

Refrigerant 717 (Ammonia) Properties of Saturated Liquid and Saturated Vapor

Temp.,* °F	Pres- sure, psia	Density, lb/ft ³ Liquid	Volume, ft ³ /lb Vapor	Enthalpy, Btu/lb		Entropy, Btu/lb·°F		Specific Heat <i>c_p</i> , Btu/lb·°F			Vel. of Sound, ft/s		Viscosity, lb _m /ft·h		Thermal Cond., Btu/h·ft·°F		Surface Tension, dyne/cm	Temp., °F
				Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor		
-107.78a	0.883	45.75	249.92	-69.830	568.765	-0.18124	1.63351	1.0044	0.4930	1.3252	6969	1161.8	1.354	0.0165	0.4735	0.01135	62.26	-107.78
-100.00	1.237	45.47	182.19	-61.994	572.260	-0.15922	1.60421	1.0100	0.4959	1.3262	6830	1173.8	1.232	0.0168	0.4647	0.01138	60.47	-100.00
-90.00	1.864	45.09	124.12	-51.854	576.688	-0.13142	1.56886	1.0176	0.5003	1.3278	6666	1188.6	1.099	0.0171	0.4534	0.01143	58.19	-90.00
-80.00	2.739	44.71	86.546	-41.637	581.035	-0.10416	1.53587	1.0254	0.5056	1.3296	6513	1202.9	0.986	0.0175	0.4422	0.01149	55.94	-80.00
-70.00	3.937	44.31	61.647	-31.341	585.288	-0.07741	1.50503	1.0331	0.5118	1.3319	6367	1216.7	0.891	0.0179	0.4310	0.01158	53.73	-70.00
-60.00	5.544	43.91	44.774	-20.969	589.439	-0.05114	1.47614	1.0406	0.5190	1.3346	6228	1229.7	0.810	0.0182	0.4198	0.01168	51.54	-60.00
-50.00	7.659	43.50	33.105	-10.521	593.476	-0.02534	1.44900	1.0478	0.5271	1.3379	6092	1242.2	0.741	0.0186	0.4088	0.01180	49.39	-50.00
-40.00	10.398	43.08	24.881	0.000	597.387	0.00000	1.42347	1.0549	0.5364	1.3419	5959	1253.9	0.680	0.0190	0.3978	0.01193	47.26	-40.00
-30.00	13.890	42.66	18.983	10.592	601.162	0.02491	1.39938	1.0617	0.5467	1.3465	5827	1264.9	0.628	0.0194	0.3870	0.01209	45.17	-30.00
-27.99b	14.696	42.57	18.007	12.732	601.904	0.02987	1.39470	1.0631	0.5490	1.3475	5801	1267.1	0.618	0.0195	0.3849	0.01212	44.75	-27.99
-25.00	15.962	42.45	16.668	15.914	602.995	0.03720	1.38784	1.0651	0.5524	1.3491	5762	1270.2	0.604	0.0196	0.3817	0.01217	44.14	-25.00
-20.00	18.279	42.23	14.684	21.253	604.789	0.04939	1.37660	1.0684	0.5583	1.3520	5697	1275.2	0.582	0.0198	0.3764	0.01226	43.11	-20.00
-15.00	20.858	42.01	12.976	26.609	606.544	0.06148	1.36567	1.0716	0.5646	1.3550	5632	1280.0	0.561	0.0200	0.3711	0.01236	42.09	-15.00
-10.00	23.723	41.79	11.502	31.982	608.257	0.07347	1.35502	1.0749	0.5711	1.3584	5567	1284.7	0.541	0.0202	0.3658	0.01246	41.08	-10.00
-5.00	26.895	41.57	10.226	37.372	609.928	0.08536	1.34463	1.0782	0.5781	1.3619	5503	1289.1	0.522	0.0204	0.3606	0.01256	40.08	-5.00
0.00	30.397	41.34	9.1159	42.779	611.554	0.09715	1.33450	1.0814	0.5853	1.3657	5438	1293.3	0.505	0.0206	0.3555	0.01267	39.08	0.00
5.00	34.253	41.12	8.1483	48.203	613.135	0.10885	1.32462	1.0847	0.5929	1.3698	5373	1297.3	0.488	0.0208	0.3503	0.01279	38.10	5.00
10.00	38.487	40.89	7.3020	53.644	614.669	0.12045	1.31496	1.0880	0.6009	1.3742	5308	1301.1	0.472	0.0210	0.3453	0.01291	37.12	10.00
15.00	43.126	40.66	6.5597	59.103	616.154	0.13197	1.30552	1.0914	0.6092	1.3789	5243	1304.7	0.457	0.0212	0.3402	0.01304	36.15	15.00
20.00	48.194	40.43	5.9067	64.579	617.590	0.14340	1.29629	1.0948	0.6179	1.3840	5178	1308.0	0.443	0.0214	0.3352	0.01317	35.19	20.00
25.00	53.720	40.20	5.3307	70.072	618.974	0.15474	1.28726	1.0983	0.6271	1.3894	5113	1311.1	0.429	0.0216	0.3302	0.01331	34.23	25.00
30.00	59.730	39.96	4.8213	75.585	620.305	0.16599	1.27842	1.1019	0.6366	1.3951	5048	1314.0	0.416	0.0218	0.3253	0.01345	33.29	30.00
35.00	66.255	39.72	4.3680	81.116	621.582	0.17717	1.26975	1.1056	0.6465	1.4012	4982	1316.6	0.404	0.0220	0.3204	0.01360	32.35	35.00
40.00	73.322	39.48	3.9680	86.666	622.803	0.18827	1.26125	1.1094	0.6569	1.4078	4916	1319.0	0.392	0.0222	0.3155	0.01376	31.42	40.00
45.00	80.962	39.24	3.6102	92.237	623.967	0.19929	1.25291	1.1134	0.6678	1.4147	4850	1321.1	0.381	0.0224	0.3107	0.01392	30.50	45.00
50.00	89.205	38.99	3.2906	97.828	625.072	0.21024	1.24472	1.1175	0.6791	1.4222	4784	1323.0	0.370	0.0227	0.3059	0.01409	29.59	50.00
55.00	98.083	38.75	3.0045	103.441	626.115	0.22111	1.23667	1.1218	0.6909	1.4301	4717	1324.6	0.360	0.0229	0.3012	0.01426	28.69	55.00
60.00	107.63	38.50	2.7479	109.076	627.097	0.23192	1.22875	1.126	0.703	1.438	4650	1325.9	0.350	0.0231	0.2965	0.01445	27.79	60.00
65.00	117.87	38.25	2.5172	114.734	628.013	0.24266	1.22095	1.131	0.716	1.447	4583	1327.0	0.340	0.0233	0.2918	0.01464	26.90	65.00
70.00	128.85	37.99	2.3094	120.417	628.864	0.25334	1.21327	1.136	0.730	1.457	4515	1327.8	0.331	0.0235	0.2872	0.01483	26.03	70.00
75.00	140.59	37.73	2.1217	126.126	629.647	0.26396	1.20570	1.141	0.744	1.467	4447	1328.3	0.322	0.0237	0.2825	0.01504	25.16	75.00
80.00	153.13	37.47	1.9521	131.861	630.359	0.27452	1.19823	1.147	0.758	1.478	4378	1328.6	0.313	0.0239	0.2780	0.01525	24.30	80.00
85.00	166.51	37.21	1.7983	137.624	630.999	0.28503	1.19085	1.153	0.774	1.490	4309	1328.5	0.305	0.0241	0.2734	0.01548	23.44	85.00
90.00	180.76	36.94	1.6588	143.417	631.564	0.29549	1.18356	1.159	0.790	1.502	4240	1328.2	0.297	0.0244	0.2689	0.01571	22.60	90.00
95.00	195.91	36.67	1.5319	149.241	632.052	0.30590	1.17634	1.166	0.807	1.515	4170	1327.5	0.289	0.0246	0.2644	0.01595	21.77	95.00
100.00	212.01	36.40	1.4163	155.098	632.460	0.31626	1.16920	1.173	0.824	1.529	4099	1326.6	0.282	0.0248	0.2600	0.01620	20.94	100.00
105.00	229.09	36.12	1.3108	160.990	632.785	0.32659	1.16211	1.180	0.843	1.544	4028	1325.3	0.274	0.0250	0.2556	0.01646	20.13	105.00
110.00	247.19	35.83	1.2144	166.919	633.025	0.33688	1.15508	1.188	0.862	1.561	3956	1323.7	0.267	0.0253	0.2512	0.01673	19.32	110.00
115.00	266.34	35.55	1.1262	172.887	633.175	0.34713	1.14809	1.197	0.883	1.578	3884	1321.8	0.260	0.0255	0.2468	0.01702	18.53	115.00
120.00	286.60	35.26	1.0452	178.896	633.232	0.35736	1.14115	1.206	0.905	1.597	3811	1319.5	0.254	0.0257	0.2424	0.01732	17.74	120.00
125.00	307.98	34.96	0.9710	184.949	633.193	0.36757	1.13423	1.216	0.928	1.617	3737	1316.9	0.247	0.0260	0.2381	0.01763	16.96	125.00
130.00	330.54	34.66	0.9026	191.049	633.053	0.37775	1.12733	1.227	0.952	1.638	3662	1313.9	0.241	0.0262	0.2338	0.01795	16.19	130.00
135.00	354.32	34.35	0.8397	197.199	632.807	0.38792	1.12044	1.239	0.978	1.662	3587	1310.6	0.235	0.0265	0.2295	0.01829	15.44	135.00
140.00	379.36	34.04	0.7817	203.403	632.451	0.39808	1.11356	1.251	1.006	1.687	3511	1306.9	0.229	0.0267	0.2253	0.01865	14.69	140.00
145.00	405.70	33.72	0.7280	209.663	631.978	0.40824	1.10666	1.265	1.035	1.715	3434	1302.8	0.223	0.0270	0.2210	0.01903	13.95	145.00
150.00	433.38	33.39	0.6785	215.984	631.383	0.41840	1.09975	1.280	1.067	1.745	3356	1298.3	0.217	0.0273	0.2168	0.01943	13.22	150.00
155.00	462.45	33.06	0.6325	222.370	630.659	0.42857	1.09281	1.296	1.101	1.778	3277	1293.4	0.211	0.0276	0.2125	0.01986	12.51	155.00
160.00	492.95	32.72	0.5899	228.827	629.798	0.43875	1.08582	1.313	1.138	1.813	3198	1288.1	0.206	0.0279	0.2083	0.02031	11.80	160.00
165.00	524.94	32.37	0.5504	235.359	628.791	0.44896	1.07878	1.333	1.178	1.853	3117	1282.4	0.200	0.0282	0.2041	0.02079	11.10	165.00
170.00	558.45	32.01	0.5136	241.973	627.630	0.45919	1.07167	1.354	1.222	1.896	3035	1276.2	0.195	0.0285	0.1999	0.02130	10.42	170.00
175.00	593.53	31.64	0.4793	248.675	626.302	0.46947	1.06447	1.377	1.270	1.944	2952	1269.6	0.190	0.0288	0.1957	0.02185	9.75	175.00
180.00	630.24	31.26	0.4473	255.472	624.797	0.47980	1.05717	1.403	1.322	1.998	2868	1262.4	0.185	0.0292	0.1916	0.02245	9.09	180.00
185.00	668.63	30.87	0.4174	262.374	623.100	0.49019	1.04974	1.432	1.381	2.058	2783	1254.8	0.179	0.0296	0.1874	0.02310	8.44	185.00
190.00	708.74	30.47	0.3895	269.390	621.195	0.50066	1.04217	1.465	1.446	2.126	2696	1246.7	0.174	0.0300	0.1832	0.02381	7.80	190.00
195.00	750.64	30.05	0.3633	276.530	619.064	0.51121	1.03443	1.502	1.519	2.203	2608	1238.0	0.169	0.0304	0.1790	0.02458	7.18	195.00
200.00	794.38	29.62	0.3387	283.809														