623.2
924	76.22	0.02234	0.0674	44.76	14.8300	68.86	52.88	121.74	0.1379	0.2366	65.03	110.21	5.7785	6.5543	920.0	622.9
925	76.31	0.02237	0.0673	44.71	14.8650	68.94	52.74	121.68	0.1381	0.2365	65.11	110.15	5.8055	6.5947	917.8	622.6
926	76.39	0.02239	0.0671	44.67	14.8990	69.03	52.58	121.61	0.1382	0.2363	65.19	110.10	5.8329	6.6357	915.6	622.4
927	76.48	0.02241	0.0670	44.63	14.9340	69.11	52.43	121.54	0.1384	0.2362	65.26	110.05	5.8607	6.6773	913.5	622.1
928	76.56	0.02243	0.0668	44.58	14.9690	69.20	52.27	121.47	0.1385	0.2360	65.34	109.99	5.8889	6.7194	911.3	621.9
929	76.65	0.02245	0.0666	44.54	15.0040	69.28	52.13	121.41	0.1387	0.2359	65.42	109.94	5.9174	6.7622	909.1	621.6
930	76.73	0.02247	0.0665	44.50	15.0390	69.37	51.97	121.34	0.1388	0.2357	65.50	109.89	5.9464	6.8055	906.9	621.3
931	76.82	0.02250	0.0663	44.45	15.0750	69.45	51.82	121.27	0.1390	0.2356	65.58	109.83	5.9757	6.8494	904.7	621.1
932	76.90	0.02252	0.0662	44.41	15.1100	69.54	51.66	121.20	0.1391	0.2354	65.65	109.78	6.0055	6.8940	902.5	620.8
933	76.98	0.02254	0.0660	44.36	15.1460	69.63	51.51	121.13	0.1393	0.2353	65.73	109.72	6.0356	6.9392	900.3	620.5
934	77.07	0.02256	0.0659	44.32	15.1820	69.71	51.35	121.06	0.1394	0.2351	65.81	109.67	6.0662	6.9850	898.1	620.3
935	77.15	0.02259	0.0657	44.28	15.2180	69.80	51.19	120.99	0.1396	0.2349	65.89	109.61	6.0973	7.0316	895.8	620.0
936	77.23	0.02261	0.0656	44.23	15.2540	69.89	51.04	120.92	0.1397	0.2348	65.97	109.56	6.1287	7.0788	893.6	619.7
937	77.32	0.02263	0.0654	44.19	15.2900	69.97	50.88	120.85	0.1399	0.2346	66.05	109.50	6.1607	7.1267	891.4	619.4
938	77.40	0.02266	0.0652	44.14	15.3270	70.06	50.72	120.78	0.1400	0.2345	66.12	109.44	6.1931	7.1753	889.2	619.2
939	77.49	0.02268	0.0651	44.10	15.3640	70.15	50.56	120.71	0.1402	0.2343	66.20	109.39	6.2260	7.2246	886.9	618.9
940	77.57	0.02270	0.0649	44.05	15.4010	70.24	50.40	120.63	0.1404	0.2342	66.28	109.33	6.2593	7.2747	884.7	618.6
941	77.65	0.02273	0.0648	44.01	15.4380	70.32	50.24	120.56	0.1405	0.2340	66.36	109.27	6.2932	7.3256	882.4	618.3
942	77.74	0.02275	0.0646	43.96	15.4750	70.41	50.08	120.49	0.1407	0.2339	66.44	109.22	6.3275	7.3772	880.2	618.0
943	77.82	0.02277	0.0645	43.91	15.5120	70.50	49.92	120.42	0.1408	0.2337	66.52	109.16	6.3624	7.4296	877.9	617.7
944	77.90	0.02280	0.0643	43.87	15.5500	70.59	49.75	120.34	0.1410	0.2335	66.60	109.10	6.3978	7.4829	875.7	617.5
945	77.98	0.02282	0.0642	43.82	15.5880	70.68	49.59	120.27	0.1411	0.2334	66.68	109.04	6.4338	7.5369	873.4	617.2
946	78.07	0.02284	0.0640	43.78	15.6260	70.77	49.42	120.19	0.1413	0.2332	66.76	108.98	6.4703	7.5919	871.1	616.9
947	78.15	0.02287	0.0638	43.73	15.6640	70.86	49.27	120.12	0.1415	0.2331	66.85	108.92	6.5074	7.6477	868.9	616.6
948	78.23	0.02289	0.0637	43.68	15.7030	70.94	49.10	120.04	0.1416	0.2329	66.93	108.86	6.5451	7.7044	866.6	616.3
949	78.32	0.02292	0.0635	43.64	15.7410	71.03	48.94	119.97	0.1418	0.2327	67.01	108.80	6.5834	7.7621	864.3	616.0
950	78.40	0.02294	0.0634	43.59	15.7800	71.12	48.77	119.89	0.1419	0.2326	67.09	108.74	6.6223	7.8206	862.0	615.7
951	78.48	0.02297	0.0632	43.54	15.8190	71.22	48.61	119.82	0.1421	0.2324	67.17	108.68	6.6618	7.8802	859.7	615.4
952	78.56	0.02299	0.0631	43.49	15.8590	71.31	48.44	119.74	0.1423	0.2322	67.25	108.62	6.7019	7.9407	857.4	615.1
953	78.65	0.02302	0.0629	43.45	15.8980	71.40	48.26	119.66	0.1424	0.2321	67.33	108.56	6.7428	8.0023	855.1	614.8
954	78.73	0.02304	0.0627	43.40	15.9380	71.49	48.09	119.58	0.1426	0.2319	67.42	108.50	6.7842	8.0649	852.8	614.5
955	78.81	0.02307	0.0626	43.35	15.9780	71.58	47.92	119.50	0.1427	0.2317	67.50	108.44	6.8264	8.1286	850.4	614.2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
956	78.89	0.02310	0.0624	43.30	16.0180	71.67	47.76	119.43	0.1429	0.2316	67.58	108.37	6.8693	8.1934	848.1	613.9
957	78.97	0.02312	0.0623	43.25	16.0580	71.76	47.59	119.35	0.1431	0.2314	67.67	108.31	6.9130	8.2593	845.8	613.6
958	79.06	0.02315	0.0621	43.20	16.0990	71.86	47.42	119.27	0.1432	0.2312	67.75	108.25	6.9573	8.3264	843.4	613.3
959	79.14	0.02317	0.0620	43.15	16.1400	71.95	47.24	119.19	0.1434	0.2311	67.83	108.18	7.0025	8.3946	841.1	612.9
960	79.22	0.02320	0.0618	43.10	16.1810	72.04	47.07	119.11	0.1436	0.2309	67.92	108.12	7.0484	8.4641	838.8	612.6
961	79.30	0.02323	0.0616	43.05	16.2220	72.13	46.90	119.03	0.1437	0.2307	68.00	108.06	7.0951	8.5349	836.4	612.3
962	79.38	0.02325	0.0615	43.00	16.2640	72.23	46.71	118.94	0.1439	0.2306	68.08	107.99	7.1427	8.6069	834.0	612.0
963	79.47	0.02328	0.0613	42.95	16.3050	72.32	46.54	118.86	0.1441	0.2304	68.17	107.93	7.1911	8.6803	831.7	611.7
964	79.55	0.02331	0.0612	42.90	16.3480	72.42	46.37	118.78	0.1442	0.2302	68.25	107.86	7.2404	8.7550	829.3	611.3
965	79.63	0.02334	0.0610	42.85	16.3900	72.51	46.19	118.70	0.1444	0.2300	68.34	107.79	7.2906	8.8312	826.9	611.0
966	79.71	0.02336	0.0609	42.80	16.4320	72.60	46.01	118.61	0.1446	0.2299	68.42	107.73	7.3417	8.9087	824.5	610.7
967	79.79	0.02339	0.0607	42.75	16.4750	72.70	45.83	118.53	0.1447	0.2297	68.51	107.66	7.3938	8.9878	822.1	610.3
968	79.87	0.02342	0.0605	42.70	16.5180	72.79	45.65	118.44	0.1449	0.2295	68.60	107.59	7.4469	9.0684	819.7	610.0
969	79.95	0.02345	0.0604	42.65	16.5620	72.89	45.47	118.36	0.1451	0.2293	68.68	107.52	7.5009	9.1506	817.3	609.7
970	80.04	0.02348	0.0602	42.60	16.6050	72.99	45.28	118.27	0.1452	0.2291	68.77	107.46	7.5560	9.2344	814.9	609.3
971	80.12	0.02351	0.0601	42.54	16.6490	73.08	45.11	118.19	0.1454	0.2290	68.86	107.39	7.6122	9.3199	812.5	609.0
972	80.20	0.02354	0.0599	42.49	16.6940	73.18	44.92	118.10	0.1456	0.2288	68.94	107.32	7.6695	9.4071	810.0	608.6
973	80.28	0.02356	0.0597	42.44	16.7380	73.28	44.73	118.01	0.1457	0.2286	69.03	107.25	7.7279	9.4961	807.6	608.3
974	80.36	0.02359	0.0596	42.39	16.7830	73.37	44.55	117.92	0.1459	0.2284	69.12	107.18	7.7874	9.5869	805.1	607.9
975	80.44	0.02362	0.0594	42.33	16.8280	73.47	44.36	117.83	0.1461	0.2282	69.21	107.11	7.8482	9.6797	802.7	607.6
976	80.52	0.02365	0.0593	42.28	16.8730	73.57	44.17	117.74	0.1463	0.2280	69.30	107.03	7.9102	9.7743	800.2	607.2
977	80.60	0.02368	0.0591	42.22	16.9190	73.67	43.98	117.65	0.1464	0.2279	69.39	106.96	7.9735	9.8710	797.8	606.8
978	80.68	0.02371	0.0589	42.17	16.9650	73.77	43.79	117.56	0.1466	0.2277	69.47	106.89	8.0381	9.9698	795.3	606.5
979	80.76	0.02375	0.0588	42.12	17.0110	73.87	43.60	117.47	0.1468	0.2275	69.56	106.82	8.1041	10.0710	792.8	606.1
980	80.84	0.02378	0.0586	42.06	17.0580	73.97	43.41	117.38	0.1470	0.2273	69.65	106.74	8.1715	10.1740	790.3	605.7
981	80.92	0.02381	0.0585	42.00	17.1050	74.07	43.22	117.29	0.1471	0.2271	69.74	106.67	8.2403	10.2790	787.8	605.3
982	81.00	0.02384	0.0583	41.95	17.1530	74.17	43.02	117.19	0.1473	0.2269	69.84	106.59	8.3107	10.3870	785.3	605.0
983	81.08	0.02387	0.0581	41.89	17.2000	74.27	42.83	117.10	0.1475	0.2267	69.93	106.52	8.3826	10.4980	782.8	604.6
984	81.16	0.02390	0.0580	41.84	17.2480	74.37	42.64	117.01	0.1477	0.2265	70.02	106.44	8.4561	10.6100	780.2	604.2
985	81.24	0.02394	0.0578	41.78	17.2970	74.48	42.43	116.91	0.1479	0.2263	70.11	106.36	8.5313	10.7260	777.7	603.8
986	81.32	0.02397	0.0577	41.72	17.3460	74.58	42.23	116.81	0.1480	0.2261	70.20	106.29	8.6082	10.8440	775.1	603.4
987	81.40	0.02400	0.0575	41.67	17.3950	74.68	42.04	116.72	0.1482	0.2259	70.30	106.21	8.6869	10.9650	772.6	603.0
988	81.48	0.02403	0.0573	41.61	17.4440	74.79	41.84	116.62	0.1484	0.2257	70.39	106.13	8.7674	11.0890	770.0	602.6
989	81.56	0.02407	0.0572	41.55	17.4940	74.89	41.63	116.52	0.1486	0.2255	70.48	106.05	8.8499	11.2160	767.4	602.2
990	81.64	0.02410	0.0570	41.49	17.5450	74.99	41.43	116.42	0.1488	0.2253	70.58	105.97	8.9344	11.3470	764.8	601.8
991	81.72	0.02414	0.0568	41.43	17.5950	75.10	41.22	116.32	0.1490	0.2251	70.67	105.89	9.0209	11.4800	762.2	601.3
992	81.80	0.02417	0.0567	41.37	17.6460	75.21	41.01	116.22	0.1492	0.2249	70.77	105.81	9.1096	11.6170	759.6	600.9
993	81.88	0.02421	0.0565	41.31	17.6980	75.31	40.81	116.12	0.1493	0.2247	70.86	105.73	9.2005	11.7580	757.0	600.5
994	81.96	0.02424	0.0563	41.25	17.7500	75.42	40.59	116.01	0.1495	0.2245	70.96	105.64	9.2938	11.9020	754.3	600.1
995	82.04	0.02428	0.0562	41.19	17.8020	75.53	40.38	115.91	0.1497	0.2243	71.05	105.56	9.3894	12.0500	751.7	599.6

R-744

Carbon Dioxide

CO2



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
996	82.12	0.02431	0.0560	41.13	17.8550	75.64	40.18	115.81	0.1499	0.2241	71.15	105.48	9.4876	12.2020	749.0	599.2
997	82.20	0.02435	0.0558	41.07	17.9090	75.74	39.96	115.70	0.1501	0.2238	71.25	105.39	9.5884	12.3580	746.4	598.7
998	82.28	0.02439	0.0557	41.01	17.9630	75.85	39.74	115.59	0.1503	0.2236	71.35	105.31	9.6919	12.5190	743.7	598.3
999	82.36	0.02442	0.0555	40.94	18.0170	75.96	39.53	115.49	0.1505	0.2234	71.45	105.22	9.7983	12.6840	741.0	597.8
1000	82.43	0.02446	0.0553	40.88	18.0720	76.07	39.31	115.38	0.1507	0.2232	71.54	105.13	9.9076	12.8530	738.2	597.4
1001	82.51	0.02450	0.0552	40.82	18.1270	76.19	39.09	115.27	0.1509	0.2230	71.64	105.04	10.0200	13.0280	735.5	596.9
1002	82.59	0.02454	0.0550	40.75	18.1830	76.30	38.86	115.16	0.1511	0.2228	71.75	104.95	10.1360	13.2080	732.8	596.4
1003	82.67	0.02458	0.0548	40.69	18.2390	76.41	38.64	115.05	0.1513	0.2225	71.85	104.86	10.2550	13.3930	730.0	595.9
1004	82.75	0.02462	0.0547	40.62	18.2960	76.52	38.41	114.93	0.1515	0.2223	71.95	104.77	10.3770	13.5840	727.2	595.4
1005	82.83	0.02466	0.0545	40.56	18.3540	76.64	38.18	114.82	0.1517	0.2221	72.05	104.68	10.5040	13.7810	724.4	594.9
1006	82.91	0.02470	0.0543	40.49	18.4120	76.75	37.96	114.71	0.1519	0.2218	72.15	104.59	10.6340	13.9840	721.6	594.4
1007	82.98	0.02474	0.0541	40.43	18.4710	76.87	37.72	114.59	0.1521	0.2216	72.26	104.49	10.7680	14.1930	718.8	593.9
1008	83.06	0.02478	0.0540	40.36	18.5300	76.99	37.49	114.47	0.1523	0.2214	72.36	104.40	10.9070	14.4100	715.9	593.4
1009	83.14	0.02482	0.0538	40.29	18.5900	77.10	37.25	114.35	0.1525	0.2211	72.47	104.30	11.0500	14.6330	713.1	592.9
1010	83.22	0.02486	0.0536	40.22	18.6500	77.22	37.01	114.23	0.1527	0.2209	72.57	104.21	11.1980	14.8640	710.2	592.3
1011	83.30	0.02491	0.0534	40.15	18.7110	77.34	36.77	114.11	0.1529	0.2207	72.68	104.11	11.3500	15.1030	707.3	591.8
1012	83.37	0.02495	0.0533	40.08	18.7730	77.46	36.53	113.99	0.1531	0.2204	72.79	104.01	11.5080	15.3500	704.3	591.2
1013	83.45	0.02499	0.0531	40.01	18.8360	77.58	36.29	113.87	0.1534	0.2202	72.89	103.91	11.6720	15.6060	701.4	590.7
1014	83.53	0.02504	0.0529	39.94	18.8990	77.70	36.04	113.74	0.1536	0.2199	73.00	103.81	11.8410	15.8710	698.4	590.1
1015	83.61	0.02508	0.0527	39.87	18.9630	77.83	35.78	113.61	0.1538	0.2197	73.11	103.70	12.0160	16.1460	695.4	589.5
1016	83.69	0.02513	0.0526	39.80	19.0280	77.95	35.54	113.49	0.1540	0.2194	73.22	103.60	12.1980	16.4310	692.4	588.9
1017	83.76	0.02518	0.0524	39.72	19.0930	78.08	35.29	113.36	0.1542	0.2192	73.33	103.49	12.3870	16.7260	689.3	588.3
1018	83.84	0.02522	0.0522	39.65	19.1600	78.20	35.02	113.22	0.1545	0.2189	73.45	103.39	12.5830	17.0340	686.3	587.7
1019	83.92	0.02527	0.0520	39.57	19.2270	78.33	34.76	113.09	0.1547	0.2186	73.56	103.28	12.7870	17.3530	683.2	587.1
1020	84.00	0.02532	0.0518	39.50	19.2950	78.46	34.50	112.96	0.1549	0.2184	73.67	103.17	12.9990	17.6860	680.0	586.4
1021	84.07	0.02537	0.0516	39.42	19.3640	78.59	34.23	112.82	0.1551	0.2181	73.79	103.06	13.2190	18.0320	676.9	585.8
1022	84.15	0.02542	0.0515	39.34	19.4340	78.72	33.96	112.68	0.1554	0.2178	73.91	102.94	13.4490	18.3930	673.7	585.1
1023	84.23	0.02547	0.0513	39.26	19.5050	78.85	33.69	112.54	0.1556	0.2176	74.02	102.83	13.6890	18.7690	670.4	584.4
1024	84.30	0.02552	0.0511	39.18	19.5770	78.98	33.42	112.40	0.1558	0.2173	74.14	102.71	13.9390	19.1620	667.2	583.7
1025	84.38	0.02558	0.0509	39.10	19.6490	79.12	33.13	112.25	0.1561	0.2170	74.26	102.59	14.2010	19.5730	663.9	583.0
1026	84.46	0.02563	0.0507	39.02	19.7230	79.25	32.86	112.11	0.1563	0.2167	74.38	102.48	14.4740	20.0030	660.6	582.3
1027	84.54	0.02568	0.0505	38.94	19.7980	79.39	32.57	111.96	0.1566	0.2164	74.51	102.35	14.7610	20.4520	657.2	581.5
1028	84.61	0.02574	0.0503	38.85	19.8750	79.53	32.28	111.81	0.1568	0.2161	74.63	102.23	15.0610	20.9240	653.8	580.8
1029	84.69	0.02580	0.0501	38.77	19.9520	79.67	31.99	111.66	0.1571	0.2158	74.76	102.11	15.3760	21.4190	650.3	580.0
1030	84.77	0.02585	0.0499	38.68	20.0310	79.81	31.69	111.50	0.1573	0.2155	74.88	101.98	15.7070	21.9390	646.8	579.2
1031	84.84	0.02591	0.0497	38.59	20.1100	79.96	31.38	111.34	0.1576	0.2152	75.01	101.85	16.0560	22.4860	643.3	578.4
1032	84.92	0.02597	0.0495	38.50	20.1920	80.10	31.08	111.18	0.1578	0.2149	75.14	101.72	16.4230	23.0620	639.7	577.5
1033	85.00	0.02603	0.0493	38.41	20.2740	80.25	30.77	111.02	0.1581	0.2146	75.27	101.58	16.8100	23.6700	636.0	576.7
1034	85.07	0.02610	0.0491	38.32	20.3590	80.40	30.45	110.85	0.1584	0.2143	75.41	101.45	17.2190	24.3120	632.3	575.8
1035	85.15	0.02616	0.0489	38.23	20.4440	80.55	30.13	110.68	0.1586	0.2139	75.54	101.31	17.6520	24.9910	628.6	574.8



Pressure (psia)	Temp. (°F)	Volume (ft ³ /lbm)		Density (lbm/ft ³)		Enthalpy (Btu/lbm)			Entropy (Btu/lbm-°R)		Int. Energy (Btu/lbm)		Cp/Cv		Sound Speed (ft/s)	
		Liquid	Vapor	Liquid	Vapor	Liquid	Latent	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
1036	85.22	0.02623	0.0487	38.13	20.5320	80.71	29.80	110.51	0.1589	0.2136	75.68	101.16	18.1120	25.7110	624.8	573.9
1037	85.30	0.02629	0.0485	38.04	20.6210	80.87	29.47	110.33	0.1592	0.2133	75.82	101.02	18.5990	26.4750	620.9	572.9
1038	85.38	0.02636	0.0483	37.94	20.7110	81.02	29.13	110.15	0.1595	0.2129	75.96	100.87	19.1180	27.2880	617.0	571.9
1039	85.45	0.02643	0.0481	37.84	20.8040	81.19	28.78	109.97	0.1598	0.2126	76.10	100.72	19.6720	28.1530	613.0	570.8
1040	85.53	0.02650	0.0479	37.73	20.8990	81.35	28.43	109.78	0.1600	0.2122	76.25	100.57	20.2630	29.0780	608.9	569.8
1041	85.60	0.02658	0.0476	37.63	20.9960	81.52	28.07	109.59	0.1603	0.2118	76.39	100.41	20.8960	30.0670	604.7	568.6
1042	85.68	0.02665	0.0474	37.52	21.0950	81.69	27.71	109.40	0.1606	0.2115	76.55	100.25	21.5760	31.1270	600.5	567.5
1043	85.75	0.02673	0.0472	37.41	21.1960	81.86	27.34	109.20	0.1610	0.2111	76.70	100.08	22.3070	32.2680	596.2	566.2
1044	85.83	0.02681	0.0469	37.30	21.3000	82.04	26.95	108.99	0.1613	0.2107	76.86	99.92	23.0960	33.4970	591.8	565.0
1045	85.91	0.02689	0.0467	37.19	21.4060	82.22	26.56	108.78	0.1616	0.2103	77.01	99.74	23.9500	34.8260	587.3	563.6
1046	85.98	0.02698	0.0465	37.07	21.5150	82.40	26.17	108.57	0.1619	0.2099	77.18	99.56	24.8780	36.2670	582.7	562.2
1047	86.06	0.02706	0.0462	36.95	21.6280	82.59	25.76	108.35	0.1623	0.2095	77.34	99.38	25.8890	37.8340	578.0	560.8
1048	86.13	0.02715	0.0460	36.83	21.7430	82.78	25.34	108.12	0.1626	0.2090	77.51	99.19	26.9940	39.5460	573.1	559.3
1049	86.21	0.02725	0.0457	36.70	21.8630	82.98	24.90	107.88	0.1630	0.2086	77.69	99.00	28.2090	41.4230	568.2	557.6
1050	86.28	0.02735	0.0455	36.57	21.9850	83.18	24.46	107.64	0.1633	0.2081	77.87	98.80	29.5480	43.4890	563.1	555.9
1051	86.36	0.02745	0.0452	36.44	22.1120	83.39	24.00	107.39	0.1637	0.2076	78.05	98.59	31.0340	45.7740	557.9	554.1
1052	86.43	0.02755	0.0450	36.30	22.2440	83.61	23.53	107.14	0.1641	0.2072	78.24	98.38	32.6900	48.3150	552.6	552.2
1053	86.51	0.02766	0.0447	36.15	22.3800	83.83	23.04	106.87	0.1645	0.2067	78.43	98.16	34.5470	51.1580	547.1	550.2
1054	86.58	0.02778	0.0444	36.00	22.5220	84.06	22.53	106.59	0.1649	0.2061	78.64	97.93	36.6440	54.3570	541.4	548.0
1055	86.66	0.02790	0.0441	35.85	22.6690	84.29	22.01	106.30	0.1653	0.2056	78.84	97.69	39.0310	57.9840	535.5	545.7
1056	86.73	0.02802	0.0438	35.69	22.8230	84.54	21.46	106.00	0.1657	0.2050	79.06	97.43	41.7700	62.1310	529.5	543.2
1057	86.80	0.02815	0.0435	35.52	22.9850	84.79	20.90	105.69	0.1662	0.2044	79.28	97.17	44.9440	66.9160	523.2	540.4
1058	86.88	0.02829	0.0432	35.34	23.1550	85.06	20.30	105.36	0.1667	0.2038	79.52	96.90	48.6660	72.4960	516.7	537.4
1059	86.95	0.02844	0.0429	35.16	23.3340	85.34	19.67	105.01	0.1672	0.2032	79.76	96.61	53.0860	79.0870	509.9	534.1
1060	87.03	0.02860	0.0425	34.96	23.5240	85.64	19.01	104.64	0.1677	0.2025	80.02	96.30	58.4190	86.9860	502.8	530.5