



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
2	-88.21	0.02221	116.180	45.02	0.0086	-50.03	627.50	577.47	-0.1265	1.5628	-50.04	534.45	1.4628	1.3281	6637.7	1191.2
3	-77.55	0.02242	79.4920	44.61	0.0126	-39.12	621.21	582.09	-0.0976	1.5281	-39.13	537.93	1.4803	1.3301	6476.4	1206.4
4	-69.55	0.02258	60.7440	44.30	0.0165	-30.88	616.36	585.48	-0.0762	1.5037	-30.89	540.48	1.4933	1.3320	6361.0	1217.3
5	-63.08	0.02271	49.3100	44.04	0.0203	-24.17	612.34	588.17	-0.0592	1.4848	-24.19	542.52	1.5038	1.3337	6270.3	1225.8
6	-57.61	0.02282	41.5860	43.81	0.0240	-18.47	608.89	590.42	-0.0449	1.4695	-18.50	544.21	1.5125	1.3354	6194.9	1232.8
7	-52.84	0.02293	36.0090	43.62	0.0278	-13.50	605.84	592.34	-0.0326	1.4565	-13.53	545.67	1.5200	1.3369	6130.2	1238.7
8	-48.61	0.02302	31.7860	43.44	0.0315	-9.06	603.09	594.03	-0.0218	1.4454	-9.10	546.94	1.5266	1.3384	6073.3	1243.9
9	-44.79	0.02310	28.4740	43.29	0.0351	-5.05	600.58	595.53	-0.0121	1.4355	-5.09	548.07	1.5325	1.3399	6022.3	1248.4
10	-41.31	0.02318	25.8050	43.14	0.0388	-1.38	598.26	596.88	-0.0033	1.4267	-1.42	549.10	1.5379	1.3413	5976.1	1252.4
11	-38.10	0.02325	23.6070	43.01	0.0424	2.01	596.11	598.12	0.0048	1.4188	1.96	550.03	1.5428	1.3427	5933.7	1256.1
12	-35.12	0.02332	21.7630	42.88	0.0459	5.16	594.09	599.25	0.0122	1.4115	5.11	550.89	1.5473	1.3440	5894.4	1259.4
13	-32.33	0.02339	20.1950	42.76	0.0495	8.11	592.18	600.29	0.0191	1.4049	8.06	551.68	1.5515	1.3454	5857.9	1262.4
14	-29.72	0.02345	18.8430	42.65	0.0531	10.89	590.38	601.27	0.0256	1.3987	10.83	552.42	1.5554	1.3467	5823.7	1265.2
15	-27.25	0.02351	17.6660	42.54	0.0566	13.52	588.66	602.17	0.0317	1.3930	13.45	553.11	1.5591	1.3479	5791.5	1267.8
16	-24.91	0.02356	16.6310	42.44	0.0601	16.01	587.03	603.03	0.0374	1.3876	15.94	553.75	1.5626	1.3492	5761.0	1270.3
17	-22.69	0.02362	15.7140	42.35	0.0636	18.38	585.45	603.83	0.0428	1.3826	18.30	554.36	1.5659	1.3504	5732.0	1272.5
18	-20.57	0.02367	14.8960	42.25	0.0671	20.64	583.95	604.59	0.0480	1.3779	20.56	554.93	1.5691	1.3516	5704.5	1274.6
19	-18.55	0.02372	14.1610	42.17	0.0706	22.81	582.49	605.30	0.0529	1.3734	22.72	555.48	1.5721	1.3528	5678.2	1276.6
20	-16.61	0.02376	13.4970	42.08	0.0741	24.89	581.09	605.98	0.0576	1.3691	24.80	556.00	1.5749	1.3540	5652.9	1278.5
21	-14.74	0.02381	12.8940	42.00	0.0776	26.89	579.74	606.63	0.0621	1.3651	26.80	556.49	1.5777	1.3552	5628.7	1280.3
22	-12.95	0.02386	12.3450	41.92	0.0810	28.82	578.44	607.25	0.0664	1.3613	28.72	556.96	1.5803	1.3564	5605.5	1282.0
23	-11.22	0.02390	11.8410	41.84	0.0845	30.68	577.17	607.84	0.0706	1.3576	30.57	557.41	1.5829	1.3575	5583.0	1283.6
24	-9.54	0.02394	11.3780	41.77	0.0879	32.47	575.94	608.41	0.0746	1.3541	32.37	557.84	1.5854	1.3587	5561.4	1285.1
25	-7.93	0.02398	10.9510	41.70	0.0913	34.22	574.74	608.95	0.0784	1.3507	34.10	558.26	1.5878	1.3598	5540.4	1286.5
26	-6.36	0.02402	10.5560	41.63	0.0947	35.90	573.58	609.48	0.0821	1.3474	35.79	558.66	1.5901	1.3609	5520.2	1287.9
27	-4.84	0.02406	10.1880	41.56	0.0982	37.54	572.44	609.98	0.0857	1.3443	37.42	559.04	1.5923	1.3620	5500.5	1289.2
28	-3.37	0.02410	9.8467	41.50	0.1016	39.13	571.33	610.46	0.0892	1.3413	39.01	559.41	1.5945	1.3631	5481.4	1290.5
29	-1.94	0.02414	9.5277	41.43	0.1050	40.68	570.25	610.93	0.0926	1.3384	40.55	559.77	1.5966	1.3642	5462.9	1291.7
30	-0.54	0.02417	9.2292	41.37	0.1084	42.19	569.19	611.38	0.0959	1.3356	42.06	560.11	1.5987	1.3653	5444.8	1292.9
31	0.81	0.02421	8.9493	41.31	0.1117	43.66	568.15	611.81	0.0991	1.3329	43.52	560.44	1.6007	1.3664	5427.2	1294.0
32	2.14	0.02424	8.6864	41.25	0.1151	45.10	567.14	612.23	0.1022	1.3302	44.95	560.76	1.6027	1.3675	5410.1	1295.1
33	3.43	0.02428	8.4388	41.19	0.1185	46.49	566.15	612.64	0.1052	1.3277	46.35	561.08	1.6046	1.3685	5393.4	1296.1
34	4.69	0.02431	8.2053	41.13	0.1219	47.86	565.18	613.04	0.1081	1.3252	47.71	561.38	1.6065	1.3696	5377.1	1297.1
35	5.92	0.02435	7.9847	41.08	0.1252	49.20	564.22	613.42	0.1110	1.3228	49.04	561.67	1.6083	1.3706	5361.1	1298.0
36	7.12	0.02438	7.7759	41.02	0.1286	50.51	563.28	613.79	0.1138	1.3205	50.34	561.95	1.6101	1.3717	5345.5	1299.0
37	8.30	0.02441	7.5780	40.97	0.1320	51.79	562.36	614.15	0.1165	1.3182	51.62	562.23	1.6119	1.3727	5330.3	1299.8
38	9.45	0.02444	7.3901	40.92	0.1353	53.04	561.46	614.50	0.1192	1.3160	52.87	562.50	1.6136	1.3737	5315.3	1300.7
39	10.58	0.02447	7.2116	40.86	0.1387	54.27	560.57	614.84	0.1218	1.3139	54.10	562.76	1.6153	1.3748	5300.7	1301.5
40	11.68	0.02450	7.0417	40.81	0.1420	55.48	559.69	615.17	0.1243	1.3118	55.30	563.02	1.6170	1.3758	5286.3	1302.3
41	12.76	0.02453	6.8798	40.76	0.1454	56.66	558.84	615.50	0.1268	1.3097	56.47	563.26	1.6186	1.3768	5272.3	1303.1

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Ammonia
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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
42	13.83	0.02456	6.7253	40.72	0.1487	57.82	557.99	615.81	0.1293	1.3077	57.63	563.51	1.6202	1.3778	5258.5	1303.9
43	14.87	0.02459	6.5778	40.67	0.1520	58.96	557.16	616.12	0.1317	1.3058	58.77	563.74	1.6218	1.3788	5244.9	1304.6
44	15.89	0.02462	6.4367	40.62	0.1554	60.08	556.33	616.41	0.1340	1.3039	59.88	563.97	1.6234	1.3798	5231.6	1305.3
45	16.90	0.02465	6.3017	40.57	0.1587	61.18	555.53	616.71	0.1363	1.3020	60.98	564.19	1.6249	1.3808	5218.5	1306.0
46	17.89	0.02468	6.1723	40.53	0.1620	62.26	554.73	616.99	0.1386	1.3002	62.05	564.41	1.6264	1.3818	5205.7	1306.6
47	18.86	0.02470	6.0483	40.48	0.1653	63.33	553.94	617.27	0.1408	1.2984	63.11	564.63	1.6279	1.3828	5193.0	1307.3
48	19.82	0.02473	5.9293	40.44	0.1687	64.38	553.16	617.54	0.1430	1.2966	64.16	564.84	1.6294	1.3838	5180.6	1307.9
49	20.76	0.02476	5.8149	40.39	0.1720	65.41	552.39	617.80	0.1451	1.2949	65.18	565.04	1.6309	1.3848	5168.3	1308.5
50	21.68	0.02478	5.7050	40.35	0.1753	66.42	551.64	618.06	0.1472	1.2932	66.20	565.24	1.6323	1.3858	5156.3	1309.1
51	22.59	0.02481	5.5992	40.31	0.1786	67.43	550.89	618.31	0.1493	1.2916	67.19	565.44	1.6337	1.3867	5144.4	1309.6
52	23.49	0.02484	5.4973	40.27	0.1819	68.41	550.15	618.56	0.1513	1.2900	68.17	565.63	1.6351	1.3877	5132.7	1310.2
53	24.37	0.02486	5.3992	40.23	0.1852	69.38	549.42	618.80	0.1533	1.2884	69.14	565.81	1.6365	1.3887	5121.2	1310.7
54	25.24	0.02489	5.3045	40.18	0.1885	70.34	548.70	619.04	0.1553	1.2868	70.09	566.00	1.6379	1.3896	5109.8	1311.2
55	26.10	0.02491	5.2132	40.14	0.1918	71.28	547.99	619.27	0.1572	1.2853	71.03	566.18	1.6392	1.3906	5098.6	1311.8
56	26.95	0.02494	5.1250	40.10	0.1951	72.22	547.28	619.50	0.1591	1.2838	71.96	566.35	1.6405	1.3916	5087.5	1312.2
57	27.78	0.02496	5.0398	40.07	0.1984	73.14	546.59	619.72	0.1610	1.2823	72.87	566.53	1.6419	1.3925	5076.6	1312.7
58	28.60	0.02498	4.9575	40.03	0.2017	74.04	545.90	619.94	0.1629	1.2809	73.77	566.69	1.6432	1.3935	5065.9	1313.2
59	29.41	0.02501	4.8778	39.99	0.2050	74.94	545.21	620.15	0.1647	1.2794	74.67	566.86	1.6445	1.3944	5055.3	1313.6
60	30.22	0.02503	4.8007	39.95	0.2083	75.82	544.54	620.36	0.1665	1.2780	75.54	567.02	1.6457	1.3954	5044.8	1314.1
61	31.01	0.02506	4.7261	39.91	0.2116	76.70	543.88	620.57	0.1683	1.2767	76.41	567.18	1.6470	1.3963	5034.4	1314.5
62	31.79	0.02508	4.6537	39.88	0.2149	77.56	543.21	620.77	0.1700	1.2753	77.27	567.34	1.6483	1.3973	5024.2	1314.9
63	32.56	0.02510	4.5836	39.84	0.2182	78.41	542.55	620.96	0.1717	1.2740	78.12	567.49	1.6495	1.3982	5014.1	1315.3
64	33.32	0.02512	4.5156	39.80	0.2215	79.25	541.91	621.16	0.1734	1.2726	78.96	567.64	1.6507	1.3991	5004.1	1315.7
65	34.07	0.02515	4.4496	39.77	0.2247	80.09	541.27	621.35	0.1751	1.2714	79.78	567.79	1.6519	1.4001	4994.2	1316.1
66	34.81	0.02517	4.3856	39.73	0.2280	80.91	540.63	621.54	0.1768	1.2701	80.60	567.94	1.6532	1.4010	4984.5	1316.5
67	35.55	0.02519	4.3233	39.70	0.2313	81.72	540.00	621.72	0.1784	1.2688	81.41	568.08	1.6544	1.4019	4974.8	1316.9
68	36.27	0.02521	4.2629	39.66	0.2346	82.53	539.37	621.90	0.1800	1.2676	82.21	568.22	1.6555	1.4029	4965.3	1317.2
69	36.99	0.02524	4.2041	39.63	0.2379	83.32	538.75	622.07	0.1816	1.2663	83.00	568.36	1.6567	1.4038	4955.9	1317.6
70	37.70	0.02526	4.1470	39.59	0.2411	84.11	538.14	622.25	0.1832	1.2651	83.78	568.49	1.6579	1.4047	4946.5	1317.9
71	38.40	0.02528	4.0914	39.56	0.2444	84.89	537.53	622.42	0.1847	1.2640	84.56	568.63	1.6590	1.4056	4937.3	1318.2
72	39.09	0.02530	4.0373	39.53	0.2477	85.66	536.93	622.59	0.1863	1.2628	85.32	568.76	1.6602	1.4066	4928.1	1318.5
73	39.78	0.02532	3.9846	39.49	0.2510	86.42	536.33	622.75	0.1878	1.2616	86.08	568.89	1.6613	1.4075	4919.1	1318.9
74	40.46	0.02534	3.9333	39.46	0.2542	87.18	535.73	622.91	0.1893	1.2605	86.83	569.01	1.6625	1.4084	4910.1	1319.2
75	41.13	0.02536	3.8834	39.43	0.2575	87.93	535.14	623.07	0.1908	1.2593	87.57	569.14	1.6636	1.4093	4901.3	1319.5
76	41.80	0.02538	3.8347	39.40	0.2608	88.67	534.56	623.23	0.1922	1.2582	88.31	569.26	1.6647	1.4102	4892.5	1319.8
77	42.46	0.02540	3.7872	39.36	0.2641	89.40	533.98	623.38	0.1937	1.2571	89.04	569.38	1.6658	1.4111	4883.8	1320.0
78	43.11	0.02543	3.7409	39.33	0.2673	90.13	533.40	623.53	0.1951	1.2561	89.76	569.50	1.6669	1.4120	4875.2	1320.3
79	43.75	0.02545	3.6957	39.30	0.2706	90.85	532.84	623.68	0.1966	1.2550	90.47	569.62	1.6680	1.4130	4866.7	1320.6
80	44.39	0.02547	3.6516	39.27	0.2739	91.56	532.27	623.83	0.1980	1.2539	91.18	569.73	1.6691	1.4139	4858.2	1320.8
81	45.02	0.02549	3.6086	39.24	0.2771	92.26	531.71	623.97	0.1993	1.2529	91.88	569.85	1.6702	1.4148	4849.8	1321.1

R-717

Ammonia
NH3



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
82	45.65	0.02551	3.5665	39.21	0.2804	92.96	531.15	624.11	0.2007	1.2518	92.58	569.96	1.6713	1.4157	4841.5	1321.3
83	46.27	0.02553	3.5255	39.18	0.2837	93.66	530.59	624.25	0.2021	1.2508	93.27	570.07	1.6723	1.4166	4833.3	1321.6
84	46.89	0.02554	3.4854	39.15	0.2869	94.34	530.05	624.39	0.2034	1.2498	93.95	570.18	1.6734	1.4175	4825.1	1321.8
85	47.50	0.02556	3.4462	39.12	0.2902	95.03	529.50	624.53	0.2048	1.2488	94.62	570.28	1.6744	1.4184	4817.1	1322.1
86	48.10	0.02558	3.4078	39.09	0.2934	95.70	528.96	624.66	0.2061	1.2478	95.29	570.39	1.6755	1.4193	4809.0	1322.3
87	48.70	0.02560	3.3704	39.06	0.2967	96.37	528.42	624.79	0.2074	1.2468	95.96	570.49	1.6765	1.4202	4801.1	1322.5
88	49.29	0.02562	3.3337	39.03	0.3000	97.04	527.89	624.92	0.2087	1.2459	96.62	570.59	1.6776	1.4211	4793.2	1322.7
89	49.88	0.02564	3.2979	39.00	0.3032	97.69	527.36	625.05	0.2100	1.2449	97.27	570.70	1.6786	1.4220	4785.4	1322.9
90	50.46	0.02566	3.2628	38.97	0.3065	98.35	526.82	625.17	0.2113	1.2440	97.92	570.79	1.6796	1.4229	4777.6	1323.1
91	51.04	0.02568	3.2284	38.94	0.3098	99.00	526.30	625.29	0.2125	1.2430	98.56	570.89	1.6806	1.4238	4769.9	1323.3
92	51.61	0.02570	3.1948	38.92	0.3130	99.64	525.78	625.42	0.2138	1.2421	99.20	570.99	1.6817	1.4246	4762.3	1323.5
93	52.18	0.02572	3.1619	38.89	0.3163	100.28	525.25	625.53	0.2150	1.2412	99.83	571.08	1.6827	1.4255	4754.7	1323.7
94	52.75	0.02573	3.1296	38.86	0.3195	100.91	524.74	625.65	0.2162	1.2403	100.46	571.18	1.6837	1.4264	4747.2	1323.9
95	53.31	0.02575	3.0980	38.83	0.3228	101.54	524.23	625.77	0.2174	1.2394	101.08	571.27	1.6847	1.4273	4739.8	1324.1
96	53.86	0.02577	3.0671	38.80	0.3260	102.16	523.72	625.88	0.2186	1.2385	101.70	571.36	1.6857	1.4282	4732.4	1324.2
97	54.41	0.02579	3.0367	38.78	0.3293	102.78	523.22	626.00	0.2198	1.2376	102.31	571.45	1.6867	1.4291	4725.0	1324.4
98	54.96	0.02581	3.0070	38.75	0.3326	103.39	522.72	626.11	0.2210	1.2367	102.92	571.54	1.6876	1.4300	4717.8	1324.6
99	55.50	0.02582	2.9778	38.72	0.3358	104.00	522.22	626.22	0.2222	1.2359	103.53	571.63	1.6886	1.4309	4710.5	1324.7
100	56.03	0.02584	2.9492	38.70	0.3391	104.60	521.72	626.32	0.2234	1.2350	104.13	571.71	1.6896	1.4318	4703.3	1324.9
101	56.57	0.02586	2.9211	38.67	0.3423	105.20	521.23	626.43	0.2245	1.2342	104.72	571.80	1.6906	1.4326	4696.2	1325.0
102	57.10	0.02588	2.8936	38.64	0.3456	105.80	520.73	626.53	0.2257	1.2333	105.31	571.88	1.6915	1.4335	4689.1	1325.2
103	57.62	0.02590	2.8666	38.62	0.3489	106.39	520.25	626.64	0.2268	1.2325	105.90	571.96	1.6925	1.4344	4682.1	1325.3
104	58.14	0.02591	2.8401	38.59	0.3521	106.98	519.76	626.74	0.2279	1.2317	106.48	572.04	1.6935	1.4353	4675.1	1325.5
105	58.66	0.02593	2.8141	38.57	0.3554	107.56	519.28	626.84	0.2290	1.2309	107.06	572.12	1.6944	1.4362	4668.2	1325.6
106	59.17	0.02595	2.7885	38.54	0.3586	108.14	518.80	626.94	0.2301	1.2300	107.63	572.20	1.6954	1.4370	4661.3	1325.7
107	59.68	0.02596	2.7634	38.51	0.3619	108.72	518.32	627.04	0.2312	1.2292	108.20	572.28	1.6963	1.4379	4654.4	1325.8
108	60.19	0.02598	2.7388	38.49	0.3651	109.29	517.84	627.13	0.2323	1.2285	108.77	572.36	1.6973	1.4388	4647.6	1326.0
109	60.69	0.02600	2.7146	38.46	0.3684	109.86	517.37	627.23	0.2334	1.2277	109.33	572.44	1.6982	1.4397	4640.9	1326.1
110	61.19	0.02602	2.6908	38.44	0.3716	110.42	516.90	627.32	0.2345	1.2269	109.89	572.51	1.6991	1.4406	4634.2	1326.2
111	61.69	0.02603	2.6674	38.41	0.3749	110.98	516.43	627.41	0.2356	1.2261	110.45	572.59	1.7001	1.4414	4627.5	1326.3
112	62.18	0.02605	2.6444	38.39	0.3782	111.54	515.96	627.50	0.2366	1.2253	111.00	572.66	1.7010	1.4423	4620.9	1326.4
113	62.67	0.02607	2.6219	38.36	0.3814	112.09	515.50	627.59	0.2377	1.2246	111.54	572.73	1.7019	1.4432	4614.3	1326.5
114	63.15	0.02608	2.5997	38.34	0.3847	112.64	515.04	627.68	0.2387	1.2238	112.09	572.80	1.7028	1.4441	4607.8	1326.6
115	63.63	0.02610	2.5779	38.32	0.3879	113.19	514.58	627.77	0.2397	1.2231	112.63	572.87	1.7038	1.4449	4601.3	1326.7
116	64.11	0.02612	2.5564	38.29	0.3912	113.73	514.13	627.86	0.2408	1.2223	113.17	572.94	1.7047	1.4458	4594.8	1326.8
117	64.59	0.02613	2.5353	38.27	0.3944	114.27	513.67	627.94	0.2418	1.2216	113.70	573.01	1.7056	1.4467	4588.4	1326.9
118	65.06	0.02615	2.5145	38.24	0.3977	114.80	513.22	628.02	0.2428	1.2209	114.23	573.08	1.7065	1.4476	4582.0	1327.0
119	65.53	0.02617	2.4941	38.22	0.4009	115.34	512.77	628.11	0.2438	1.2201	114.76	573.15	1.7074	1.4484	4575.7	1327.1
120	66.00	0.02618	2.4740	38.20	0.4042	115.87	512.32	628.19	0.2448	1.2194	115.28	573.21	1.7083	1.4493	4569.4	1327.2
121	66.46	0.02620	2.4542	38.17	0.4075	116.39	511.88	628.27	0.2458	1.2187	115.80	573.28	1.7092	1.4502	4563.1	1327.3

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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
122	66.92	0.02621	2.4348	38.15	0.4107	116.92	511.43	628.35	0.2468	1.2180	116.32	573.34	1.7101	1.4510	4556.9	1327.3
123	67.38	0.02623	2.4156	38.13	0.4140	117.44	510.99	628.43	0.2478	1.2173	116.84	573.41	1.7110	1.4519	4550.7	1327.4
124	67.83	0.02625	2.3968	38.10	0.4172	117.95	510.55	628.50	0.2487	1.2166	117.35	573.47	1.7119	1.4528	4544.5	1327.5
125	68.29	0.02626	2.3782	38.08	0.4205	118.47	510.11	628.58	0.2497	1.2159	117.86	573.53	1.7128	1.4537	4538.4	1327.6
126	68.74	0.02628	2.3599	38.06	0.4238	118.98	509.68	628.66	0.2507	1.2152	118.36	573.59	1.7137	1.4545	4532.3	1327.6
127	69.18	0.02629	2.3419	38.03	0.4270	119.49	509.24	628.73	0.2516	1.2145	118.87	573.65	1.7146	1.4554	4526.2	1327.7
128	69.63	0.02631	2.3242	38.01	0.4303	119.99	508.81	628.80	0.2526	1.2138	119.37	573.71	1.7155	1.4563	4520.2	1327.8
129	70.07	0.02632	2.3067	37.99	0.4335	120.49	508.39	628.88	0.2535	1.2132	119.87	573.77	1.7163	1.4571	4514.2	1327.8
130	70.51	0.02634	2.2895	37.97	0.4368	120.99	507.96	628.95	0.2544	1.2125	120.36	573.83	1.7172	1.4580	4508.2	1327.9
131	70.94	0.02636	2.2725	37.94	0.4400	121.49	507.53	629.02	0.2554	1.2118	120.85	573.89	1.7181	1.4589	4502.3	1327.9
132	71.38	0.02637	2.2558	37.92	0.4433	121.99	507.10	629.09	0.2563	1.2112	121.34	573.95	1.7190	1.4597	4496.4	1328.0
133	71.81	0.02639	2.2393	37.90	0.4466	122.48	506.67	629.15	0.2572	1.2105	121.83	574.00	1.7198	1.4606	4490.5	1328.0
134	72.24	0.02640	2.2231	37.88	0.4498	122.97	506.25	629.22	0.2581	1.2099	122.31	574.06	1.7207	1.4615	4484.7	1328.1
135	72.66	0.02642	2.2071	37.85	0.4531	123.45	505.84	629.29	0.2590	1.2092	122.79	574.11	1.7216	1.4623	4478.9	1328.1
136	73.09	0.02643	2.1913	37.83	0.4563	123.94	505.42	629.36	0.2599	1.2086	123.27	574.17	1.7224	1.4632	4473.1	1328.2
137	73.51	0.02645	2.1758	37.81	0.4596	124.42	505.00	629.42	0.2608	1.2080	123.75	574.22	1.7233	1.4641	4467.4	1328.2
138	73.93	0.02646	2.1605	37.79	0.4629	124.90	504.58	629.48	0.2617	1.2073	124.22	574.28	1.7242	1.4649	4461.7	1328.2
139	74.34	0.02648	2.1453	37.77	0.4661	125.37	504.18	629.55	0.2626	1.2067	124.69	574.33	1.7250	1.4658	4456.0	1328.3
140	74.76	0.02649	2.1304	37.75	0.4694	125.85	503.76	629.61	0.2635	1.2061	125.16	574.38	1.7259	1.4667	4450.3	1328.3
141	75.17	0.02651	2.1157	37.72	0.4727	126.32	503.35	629.67	0.2643	1.2054	125.63	574.43	1.7267	1.4675	4444.7	1328.3
142	75.58	0.02652	2.1012	37.70	0.4759	126.79	502.94	629.73	0.2652	1.2048	126.09	574.48	1.7276	1.4684	4439.1	1328.4
143	75.99	0.02654	2.0869	37.68	0.4792	127.26	502.53	629.79	0.2661	1.2042	126.55	574.53	1.7284	1.4693	4433.5	1328.4
144	76.39	0.02655	2.0728	37.66	0.4824	127.72	502.13	629.85	0.2669	1.2036	127.01	574.58	1.7293	1.4701	4427.9	1328.4
145	76.80	0.02657	2.0588	37.64	0.4857	128.18	501.73	629.91	0.2678	1.2030	127.47	574.63	1.7301	1.4710	4422.4	1328.5
146	77.20	0.02658	2.0451	37.62	0.4890	128.64	501.33	629.97	0.2686	1.2024	127.92	574.68	1.7310	1.4719	4416.9	1328.5
147	77.60	0.02660	2.0315	37.60	0.4922	129.10	500.93	630.03	0.2695	1.2018	128.38	574.73	1.7318	1.4727	4411.4	1328.5
148	77.99	0.02661	2.0181	37.58	0.4955	129.56	500.52	630.08	0.2703	1.2012	128.83	574.77	1.7327	1.4736	4406.0	1328.5
149	78.39	0.02663	2.0049	37.56	0.4988	130.01	500.13	630.14	0.2711	1.2006	129.28	574.82	1.7335	1.4745	4400.6	1328.5
150	78.78	0.02664	1.9919	37.54	0.5020	130.46	499.73	630.19	0.2720	1.2000	129.72	574.87	1.7343	1.4753	4395.2	1328.5
151	79.17	0.02666	1.9790	37.52	0.5053	130.91	499.34	630.25	0.2728	1.1995	130.16	574.91	1.7352	1.4762	4389.8	1328.6
152	79.56	0.02667	1.9663	37.50	0.5086	131.36	498.94	630.30	0.2736	1.1989	130.61	574.96	1.7360	1.4771	4384.4	1328.6
153	79.95	0.02668	1.9537	37.48	0.5119	131.80	498.55	630.35	0.2744	1.1983	131.05	575.00	1.7368	1.4779	4379.1	1328.6
154	80.34	0.02670	1.9413	37.46	0.5151	132.25	498.15	630.40	0.2752	1.1977	131.48	575.04	1.7377	1.4788	4373.8	1328.6
155	80.72	0.02671	1.9291	37.44	0.5184	132.69	497.77	630.46	0.2760	1.1972	131.92	575.09	1.7385	1.4797	4368.5	1328.6
156	81.10	0.02673	1.9170	37.42	0.5217	133.13	497.38	630.51	0.2768	1.1966	132.35	575.13	1.7393	1.4805	4363.3	1328.6
157	81.48	0.02674	1.9050	37.40	0.5249	133.56	497.00	630.56	0.2776	1.1960	132.79	575.17	1.7402	1.4814	4358.1	1328.6
158	81.86	0.02676	1.8932	37.38	0.5282	134.00	496.61	630.61	0.2784	1.1955	133.21	575.21	1.7410	1.4823	4352.8	1328.6
159	82.23	0.02677	1.8816	37.36	0.5315	134.43	496.22	630.65	0.2792	1.1949	133.64	575.26	1.7418	1.4831	4347.7	1328.6
160	82.61	0.02678	1.8700	37.34	0.5348	134.86	495.84	630.70	0.2800	1.1944	134.07	575.30	1.7426	1.4840	4342.5	1328.6
161	82.98	0.02680	1.8587	37.32	0.5380	135.29	495.46	630.75	0.2808	1.1938	134.49	575.34	1.7434	1.4848	4337.3	1328.6

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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
162	83.35	0.02681	1.8474	37.30	0.5413	135.72	495.08	630.80	0.2816	1.1933	134.91	575.38	1.7443	1.4857	4332.2	1328.6
163	83.72	0.02683	1.8363	37.28	0.5446	136.14	494.70	630.84	0.2823	1.1927	135.34	575.42	1.7451	1.4866	4327.1	1328.6
164	84.09	0.02684	1.8253	37.26	0.5479	136.57	494.32	630.89	0.2831	1.1922	135.75	575.46	1.7459	1.4874	4322.0	1328.6
165	84.45	0.02686	1.8145	37.24	0.5511	136.99	493.94	630.93	0.2839	1.1917	136.17	575.49	1.7467	1.4883	4317.0	1328.5
166	84.82	0.02687	1.8037	37.22	0.5544	137.41	493.57	630.98	0.2846	1.1911	136.58	575.53	1.7475	1.4892	4312.0	1328.5
167	85.18	0.02688	1.7931	37.20	0.5577	137.83	493.19	631.02	0.2854	1.1906	137.00	575.57	1.7483	1.4900	4306.9	1328.5
168	85.54	0.02690	1.7827	37.18	0.5610	138.25	492.81	631.06	0.2862	1.1901	137.41	575.61	1.7492	1.4909	4301.9	1328.5
169	85.90	0.02691	1.7723	37.16	0.5642	138.66	492.45	631.11	0.2869	1.1895	137.82	575.64	1.7500	1.4918	4297.0	1328.5
170	86.25	0.02692	1.7621	37.14	0.5675	139.07	492.08	631.15	0.2877	1.1890	138.23	575.68	1.7508	1.4926	4292.0	1328.5
171	86.61	0.02694	1.7519	37.12	0.5708	139.49	491.70	631.19	0.2884	1.1885	138.63	575.71	1.7516	1.4935	4287.1	1328.4
172	86.96	0.02695	1.7419	37.10	0.5741	139.90	491.33	631.23	0.2891	1.1880	139.04	575.75	1.7524	1.4944	4282.1	1328.4
173	87.32	0.02697	1.7320	37.09	0.5774	140.30	490.97	631.27	0.2899	1.1875	139.44	575.79	1.7532	1.4952	4277.2	1328.4
174	87.67	0.02698	1.7222	37.07	0.5807	140.71	490.60	631.31	0.2906	1.1870	139.84	575.82	1.7540	1.4961	4272.4	1328.4
175	88.02	0.02699	1.7125	37.05	0.5839	141.12	490.23	631.35	0.2914	1.1864	140.24	575.85	1.7548	1.4970	4267.5	1328.3
176	88.37	0.02701	1.7030	37.03	0.5872	141.52	489.87	631.39	0.2921	1.1859	140.64	575.89	1.7556	1.4978	4262.7	1328.3
177	88.71	0.02702	1.6935	37.01	0.5905	141.92	489.51	631.43	0.2928	1.1854	141.04	575.92	1.7564	1.4987	4257.8	1328.3
178	89.06	0.02703	1.6841	36.99	0.5938	142.32	489.14	631.46	0.2935	1.1849	141.43	575.95	1.7572	1.4996	4253.0	1328.3
179	89.40	0.02705	1.6748	36.97	0.5971	142.72	488.78	631.50	0.2942	1.1844	141.82	575.99	1.7580	1.5005	4248.2	1328.2
180	89.74	0.02706	1.6657	36.96	0.6004	143.12	488.42	631.54	0.2950	1.1839	142.22	576.02	1.7588	1.5013	4243.5	1328.2
181	90.08	0.02707	1.6566	36.94	0.6037	143.51	488.06	631.57	0.2957	1.1834	142.61	576.05	1.7596	1.5022	4238.7	1328.2
182	90.42	0.02709	1.6476	36.92	0.6069	143.91	487.70	631.61	0.2964	1.1829	142.99	576.08	1.7604	1.5031	4234.0	1328.1
183	90.76	0.02710	1.6387	36.90	0.6102	144.30	487.34	631.64	0.2971	1.1825	143.38	576.11	1.7612	1.5039	4229.3	1328.1
184	91.10	0.02711	1.6299	36.88	0.6135	144.69	486.99	631.68	0.2978	1.1820	143.77	576.14	1.7620	1.5048	4224.6	1328.1
185	91.43	0.02713	1.6212	36.86	0.6168	145.08	486.63	631.71	0.2985	1.1815	144.15	576.17	1.7628	1.5057	4219.9	1328.0
186	91.76	0.02714	1.6126	36.85	0.6201	145.47	486.28	631.75	0.2992	1.1810	144.53	576.20	1.7636	1.5065	4215.2	1328.0
187	92.10	0.02715	1.6041	36.83	0.6234	145.86	485.92	631.78	0.2999	1.1805	144.92	576.23	1.7644	1.5074	4210.6	1327.9
188	92.43	0.02717	1.5957	36.81	0.6267	146.24	485.57	631.81	0.3006	1.1800	145.29	576.26	1.7652	1.5083	4205.9	1327.9
189	92.76	0.02718	1.5873	36.79	0.6300	146.62	485.22	631.84	0.3012	1.1796	145.67	576.29	1.7660	1.5092	4201.3	1327.9
190	93.09	0.02719	1.5791	36.77	0.6333	147.01	484.86	631.87	0.3019	1.1791	146.05	576.32	1.7668	1.5100	4196.7	1327.8
191	93.41	0.02721	1.5709	36.76	0.6366	147.39	484.52	631.91	0.3026	1.1786	146.43	576.35	1.7675	1.5109	4192.1	1327.8
192	93.74	0.02722	1.5628	36.74	0.6399	147.77	484.17	631.94	0.3033	1.1782	146.80	576.37	1.7683	1.5118	4187.6	1327.7
193	94.06	0.02723	1.5548	36.72	0.6432	148.15	483.82	631.97	0.3040	1.1777	147.17	576.40	1.7691	1.5126	4183.0	1327.7
194	94.39	0.02725	1.5468	36.70	0.6465	148.52	483.48	632.00	0.3046	1.1772	147.54	576.43	1.7699	1.5135	4178.5	1327.6
195	94.71	0.02726	1.5390	36.69	0.6498	148.90	483.13	632.03	0.3053	1.1768	147.92	576.45	1.7707	1.5144	4174.0	1327.6
196	95.03	0.02727	1.5312	36.67	0.6531	149.27	482.78	632.05	0.3060	1.1763	148.28	576.48	1.7715	1.5153	4169.4	1327.5
197	95.35	0.02728	1.5235	36.65	0.6564	149.65	482.43	632.08	0.3066	1.1758	148.65	576.51	1.7723	1.5161	4165.0	1327.5
198	95.67	0.02730	1.5159	36.63	0.6597	150.02	482.09	632.11	0.3073	1.1754	149.02	576.53	1.7730	1.5170	4160.5	1327.4
199	95.98	0.02731	1.5083	36.62	0.6630	150.39	481.75	632.14	0.3079	1.1749	149.38	576.56	1.7738	1.5179	4156.0	1327.4
200	96.30	0.02732	1.5008	36.60	0.6663	150.76	481.41	632.17	0.3086	1.1745	149.75	576.58	1.7746	1.5188	4151.6	1327.3
201	96.61	0.02734	1.4934	36.58	0.6696	151.13	481.06	632.19	0.3093	1.1740	150.11	576.61	1.7754	1.5196	4147.1	1327.2

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Ammonia
NH3



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
202	96.93	0.02735	1.4861	36.57	0.6729	151.49	480.73	632.22	0.3099	1.1736	150.47	576.63	1.7762	1.5205	4142.7	1327.2
203	97.24	0.02736	1.4788	36.55	0.6762	151.86	480.38	632.24	0.3105	1.1731	150.83	576.66	1.7769	1.5214	4138.3	1327.1
204	97.55	0.02737	1.4716	36.53	0.6795	152.22	480.05	632.27	0.3112	1.1727	151.19	576.68	1.7777	1.5223	4133.9	1327.1
205	97.86	0.02739	1.4645	36.51	0.6828	152.59	479.71	632.30	0.3118	1.1722	151.55	576.70	1.7785	1.5231	4129.6	1327.0
206	98.17	0.02740	1.4574	36.50	0.6862	152.95	479.37	632.32	0.3125	1.1718	151.90	576.73	1.7793	1.5240	4125.2	1327.0
207	98.48	0.02741	1.4504	36.48	0.6895	153.31	479.03	632.34	0.3131	1.1714	152.26	576.75	1.7801	1.5249	4120.8	1326.9
208	98.78	0.02743	1.4435	36.46	0.6928	153.67	478.70	632.37	0.3137	1.1709	152.61	576.77	1.7808	1.5258	4116.5	1326.8
209	99.09	0.02744	1.4366	36.45	0.6961	154.03	478.36	632.39	0.3144	1.1705	152.96	576.79	1.7816	1.5267	4112.2	1326.8
210	99.39	0.02745	1.4298	36.43	0.6994	154.38	478.03	632.41	0.3150	1.1701	153.32	576.81	1.7824	1.5275	4107.9	1326.7
211	99.69	0.02746	1.4230	36.41	0.7027	154.74	477.70	632.44	0.3156	1.1696	153.67	576.84	1.7832	1.5284	4103.6	1326.6
212	100.00	0.02748	1.4164	36.40	0.7060	155.09	477.37	632.46	0.3163	1.1692	154.02	576.86	1.7839	1.5293	4099.3	1326.6
213	100.30	0.02749	1.4097	36.38	0.7094	155.45	477.03	632.48	0.3169	1.1688	154.36	576.88	1.7847	1.5302	4095.0	1326.5
214	100.60	0.02750	1.4032	36.36	0.7127	155.80	476.70	632.50	0.3175	1.1683	154.71	576.90	1.7855	1.5311	4090.8	1326.4
215	100.90	0.02751	1.3967	36.35	0.7160	156.15	476.37	632.52	0.3181	1.1679	155.06	576.92	1.7863	1.5319	4086.5	1326.4
216	101.19	0.02753	1.3902	36.33	0.7193	156.50	476.05	632.55	0.3187	1.1675	155.40	576.94	1.7870	1.5328	4082.3	1326.3
217	101.49	0.02754	1.3838	36.31	0.7226	156.85	475.72	632.57	0.3194	1.1671	155.74	576.96	1.7878	1.5337	4078.1	1326.2
218	101.79	0.02755	1.3775	36.30	0.7260	157.20	475.39	632.59	0.3200	1.1667	156.09	576.98	1.7886	1.5346	4073.9	1326.1
219	102.08	0.02756	1.3712	36.28	0.7293	157.55	475.06	632.61	0.3206	1.1662	156.43	577.00	1.7893	1.5355	4069.7	1326.1
220	102.38	0.02758	1.3650	36.26	0.7326	157.89	474.73	632.62	0.3212	1.1658	156.77	577.02	1.7901	1.5364	4065.5	1326.0
221	102.67	0.02759	1.3588	36.25	0.7359	158.24	474.40	632.64	0.3218	1.1654	157.11	577.04	1.7909	1.5372	4061.4	1325.9
222	102.96	0.02760	1.3527	36.23	0.7393	158.58	474.08	632.66	0.3224	1.1650	157.45	577.05	1.7917	1.5381	4057.2	1325.9
223	103.25	0.02761	1.3466	36.22	0.7426	158.92	473.76	632.68	0.3230	1.1646	157.78	577.07	1.7924	1.5390	4053.1	1325.8
224	103.54	0.02763	1.3406	36.20	0.7459	159.27	473.43	632.70	0.3236	1.1642	158.12	577.09	1.7932	1.5399	4048.9	1325.7
225	103.83	0.02764	1.3347	36.18	0.7493	159.61	473.11	632.72	0.3242	1.1638	158.46	577.11	1.7940	1.5408	4044.8	1325.6
226	104.12	0.02765	1.3288	36.17	0.7526	159.95	472.78	632.73	0.3248	1.1634	158.79	577.13	1.7947	1.5417	4040.7	1325.5
227	104.40	0.02766	1.3229	36.15	0.7559	160.28	472.47	632.75	0.3254	1.1630	159.12	577.14	1.7955	1.5426	4036.6	1325.5
228	104.69	0.02767	1.3171	36.14	0.7593	160.62	472.15	632.77	0.3260	1.1626	159.45	577.16	1.7963	1.5434	4032.5	1325.4
229	104.97	0.02769	1.3113	36.12	0.7626	160.96	471.82	632.78	0.3265	1.1621	159.79	577.18	1.7970	1.5443	4028.5	1325.3
230	105.26	0.02770	1.3056	36.10	0.7659	161.30	471.50	632.80	0.3271	1.1617	160.12	577.19	1.7978	1.5452	4024.4	1325.2
231	105.54	0.02771	1.3000	36.09	0.7693	161.63	471.19	632.82	0.3277	1.1613	160.44	577.21	1.7986	1.5461	4020.4	1325.1
232	105.82	0.02772	1.2943	36.07	0.7726	161.96	470.87	632.83	0.3283	1.1610	160.77	577.23	1.7993	1.5470	4016.3	1325.1
233	106.10	0.02774	1.2888	36.06	0.7759	162.30	470.55	632.85	0.3289	1.1606	161.10	577.24	1.8001	1.5479	4012.3	1325.0
234	106.38	0.02775	1.2832	36.04	0.7793	162.63	470.23	632.86	0.3294	1.1602	161.43	577.26	1.8009	1.5488	4008.3	1324.9
235	106.66	0.02776	1.2778	36.02	0.7826	162.96	469.91	632.87	0.3300	1.1598	161.75	577.27	1.8016	1.5497	4004.3	1324.8
236	106.94	0.02777	1.2723	36.01	0.7860	163.29	469.60	632.89	0.3306	1.1594	162.08	577.29	1.8024	1.5506	4000.3	1324.7
237	107.22	0.02778	1.2669	35.99	0.7893	163.62	469.28	632.90	0.3312	1.1590	162.40	577.30	1.8032	1.5515	3996.3	1324.6
238	107.50	0.02780	1.2616	35.98	0.7927	163.95	468.97	632.92	0.3317	1.1586	162.72	577.32	1.8039	1.5524	3992.3	1324.5
239	107.77	0.02781	1.2563	35.96	0.7960	164.27	468.66	632.93	0.3323	1.1582	163.04	577.33	1.8047	1.5533	3988.4	1324.4
240	108.05	0.02782	1.2510	35.95	0.7993	164.60	468.34	632.94	0.3329	1.1578	163.36	577.34	1.8054	1.5542	3984.4	1324.4
241	108.32	0.02783	1.2458	35.93	0.8027	164.92	468.03	632.95	0.3334	1.1574	163.68	577.36	1.8062	1.5551	3980.5	1324.3

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Ammonia
NH3



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
242	108.60	0.02784	1.2406	35.91	0.8060	165.25	467.72	632.97	0.3340	1.1571	164.00	577.37	1.8070	1.5559	3976.5	1324.2
243	108.87	0.02786	1.2355	35.90	0.8094	165.57	467.41	632.98	0.3346	1.1567	164.32	577.38	1.8077	1.5568	3972.6	1324.1
244	109.14	0.02787	1.2304	35.88	0.8128	165.90	467.09	632.99	0.3351	1.1563	164.64	577.40	1.8085	1.5577	3968.7	1324.0
245	109.41	0.02788	1.2253	35.87	0.8161	166.22	466.78	633.00	0.3357	1.1559	164.95	577.41	1.8093	1.5586	3964.8	1323.9
246	109.68	0.02789	1.2203	35.85	0.8195	166.54	466.47	633.01	0.3362	1.1555	165.27	577.42	1.8100	1.5595	3960.9	1323.8
247	109.95	0.02790	1.2153	35.84	0.8228	166.86	466.16	633.02	0.3368	1.1552	165.58	577.44	1.8108	1.5604	3957.0	1323.7
248	110.22	0.02792	1.2104	35.82	0.8262	167.18	465.85	633.03	0.3373	1.1548	165.90	577.45	1.8115	1.5613	3953.2	1323.6
249	110.48	0.02793	1.2055	35.81	0.8295	167.50	465.54	633.04	0.3379	1.1544	166.21	577.46	1.8123	1.5622	3949.3	1323.5
250	110.75	0.02794	1.2006	35.79	0.8329	167.81	465.24	633.05	0.3384	1.1540	166.52	577.47	1.8131	1.5631	3945.5	1323.4
251	111.02	0.02795	1.1958	35.78	0.8363	168.13	464.93	633.06	0.3390	1.1537	166.83	577.48	1.8138	1.5640	3941.6	1323.3
252	111.28	0.02796	1.1910	35.76	0.8396	168.45	464.62	633.07	0.3395	1.1533	167.14	577.49	1.8146	1.5650	3937.8	1323.2
253	111.55	0.02798	1.1863	35.75	0.8430	168.76	464.32	633.08	0.3401	1.1529	167.45	577.50	1.8154	1.5659	3934.0	1323.1
254	111.81	0.02799	1.1816	35.73	0.8463	169.07	464.02	633.09	0.3406	1.1525	167.76	577.52	1.8161	1.5668	3930.2	1323.0
255	112.07	0.02800	1.1769	35.72	0.8497	169.39	463.71	633.10	0.3411	1.1522	168.07	577.53	1.8169	1.5677	3926.4	1322.9
256	112.33	0.02801	1.1722	35.70	0.8531	169.70	463.41	633.11	0.3417	1.1518	168.37	577.54	1.8176	1.5686	3922.6	1322.8
257	112.60	0.02802	1.1676	35.69	0.8564	170.01	463.10	633.11	0.3422	1.1514	168.68	577.55	1.8184	1.5695	3918.8	1322.7
258	112.86	0.02803	1.1630	35.67	0.8598	170.32	462.80	633.12	0.3427	1.1511	168.98	577.56	1.8192	1.5704	3915.0	1322.6
259	113.12	0.02805	1.1585	35.66	0.8632	170.63	462.50	633.13	0.3433	1.1507	169.29	577.57	1.8199	1.5713	3911.3	1322.5
260	113.37	0.02806	1.1540	35.64	0.8666	170.94	462.20	633.14	0.3438	1.1504	169.59	577.58	1.8207	1.5722	3907.5	1322.4
261	113.63	0.02807	1.1495	35.63	0.8699	171.25	461.89	633.14	0.3443	1.1500	169.89	577.59	1.8214	1.5731	3903.8	1322.3
262	113.89	0.02808	1.1451	35.61	0.8733	171.56	461.59	633.15	0.3449	1.1496	170.20	577.59	1.8222	1.5740	3900.0	1322.2
263	114.15	0.02809	1.1407	35.60	0.8767	171.87	461.29	633.16	0.3454	1.1493	170.50	577.60	1.8230	1.5749	3896.3	1322.1
264	114.40	0.02810	1.1363	35.58	0.8801	172.17	460.99	633.16	0.3459	1.1489	170.80	577.61	1.8237	1.5758	3892.6	1322.0
265	114.66	0.02812	1.1320	35.57	0.8834	172.48	460.69	633.17	0.3464	1.1486	171.10	577.62	1.8245	1.5768	3888.9	1321.9
266	114.91	0.02813	1.1276	35.55	0.8868	172.78	460.39	633.17	0.3470	1.1482	171.40	577.63	1.8252	1.5777	3885.2	1321.8
267	115.17	0.02814	1.1234	35.54	0.8902	173.09	460.09	633.18	0.3475	1.1479	171.69	577.64	1.8260	1.5786	3881.5	1321.7
268	115.42	0.02815	1.1191	35.52	0.8936	173.39	459.79	633.18	0.3480	1.1475	171.99	577.65	1.8267	1.5795	3877.8	1321.6
269	115.67	0.02816	1.1149	35.51	0.8970	173.69	459.50	633.19	0.3485	1.1472	172.29	577.65	1.8275	1.5804	3874.1	1321.5
270	115.92	0.02817	1.1107	35.49	0.9003	173.99	459.20	633.19	0.3490	1.1468	172.58	577.66	1.8283	1.5813	3870.5	1321.4
271	116.17	0.02819	1.1065	35.48	0.9037	174.29	458.91	633.20	0.3495	1.1465	172.88	577.67	1.8290	1.5823	3866.8	1321.3
272	116.42	0.02820	1.1024	35.47	0.9071	174.59	458.61	633.20	0.3501	1.1461	173.17	577.68	1.8298	1.5832	3863.1	1321.2
273	116.67	0.02821	1.0983	35.45	0.9105	174.89	458.31	633.20	0.3506	1.1458	173.47	577.68	1.8305	1.5841	3859.5	1321.0
274	116.92	0.02822	1.0942	35.44	0.9139	175.19	458.02	633.21	0.3511	1.1454	173.76	577.69	1.8313	1.5850	3855.9	1320.9
275	117.17	0.02823	1.0902	35.42	0.9173	175.49	457.72	633.21	0.3516	1.1451	174.05	577.70	1.8321	1.5859	3852.2	1320.8
276	117.42	0.02824	1.0862	35.41	0.9207	175.79	457.42	633.21	0.3521	1.1447	174.34	577.70	1.8328	1.5869	3848.6	1320.7
277	117.67	0.02825	1.0822	35.39	0.9241	176.08	457.14	633.22	0.3526	1.1444	174.64	577.71	1.8336	1.5878	3845.0	1320.6
278	117.91	0.02827	1.0782	35.38	0.9275	176.38	456.84	633.22	0.3531	1.1440	174.93	577.72	1.8343	1.5887	3841.4	1320.5
279	118.16	0.02828	1.0743	35.36	0.9309	176.68	456.54	633.22	0.3536	1.1437	175.21	577.72	1.8351	1.5896	3837.8	1320.4
280	118.40	0.02829	1.0704	35.35	0.9343	176.97	456.25	633.22	0.3541	1.1434	175.50	577.73	1.8358	1.5905	3834.2	1320.3
281	118.65	0.02830	1.0665	35.34	0.9377	177.26	455.97	633.23	0.3546	1.1430	175.79	577.73	1.8366	1.5915	3830.7	1320.1

R-717

Ammonia
NH3



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
282	118.89	0.02831	1.0626	35.32	0.9411	177.56	455.67	633.23	0.3551	1.1427	176.1	577.7	1.8374	1.5924	3827.1	1320.0
283	119.13	0.02832	1.0588	35.31	0.9445	177.85	455.38	633.23	0.3556	1.1424	176.4	577.7	1.8381	1.5933	3823.5	1319.9
284	119.37	0.02833	1.0550	35.29	0.9479	178.14	455.09	633.23	0.3561	1.1420	176.7	577.8	1.8389	1.5943	3820.0	1319.8
285	119.62	0.02835	1.0512	35.28	0.9513	178.43	454.80	633.23	0.3566	1.1417	176.9	577.8	1.8396	1.5952	3816.4	1319.7
286	119.86	0.02836	1.0475	35.27	0.9547	178.72	454.51	633.23	0.3571	1.1413	177.2	577.8	1.8404	1.5961	3812.9	1319.6
287	120.10	0.02837	1.0437	35.25	0.9581	179.01	454.22	633.23	0.3576	1.1410	177.5	577.8	1.8412	1.5970	3809.4	1319.5
288	120.34	0.02838	1.0400	35.24	0.9615	179.30	453.93	633.23	0.3581	1.1407	177.8	577.8	1.8419	1.5980	3805.9	1319.3
289	120.58	0.02839	1.0364	35.22	0.9649	179.59	453.64	633.23	0.3585	1.1403	178.1	577.8	1.8427	1.5989	3802.3	1319.2
290	120.81	0.02840	1.0327	35.21	0.9683	179.88	453.35	633.23	0.3590	1.1400	178.4	577.8	1.8434	1.5998	3798.8	1319.1
291	121.05	0.02841	1.0291	35.19	0.9717	180.17	453.06	633.23	0.3595	1.1397	178.6	577.8	1.8442	1.6008	3795.3	1319.0
292	121.29	0.02843	1.0255	35.18	0.9752	180.45	452.78	633.23	0.3600	1.1394	178.9	577.8	1.8450	1.6017	3791.8	1318.9
293	121.53	0.02844	1.0219	35.17	0.9786	180.74	452.49	633.23	0.3605	1.1390	179.2	577.8	1.8457	1.6026	3788.4	1318.7
294	121.76	0.02845	1.0183	35.15	0.9820	181.02	452.21	633.23	0.3610	1.1387	179.5	577.8	1.8465	1.6036	3784.9	1318.6
295	122.00	0.02846	1.0148	35.14	0.9854	181.31	451.92	633.23	0.3614	1.1384	179.8	577.8	1.8472	1.6045	3781.4	1318.5
296	122.23	0.02847	1.0113	35.13	0.9888	181.59	451.64	633.23	0.3619	1.1381	180.0	577.8	1.8480	1.6055	3777.9	1318.4
297	122.47	0.02848	1.0078	35.11	0.9922	181.88	451.35	633.23	0.3624	1.1377	180.3	577.8	1.8487	1.6064	3774.5	1318.3
298	122.70	0.02849	1.0044	35.10	0.9957	182.16	451.06	633.22	0.3629	1.1374	180.6	577.8	1.8495	1.6073	3771.0	1318.1
299	122.93	0.02850	1.0009	35.08	0.9991	182.44	450.78	633.22	0.3634	1.1371	180.9	577.8	1.8503	1.6083	3767.6	1318.0
300	123.17	0.02852	0.9975	35.07	1.0025	182.72	450.50	633.22	0.3638	1.1368	181.1	577.8	1.8510	1.6092	3764.2	1317.9
301	123.40	0.02853	0.9941	35.06	1.0059	183.00	450.22	633.22	0.3643	1.1364	181.4	577.8	1.8518	1.6102	3760.7	1317.8
302	123.63	0.02854	0.9907	35.04	1.0094	183.28	449.93	633.21	0.3648	1.1361	181.7	577.8	1.8525	1.6111	3757.3	1317.6
303	123.86	0.02855	0.9874	35.03	1.0128	183.56	449.65	633.21	0.3652	1.1358	182.0	577.8	1.8533	1.6120	3753.9	1317.5
304	124.09	0.02856	0.9840	35.01	1.0162	183.84	449.37	633.21	0.3657	1.1355	182.2	577.8	1.8541	1.6130	3750.5	1317.4
305	124.32	0.02857	0.9807	35.00	1.0197	184.12	449.08	633.20	0.3662	1.1352	182.5	577.8	1.8548	1.6139	3747.1	1317.3
306	124.55	0.02858	0.9774	34.99	1.0231	184.40	448.80	633.20	0.3666	1.1349	182.8	577.8	1.8556	1.6149	3743.7	1317.1
307	124.78	0.02859	0.9741	34.97	1.0265	184.68	448.52	633.20	0.3671	1.1345	183.1	577.8	1.8563	1.6158	3740.3	1317.0
308	125.00	0.02860	0.9709	34.96	1.0300	184.95	448.24	633.19	0.3676	1.1342	183.3	577.8	1.8571	1.6168	3736.9	1316.9
309	125.23	0.02862	0.9677	34.95	1.0334	185.23	447.96	633.19	0.3680	1.1339	183.6	577.8	1.8579	1.6177	3733.6	1316.8
310	125.46	0.02863	0.9645	34.93	1.0369	185.51	447.67	633.18	0.3685	1.1336	183.9	577.8	1.8586	1.6187	3730.2	1316.6
311	125.68	0.02864	0.9613	34.92	1.0403	185.78	447.40	633.18	0.3690	1.1333	184.1	577.8	1.8594	1.6196	3726.8	1316.5
312	125.91	0.02865	0.9581	34.91	1.0437	186.06	447.11	633.17	0.3694	1.1330	184.4	577.8	1.8602	1.6206	3723.5	1316.4
313	126.14	0.02866	0.9549	34.89	1.0472	186.33	446.84	633.17	0.3699	1.1327	184.7	577.8	1.8609	1.6215	3720.1	1316.2
314	126.36	0.02867	0.9518	34.88	1.0506	186.60	446.56	633.16	0.3703	1.1323	184.9	577.8	1.8617	1.6225	3716.8	1316.1
315	126.58	0.02868	0.9487	34.87	1.0541	186.88	446.28	633.16	0.3708	1.1320	185.2	577.8	1.8624	1.6235	3713.5	1316.0
316	126.81	0.02869	0.9456	34.85	1.0575	187.15	446.00	633.15	0.3713	1.1317	185.5	577.8	1.8632	1.6244	3710.1	1315.9
317	127.03	0.02870	0.9425	34.84	1.0610	187.42	445.73	633.15	0.3717	1.1314	185.7	577.8	1.8640	1.6254	3706.8	1315.7
318	127.25	0.02872	0.9395	34.83	1.0644	187.69	445.45	633.14	0.3722	1.1311	186.0	577.8	1.8647	1.6263	3703.5	1315.6
319	127.47	0.02873	0.9364	34.81	1.0679	187.96	445.18	633.14	0.3726	1.1308	186.3	577.8	1.8655	1.6273	3700.2	1315.5
320	127.70	0.02874	0.9334	34.80	1.0713	188.23	444.90	633.13	0.3731	1.1305	186.5	577.8	1.8663	1.6283	3696.9	1315.3
321	127.92	0.02875	0.9304	34.79	1.0748	188.50	444.62	633.12	0.3735	1.1302	186.8	577.8	1.8670	1.6292	3693.6	1315.2

R-717

Ammonia
NH3



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
322	128.14	0.02876	0.9274	34.77	1.0783	188.77	444.35	633.12	0.3740	1.1299	187.06	577.82	1.8678	1.6302	3690.3	1315.1
323	128.36	0.02877	0.9245	34.76	1.0817	189.04	444.07	633.11	0.3744	1.1296	187.32	577.82	1.8685	1.6311	3687.0	1314.9
324	128.58	0.02878	0.9215	34.75	1.0852	189.31	443.79	633.10	0.3749	1.1293	187.58	577.82	1.8693	1.6321	3683.8	1314.8
325	128.80	0.02879	0.9186	34.73	1.0887	189.58	443.52	633.10	0.3753	1.1290	187.84	577.82	1.8701	1.6331	3680.5	1314.7
326	129.01	0.02880	0.9157	34.72	1.0921	189.84	443.25	633.09	0.3757	1.1287	188.10	577.81	1.8708	1.6340	3677.2	1314.5
327	129.23	0.02881	0.9128	34.71	1.0956	190.11	442.97	633.08	0.3762	1.1284	188.36	577.81	1.8716	1.6350	3674.0	1314.4
328	129.45	0.02883	0.9099	34.69	1.0990	190.37	442.70	633.07	0.3766	1.1281	188.62	577.81	1.8724	1.6360	3670.7	1314.3
329	129.67	0.02884	0.9070	34.68	1.1025	190.64	442.43	633.07	0.3771	1.1278	188.88	577.81	1.8731	1.6369	3667.5	1314.1
330	129.88	0.02885	0.9042	34.67	1.1060	190.91	442.15	633.06	0.3775	1.1275	189.14	577.81	1.8739	1.6379	3664.2	1314.0