

N<sub>2</sub> Ref.: <http://cea.grc.nasa.gov/>

T K	C <sub>p</sub> J/mol-K	H-H298.15 kJ/mol	S J/mol-K	-(G-H298.15)/T J/mol-K	H kJ/mol	Δ H <sub>f</sub> kJ/mol	log K
0	0.	-8.670	0.	INFINITE	-8.670	0	INFINITE
200	29.107	-2.857	179.986	194.273	-2.857	0	0
220	29.105	-2.275	182.760	193.102	-2.275	0	0
240	29.108	-1.693	185.293	192.347	-1.693	0	0
260	29.112	-1.111	187.623	191.896	-1.111	0	0
280	29.118	-0.529	189.781	191.668	-0.529	0	0
298.15	29.124	0.000	191.610	191.610	0.000	0	0
300	29.125	0.054	191.790	191.610	0.054	0	0
320	29.137	0.636	193.670	191.681	0.636	0	0
340	29.154	1.219	195.437	191.850	1.219	0	0
360	29.177	1.803	197.104	192.096	1.803	0	0
380	29.209	2.387	198.682	192.402	2.387	0	0
400	29.249	2.971	200.181	192.754	2.971	0	0
420	29.298	3.557	201.610	193.142	3.557	0	0
440	29.355	4.143	202.974	193.558	4.143	0	0
460	29.422	4.731	204.280	193.996	4.731	0	0
480	29.498	5.320	205.534	194.451	5.320	0	0
500	29.582	5.911	206.740	194.918	5.911	0	0
520	29.674	6.503	207.902	195.395	6.503	0	0
540	29.773	7.098	209.023	195.879	7.098	0	0
560	29.879	7.694	210.108	196.368	7.694	0	0
580	29.992	8.293	211.159	196.860	8.293	0	0
600	30.109	8.894	212.177	197.354	8.894	0	0
620	30.232	9.497	213.167	197.848	9.497	0	0
640	30.358	10.103	214.128	198.342	10.103	0	0
660	30.487	10.712	215.064	198.835	10.712	0	0
680	30.620	11.323	215.977	199.325	11.323	0	0
700	30.754	11.937	216.866	199.814	11.937	0	0
720	30.889	12.553	217.734	200.300	12.553	0	0
740	31.026	13.172	218.583	200.782	13.172	0	0
760	31.162	13.794	219.412	201.262	13.794	0	0
780	31.299	14.419	220.223	201.738	14.419	0	0
800	31.434	15.046	221.017	202.210	15.046	0	0
820	31.569	15.676	221.795	202.678	15.676	0	0
840	31.702	16.309	222.557	203.142	16.309	0	0
860	31.833	16.944	223.305	203.602	16.944	0	0
880	31.963	17.582	224.038	204.059	17.582	0	0
900	32.090	18.223	224.758	204.511	18.223	0	0
920	32.216	18.866	225.465	204.958	18.866	0	0
940	32.339	19.511	226.159	205.402	19.511	0	0
960	32.460	20.159	226.841	205.842	20.159	0	0
980	32.579	20.810	227.511	206.277	20.810	0	0
1000	32.696	21.462	228.171	206.708	21.462	0	0

N<sub>2</sub>

T K	Cp J/mol-K	H-H298.15 kJ/mol	S J/mol-K	-(G-H298.15)/T J/mol-K	H kJ/mol	Δ Hf kJ/mol	log K
1020	32.811	22.117	228.819	207.136	22.117	0	0
1040	32.922	22.775	229.458	207.559	22.775	0	0
1060	33.032	23.434	230.086	207.978	23.434	0	0
1080	33.138	24.096	230.704	208.393	24.096	0	0
1100	33.242	24.760	231.313	208.804	24.760	0	0
1120	33.344	25.426	231.913	209.212	25.426	0	0
1140	33.442	26.093	232.504	209.615	26.093	0	0
1160	33.539	26.763	233.086	210.015	26.763	0	0
1180	33.633	27.435	233.661	210.411	27.435	0	0
1200	33.724	28.109	234.227	210.803	28.109	0	0
1220	33.813	28.784	234.785	211.191	28.784	0	0
1240	33.900	29.461	235.335	211.576	29.461	0	0
1260	33.985	30.140	235.878	211.958	30.140	0	0
1280	34.067	30.820	236.414	212.336	30.820	0	0
1300	34.147	31.503	236.943	212.710	31.503	0	0
1320	34.225	32.186	237.465	213.081	32.186	0	0
1340	34.301	32.872	237.980	213.449	32.872	0	0
1360	34.375	33.558	238.489	213.814	33.558	0	0
1380	34.447	34.247	238.991	214.175	34.247	0	0
1400	34.518	34.936	239.488	214.533	34.936	0	0
1420	34.586	35.627	239.978	214.888	35.627	0	0
1440	34.652	36.320	240.462	215.240	36.320	0	0
1460	34.717	37.013	240.940	215.589	37.013	0	0
1480	34.780	37.708	241.413	215.934	37.708	0	0
1500	34.842	38.405	241.880	216.277	38.405	0	0
1520	34.902	39.102	242.342	216.617	39.102	0	0
1540	34.960	39.801	242.799	216.954	39.801	0	0
1560	35.017	40.500	243.250	217.288	40.500	0	0
1580	35.073	41.201	243.697	217.620	41.201	0	0
1600	35.127	41.903	244.138	217.949	41.903	0	0
1620	35.179	42.606	244.575	218.275	42.606	0	0
1640	35.231	43.310	245.007	218.598	43.310	0	0
1660	35.281	44.016	245.434	218.919	44.016	0	0
1680	35.330	44.722	245.857	219.237	44.722	0	0
1700	35.377	45.429	246.275	219.553	45.429	0	0
1720	35.424	46.137	246.690	219.866	46.137	0	0
1740	35.469	46.846	247.099	220.176	46.846	0	0
1760	35.513	47.556	247.505	220.485	47.556	0	0
1780	35.556	48.266	247.906	220.791	48.266	0	0
1800	35.599	48.978	248.304	221.094	48.978	0	0

N<sub>2</sub>

T K	Cp J/mol-K	H-H298.15 kJ/mol	S J/mol-K	-(G-H298.15)/T J/mol-K	H kJ/mol	Δ Hf kJ/mol	log K
1820	35.640	49.690	248.698	221.395	49.690	0	0
1840	35.680	50.403	249.087	221.694	50.403	0	0
1860	35.719	51.117	249.473	221.991	51.117	0	0
1880	35.758	51.832	249.855	222.285	51.832	0	0
1900	35.795	52.548	250.234	222.577	52.548	0	0
1920	35.832	53.264	250.609	222.867	53.264	0	0
1940	35.867	53.981	250.981	223.155	53.981	0	0
1960	35.902	54.699	251.349	223.441	54.699	0	0
1980	35.937	55.417	251.713	223.725	55.417	0	0
2000	35.970	56.136	252.075	224.007	56.136	0	0
2020	36.003	56.856	252.433	224.286	56.856	0	0
2040	36.035	57.576	252.788	224.564	57.576	0	0
2060	36.066	58.297	253.139	224.840	58.297	0	0
2080	36.097	59.019	253.488	225.113	59.019	0	0
2100	36.127	59.741	253.833	225.385	59.741	0	0
2120	36.156	60.464	254.176	225.655	60.464	0	0
2140	36.185	61.187	254.516	225.923	61.187	0	0
2160	36.213	61.911	254.852	226.190	61.911	0	0
2180	36.240	62.636	255.186	226.454	62.636	0	0
2200	36.267	63.361	255.517	226.717	63.361	0	0
2220	36.294	64.087	255.846	226.978	64.087	0	0
2240	36.320	64.813	256.171	227.237	64.813	0	0
2260	36.345	65.539	256.494	227.495	65.539	0	0
2280	36.370	66.266	256.815	227.750	66.266	0	0
2300	36.395	66.994	257.132	228.005	66.994	0	0
2320	36.419	67.722	257.448	228.257	67.722	0	0
2340	36.442	68.451	257.760	228.508	68.451	0	0
2360	36.465	69.180	258.071	228.757	69.180	0	0
2380	36.488	69.909	258.378	229.005	69.909	0	0
2400	36.510	70.639	258.684	229.251	70.639	0	0
2420	36.532	71.370	258.987	229.495	71.370	0	0
2440	36.553	72.101	259.288	229.738	72.101	0	0
2460	36.574	72.832	259.586	229.980	72.832	0	0
2480	36.595	73.564	259.882	230.220	73.564	0	0
2500	36.615	74.296	260.176	230.458	74.296	0	0
2520	36.635	75.028	260.468	230.695	75.028	0	0
2540	36.654	75.761	260.758	230.931	75.761	0	0
2560	36.674	76.494	261.045	231.165	76.494	0	0
2580	36.693	77.228	261.331	231.398	77.228	0	0
2600	36.711	77.962	261.614	231.629	77.962	0	0

N<sub>2</sub>

T K	Cp J/mol-K	H-H298.15 kJ/mol	S J/mol-K	-(G-H298.15)/T J/mol-K	H kJ/mol	Δ Hf kJ/mol	log K
2620	36.729	78.697	261.896	231.859	78.697	0	0
2640	36.747	79.431	262.175	232.088	79.431	0	0
2660	36.765	80.166	262.453	232.315	80.166	0	0
2680	36.782	80.902	262.728	232.541	80.902	0	0
2700	36.800	81.638	263.002	232.765	81.638	0	0
2720	36.816	82.374	263.273	232.989	82.374	0	0
2740	36.833	83.110	263.543	233.211	83.110	0	0
2760	36.849	83.847	263.811	233.431	83.847	0	0
2780	36.865	84.584	264.077	233.651	84.584	0	0
2800	36.881	85.322	264.341	233.869	85.322	0	0
2820	36.897	86.060	264.604	234.086	86.060	0	0
2840	36.912	86.798	264.865	234.302	86.798	0	0
2860	36.927	87.536	265.124	234.517	87.536	0	0
2880	36.942	88.275	265.381	234.730	88.275	0	0
2900	36.957	89.014	265.637	234.942	89.014	0	0
2920	36.971	89.753	265.891	235.154	89.753	0	0
2940	36.986	90.493	266.143	235.364	90.493	0	0
2960	37.000	91.232	266.394	235.572	91.232	0	0
2980	37.014	91.973	266.643	235.780	91.973	0	0
3000	37.027	92.713	266.891	235.987	92.713	0	0
3020	37.041	93.454	267.137	236.192	93.454	0	0
3040	37.054	94.195	267.382	236.397	94.195	0	0
3060	37.067	94.936	267.625	236.600	94.936	0	0
3080	37.080	95.677	267.866	236.802	95.677	0	0
3100	37.093	96.419	268.106	237.003	96.419	0	0
3120	37.106	97.161	268.345	237.203	97.161	0	0
3140	37.118	97.903	268.582	237.403	97.903	0	0
3160	37.131	98.646	268.818	237.601	98.646	0	0
3180	37.143	99.389	269.052	237.798	99.389	0	0
3200	37.155	100.131	269.285	237.994	100.131	0	0
3220	37.167	100.875	269.516	238.189	100.875	0	0
3240	37.179	101.618	269.747	238.383	101.618	0	0
3260	37.190	102.362	269.975	238.576	102.362	0	0
3280	37.202	103.106	270.203	238.768	103.106	0	0
3300	37.213	103.850	270.429	238.959	103.850	0	0
3320	37.224	104.594	270.654	239.150	104.594	0	0
3340	37.235	105.339	270.878	239.339	105.339	0	0
3360	37.246	106.084	271.100	239.527	106.084	0	0
3380	37.257	106.829	271.321	239.715	106.829	0	0
3400	37.268	107.574	271.541	239.901	107.574	0	0

N<sub>2</sub>

T K	C <sub>p</sub> J/mol-K	H-H298.15 kJ/mol	S J/mol-K	-(G-H298.15)/T J/mol-K	H kJ/mol	Δ H <sub>f</sub> kJ/mol	log K
3420	37.279	108.319	271.759	240.087	108.319	0	0
3440	37.289	109.065	271.977	240.272	109.065	0	0
3460	37.300	109.811	272.193	240.456	109.811	0	0
3480	37.310	110.557	272.408	240.639	110.557	0	0
3500	37.320	111.303	272.622	240.821	111.303	0	0
3520	37.330	112.050	272.835	241.002	112.050	0	0
3540	37.340	112.797	273.046	241.183	112.797	0	0
3560	37.350	113.544	273.256	241.362	113.544	0	0
3580	37.360	114.291	273.466	241.541	114.291	0	0
3600	37.370	115.038	273.674	241.719	115.038	0	0
3620	37.379	115.785	273.881	241.896	115.785	0	0
3640	37.389	116.533	274.087	242.072	116.533	0	0
3660	37.398	117.281	274.292	242.248	117.281	0	0
3680	37.408	118.029	274.496	242.423	118.029	0	0
3700	37.417	118.777	274.698	242.596	118.777	0	0
3720	37.426	119.526	274.900	242.770	119.526	0	0
3740	37.435	120.274	275.101	242.942	120.274	0	0
3760	37.444	121.023	275.301	243.114	121.023	0	0
3780	37.453	121.772	275.499	243.284	121.772	0	0
3800	37.462	122.521	275.697	243.454	122.521	0	0
3820	37.471	123.271	275.894	243.624	123.271	0	0
3840	37.480	124.020	276.089	243.792	124.020	0	0
3860	37.489	124.770	276.284	243.960	124.770	0	0
3880	37.497	125.520	276.478	244.127	125.520	0	0
3900	37.506	126.270	276.671	244.294	126.270	0	0
3920	37.514	127.020	276.862	244.459	127.020	0	0
3940	37.523	127.770	277.053	244.624	127.770	0	0
3960	37.531	128.521	277.243	244.789	128.521	0	0
3980	37.540	129.271	277.432	244.952	129.271	0	0
4000	37.548	130.022	277.621	245.115	130.022	0	0
4020	37.556	130.773	277.808	245.277	130.773	0	0
4040	37.564	131.525	277.994	245.439	131.525	0	0
4060	37.573	132.276	278.180	245.600	132.276	0	0
4080	37.581	133.027	278.365	245.760	133.027	0	0
4100	37.589	133.779	278.548	245.919	133.779	0	0
4120	37.597	134.531	278.731	246.078	134.531	0	0
4140	37.605	135.283	278.913	246.236	135.283	0	0
4160	37.613	136.035	279.095	246.394	136.035	0	0
4180	37.621	136.788	279.275	246.551	136.788	0	0
4200	37.629	137.540	279.455	246.707	137.540	0	0

N<sub>2</sub>

T K	Cp J/mol-K	H-H298.15 kJ/mol	S J/mol-K	-(G-H298.15)/T J/mol-K	H kJ/mol	Δ Hf kJ/mol	log K
4220	37.636	138.293	279.633	246.863	138.293	0	0
4240	37.644	139.046	279.811	247.018	139.046	0	0
4260	37.652	139.798	279.988	247.172	139.798	0	0
4280	37.660	140.552	280.165	247.326	140.552	0	0
4300	37.667	141.305	280.340	247.479	141.305	0	0
4320	37.675	142.058	280.515	247.631	142.058	0	0
4340	37.683	142.812	280.689	247.783	142.812	0	0
4360	37.690	143.566	280.863	247.935	143.566	0	0
4380	37.698	144.319	281.035	248.085	144.319	0	0
4400	37.706	145.074	281.207	248.236	145.074	0	0
4420	37.713	145.828	281.378	248.385	145.828	0	0
4440	37.721	146.582	281.548	248.534	146.582	0	0
4460	37.728	147.337	281.718	248.683	147.337	0	0
4480	37.736	148.091	281.887	248.830	148.091	0	0
4500	37.743	148.846	282.055	248.978	148.846	0	0
4520	37.751	149.601	282.222	249.124	149.601	0	0
4540	37.758	150.356	282.389	249.271	150.356	0	0
4560	37.766	151.111	282.555	249.416	151.111	0	0
4580	37.773	151.867	282.720	249.561	151.867	0	0
4600	37.781	152.622	282.885	249.706	152.622	0	0
4620	37.788	153.378	283.049	249.850	153.378	0	0
4640	37.796	154.134	283.212	249.993	154.134	0	0
4660	37.803	154.890	283.374	250.136	154.890	0	0
4680	37.811	155.646	283.536	250.279	155.646	0	0
4700	37.818	156.402	283.698	250.420	156.402	0	0
4720	37.826	157.159	283.858	250.562	157.159	0	0
4740	37.833	157.915	284.018	250.703	157.915	0	0
4760	37.841	158.672	284.177	250.843	158.672	0	0
4780	37.848	159.429	284.336	250.983	159.429	0	0
4800	37.856	160.186	284.494	251.122	160.186	0	0
4820	37.863	160.943	284.652	251.261	160.943	0	0
4840	37.871	161.700	284.808	251.399	161.700	0	0
4860	37.878	162.458	284.965	251.537	162.458	0	0
4880	37.886	163.215	285.120	251.674	163.215	0	0
4900	37.893	163.973	285.275	251.811	163.973	0	0
4920	37.901	164.731	285.429	251.947	164.731	0	0
4940	37.909	165.489	285.583	252.083	165.489	0	0
4960	37.916	166.248	285.736	252.219	166.248	0	0
4980	37.924	167.006	285.889	252.354	167.006	0	0
5000	37.932	167.764	286.041	252.488	167.764	0	0

N<sub>2</sub>

T K	C <sub>p</sub> J/mol-K	H-H298.15 kJ/mol	S J/mol-K	-(G-H298.15)/T J/mol-K	H kJ/mol	Δ H <sub>f</sub> kJ/mol	log K
5020	37.940	168.523	286.192	252.622	168.523	0	0
5040	37.947	169.282	286.343	252.756	169.282	0	0
5060	37.955	170.041	286.494	252.889	170.041	0	0
5080	37.963	170.800	286.643	253.021	170.800	0	0
5100	37.971	171.560	286.793	253.153	171.560	0	0
5120	37.979	172.319	286.941	253.285	172.319	0	0
5140	37.987	173.079	287.089	253.416	173.079	0	0
5160	37.995	173.839	287.237	253.547	173.839	0	0
5180	38.003	174.599	287.384	253.677	174.599	0	0
5200	38.011	175.359	287.530	253.807	175.359	0	0
5220	38.020	176.119	287.676	253.937	176.119	0	0
5240	38.028	176.880	287.822	254.066	176.880	0	0
5260	38.036	177.640	287.966	254.195	177.640	0	0
5280	38.045	178.401	288.111	254.323	178.401	0	0
5300	38.053	179.162	288.255	254.451	179.162	0	0
5320	38.061	179.923	288.398	254.578	179.923	0	0
5340	38.070	180.684	288.541	254.705	180.684	0	0
5360	38.079	181.446	288.683	254.831	181.446	0	0
5380	38.087	182.208	288.825	254.957	182.208	0	0
5400	38.096	182.969	288.966	255.083	182.969	0	0
5420	38.105	183.731	289.107	255.208	183.731	0	0
5440	38.114	184.494	289.248	255.333	184.494	0	0
5460	38.123	185.256	289.387	255.458	185.256	0	0
5480	38.132	186.018	289.527	255.582	186.018	0	0
5500	38.141	186.781	289.666	255.706	186.781	0	0
5520	38.151	187.544	289.804	255.829	187.544	0	0
5540	38.160	188.307	289.942	255.952	188.307	0	0
5560	38.169	189.071	290.080	256.074	189.071	0	0
5580	38.179	189.834	290.217	256.196	189.834	0	0
5600	38.189	190.598	290.353	256.318	190.598	0	0
5620	38.198	191.362	290.490	256.440	191.362	0	0
5640	38.208	192.126	290.625	256.561	192.126	0	0
5660	38.218	192.890	290.761	256.681	192.890	0	0
5680	38.228	193.654	290.895	256.801	193.654	0	0
5700	38.238	194.419	291.030	256.921	194.419	0	0
5720	38.249	195.184	291.164	257.041	195.184	0	0
5740	38.259	195.949	291.297	257.160	195.949	0	0
5760	38.270	196.714	291.430	257.279	196.714	0	0
5780	38.280	197.480	291.563	257.397	197.480	0	0
5800	38.291	198.245	291.695	257.515	198.245	0	0

N<sub>2</sub>

---

T K	Cp J/mol-K	H-H298.15 kJ/mol	S J/mol-K	-(G-H298.15)/T J/mol-K	H kJ/mol	Δ Hf kJ/mol	log K
5820	38.302	199.011	291.827	257.633	199.011	0	0
5840	38.313	199.778	291.959	257.750	199.778	0	0
5860	38.324	200.544	292.090	257.867	200.544	0	0
5880	38.335	201.311	292.220	257.984	201.311	0	0
5900	38.347	202.077	292.350	258.100	202.077	0	0
5920	38.358	202.844	292.480	258.216	202.844	0	0
5940	38.370	203.612	292.610	258.331	203.612	0	0
5960	38.382	204.379	292.739	258.447	204.379	0	0
5980	38.394	205.147	292.867	258.562	205.147	0	0
6000	38.406	205.915	292.995	258.676	205.915	0	0

---